US ERA ARCHIVE DOCUMENT

CATEGORY "S"
BASELINE ENVIRONMENTAL ASSESSMENT
FORMER TECUMSEH PRODUCTS PLANT
100 AND 101 EAST PATTERSON STREET
TECUMSEH, MICHIGAN
ATC PROJECT NO.: 39.02922.8N01

**VOLUME 2 OF 3** 

Category "S" Baseline Environmental Assessment Former Tecumseh Products Plant 100 and 101 East Patterson Street, Tecumseh, Michigan 49286 January 21, 2010

# APPENDIX G RMT'S CURRENT CONDITIONS REPORT VOLUME 2 OF 3



September 21, 2009

Mr. Hak Cho USEPA Region V, DW-8J 77 West Jackson Blvd. Chicago, IL 60604

Subject: Current Conditions Report – Tecumseh Products Company Property Tecumseh, Michigan

Dear Mr. Cho:

As a follow up to RMT, Inc.'s (RMT) letter dated June 17, 2009, to the United States Environmental Protection Agency (USEPA), please find enclosed two copies of the Current Conditions Report (CCR) for the Tecumseh Products Company, Inc. (TPC) property located at 100 East Patterson Street, Tecumseh, Lenawee County, Michigan.

If you have any questions regarding the attached, please contact me at (734) 971-7080, ext. 7122.

Sincerely,

RMT, Inc.

Graham Crockford

Project Manager

graham.crockford@rmtinc.com

Attachments: Current Conditions Report – September 2009

cc: Peter Quackenbush, MDEQ, WHMD, Hazardous Waste Permits
Jason Smith, Corporate Environmental Director, Tecumseh Products Company
Laurel Krueger, Tecumseh Products Company
Douglas McClure, Conlin, McKenney & Philbrick, P.C.



#### **Current Conditions Report**

Tecumseh Manufacturing Facility Lenawee County, Michigan

September 2009





### **Current Conditions Report**

#### **Tecumseh Manufacturing Facility**

Lenawee County, Michigan

September 2009

Prepared For Tecumseh Products Company

Graham Crockford Project Manager

Stacy E. Metz

**Environmental Specialist** 

RMT, Inc. | Tecumseh Products Company Final
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## Section 1 Introduction

#### 1.1 Site Description

Tecumseh Products Company (TPC) owns a manufacturing site located in Lenawee County, Michigan (Figure 1). The approximately 53-acre TPC manufacturing site is located at 100 East Patterson Street between Evans Street and Maumee Street. This parcel includes an expanse of interconnected buildings/building additions that occupy approximately 750,000 square feet (Figure 2).

#### 1.2 Project Background

In 2008, a Phase I Environmental Site Assessment (ESA) was conducted by Atwell-Hicks, LLC as part of the potential sale of the TPC manufacturing site to Consolidated Biscuit Company (CBC). The Phase I ESA Report recommended that a Phase II Subsurface Investigation be conducted to address the identified recognized environmental conditions (RECs). A Phase II ESA was performed by ATC Environmental Consultants (ATC) on behalf of CBC between December 2008 and January 2009. A copy of the Draft Limited Phase II ESA Report was provided to TPC in February 2009.

At the request of TPC, RMT, Inc., (RMT) reviewed the Draft Limited Phase II ESA Report. Based on this review, RMT recommended an investigation be performed to determine the potential for off-site migration of volatile organic compounds (VOCs) above the generic cleanup criteria specified in the Michigan Department of Environmental Quality (MDEQ) Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). In March 2009, RMT initiated a perimeter subsurface investigation to further evaluate the potential for off-site migration. Data from the perimeter investigation indicated that VOCs were present above Part 201 criteria at the property boundary. In accordance with Part 201 rules, potentially affected property owners and the MDEQ were notified of the potential for off-site migration of affected groundwater from the site on April 8, 2009.

During the period from April through August 2009, RMT advanced numerous off-site soil borings, installed monitoring wells, collected samples from the storm water sewer system, and performed groundwater sampling in the backfill surrounding the storm and sanitary sewer systems in order to define the horizontal extent of constituents of concern (COCs) above generic cleanup criteria adjacent to the site. Based on the results of this off-site subsurface investigation,

on June 1, 2009, additional property owners were notified of the potential for off-site migration of affected groundwater. RMT also conducted a well survey, which included a review of publically available water well logs, records of municipal water usage for the area adjacent to the site, and evaluated whether the City of Tecumseh municipal water supply has the potential to become affected by off-site migrations of COCs. The well survey also included sampling of private wells at properties potentially affected by off-site migration of COCs. A limited on-site subsurface investigation was also performed to further refine probable on-site source areas.

On April 15, 2009, following the submittal of the initial notices of off-site migration, TPC met with the MDEQ to discuss the potential off-site migration of affected groundwater, appropriate interim response activities, and regulatory control. Because the site is a former Part A Interim Status Facility, MDEQ indicated that the site was subject to RCRA corrective action under the authority of the United States Environmental Protection Agency (USEPA) rather than Part 201 corrective action led by the MDEQ. During this meeting, MDEQ staff made a commitment to contact USEPA to determine whether the MDEQ or USEPA would take the lead agency role. As explained in a subsequent email from Peter Quackenbush (MDEQ Waste and Hazardous Materials Division) on May 14, 2009, the MDEQ has referred the project to the USEPA.

#### 1.3 Purpose and Scope

This Current Conditions Report (report) was prepared for submittal to the USEPA in order to initiate the corrective action process. This report describes and summarizes the physical setting of the site, the historical operations, recent sampling data, and voluntary remedial activities undertaken by TPC.

## Section 2 Site Setting

#### 2.1 Site Location and Description

The TPC manufacturing site is located in the Section 34, Township 5 South, Range 4 East, Tecumseh, Lenawee County, Michigan (Figure 1). The site, also known as the property located at 100 East Patterson Street, in the City of Tecumseh, consists of approximately 53 acres of land, which includes an expanse of interconnected buildings/building additions that occupy approximately 750,000 square feet.

#### 2.2 Geology

The site is located near the southeast rim of the Michigan Basin. Topographically, the region is relatively flat and characterized by glaciofluvial sediments at the surface (Figure 1). The geology consists of a series of unconsolidated Holocene and Pleistocene age glacial deposits, predominantly gravel and sand with areas of silt and clay overlying Mississippian age shales. The thickness of the glacial deposits varies from a few feet to over 200 feet thick throughout the region. Local water well logs within one mile of the site indicate bedrock in that area is 150 to 200 feet deep.

RMT evaluated the unconsolidated materials underlying the site through a review of logs from soil borings advanced at the site during field activities conducted by RMT from April through July 2009. Logs of soil borings and monitoring wells installed during the investigation are included as Appendix A. Geologic cross sections developed from these boring logs illustrate the geology underlying the TPC site. Figure 4 shows the orientation of the cross-section transects (A-A', B-B', C-C', and D-D'), while Figures 5 to 8 present the cross sections.

As shown on the cross sections, the site geology generally consists of a surficial clay interval ranging from 3 to 7 feet thick, underlain by unconsolidated fine to coarse sand and gravel. On the east edge of the site, a second clay interval was observed approximately 30 to 35 feet bgs. The continuity and thickness of the lower clay layer is currently unknown; however, based on data from water supply wells, this clay likely serves as an aquitard. Bedrock was not encountered in any of the borings. As discussed above, local water well logs indicate that bedrock is 150 to 200 feet deep at the site.

#### 2.3 Hydrogeology

The site and surrounding area are centrally located in the River Raisin watershed. Because bedrock is frequently encountered 150 feet or more below ground surface in the Raisin River Basin area, the more accessible, unconsolidated aquifers in this system are frequently used for drinking water sources. Area well records indicate that the primary groundwater source for Lenawee County and the City of Tecumseh are unconsolidated glacial deposits.

Data collected from the soil borings and monitoring wells installed during the 2009 subsurface investigation activities indicate that shallow groundwater in the unconsolidated sediments typically ranges in depth from 3 to 30 feet bgs within the sand and gravel (Appendix A, Table 1). The variation in groundwater depth is a result of site topography, which slopes downward to the east, toward the Raisin River. A clay unit was observed at a depth of 30 to 35 feet bgs in multiple locations underlying the sand interval, topographically and hydraulically downgradient, east and northeast, of the site.

The groundwater elevation data collected in June 2009 were used to construct a contour map and determine the direction of groundwater flow and hydraulic gradient within the unconsolidated sand underlying the site (Figure 9). Several rounds of water levels have been collected (Table 1), and the depth to groundwater and the direction of groundwater flow is generally consistent. Groundwater flow at the TPC site is generally east toward the Raisin River, the nearest body of water located 1,500 to 2,500 feet east of the site. The Raisin River is the regional discharge feature for groundwater beneath the TPC site. A mean horizontal hydraulic gradient of 0.002 was measured across the site using the June 2009 groundwater elevation data.

### Section 3 Site History

#### 3.1 Historical Uses of the Site

The TPC site consisted of farmland (undeveloped woodlands/farmland) until it was first developed for industrial use in the late 1800s and early 1900s. Prior to TPC's acquisition of the site in 1934, portions of the property had been occupied by the following manufacturing facilities: Tiffany Iron Works (iron foundry); Heesen Brothers and Company (feed cookers, hog rings and hollowware); Carson Foundry and Manufacturing/Bruce Manufacturing (job castings and food cookers); Anthony Fence Company/American Steel and Wire Company (steel wire and woven wire fencing); and H. Brewer Company (concrete mixers and general foundry products). Since 1934, the site has been occupied by various divisions of TPC. Historical documents indicate that the uses of the site have not changed significantly since 1934, other than changes in some product lines, several episodes of facility expansion, and an increasing level of development until June 2008.

#### 3.2 Site Operations

The TPC site is occupied by a series of interconnected buildings/building additions that occupy approximately 750,000 square feet (main building). There are other buildings on site, but they are significantly smaller in size, and were typically not utilized for manufacturing operations. Letter designations, *i.e.*, Area K, Building Q, etc., for each building/building addition are shown on Figure 2.

The oldest portion of the main building, referred to as Area K (Figure 2), is located in the northern portion of the site; subsequent building expansions and additions have grown the main building to the south and east. Areas H and J in the northwestern portion of the building have historically housed the TPC corporate headquarters and TPC research and development (Engineering Department). The rest of the main building was used primarily for the manufacture and storage of TPC products. The first products manufactured by TPC included automotive parts, refrigeration systems, small tools, and toys. By June 2008, when manufacturing operation ceased at the site, TPC operations focused on the production and reconditioning of compressors and condensing units for refrigeration and air conditioning units. Significant manufacturing processes formerly conducted at the site are listed below:

- Parts degreasing (trichloroethene, 1,1,1-trichloroethane, and water)
- Unit assembly

- Paint preparation (water, citric acid, iron phosphate, fix solution)
- Unit painting
- Unit reconditioning
- Shipping and receiving, including use of an on-site rail spur until the 1960s

Approximately 30 TPC employees currently occupy the office/engineering portions of the building (Areas H and J). The balance of the site, including the front offices (Area Z), is currently unoccupied, pending a sale of the site. TPC plans to relocate their remaining staff in 2010.

#### 3.3 Types of Waste Generated and Waste Management

Several waste streams were generated during the former production processes. The primary wastes generated at TPC were solvent distillation sludges (F001), spent mineral spirits (D001), paint waste (D007), waste oil (F002), scrap metal, metal fines, and an iron phosphate and citric acid solution. The following is a summary describing the waste generation and treatment processes at TPC.

Wastewater treatment was performed at two locations at the site. The first wastewater treatment system operated in the K-1 area of the main building. This wastewater system is also described as solid waste management unit (SWMU) #1 later in this report, and is not to be confused with the newer wastewater treatment system that was built in 1990 and operated in a separate building (Building R) on the eastern side of the main building (Figure 2). These wastewater treatment systems were used to treat process wastewater that contained suspended solids, water-based cleaning compounds, coolants, and a trace amount of oil and solvents. Wastes generated during the water treatment process included filtercake from water filtration, solids generated during the settling process, and residual oil that was skimmed off and managed with all other waste oil generated at the site (solvent waste code F002). Treated wastewater was discharged to the City of Tecumseh publicly-owned treatment works (POTW).

TPC operated a Distillation Solvent Recovery System used to distill spent 1,1,1-trichloroethane (1,1,1-TCA) that was generated by two vapor degreasers (Area M). 1,1,1-TCA was used in 10 percent of the degreasing operations at the site. The vapor degreasers were used to clean used motors during reconditioning and the tubes and valves that were assembled into new units. Spent 1,1,1-TCA was distilled and the clean solvent was recycled back into the vapor degreasers. The distillation sludge was stored in the Hazardous Waste Drum Storage Area (outside of Area L-1), before being sent to Safety-Kleen of Hebron, Ohio for recycling. TPC previously managed spent 1,1,1-TCA by storing it in the Former Spent Solvent Storage Tank (Area TD), which was taken out of service in 1979. The distillate solvent recovery system operated until the early 1990s.

TPC generated waste citric acid solution and iron phosphate solution during the cleaning and priming of the units prior to the painting process. These solutions were collected in 55-gallon drums at the Citric Acid and Iron Phosphate Solution Accumulation Area (Area V-2) until they were emptied into the Wastewater Treatment System.

Paint waste was generated when the paint areas were cleaned-out. TPC representatives reported that the site switched from solvent-based paint to water-based paint in 1984. Paint waste was still treated as a hazardous waste because it contained chromium. As part of the painting process, manufactured units, hanging on a conveyor belt, were sent through an enclosed structure open at the front and back for the conveyor to move through. The paint was applied in this enclosed structure. When the paint areas were cleaned, all four sides were scraped. These scrapings, which included tubes or fixtures that fell off of the parts, were accumulated in a 55-gallon drum at a Paint Waste Accumulation Area (Area G-2) until enough paint waste (D007 chromium) accumulated to be transferred to the Hazardous Waste Drum Storage Area. Paint waste was picked up by Chem-Met in Wyandotte, Michigan, for treatment and disposal.

Waste oil was generated at the site in several areas. Compressors and motors brought in for reconditioning were drained of any residual oil. The oil skimmers that operated as a part of the wastewater treatment system collected oil. Maintenance of machinery as a part of site operations generated waste hydraulic oil. Waste oil was collected in the 6,000-gallon Waste Oil Storage Tank, which was located in Area TD of the main building.

Metal fines were generated during the machining process. Iron castings were machined to specifications and the resulting iron fines were collected at the Metal Fines Storage Area (outside of Area B-2). These fines were sold to Jackson Iron and Metal in Adrian, Michigan, who in turn sent the fines to a foundry.

Scrap metal was generated at several different areas of the plant. When used compressors and motors were brought in to be reconditioned, worn parts were replaced. Worn metal parts were collected and placed in one of the Scrap Metal Bins (outside of Areas B-2 and L-1). Scrap metal was also generated during equipment maintenance. Scrap metal was sold to recyclers.

#### 3.4 Summary of Historic Waste Management Permits and Licenses

#### 3.4.1 RCRA Part A Permit

TPC filed a RCRA Part A permit application with the USEPA on March 17, 1981. The permit application allowed for container (S01) and tank (S02) storage for solvent wastes (F002 and F017). On June 10, 1982, the USEPA granted TPC interim status for the

container storage and the tank storage areas, identified as SWMU #6 and #10, respectively, in a USEPA Preliminary Assessment/Visual Site Inspection (PA/VSI) conducted in April 1982. The approximate locations of the SWMUs are shown on Figure 2. On June 21, 1982, TPC submitted a closure plan for its container storage and 2,500-gallon spent solvent storage tank and reported that the site would discontinue storage of hazardous waste for greater than 90 days. USEPA granted approval of TPC's closure plan and reported that it would consider closure final with the submittal of a certification of closure for the storage tank. On November 12, 1982, an engineering firm representing TPC submitted a certificate of closure for the storage tank. TPC was regulated as a generator of hazardous waste with less-than-90-day storage until 2008.

#### 3.4.2 National Pollution Discharge Elimination System Permit

TPC was granted a National Pollution Discharge Elimination System (NPDES) permit on April 16, 1979. The permit was issued by the Michigan Water Resources Commission and authorized TPC to discharge to the Raisin River via a Patterson Street storm sewer, Permit Number MIO000256. TPC was required under their NPDES permit to submit sampling results for the following parameters: 1) total suspended solids, 2) total dissolved solids, 3) temperature, 4) oil and grease, 5) pH, and 6) 1,1,1- TCA.

#### 3.4.3 Air Permits

TPC was reported to have had two air permits with the state of Michigan. One permit was issued for the application of water-based paints, Permit Number 312-83. The second permit was for one 1,1,1-TCA vapor degreaser, Permit Number 726-86. TPC reported that its second 1,1,1-TCA degreaser was covered by a grandfather clause, which did not require that a permit be issued because it was installed before the regulations became effective. In early 2000, TPC operated under a synthetic minor operating permit, as source ID 26091000031.

#### 3.5 On-site Treatment Facilities

Prior to 1990, TPC operated a wastewater treatment system with a capacity of up to 20,000 gallons per day (SWMU-#1 on Figure 2). This system, located in area K-1 of the main building, was used to treat process wastewater that contained suspended solids, water-based cleaning compounds, coolants, and a trace amount of oil and solvents. The system managed all process wastewater and the resulting by-product consisted of filtercake that was scraped off and stored in a hopper at the point of generation. TPC then transported the filtercake to the Laidlaw Landfill in Adrian, Michigan, for disposal. The solids generated during the settling process were collected in a hopper at the point of generation and then transferred to a

20-cubic-yard steel Metal Solids Bin located directly outside of the wastewater treatment system building. Chem-Met of Wyandotte, Michigan, picked up the solids consisting of metal chips and metal fines for treatment and disposal. Any residual oil was skimmed off and transferred to a waste oil storage tank. Because trace amounts of solvents remained in this residual oil, which was mixed in with all other waste oil generated at the site, all waste oil was classified with a solvent waste code (F002). The wastewater was sent through sand filters prior to being discharged to the City of Tecumseh POTW. A new Waste Water Treatment Plant (Building R) was constructed in 1990 and placed in its own 2,000-square-foot building, located east of the main manufacturing building (Figure 2).

Prior to 1979, TPC managed spent 1,1,1-TCA by storing it in the Former Spent Solvent Storage Tank. After the tank was taken out of service TPC operated a Distillation Solvent Recovery System used to distill spent 1,1,1-TCA that was generated by two vapor degreasers. This is also referred to as SWMU-5 in latter portions of this report; the location is shown on Figure 2. 1,1,1-TCA was used in 10 percent of the degreasing operations at this site. The vapor degreasers were used to clean used motors during reconditioning and the tubes and valves that were assembled into new units. Spent 1,1,1-TCA was distilled and the clean solvent was recycled back into the vapor degreasers. The distillation sludge was stored in the Hazardous Waste Drum Storage Area, before being sent to Safety-Kleen of Hebron, Ohio, for recycling.

#### 3.6 On-Site Storage Facilities

Eighteen underground storage tanks (USTs) and numerous above ground storage tanks (ASTs) have been identified at the site. Appendix C provides a copy of a TPC table, created in 1986, with a summary of the storage tanks in place at the time the table was created, including the eighteen identified USTs and 8 bulk ASTS. A figure showing their corresponding locations is also included in Appendix C. Additional smaller ASTs were identified in the Phase I ESA Report and the USEPA PA/VSI Report.

#### 3.6.1 Underground Storage Tanks

Eighteen USTs have been identified at the site. These USTs are described below. Additional information and a map showing the locations these USTs are provided in Appendix C. UST tank areas are also shown on Figure 2.

The MDEQ UST database contains records for 15 of these USTs. The USTs listed in the MDEQ database were previously used by the site for storage of lubricating oils, lap oil, kerosene, used oil, fuel oil, and hazardous substances. The USTs, located immediately west of the central part of the building, were installed between 1946 and 1970, and ranged in size from 6,000 to 20,000 gallons. All of the USTs were closed between

July 1990 and November 1990. The UST database indicates that three of the tanks were abandoned in place and the remaining tanks were removed from the ground. According to an October 25, 1990, letter from TPC sent to the Michigan Fire Marshall, the five tanks that were removed in July 1990 were cleaned and inspected; none of the tanks reportedly exhibited evidence of leakage. No other documentation was available concerning removal of the former USTs or any sampling conducted at the time of removal. The MDEQ UST database reports no active USTs and fifteen tanks either removed from the ground or closed in ground. The TPC site is not listed on the Leaking Underground Storage Tank (LUST) database.

In addition to the fifteen USTs listed in the MDEQ UST database and discussed above, the March 1993 PA/VSI Report identified a 20,000-gallon tank divided into two 10,000-gallon compartments, located beneath the floor of the former wastewater treatment area, which were used to hold untreated wastewater. These tanks were reportedly constructed of stainless steel with a fiberglass lining and were installed in the early 1980s. According to site personnel, these tanks were pumped out and filled with sand in 1990. Based on their construction, it is unlikely that significant releases were associated with the historical usage of these former wastewater holding tanks.

The site records, included in Appendix C, also show two additional USTs (a 20,000-gallon quench oil tank and a 6,000-gallon alcohol tank) that were removed in November 1987. These tanks do not appear in the UST database searched by EDR.

#### 3.6.2 Aboveground Storage Tanks

Through a review of site records, the Phase I ESA Report and the USEPA PA/VSI Report, numerous ASTs have been identified at the site. These ASTs are described below. Additional information and a map showing the locations the 8 bulk ASTs are provided in Appendix C.

According to the 1986 tank inventory table and figure in Appendix C, there were eight bulk aboveground bulk storage tanks (ASTs) at the site, with capacities ranging from 6,000 to 12,000. Three of the tanks contained used oil; the remaining tanks contained compressor oils. All of these bulk tanks were located inside buildings in areas that have concrete floors and concrete dike walls for secondary containment. Currently all of the bulk ASTs are currently empty and out of service.

In addition to the eight large ASTs, a Phase I ESA Report and the USEPA PA/VSI Report noted additional smaller tanks. A summary of these tanks is provided below:

- There are five small tanks located in Area E (estimated capacities of between 500 and 1,000 gallons) that were used to hold and distribute refrigeration oils.
   These tanks are now empty.
- In the former wastewater treatment area (Area K-1), there are two aboveground storage tanks that were used to hold wastewater.
- In the newer wastewater treatment building (Building R), there are several aboveground vessels, including reactor tanks, holding tanks, and an oil-water separator.
- Two propane tanks are located in the southwest corner of the site (both 1,000-gallon capacity) that provide propane for the site forklifts.
- One oxygen tank (1,000-gallon capacity), located in the western portion of the site, supplies oxygen used in the brazing operations.
- There were four tanks located in the Engineering Department containing refrigerants used to charge refrigeration units for testing purposes (capacities ranging from 1,350 to 1,750 pounds).
- The site also has two emergency diesel generators, which have tanks that have a combined capacity for 733 gallons of fuel. The diesel tanks are equipped with secondary containment.
- A 2,800-gallon "used oil burn tank" in Area TD contained oils from compressor tear-downs that was later used to fuel the boilers.
- A 5,000-gallon AST in Area TD contained 1,1,1-TCA.
- A 3,500-gallon AST outside of Building L held acid from de-rust operations.
- A 2,500-gallon spent solvent (TCA) AST located near Area K (RCRA-closed in 1982).

Site personnel were not aware of any leaks or spills relating to the ASTs, and the Phase I ESA report did not note any observed evidence of staining or past releases at the time of the site visit.

#### 3.6.3 Drum and Other Storage Areas

New oils and non-flammable chemicals were stored in a separate building (Building Q). The walls and floor of the building provided adequate secondary containment. A partitioned self-contained flammable chemical storage building located adjacent to Building Q was used for the storage of flammable chemicals (*e.g.*, paints, non-hazardous parts washer solvent, acetone, and alcohols), as well as hazardous waste. Maintenance oils, used oil, and smaller containers of oils and greases were once stored in the maintenance shop. Drums containing oil-contaminated solids (mostly absorbents used

for minor spills/leaks) and empty drums were stored in Area TD. Drums containing compressor oil were stored and maintained in the compressor room. Containers of boiler treatment chemicals were once stored in the boiler room (Area N-2). Drip pans provided secondary containment for drums used to dispense the water treatment chemicals. A roll-off container with grinding swarf was staged in a shed located in the western part of the site that is no longer present. Cylinders of compressed gases were staged in a shed located north of the Engineering Department. Drums and totes containing various chemicals were once stored in the de-rust area (Area W-1). Totes containing a two-part disocyanate foam packaging system were once used in the shipping department (Area P). Three parts washers that contained a non-hazardous petroleum-based solvent were used in the maintenance shop (one washer) and the Engineering Department (two washers). Several drums and smaller containers with machine oils and greases and used oil were stored in the Engineering Department. All of these containers were provided with secondary containment.

According to the Phase I ESA, site personnel were not aware of any significant spills or releases of materials nor did the report note any observed evidence of significant spills or uncontrolled releases from these storage areas. In addition, Tecumseh Fire Chief Joseph Tuckey had no knowledge of any spills at the site.

#### 3.7 Disposal Activities

The Phase I ESA did not identify any on-site disposal areas, ponds or apparent evidence of solid waste dumping (*i.e.*, unusual mounding, debris piles, or depressions), suspect fill material, or landfilling on the TPC property during site reconnaissance. A pile of concrete rubble was observed on the south side of the subject site building. Although the source was unknown, based on its appearance and inert nature, this concrete rubble was not considered to be an environmental concern.

#### 3.8 Summary of Past Releases

Two spills have been documented at the site.

- 1992 Spill: The site is listed in the Emergency Release Notification System (ERNS) database as having had a reported release of 200 gallons of oil from overfilling of an aboveground storage tank in 1992. The release reportedly entered a storm sewer outfall. No further documentation was available concerning this spill response and no enforcement action was made.
- 2003 Spill: The site is listed in the Michigan Pollution Emergency Alerting System (PEAS) database as having had a release of compressor oil onto a loading dock in August 2003. The spill was reportedly cleaned up and did not enter the storm sewer system.

#### 3.9 Summary of Potential Sources of Contamination

This section summarizes the potential sources of contamination identified at the site in the USEPA PA/VSI Report and the Phase I ESA. This section will describe each possible source of contamination in detail including historical use, current status, and any corrective action taken.

#### 3.9.1 1992 USEPA Preliminary Assessment/Visual Site Inspection

According to the USEPA Final PA/VSI Report resulting from an inspection of the TPC site on April 28, 1992, twelve solid waste management units (SWMUs) were identified. Figure 2 shows the approximate locations of each SWMU. The PA/VSI did not identify any other areas of concern. A general summary of each SWMU is as follows:

#### SWMU 1: Old Wastewater Treatment System

Capacity: 20,000 gallons of wastewater per day

■ Location: Area K-1

Dates of Operation: 1975 through early 1990s

- Unit Description: Composed of a settling tank with attached oil skimmers, a treatment tank with attached oil skimmers, a deep bed filter and a filter press
- Functionality: Managed process wastewater that contained suspended solids, water-based cleaning compounds, coolants, and a trace amount of oil and solvents
- Environmental Protection: Concrete floor with minimum thickness of 8 inches

Status: Decommissioned in 1990s

#### SWMU 2: Metal Solids Bins

Capacity: 20 cubic yards

Location: Area TD

Dates of Operation: Early 1970s through 2008

Unit Description: Steel bin

 Functionality: Containment for metal fines separated at the waste water settling tank

Environmental Protection: Concrete pad

Status: Bins have been removed

#### SWMU 3: Underground Wastewater Storage Tank

Capacity: 20,000 gallons, two 10,000-gallon compartments

■ Location: Area K-1

Dates of Operation: Early 1980s through 1990

- Unit Description: Fiberglass-lined stainless steel underground storage tank divided into two compartments
- Functionality: Holding tanks to control flow of process wastewater
- Status: Pumped out and filled with sand in 1990

#### SWMU 4: Final Holding Tank

Capacity: 3,500 gallons

Location: Area G-2

Dates of Operation: 1975 through 1990

- Unit Description: Steel tank with oil skimmer and connected sand filters
- Functionality: Used to settle solids, skim residual oil, and filter wastewater prior to discharge to the City of Tecumseh POTW
- Environmental Protection: Oil collected was transferred to the Waste Oil Storage Tank (SWMU 11)
- Status: Decommissioned in 1990

#### SWMU 5: Distillation Solvent Recovery System

Location: Area M

Dates of Operation: 1984 through early 1990s

- Unit Description: Water vapor conveyed heated solvents through the system's separator and the recovered solvents were pumped into 55-gallon drums for reuse in the degreasing process
- Functionality: Distillation of spent 1,1,1-TCA generated during degreasing operations
- Status: Decommissioned in early 1990s

#### SWMU 6: Hazardous Waste Drum Storage Area

• Area: 8 feet by 25 feet

Location: Outside of Area L-1

Dates of Operation: Late 1970s through 1990

- Unit Description: Sloped concrete pad with a covering over the top and 4-foot concrete walls on three sides
- Functionality: Storage and containment drum containing solvent distillation sludge, spent mineral spirits, and paint waste
- Environmental Protection: Managed under a Part A Interim Status but closed in 1982 as a permitted unit and then managed as a less-than-90-day unit from 1982 to 1990

Status: Closed

#### SWMU 7: Citric Acid and Iron Phosphate Solution Accumulation Area

Capacity: 55 gallons

Location: Area V-2

Dates of Operation: 1976 until June 2008

- Unit Description: Drum on a wooden pallet located in the interior of the site
- Functionality: Accumulation and temporary storage of spent non-hazardous citric acid and iron phosphate solution from the wash process
- Status: Removed June 2008

#### SWMU 8: Scrap Metal Bins

- Capacity: Multiple units ranging in size from 55-gallon drums to an 8-foot by 5-foot hopper
- Location: Outside of Areas L-1 and B-2
- Dates of Operation: 1934 through June 2008
- Unit Description: Steel bins
- Functionality: Contain scrap parts from the production processes and site maintenance operations. Aluminum parts were separated from the copper and steel parts. All other parts were stored outside of bins.
- Status: Bins and all scrap metal have been removed

#### SWMU 9: Paint Waste Accumulation Area

Capacity: Two 55-gallon drums

Location: Area G-2

Dates of Operation: 1960s through June 2008

- Unit Description: Steel drums
- Functionality: Collection of paint waste generated during the cleaning of the painting machines
- Environmental Protection: Concrete floor
- Status: Drums and paint waste have been removed

#### SWMU 10: Former Spent Solvent Storage Tank

- Capacity: 2,500 gallons
- Location: Area TD
- Dates of Operation: Unknown through 1982
- Unit Description: Aboveground storage tank
- Functionality: Storage of spent solvents
- Environmental Protection: Concrete floor
- Status: RCRA closure in 1982

#### SWMU 11: Waste Oil Storage Tank

- Capacity: 6,000 gallons
- Location: Area N-1
- Dates of Operation: 1976 through June 2008
- Unit Description: Aboveground storage tank
- Functionality: Managed waste oil generated during manufacturing, from maintenance of on-site machinery, from the draining of compressors that came back to the plant, and by the oil skimmers that were part of the old wastewater treatment system
- Environmental Protection: Concrete floor
- Status: Tank is empty

#### SWMU 12: Metal Fines Storage Area

- Location: Outside of Area B-2
- Dates of Operation: 1940s through June 2008
- Unit Description: Area with concrete base, surrounded on three sides by the building walls
- Functionality: Storage of metal fines generated during the machining processes

- Environmental Protection: Drain leading to the wastewater treatment plant to collect all run-off from the area
- Status: Bins and metal fines have been removed

#### 3.9.2 Phase I Environmental Site Assessment

In October 2008, Atwell Hicks, LLC conducted a Phase I ESA to evaluate the presence of recognized environmental conditions (RECs) or other environmental concerns at the TPC site. This evaluation identified two general RECs, which are described below:

- REC 1: According to a report prepared by Environmental Data Resources (EDR), the TPC site is listed on the following environmental databases: Comprehensive Environmental Response, Compensation, and Liability Information System-No Further Remedial Action Planned (CERCLIS NFRAP); a Corrective Action Report (CORRACTS); a Resource Conservation Recovery Act-Treatment, Storage, and Disposal Facility (RCRA-TSDF); a NPDES, PEAS, and a UST database. Lacking information on site assessment activities related to the RCRA, CERCLIS, UST, CORRACTS listings, or the PEAS incident. The Phase I Report identified "release(s) associated with the subject site activities" as a REC.
- REC 2: A potential for subsurface impact by releases of petroleum products and/or other hazardous substances related to the long-term industrial operations or the railroad siding represents a REC to the site.

#### 3.9.3 Assessment of SWMUs and RECs

Soil and analytical data indicate that operations related to SWMU 5, the distillation and solvent recovery system, may be a significant source area for 1,1,1-TCA and TCE in soil and groundwater. Although concentrations of chlorinated VOCs (CVOCs) are elevated throughout the site, there is no evidence that other units (SWMUs, USTs, ASTs, etc.) are the source of on-site CVOCs. Rather, on-site CVOCs appear to be a result of long-term industrial operations at the site (REC 2). The subsurface contamination will be addressed as part of the site-wide corrective action response.

## Section 4 Nature and Extent of Affected Media

#### 4.1 Summary of Previous Investigation Activities

In 2008, a Phase I ESA was conducted by Atwell-Hicks, LLC, as part of the potential sale of the TPC manufacturing site to CBC. The Phase I ESA Report recommended that a Phase II Subsurface Investigation be conducted to determine the nature and extent of the recognized environmental conditions.

A Phase II ESA conducted by ATC on behalf of CBC was performed between December 2008 and January 2009. The Limited Phase II Investigation included the advancement of 30 on-site soil borings. Soil and groundwater samples were analyzed for VOCs, semi-volatile organic compounds (SVOCs), and 11 metals.

In February 2009, RMT reviewed the Draft Limited Phase II ESA Report on behalf of TPC. Based on this review, RMT identified two likely source areas: the Northern Source Area and the Southern Source Area. The Northern South Area is in the vicinity of GP-14 and GP-15 (Figure 3) where the highest concentration of TCE was found in the soil, and upgradient of GP-2 where high concentrations of TCE were found in the groundwater. There is no single known source for TCE in the Northern Source Area and TCE is detected at varying concentrations throughout the area. The distribution suggests incidental usage during the manufacturing process (REC 2), and potential sources of TCE include use of TCE during machining and degreasing processes and a former railroad spur where various chemicals, including TCE, were off-loaded from rail cars. The Southern Source Area is in the vicinity of GP-21 and GP-22 where high concentrations of TCE and 1,1,1-TCA were found in the groundwater. A distillation and solvent recovery system (SWMU 5) located in area M of the main building is in the vicinity of the Southern Source Area and is the most likely source of the COCs in this area (Figure 2).

After review of the Draft Phase II ESA Report, RMT concluded that there was a potential for off-site migration of VOCs above the MDEQ Part 201 generic cleanup criteria (GCC). RMT also investigated the presence of 1,4-dioxane, which is sometimes used to stabilize 1,1,1-TCA. In March 2009, RMT initiated a phased series of investigations to define the horizontal extent of COCs above generic cleanup criteria adjacent to the site and to evaluate potential exposure pathways. The investigation activities, which were conducted between March 2009 and August 2009 are described below:

- A Perimeter and Off-Site Subsurface Investigation, which included:
  - Advancement of forty-one soil borings (B-1 through B-8, B-10 through B-26, and B-29 through B-44) to evaluate the lateral extent of off-site contaminant migration in groundwater (Figure 3);
  - Collection of 68 groundwater samples from perimeter and off-site soil boring locations;
  - Installation of 17 shallow monitoring wells (MW-1s through MW-17s) at perimeter and off-site locations;
  - Collection of groundwater samples from 16 monitoring wells (MW-16s was dry);
  - Collection of 5 additional groundwater samples (B-23b, B-24b, B-27b, B-28b, and B-32b) from the backfill surrounding the storm and sanitary system using an air-knife in order to assess the potential for preferential contaminant migration along the public utility corridors;
  - Collection and analysis of water from the storm sewer at 8 locations (STW-1 through STW-8) adjacent to the site;
  - Analysis of groundwater samples for VOCs; and
  - Analysis of groundwater samples downgradient of the Southern Source Area for 1,4-dioxane.
- A Well Survey for the area downgradient and adjacent to the site, which included:
  - Review of publically available water well logs;
  - Review of City of Tecumseh municipal water usage and connection records;
  - Review of City of Tecumseh Wellhead Protection Area Study; and
  - Collection of water samples from 7 private wells downgradient of the subject site to determine if private water supply wells were affected by the off-site migration of contaminants.
- An On-Site Source Area Investigation, which included:
  - Advancement of 10 on-site soil borings (NS-1 through NS-10) to locate potential on-site source areas in the north areas of the building (North Source Area);
  - Advancement of 8 on-site soil borings (SS-1 through SS-8) to locate potential on-site source areas in the south areas of the building (Southern Source Area);
  - Collection of 22 groundwater samples from on-site boring locations;
  - Collection of 26 soil samples from on-site boring locations;
  - Analysis of soil and groundwater samples for VOCs; and

 Analysis of soil and groundwater samples from the Southern Source Area for 1,4-dioxane.

Tables 2 through 5 summarize the groundwater and soil data collected by RMT. Laboratory results are included in Appendix H.

#### 4.2 Existing On-Site Source Area Conditions

The Phase II Subsurface Investigation conducted by ATC and the Source Area Investigation conducted by RMT identified the presence of affected soil and groundwater on-site above the GCC.

The Phase II Investigation conducted by ATC found that VOCs are present in soil and groundwater throughout the former manufacturing area. The VOCs at the site appear to be predominantly the result of historic solvent usage in manufacturing portions of the site (REC 2). VOCs above GCC include BTEX compounds (benzene, toluene, ethylbenzene, and xylenes), trimethylbenzenes (TMBs), and CVOCs. In particular, CVOCs which were typically used for degreasing purposes including trichloroethene (TCE), tetrachloroethene (PCE) and 1,1,1-TCA, and associated byproducts of their decomposition such as cis-1,2-dichloroethene (cis 1,2-DCE), trans-1,2-dichloroethene (trans 1,2-DCE), 1,1-dichloroethene (1,1,-DCE), and vinyl chloride are present at elevated concentrations throughout the site.

The Phase II Investigation conducted by ATC also included SVOC and metals analysis. SVOCs and metals were found slightly above GCC at several locations. However, as described in subsequent sections of this report, there is no evidence of a significant on-site source of SVOCs or metals, nor is there evidence to suggest that these potential COCs are likely to migrate off-site. Therefore, VOCs, particularly CVOCs, were the focus of the investigations conducted by RMT and are expected to drive the scope of corrective action at the site.

#### 4.2.1 Analysis of SVOCs in Soil and Groundwater

In February 2009, RMT reviewed preliminary analytical data for SVOCs collected during the Phase II Investigation by ATC. One or more SVOCs were found in soil at three locations. These data are summarized in draft analytical data tables from the Limited Phase II ESA Report by ATC, which are included in Appendix B. The naphthalene concentration at GP-15 and GP-16 was 1,800  $\mu g/kg$  and 1,500  $\mu g/kg$ , respectively, compared to a Groundwater/Surface Water Interface Protection (GSIP) criterion of 870  $\mu g/kg$ . At HB-31 the fluoranthene concentration was 13,000  $\mu g/kg$  and the phenanthrene concentration was 5,700  $\mu g/kg$  compared to GSIP criteria of 5,500  $\mu g/kg$  and 5,300  $\mu g/kg$ , respectively. No other GCC for soil was exceeded, and no SVOCs were

detected in groundwater above GCC. Therefore SVOCs, with the exception of 1,4-dioxane (as described previously), were not included in the subsurface investigation conducted by RMT.

#### 4.2.2 Analysis of Metals in Soil and Groundwater

RMT also reviewed preliminary analytical data for metals collected during the Phase II Investigation. Both arsenic and selenium were found in soil above the Statewide Default Background concentration and GCC. Arsenic concentrations ranged from 2.3 to 14 mg/kg. Arsenic concentrations exceeded the Statewide Default Background concentration (5.8 mg/kg) and the Drinking Water Protection (DWP) criteria (4.6 mg/kg) at four locations, and the Direct Contact (DC) criteria (7.6 mg/kg) at two locations. Selenium concentrations in soil ranged from 0.23 to 3.5 mg/kg. Selenium concentrations exceeded the Statewide Default Background concentration (0.41 mg/kg) and the GSIP criteria (0.40 mg/kg) at eight locations. Neither arsenic nor selenium was detected in on-site groundwater. The only metal detected in groundwater above GCC was lead at a single location. The measured concentration of lead at GP-10 was 5.0 µg/L compared to a Drinking Water (DW) criterion of 4.0 µg/L. Given the relatively low concentrations and the natural variation in metal concentrations in soil and groundwater, RMT concluded that there is no significant evidence that manufacturing operations at the TPC site affected on-site soil and groundwater with metals. Therefore, metals were not analyzed during the RMT subsurface investigation. Draft analytical data tables from the Limited Phase II ESA Report, prepared by ATC, are included in Appendix B.

#### 4.2.3 Analysis of VOCs and 1,4-Dioxane in Soil

VOCs are present in soils throughout the area beneath the 750,000-square-foot manufacturing building. VOCs found in soil above GCC include BTEX compounds, TMBs, n-butyl benzene, naphthalene, n-propyl benzene, and CVOCs. 1,4-dioxane was not detected in on-site soils. Figure 10 shows on-site sampling locations and criteria exceedences, and Table 2 presents a summary of VOCs detected in on-site soil during the source area investigation. Analytical data from the Phase II ESA performed by ATC can be found in Appendix B.

Petroleum hydrocarbons, (*i.e.*, BTEX compounds, TMBs, n-butyl benzene, naphthalene, and n-propyl benzene), were detected only in the northern portion of the site. These compounds exceed the DWP criteria and/or the GSIP criteria at eight locations (NS-1, NS-6, NS-9, NS-10, GP-14, GP-15, GP-16, and GP-23) on site. As discussed subsequently, these compounds have not been detected in off-site groundwater above GCC. Therefore, they are not expected to significantly drive remedial activities at the site.

CVOCs detected above GCC in on-site soils include PCE, TCE, and 1,1,1-TCA, their degradation byproducts (1,1-DCE, cis-1,2-DCE, and vinyl chloride). PCE and TCE are present in soils beneath the 750,000-square-foot former manufacturing building, and are likely related to historic solvent usage. The TCE concentration was above the DWP criterion (100 µg/kg) in 45 of 47 samples, above the GSIP criterion (4,000 µg/kg) in 16 samples, and above the Industrial Soil Volatilization to Indoor Air Inhalation Criteria (SVIAIC) (37,000 µg/kg) in 2 samples. The PCE concentration was above the DWP criterion (100 µg/kg) in 18 of 47 samples, and above the GSIP criterion (900 µg/kg) in 5 samples. The highest concentrations of TCE (43,000 µg/kg) and PCE (5,900 µg/kg) in soil were detected at GP-14, which is located in Area K. 1,1,1-TCA is present above GCC primarily in the Southern Source Area. The 1,1,1-TCA concentration was above the DWP (4,000 µg/kg) and GSIP criteria (4,000 µg/kg) in 7 of 47 samples. The highest concentration of 1,1,1-TCA (13,000 µg/kg) in soil was found at SS-5 (3-4'). 1,1-DCE, cis-1,2-DCE, and vinyl chloride, the degradation byproducts of PCE, TCE, and 1,1,1-TCA, were detected less frequently in on-site soils and were found above one or more GCC in only 7 of 47 samples.

#### 4.2.4 Analysis of VOCs and 1,4-Dioxane in Groundwater

The VOC data for on-site source area groundwater include data from the Phase II ESA and from the Source Area Investigation. The Phase II ESA performed by ATC included the advancement of direct push Geoprobe® borings at 28 locations, and collection of 31 groundwater samples for VOCs analysis. Three of these samples (GP-1, GP-24, and GP-26) are located outside of the area of the main manufacturing building at 100 E Patterson and are considered in the discussion below of VOCs in off-site and perimeter groundwater, rather than this discussion of on-site source area groundwater. Preliminary analytical data from ATC's Phase II ESA can be found in Appendix B. The subsequent Source Area Investigation conducted by RMT on behalf of TPC included:

- the advancement of 10 on-site soil borings (NS-1 through NS-10) and collection of 12 groundwater samples for VOCs analysis in the Northern Source Area; and
- the advancement of 8 on-site soil borings (SS-1 through SS-8) and collection of 10 groundwater samples for VOCs and 1,4-dioxane analysis in the Southern Source Area.

Sample locations and criteria exceedences from the Source Area Investigation are shown on Figure 11 and groundwater analytical data are presented in Table 3.

CVOCs detected above the GCC in on-site groundwater include PCE, TCE, 1,1,1-TCA, and their degradation byproducts (1,1-DCE, cis-1,2-DCE, and vinyl chloride). TCE is

present in groundwater throughout the area beneath and adjacent to the 750,000-square-foot former manufacturing building, and is likely related to historic solvent usage. The TCE concentration was above the Drinking Water (DW) criterion (5.0 µg/L) in 45 of 52 samples and above the Groundwater/Surface Water Interface (GSI) criterion (200  $\mu$ g/L) in 31 samples. The highest concentration of TCE (4,500  $\mu$ g/L) was detected at NS-6. 1,1,1-TCA is present in groundwater above GCC only in the Southern Source Area. The 1,1,1-TCA concentration was above the DW (200 µg/kg) and GSIP criteria (200 µg/kg) in 12 of 52 samples. The highest concentration of 1,1,1-TCA (8,500 μg/L) in groundwater was found at GP-21. 1,4-Dioxane, which is known to be associated with 1,1,1-TCA, was detected above the Residential DW criterion (85 µg/L) at only one location, SS-6 (23-27') (160 µg/L). PCE was detected above the DW criterion (5.0 µg/L) in only 4 on-site groundwater samples and above the GSI criterion (45 µg/L) at only one sample location. The maximum concentration of PCE in on-site groundwater is 120 µg/L at SS-3 (20-24'). 1,1-DCE, cis-1,2-DCE, and vinyl chloride, the degradation byproducts of PCE, TCE, and 1,1,1-TCA, were found above one or more relevant GCC in 28 of 52 samples. The highest concentration of 1,1-DCE, cis-1,2-DCE, and vinyl chloride were found at GP-21 (920 μg/L), GP-3 (760 μg/L), and NS-3 (37-41') (480 μg/L), respectively.

Benzene and 1,2,4-TMB were each detected above their DW criteria (5.0  $\mu$ g/L and 63  $\mu$ g/L, respectively) at a single location. Benzene was detected at GP-16 at a concentration of 9.0  $\mu$ g/L, and 1,2,4-TMB was detected at a concentration of 64  $\mu$ g/L at GP-11. These compounds were not detected in perimeter or off-site groundwater (see Section 4.3 below).

#### 4.2.5 Analysis of VOCs in Surface Water

There is no surface water present at the TPC site.

#### 4.2.6 Analysis of VOCs in Indoor Air

No indoor air sampling has been conducted. However, soil analytical data indicate that concentrations of chlorinated ethenes are above the Industrial SVIAIC at two locations, GP-14 and GP-15. Analytical data for GP-14 and GP-15 indicate TCE concentrations of 43 mg/kg and 38 mg/kg, respectively. These concentrations slightly exceed the SVIAIC of 37 mg/kg. Data for GP-15 also indicate a 1,1-DCE concentration of 0.36 mg/kg, which slightly exceeds the SVIAIC of 0.33 mg/kg.

#### 4.3 Existing Off-Site and Perimeter Conditions

#### 4.3.1 Soil

Based on the historical site use, off-site soil is not an affected media as there is no known migration pathway for COCs from the site to affect off-site soils.

#### 4.3.2 Groundwater

The VOC data for off-site and perimeter groundwater include data from the Phase II ESA and from the Source Area Investigation. The Phase II ESA included the collection of 3 groundwater samples from off-site and perimeter locations (GP-1, GP-24, and GP-26). Preliminary analytical data from the Phase II ESA can be found in Appendix B. As described above, the perimeter and off-site investigation conducted by RMT on behalf of TPC included: 1) the advancement of forty-one soil borings (B-1 through B-8, B-10 through B-26, and B-29 through B-44) and collection of 68 groundwater samples; 2) the installation of 17 shallow monitoring wells (MW-1s through MW-17s) at perimeter and off-site locations and collection of groundwater samples from 16 monitoring wells (MW-16s was dry); and 3) collection of 5 additional groundwater samples (B-23b, B-24b, B-27b, B-28b, and B-32b) from the backfill surrounding the storm and sanitary system using an air-knife. Sample locations and criteria exceedences from the perimeter and off-site investigation are shown on Figures 11 and 12 and groundwater analytical data are presented in Table 4.

VOCs detected above GCC in off-site and perimeter groundwater include 1,1,1-TCA, TCE, and the degradation byproducts of TCE (cis-1,2-DCE and vinyl chloride). The lateral extent of the VOCs is shown on Figure 13. 1,1,1-TCA was detected above GCC (200  $\mu$ g/L) at two on-site perimeter locations MW-1s and MW-9s; 1,1,1-TCA was not detected off-site. The highest concentration of 1,1,1-TCA (1,100  $\mu$ g/L) was detected at MW-1s on April 20, 2009. 1,4-dioxane was not detected in any of the off-site or perimeter locations. TCE concentrations in groundwater above GCC (5.0  $\mu$ g/L) were found around the entire perimeter of the site and extend east of the site to B-27b, B-21 and B-29. Cis-1,2-DCE concentrations are above GCC (70  $\mu$ g/L) near the northeast perimeter of the site (MW-4s, MW-3s, B-23, and B-32). Vinyl chloride concentrations above GCC (2.0  $\mu$ g/L) are found around the northeast and east perimeter of the site and extend northeast of the site to B-35 and east of the site to B-21. The highest detected concentrations of TCE (5,000  $\mu$ g/L) and vinyl chloride (520  $\mu$ g/L) were detected at MW-4s on April 20, 2009, and March 13, 2009, respectively. The highest concentration of cis-1,2-DCE (5,500  $\mu$ g/L) was detected at B-23a.

Seventeen monitoring wells (MW-1s through MW-17s) were installed at perimeter and off-site locations to monitor water quality adjacent to the site. Nine monitoring wells (MW-1s through MW-9s) were installed around the site perimeter. These wells confirm that CVOCs are present above GCC around the site perimeter. Five monitoring wells (MW-10s, MW-12s, MW-13s, MW-14s, and MW-17s) were installed downgradient of the site (Figure 3). No VOCs were detected above GCC in samples collected from these five wells. These downgradient monitoring wells can be used to confirm that the River Raisin remains unaffected in the future. Two monitoring wells (MW-11s and MW-15s) were installed between the site and the City of Tecumseh water supply wells located approximately ½ mile west of the site. (See Section 6.1 for further discussion of the Public Water Supply Well Survey). No VOCs have been detected in these wells and water levels indicate that drawdown from the city well field has not changed the natural west to east horizontal groundwater flow direction. Upgradient monitoring wells MW-11s and MW-15s can be used in the future to provide background water quality data and to confirm that the City of Tecumseh water supply remains unaffected.

#### 4.3.3 Surface Water

The closest downgradient surface water body is the River Raisin, which is approximately ¼ mile east of the site. The lateral extent of the groundwater plume was defined during the off-site subsurface investigation (Figure 13). There is currently no evidence of any surface water body being affected by the off-site migration of contaminants through groundwater. Five monitoring wells (MW-10s, MW-12s, MW-13s, MW-14s, and MW-17s) were installed to verify the horizontal extent of VOCs downgradient of the site (Figure 3). No VOCs were detected above GCC in samples collected from these wells. These monitoring wells can be used to confirm that the River Raisin remains unaffected in the future.

Storm sewer samples were collected at 8 locations (STW-1 through STW-8) adjacent to the site to determine whether storm water was an affected media and to determine whether COCs had the potential to discharge to the River Raisin above GSI criteria. Storm water analytical data are presented in Table 5 and sample locations are shown on Figure 3. Storm water from the site flows either to the east along Patterson Street or to the south along Maumee Street. Analytical results from STW-1 and STW-7 downgradient of the site to the east and south, respectively, were reported below generic GSI criteria. Consequently, there is no evidence that storm water above the GCC is discharged to the River Raisin.

#### 4.3.4 Indoor Air

Measured concentrations of VOCs in off-site groundwater are below Residential Groundwater Volatilization to Indoor Air Inhalation Criteria (GVIAIC). Therefore, off-site indoor air is not expected to be affected by groundwater volatilization to indoor air.

## Section 5 Receptors and Potential Exposure Pathways

#### 5.1 On-Site Receptors

For the TPC site, potential on-site receptors include employees and construction workers. The potentially relevant exposure pathways are listed below, with potential receptors noted in parenthesis.

#### ■ Soil:

- Direct or incidental contact with affected surface soils (employees, construction workers)
- Direct or incidental contact with affected subsurface soils (construction workers)
- Incidental ingestion of affected surface soils (tenants, construction workers)
- Incidental ingestion of affected subsurface soils (construction workers)

#### ■ Groundwater:

- Direct or incidental contact with affected groundwater (tenants, construction workers)
- Ingestion of affected groundwater (tenants, construction workers)
- Incidental ingestion of affected groundwater (construction worker)

#### Air:

Inhalation of affected indoor air (tenants, construction workers)

#### 5.2 Off-Site Receptors

Potential off-site receptors include tenants (residents, owners, and employees), construction workers, recreational users, and flora/fauna. The potentially relevant exposure pathways are listed below, with potential receptors noted in parenthesis.

#### Groundwater:

- Direct or incidental contact with affected groundwater (tenants, construction workers)
- Ingestion of affected groundwater (tenants, construction workers)
- Incidental ingestion of affected groundwater (construction worker)

#### ■ Air:

Inhalation of affected indoor air (tenants, construction workers)

#### Surface Water:

- Direct or incidental contact with affected surface water (recreational users, flora/fauna)
- Incidental ingestion of surface water (recreational users, flora/fauna)

#### 5.3 Potentially Applicable Criteria and Clean-up Requirements

The TPC site is zoned for industrial use and is anticipated to remain industrial in the future. The area downgradient of the site, where groundwater may be affected by off-site migration of VOCs, is zoned for mixed residential-commercial use. A zoning map for the City of Tecumseh can be found in Appendix D. Based on current and anticipated future land use, the generic Part 201 **industrial** criteria were used to evaluate on-site exposure pathways. Generic **residential** Part 201 criteria were used to evaluate potential exposure pathways off-site. Potentially applicable criteria include the following:

#### On-Site:

- Industrial Soil (SVIIC) and Groundwater (GVIIC) Volatilization to Indoor Air Inhalation Criteria
- Industrial Direct Contact (DC) Criteria soil and groundwater
- Drinking Water Protection (DWP) Criteria soil
- Groundwater/Surface Water Interface Protection (GSIP) Criteria soil
- Groundwater Contact Protection (GCP) Criteria soil
- Drinking Water (DW) Criteria groundwater
- Groundwater/Surface Water Interface (GSI) Criteria groundwater

#### ■ Off-Site:

- Residential Groundwater (GVIIC) Volatilization to Indoor Air Inhalation Criteria
- Residential Direct Contact (DC) Criteria groundwater
- Residential Drinking Water (DW) Criteria groundwater
- Groundwater/Surface Water Interface (GSI) Criteria groundwater

#### 5.4 Non-Relevant Criteria

Based on a comparison of VOC analytical data to Part 201 criteria, the following criteria are not exceeded at any of the applicable (on-site or perimeter/off-site) sample locations and are therefore not relevant:

#### On-Site:

- Industrial Groundwater (GVIIC) Volatilization to Indoor Air Inhalation Criteria
- Industrial Direct Contact (DC) Criteria soil and groundwater
- Groundwater Contact Protection (GCP) Criteria soil

#### Off-Site:

- Residential Groundwater (GVIIC) Volatilization to Indoor Air Inhalation Criteria
- Residential Direct Contact (DC) Criteria groundwater

#### 5.5 Potentially Relevant Criteria and Pathway Evaluation

Based on a comparison of analytical data to applicable Part 201 criteria, there are only five potentially relevant criteria. The three relevant exposure pathways associated with these criteria include:

- On-site or off-site ingestion of affected groundwater (DW and DWP Criteria)
- On-site inhalation of affected indoor air (Industrial SVIIC)
- Contact with or incidental ingestion of affected surface water (GSI and GSIP Criteria)

The completeness of these relevant exposure pathways is evaluated below. Complete or potentially complete exposure pathways may need to be addressed through Restrictive Covenants (or equivalent):

#### 5.5.1 Ingestion of Affected Groundwater

On-site VOCs have been identified in soil and groundwater above the industrial DWP and DW Criteria. However, the TPC site is connected to water from the City of Tecumseh. On-site groundwater is not used as a potable water source, nor are there any on-site supply wells. Consequently, ingestion of on-site groundwater is a relevant, but incomplete, exposure pathway. TPC is the current owner of the site and intends to record a Restrictive Covenant with the local register of deeds to further restrict this potential route of exposure..

VOCS have been detected in off-site groundwater above DW Criteria. As described in Section 6, RMT conducted a well survey to determine if ingestion of off-site

groundwater was a complete exposure pathway. VOCs were identified above the GCC at two well locations. One property was using the well water for potable purposes; the other well is used for irrigation. The property that utilizes the water for irrigation has been notified of the test results. The property using the water for potable purposes has since been connected to the municipal water supply, and the shallow water supply well at the property has been decommissioned. Subsequent to this action, there are no known instances of ingestion of affected groundwater. Ingestion of off-site groundwater is a relevant pathway. However, data indicate this pathway is currently incomplete.

#### 5.5.2 On-Site Inhalation of Affected Indoor Air

Soil analytical data indicate that concentrations of chlorinated ethenes are above the Industrial SVIAIC at two locations, GP-14 and GP-15. Analytical data for GP-14 and GP-15 indicate TCE concentrations of 43 mg/kg and 38 mg/kg, respectively. These concentrations slightly exceed the SVIAIC of 37 mg/kg. Data for GP-15 also indicate a 1,1-DCE concentration of 0.36 mg/kg, which slightly exceeds the SVIAIC of 0.33 mg/kg. Neither of these locations is within the limited area that is currently occupied by the remaining TPC employees. On-site inhalation of affected indoor air is a relevant pathway. Further evaluation is necessary to determine if this pathway is complete.

#### 5.5.3 Contact with or Incidental Ingestion of Affected Surface Water

The closest downgradient surface water body is the River Raisin, which is approximately ¼ mile east of the site. Analytical data indicate that concentrations of VOCs in on-site soil and in on-site and off-site groundwater are above GSI and GSIP Criteria. However, as described in Section 4 above, there is currently no evidence of any surface water body being affected by the off-site migration of COCs. Therefore, data indicate that contact with ingestion of affected surface water is a potentially relevant, but currently incomplete, exposure pathway.

# Section 6 Summary of Response Activities

### 6.1 Public Water Supply Well Survey

The City of Tecumseh owns and operates two municipal well fields. One well field is located north of the City of Tecumseh, and is on the north (opposite) side of the River Raisin relative to the TPC site. The second well field (south) is located approximately one-half mile west of the site, west of South Union Street. This well field is hydraulically upgradient of the site, and analytical data from water quality testing routinely performed by the City of Tecumseh indicate that these wells are unaffected by COCs. Furthermore, a monitoring well (MW-11s) was installed approximately halfway between the well field and the site and near the edge of the wellhead protection area. No VOCs were detected in samples collected from MW-11s. Groundwater elevation data does not indicate that drawdown associated with the municipal well field has affected the horizontal groundwater flow direction (Table 1 and Figure 9).

### 6.2 Private Well Survey

RMT conducted a private well survey to determine whether potentially affected off-site groundwater was used as potable water or for other uses. The survey area extended from Pearl Street west of the site to the River Raisin, south to Russell Road and north to Potawatomie Street. The survey included a search of publicly available water well logs through the MDEQ website (Well Logic System and historical well logs database) and through a Freedom of Information Act request to the Lenawee County Health Department (LCHD). Well logs obtained from the MDEQ or LCHD for wells that may be located within the area described above are included in Appendix E. RMT also worked with the City of Tecumseh to identify properties that do not use municipal water (*i.e.*, are not receiving a water bill from the City of Tecumseh).

As described below, Notices of Off-Site Migration (NOMs) were sent to potentially affected property owners. Each NOM requested that property owners with private wells contact TPC to arrange for their well to be tested at no cost to them. A representative from TPC and RMT hand delivered NOMs to the owners of the properties not connected to city water in order to personally verify the presence of a private well and to request permission to collect a sample for analysis. Of the properties receiving NOMs, one non-potable (irrigation) supply well and five potable water supply wells were identified. The non-potable (irrigation) well (509 S. Maumee Street) and one of the five potable water supply wells (610 Mohawk Street) were determined to be relatively shallow (e.g., less than 25 feet bgs). The four remaining potable wells were deeper (e.g., greater than 50 feet). No well logs were available for the two shallow wells or for one of

the deeper wells (307 Kilbuck Street). Well logs for the other three deeper wells are included in Appendix E.

#### 6.3 Notices of Off-Site Migration

On April 8, 2009, and June 1, 2009, TPC submitted NOM letters to seventy-two property owners in the City of Tecumseh to notify them that contaminated groundwater, which originated beneath the subject site, may have migrated beneath their property. Included with this letter was a Question and Answers page, an MDEQ Notice of Migration of Contamination Form, a table identifying the potentially affected property owners, a figure identifying potentially affected properties, and analytical results from the City of Tecumseh Municipal Water Supply, which show that the municipal water supply has not been affected by the VOCs (Appendix F). Figure 14 identifies potentially affected properties and property information is listed in Table 6.

### 6.4 Private Water Supply Well Testing

During the RMT private well survey, described above, six private water supply wells were identified downgradient of the subject site (one irrigation and five potable). In order to verify whether or not these wells were affected by the contaminant plume, TPC collected water samples from each well to be analyzed for VOCs by USEPA Method 524.2 (Drinking Water) and for 1,4-dioxane by USEPA Method 8270C in wells downgradient of the south (former vapor degreaser) source area. A seventh well, not located within the extent of known VOCs, at 6719 Mills Highway (immediately south of the study area) was also tested at the owner's request.

Results indicate that two shallow water wells, located at 610 Mohawk Street and at 509 S. Maumee Street, are affected by VOCs (Appendix G). The well at 610 Mohawk Street (reportedly approximately 18 feet deep) was used as a potable water supply well. No well log was available for this well. The property owner was notified immediately after the data were received and was supplied with bottled water. Additionally, TPC made arrangements with the property owner to connect him to the municipal water supply. In May 2009, 610 Mohawk was connected to the municipal water supply and the shallow water well at the property was decommissioned. The property at 509 S. Maumee Street is connected to the municipal water supply and the private supply well is used as a non-potable supply well for on-site irrigation. The property owner was notified by TPC on August 25, 2009. 1,4-dioxane was not detected in any of the private water supply wells.

The remaining five potable wells (four in the study area and one immediately south of the study area) appear to be screened in a deeper water bearing unit, and do not appear to be withdrawing

groundwater from the affected aquifer. As part of ongoing investigation and monitoring activities, TPC will perform periodic monitoring of these water wells.

### 6.5 Installation of Monitoring Well Network

As part of the perimeter investigation conducted by RMT in March 2009, nine monitoring wells (MW-1s through MW-9s) were installed around the perimeter of the site so that off-site migration of COCs could be monitored. Samples were collected at these locations between March 13 and March 16, 2009, and again on April 20, 2009. Based on preliminary results of the off-site subsurface investigation, two upgradient (MW-11s and MW-12s) and six downgradient (MW-10s, MW-13s, MW-14s, MW-15s, MW-16s and MW-17s) monitoring wells were installed off-site. MW-16s is dry, and TPC plans to abandon it. No VOCs have been detected above GCC in the five monitoring wells (MW-10s, MW-13s, MW-14s, MW-15s, and MW-17s) downgradient of the plume. These monitoring wells may be used to confirm that the River Raisin remains unaffected in the future.

# Section 7 Summary/Conclusions

This Current Conditions Report for the TPC manufacturing site in Tecumseh, Michigan, provides a description of physical setting, site history, on-site and off-site investigation activities, the nature and extent of affected media, and a summary of potentially complete exposure pathways. Key findings are listed below:

- COCs have been identified in soil and groundwater at the site above potentially relevant generic Part 201 cleanup criteria.
- There is no evidence of a significant on-site source of SVOCs or metals, nor is there evidence to suggest that these potential COCs are likely to migrate off-site. Therefore, VOCs, particularly CVOCs, were the focus of the investigation conducted by RMT and are expected to drive the scope of corrective action at the site.
- Historical operations at TPC focused on the production and reconditioning of compressors and condensing units for refrigeration and air conditioning units. Two likely source areas, the Northern Source Area located in the former manufacturing areas in and around Area K (TCE and degradation byproducts) and the Southern Source Area in the vicinity of Area M (1,1,1-TCA, TCE and degradation byproducts), were identified.
  - There is no single known source for TCE in the Northern Source Area and TCE is detected at varying concentrations throughout the area. The distribution suggests incidental usage during the manufacturing process.
- A distillation and solvent recovery system (SWMU 5) was located in the vicinity of the Southern Source Area and is the most likely source of the COCs in this area.
- Any VOC-affected media generated during any future remedial investigations/actions (*e.g.*, soil boring auger cuttings, soil, broken concrete, etc.) removed from the site will be characterized based on representative sampling and analyzed/assessed for hazardous characteristics, because there are no known or documented releases from hazardous waste storage units where F001 waste was managed on-site. Furthermore, no determination can be made if 1,1,1-TCA and/or TCE were in soil and groundwater prior to promulgation of RCRA regulations and the effective date of applicable land disposal restrictions. This approach is consistent with the USEPA's *Management of Remediation Waste Under RCRA* guidance document, published in 1998.
- CVOCs, specifically 1,1,1-TCA, TCE, cis-1,2-DCE, and vinyl chloride, have been identified in groundwater at perimeter and off-site locations.
- The horizontal extent of groundwater affected by CVOCs has been defined and is shown on Figure 13. The vertical extent of VOC-affected groundwater has not been fully

- characterized. However, data support that a relatively continuous clay layer downgradient of the site is impeding vertical migration of VOCs into deeper aquifers.
- Municipal water wells are located approximately ½ mile from the site. These wells are upgradient of the site and are not affected by COCs.
- Private water supply wells have been identified in the affected area; these wells were sampled and tested for VOCs. VOCs were identified above the GCC at one potable water supply well and one water supply well used for irrigation.
  - The affected potable water supply well has been decommissioned and the property has since been connected to the municipal water supply. Subsequent to this action, there are no known instances of ingestion of affected groundwater.
  - The owner of the water supply well used for irrigation has been notified.
- Concentrations of COCs are below the applicable criteria; therefore, the following exposure pathways are not relevant:
  - Off-site indoor air inhalation pathway
  - On-site and off-site direct contact pathway
- Concentrations of COCs are above the SVIAIC at two locations; therefore, on-site inhalation of affected indoor air is a relevant and potentially complete exposure pathway.
- Groundwater and storm water analytical data indicate that surface water is currently not an affected media. Therefore, contact with or ingestion of affected surface water is a relevant, but currently incomplete, exposure pathway.
- The well survey indicates that there are currently no known instances of ingestion of affected groundwater. Therefore, ingestion of affected groundwater is a relevant, but incomplete, exposure pathway.
- TPC, the current owner of the site, intends to place a Restrictive Covenant on the site to prevent the future installation and use of on-site water supply wells.

## Section 8 References

- ATC Associates, Inc. February 16, 2009. DRAFT Limited Phase II Environmental Site Assessment for the Tecumseh Products Company, 100 East Patterson Street, Tecumseh, Michigan. Prepared for Consolidated Biscuit Company, Toledo, Ohio.
- Atwell-Hicks Development Consultants, Michigan. October 9, 2008. Phase I Environmental Site Assessment for the Tecumseh Products, 100 and 101 East Patterson; 402, 404, and 805 South Evans; 600 South Ottawa; and 420 South Maumee, Tecumseh, Michigan. Prepared for Fifth Third Bank, Cincinnati, Ohio.
- ENVIRON International Corporation, New Jersey. January 2007. Environmental Site Assessment of Tecumseh Products Company, Tecumseh, Michigan. Prepared for Tecumseh Products Company, as Borrower; Tricap Partners, LLC, as Lender and Administrative Agent; and Citicorp USA, Inc. as Collateral Agent.
- Jones and Henry Engineers, Ltd., Toledom Ohio. June 1997. Wellhead Protection Program Delineation of Wellhead Protection Area. Prepared for the City of Tecumseh, Michigan.
- MDEQ. Query January 20, 2009. MDEQ Storage Tank Information Database. http://www.deq.state.mi.us/sid-web.
- PRC Environmental Management, Illinois. March 30, 1993. Preliminary Assessment / Visual Site Inspection, Tecumseh Products, Incorporated, Tecumseh, Michigan. Prepared for the Environmental Protection Agency Office of Waste Programs Enforcement, Washington, D.C.
- Tecumseh Products, Incorporated. October 25, 1990. Letter from G.F. Blufton to D/Lt. D. T. Smith, [MI] Fire Marshall Division.

### Table 1 Groundwater Elevations

Table 2
Summary of Detected Volatile Organic Compounds in On-Site Soil

Table 3

Summary of Detected Volatile Organic Compounds in Groundwater – On-Site Source Area Locations

Table 4

Summary of Detected Volatile Organic Compounds in Groundwater – Perimeter and Off-Site Locations

Table 5

Summary of Detected Volatile Organic Compounds in Water from Storm Sewers

Table 6 List of Notified Property Owners

#### Table 1 Groundwater Elevations Tecumseh Products Company Tecumseh, Michigan

Well Location	Top of Well Casing (ft MSL)	Measurement Date	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft MSL)
		03/16/09	16.13	780.40
MW-1S	796.53	04/20/09	15.95	780.58
		06/04/09	16.14	780.39
		03/16/09	21.94	780.20
MW-2S	802.14	04/20/09	21.60	780.54
		06/04/09	21.53	780.61
		03/16/09	7.63	779.37
MW-3S	787	04/20/09	7.45	779.55
		06/04/09	7.63	779.37
		03/16/09	14.64	779.78
MW-4S	794.42	04/20/09	14.40	780.02
11111 40	754.42	06/04/09	14.48	779.94
		03/16/09	24.73	780.86
MW-5S	805.59	04/20/09	24.40	781.19
IVIVV-33	605.59		24.40	
		06/04/09		781.18
MW CC	000.70	03/16/09	23.26	780.47
MW-6S	803.73	04/20/09	22.85	780.88
		06/04/09	22.72	781.01
		03/16/09	23.85	780.55
MW-7S	804.4	04/20/09	23.40	781.00
		06/04/09	23.24	781.16
		03/16/09	23.61	780.78
MW-8S	804.39	04/20/09	23.30	781.09
		06/04/09	23.24	781.15
		03/16/09	4.46	779.46
MW-9S	783.97	04/20/09	4.30	779.67
		06/04/09	4.63	779.34
		03/16/09	NI	NI
MW-10S	788.65	04/20/09	NI	NI
		06/04/09	10.46	778.19
		03/16/09	NI	NI
MW-11S	809.64	04/20/09	NI	NI
		06/04/09	28.09	781.55
		03/16/09	NI	NI
MW-12S	790.9	04/20/09	NI	NI
11111 120	700.0	06/04/09	12.40	778.50
		03/16/09	12.40 NI	778.30 NI
MW-13S	787.35	03/16/09	NI	NI
IVI VV-133	101.33			
		06/04/09 03/16/09	14.88 NI	772.47 NI
MW 440	700.07	00, 10,00		
MW-14S	780.67	04/20/09	NI 5.40	NI 775.55
		06/04/09	5.12	775.55
	04:	03/16/09	NI	NI Ni
MW-15S	811.72	04/20/09	NI	NI
		06/04/09	29.59	782.13
		03/16/09	NI	NI
MW-16S	782.9	04/20/09	NI	NI
		07/23/09	Dry	NM
		03/16/09	NI	NI
MW-17S	754.49	04/20/09	NI	NI
		07/23/09	5.33	749.16

#### Notes:

Survey conducted to feet mean sea level by Midwestern Consultants, Inc. (2009)

ft BTOC - feet below top of casing ft MSL - feet above mean sea level NI - Not Installed at time of measurement

NM - Not Measured

# Table 2 Summary of Detected Volatile Organic Compounds in On-Site Soil Tecumseh Products Company Tecumseh, Michigan

		D (1D)	cis-1,2-	trans-1,2-	Ed. II (2)	Northeless	N (2)	T. ( )	Toluene <sup>(2)</sup>	1,1,1-	T 1.11	1,2,4-	1,3,5-	Vis. LOUIS II.	Xvlenes <sup>(2)</sup>
Analyte	WD0	n-Butyl Benzene	Dichloroethene	Dichloroethene	Ethylbenzene <sup>(2)</sup>	Napthalene	N-propyl Benzene <sup>(2)</sup>	Tetrachloroethene		Trichloroethane	Trichloroethene	Trimethylbenzene <sup>(2)</sup>	Trimethylbenzene <sup>(2)</sup>	Vinyl Chloride	,
Residential D		1,600	1,400	2,000	1,500	35,000	1,600	100	16,000	4,000	100	2,100	1,800	40	5,600
Industrial DV	VPC	4,600	1,400	2,000	1,500	1.00E+05	4,600	100	16,000	4,000	100	2,100	1,800	40	5,600
GSI Protection (	Criteria	NC	12,000	30,000	360	870	NC	900 <sup>(1)</sup>	2,800	4,000	4000 <sup>(1)</sup>	570	1,100	300	700
Groundwater Contact Pro	otection Criteria	1.20E+05	6.40E+05	1.40E+06	1.40E+05	2.10E+06	3.00E+05	88,000	2.50E+05	4.60E+05	4.40E+05	1.10E+05	94,000	20,000	1.50E+05
Soil Volatilization to	IAI Criteria	NC	41,000	43,000	1.40E+05	4.70E+05	NC	60,000	2.50E+05	4.60E+05	37,000	1.10E+05	94,000	2,800	1.50E+05
Industrial and Comm	nercial DCC	8.00E+06	6.40E+05	1.40E+06	1.40E+05	5.20E+07	8.00E+06	88,000	2.50E+05	4.60E+05	5.00E+05	1.10E+05	94,000	34,000	1.50E+05
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
NS-01 (0-4')	4/17/2009	<39	<39	<39	<39	480	<39	<39	<39	<39	1,900	<39	<39	<39	<117
NS-01 (16-20')	4/17/2009	<25	<25	<25	<25	<250	<25	<25	<25	<25	510	<25	<25	<25	<75
NS-02 (0-4')	4/16/2009	<27	<27	<27	<27	<270	<27	<27	<27	<27	350	<27	<27	<27	<80
NS-02 (8-12')	4/16/2009	<27	<27	<27	<27	<270	<27	<27	<27	<27	750	<27	<27	<27	<81
NS-04 (8-12')	4/16/2009	<29	<29	<29	<29	<290	<29	<29	<29	<29	<29	<29	<29	<29	<86
NS-05 (12-14')	4/20/2009	<33	58	<33	<33	<330	<33	40	<33	33	4,500	<33	<33	<33	<99
NS-06 (2-3')	4/20/2009	<26	9,600	230	140	310	430	510	82	<26	5,200	4,000	1,400	140	1,070
NS-06 (23-24')	4/20/2009	<30	<30	<30	<30	<300	<30	<30	<30	<30	520	<30	<30	<30	<90
NS-07 (10-11')	4/21/2009	<29	<29	<29	<29	<290	<29	340	<29	<29	1,500	<29	<29	<29	<87
NS-07 (10-11') Dup-03	4/21/2009	<24	<24	<24	<24	<240	<24	320	<24	<24	1,400	<24	<24	<24	<72
NS-08 (15-16')	4/21/2009	<63	<63	<63	<63	<630	<63	830	<63	<63	4,300	<63	<63	<63	<193
NS-09 (2-3')	4/21/2009	1,200	4,900	77	88	1,200	370	<30	86	<30	310	5,400	1,900	480	720
NS-10 (8-9')	4/21/2009	9,100	880	<430	1,200	14,000	4,000	450	920	<430	<430	34,000	9,700	<430	6,700
NS-10 (10-11')	4/21/2009	910	340	<27	110	1,500	360	28	90	<27	61	3,100	980	72	660
SS-01(1-1.5')	4/15/2009	<32	<32	<32	<32	<320	<32	<32	<32	840	1,900	<32	<32	<32	<96
SS-02 (8-12')	4/16/2009	<29	<29	<29	<29	<290	<29	69	<29	810	970	<29	<29	<29	<87
SS-02 (16-20')	4/16/2009	<29	<29	<29	<29	<290	<29	110	<29	1,300	1,500	<29	<29	<29	<88>
SS-02 (16-20') Dup-01	4/16/2009	<32	<32	<32	<32	<320	<32	160	<32	1,900	2,300	<32	<32	<32	<96
SS-03 (8-12')	4/16/2009	<30	<30	<30	<30	<300	<30	1,100	<30	1,200	900	<30	<30	<30	<91
SS-03 (16-20')	4/16/2009	<35	<35	<35	<35	<350	<35	3,900	<35	3,500	2,800	<35	<35	<35	<105
SS-04 (8-12')	4/17/2009	<120	<120	<120	<120	<1200	<120	490	<120	8,200	4,400	<120	<120	<120	<350
SS-04 (12-16')	4/17/2009	<30	<30	<30	<30	<300	<30	230	<30	3,500	1,800	<30	<30	<30	<90
SS-05 (3-4')	4/17/2009	<130	<130	<130	<130	<1300	<130	240	<130	13,000	11,000	<130	<130	<130	<390
SS-05 (12-13')	4/17/2009	<30	<30	<30	<30	<300	<30	130	<30	4,400	3,300	<30	<30	<30	<91
SS-05 (20-21')	4/17/2009	<26	<26	<26	<26	<260	<26	180	<26	7,700	5,500	<26	<26	<26	<78
SS-06 (5-7')	4/17/2009	<34	<34	<34	<34	<340	<34	<34	<34	230	120	<34	<34	<34	<101
SS-6 (5-7') Dup-02	4/17/2009	<40	<40	<40	<40	<400	<40	<40	<40	320	160	<40	<40	<40	<120
SS-07 (21-22')	4/20/2009	<35	<35	<35	<35	<350	<35	<35	<35	1,600	5,000	<35	<35	<35	<106
SS-08 (19-20')	4/21/2009	<130	<130	<130	<130	<1300	<130	250	<130	7,300	8,600	<130	<130	<130	<390

#### Notes:

Residential and Industrial Health-Based Drinking Water Protection Criteria (DWPC), Groundwater Surface Water Interface (GSI) Protection Criteria, Groundwater Contact Protection Criteria, Commercial and Industrial Soil Volatilization to Indoor Air Inhalation (IAI) Criteria,

and Residential and Industrial Direct Contact Criteria (DCC) from MDEQ RRD Op Memo 1 Part 201 Generic Cleanup Criteria/Part 213 Risk Based Cleanup Levels, January 23, 2006.

ug/kg = micrograms per kilogram NC = No Criteria

NA = Not Analyzed

bold font denotes concentrations detected above laboratory reporting limits

Denotes concentrations above one or more criteria

1) Criterion is not protective for surface water used as a drinking water source as described in footnote (X) of MDEQ Op Memo 1 Part 201, Attachment 1.

2) Compound may exhibit characteristic ignitability as defined in 40 C.F.R. § 261.21

Table 3
Summary of Detected Volatile Organic Compounds in Groundwater
On-Site Source Area Locations
Tecumseh Products Company
Tecumseh, Michigan

Analyte		Chloroethane	Chloroform	1,1-Dichloroethane	1,1-Dichloroethene <sup>(2)</sup>	cis-1,2-Dichloroethene	trans-1,2- Dichloroethene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	1,2,4- Trimethylbenzene <sup>(2)</sup>	Vinyl Chloride	1,4-Dioxane <sup>(2)</sup>
Residential & Industrial A	esthetic DWC	NC	NC	NC	NC	NC	NC	NC	NC	NC	63	NC	NC
Residential Health-Ba	ased DWC	430	80	880	7.0	70	100	5.0	200	5.0	1000	2.0	85
Industrial Health-Ba	sed DWC	1,700	80	2,500	7.0	70	100	5.0	200	5.0	2900	2.0	350
GSI Criteria	a	NC	170 <sup>(1)</sup>	740	65 <sup>(1)</sup>	620	1,500	45 <sup>(1)</sup>	200	200 <sup>(1)</sup>	17	15	2800 <sup>(1)</sup>
Residential Volatilization	to IAI Criteria	2.50E+05	28,000	1.0E+6	200	93,000	85,000	25,000	6.6E+5	15,000	56,000	1,100	NC
Industrial Volatilization	to IAI Criteria	5.50E+05	1.80E+05	2.3E+6	1,300	2.1E+5	2.0E+5	1.7E+5	1.3E+6	97,000	56,000	13,000	NC
Groundwater Conta	ct Criteria	1.20E+06	1.50E+05	2.4E+6	11,000	2.0E+5	2.2E+5	12,000	1.3E+6	22,000	56,000	1,000	1.70E+06
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
NS-01 (20-24')	4/17/2009	<100	<20	<20	<20	260	<20	<20	<20	830	<20	<20	NA
NS-02 (20-24')	4/17/2009	<250	<50	<50	<50	590	<50	<50	<50	1700	<50	430	NA
NS-03 (16-20')	4/15/2009	<20	<4.0	<4.0	<4.0	23	<4.0	<4.0	<4.0	45	<4.0	41	NA
NS-03 (37-41')	4/15/2009	<5.0	<1.0	<1.0	<1.0	9.8	<1.0	<1.0	<1.0	19	<1.0	480	NA
NS-04 (14-18')	4/16/2009	<5.0	<1.0	1.4	<1.0	11	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
NS-04 (32-36')	4/16/2009	<5.0	<1.0	<1.0	<1.0	5.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
NS-05 (20-24')	4/20/2009	<1000	<200	<200	<200	<200	<200	<200	<200	2900	<200	<200	NA
NS-06 (22-24')	4/20/2009	<500	<100	<100	<100	220	<100	<100	100	4500	<100	<100	NA
NS-07 (20-24')	4/21/2009	<100	<20	<20	<20	34	<20	30	<20	710	<20	<20	NA
NS-08 (20-24')	4/21/2009	<100	<20	21	<20	100	<20	28	<20	960	<20	27	NA
NS-08 (20-24'), Dup-09	4/21/2009	<100	<20	22	<20	100	<20	29	<20	950	<20	30	NA
NS-09 (20-24')	4/21/2009	5.8	1.1	46	<1.0	110	5.0	<1.0	<1.0	16	1.3	140	NA
NS-10 (21-25')	4/21/2009	<50	<10	26	<10	380	13	<10	<10	<10	17	45	NA
SS-01 (24-28')	4/15/2009	<1000	<200	<200	<200	<200	<200	<200	1500	1500	<200	<200	<25
SS-01 (45-49')	4/15/2009	<5.0	<1.0	2.5	<1.0	9.9	<1.0	<1.0	2.7	5.8	<1.0	<1.0	<25
SS-02 (20-24')	4/16/2009	<500	<100	<100	<100	<100	<100	<100	2200	1000	<100	<100	<25
SS-02 (42-46')	4/16/2009	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.5	5.3	<1.0	<1.0	<25
SS-03 (20-24')	4/16/2009	<250	<50	<50	<50	<50	<50	120	600	430	<50	<50	<25
SS-04 (22-24')	4/17/2009	<500	<100	<100	<100	<100	<100	<100	2500	1100	<100	<100	<25
SS-05 (22-26')	4/17/2009	<500	<100	<100	<100	<100	<100	<100	2200	1300	<100	<100	<25
SS-06 (23-27')	4/17/2009	<1000	<200	<200	<200	<200	<200	<200	2600	1100	<200	<200	160
SS-07 (22-26')	4/20/2009	<500	<100	<100	<100	<100	<100	<100	1300	1400	<100	<100	<25
SS-08 (23-27')	4/21/2009	<500	<100	<100	<100	<100	<100	<100	4100	2300	<100	<100	38

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Residential and Industrial Aesthetic Drinking Water Criteria (DWC), Residential and Industrial Health-Based DWC, Groundwater Surface Water Interface (GSI) Criteria, Residential and Industrial Groundwater Volatilization to Indoor Air Inhalation (IAI) Criteria, and Groundwater Contact Criteria (GCC) from MDEQ RRD Op Memo 1 Part 201 Generic Cleanup Criteria/Part 213 Risk Based Cleanup Levels, January 23, 2006.

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**bold** font denotes concentrations detected above laboratory reporting limits

Denotes concentrations above one or more criteria

1) Criterion is not protective for surface water used as a drinking water source as described in footnote (X) of MDEQ Op Memo 1 Part 201, Attachment 1.

2) Compound may exhibit characteristic ignitability as defined in 40 C.F.R. § 261.21

Summary of Detected Volatile Organic Compounds in Groundwater
Perimeter and Off-Site Locations
Tecumseh Products Company
Tecumseh, Michigan

Analida		Carbon Disulfide <sup>(2,3)</sup>	Dichlorodi- fluoromethane	1.1-Dichloroethane	1,2- Dichloroethane <sup>(2)</sup>	1,1-Dichloroethene <sup>(2)</sup>	cis-1,2- Dichloroethene	trans-1,2-	Tetrachloroethene	Toluene <sup>(2)</sup>	1,1,1- Trichloroethane	Trichloroethene	Visul Chlorida	Xylenes <sup>(2)</sup>
Analyte Residential & Industrial A	Aesthetic DWC			NC	NC NC	NC	NC	Dichloroethene NC	NC NC	790			Vinyl Chloride	,
Residential Health-B		NC 800	NC 1,700	880	5.0	7.0	70	100	5.0	1,000	NC 200	NC 5.0	NC 2.0	280 10000
Industrial Health-Ba		2,300	4,800	2,500	5.0	7.0	70	100	5.0	1,000	200	5.0	2.0	10000
GSI Criteri		NC	4,800 NC	740	360 <sup>(1)</sup>	65 <sup>(1)</sup>	620	1,500	45 <sup>(1)</sup>	140	200	200 <sup>(1)</sup>	15	35
Residential Volatilization		2.5E+5	2.20E+05	1.0E+6	9,600	200	93,000	85,000	25,000	5.30E+05	6.6E+5	15,000	1,100	1.90E+05
Industrial Volatilization		5.5E+5	3.00E+05	2.3E+6	59,000	1,300	2.1E+5	2.0E+5	1.7E+5	5.30E+05	1.3E+6	97,000	13,000	1.90E+05
Groundwater Conta		1.2E+6 (S)	3.00E+05	2.4E+6	19.000	11.000	2.0E+5	2.2E+5	12.000	5.30E+05	1.3E+6	22.000	1.000	1.90E+05
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
B-01 (26'-30')	03/09/2009	<1.0	<1.0	26	1.0	5.9	120	12	<1.0	5.3	<1.0	200	<1.0	<3.0
B-01 (46'-50')	03/09/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.2	<1.0	6.8	5.0	<3.0
B-02 (22'-26')	03/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.8	27	<3.0
B-02 (33'-37')	03/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.0	16	<3.0
B-03 (26'-30')	03/09/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.6	<1.0	<1.0	1.4	<3.0
B-03 (38'-42')	03/09/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<1.0	<3.0
B-04 (19'-23')	03/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	12	<3.0
B-04 (19-23'), Dup-01	03/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	12	<3.0
B-04 (29'-33')	03/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
B-05 (14'-18)	03/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	<3.0
B-05 (22'-26')	03/10/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.7	<3.0
B-06 (44'-48')	03/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.5	<1.0	<1.0	<1.0	<3.0
B-07 (44'-48')	03/16/2009	3.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
B-08 (44'-48')	03/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
B-10 (24-28')	4/16/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	57	<1.0	<2.0
B-11 (29-33')	4/16/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-12 (24-28')	4/16/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.5	<1.0	<2.0
B-12 (24-28'), Dup-05	4/16/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<2.0
B-13 (29-33')	4/17/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-13 (46-50')	4/16/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-14 (16-20')	4/14/2009	NA	NA	<100	<100	<100	<100	<100	<100	<100	<100	1100	<100	<200
B-14 (36-40')	4/14/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	<1.0	<2.0
B-15 (24-28')	4/20/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	9.9	2.8	<1.0	<2.0
B-15 (44-48')	4/20/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.7	<1.0	<2.0
B-17 (24-28')	4/20/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-18 (22-26')	4/14/2009	NA	NA	<1.0	<1.0	<1.0	2.3	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<2.0
B-18 (32-36')	4/14/2009	NA	NA	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<2.0

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#### Noto

Residential and Industrial Aesthetic Drinking Water Criteria (DWC), Residential and Industrial Health-Based DWC, Groundwater Surface Water Interface (GSI) Criteria, Residential and Industrial Groundwater Volatilization to Indoor Air Inhalation (IAI) Criteria, and Groundwater Contact Criteria (GCC) from MDEQ RRD Op Memo 1 Part 201 Generic Cleanup Criteria/Part 213 Risk Based Cleanup Levels, January 23, 2006.

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1) Criterion is not protective for surface water used as a drinking water source as described in footnote {X} of MDEQ Op Memo 1 Part 201, Attachment 1.

2) Compound may exhibit characteristic ignitability as defined in 40 C.F.R. § 261.21

3) Compound may exhibit characteristic reactivity as defined in 40 C.F.R. § 261.23

Summary of Detected Volatile Organic Compounds in Groundwater
Perimeter and Off-Site Locations
Tecumseh Products Company
Tecumseh, Michigan

Analyta		Carbon Disulfide <sup>(2,3)</sup>	Dichlorodi- fluoromethane	1.1-Dichloroethane	1,2- Dichloroethane <sup>(2)</sup>	1.1-Dichloroethene <sup>(2)</sup>	cis-1,2- Dichloroethene	trans-1,2- Dichloroethene	Tetrachloroethene	Toluene <sup>(2)</sup>	1,1,1- Trichloroethane	Trichloroethene	Vinyl Chloride	Xylenes <sup>(2)</sup>
Analyte  Residential & Industrial A	Aesthetic DWC			NC	NC	NC	NC	NC	NC	790			,	280
Residential Health-Ba		NC 800	NC 1.700	880	5.0	7.0	70	100	5.0	1,000	NC 200	NC 5.0	NC 2.0	10000
Industrial Health-Ba		2,300	4,800	2,500	5.0	7.0	70	100	5.0	1,000	200	5.0	2.0	10000
GSI Criteria		NC	4,800 NC	740	360 <sup>(1)</sup>	65 <sup>(1)</sup>	620	1,500	45 <sup>(1)</sup>	140	200	200 <sup>(1)</sup>	15	35
Residential Volatilization		2.5E+5	2.20E+05	1.0E+6	9,600	200	93,000	85,000	25,000	5.30E+05	6.6E+5	15,000	1,100	1.90E+05
Industrial Volatilization		5.5E+5	3.00E+05	2.3E+6	59.000	1.300	2.1E+5	2.0E+5	1.7E+5	5.30E+05	1.3E+6	97,000	13,000	1.90E+05
Groundwater Contac	ct Criteria	1.2E+6 (S)	3.00E+05	2.4E+6	19,000	11,000	2.0E+5	2.2E+5	12,000	5.30E+05	1.3E+6	22,000	1,000	1.90E+05
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
B-19 (12-16')	4/15/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	<2.0
B-19 (29-33')	4/15/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	10	<2.0
B-20 (18-22')	4/15/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-20 (8-12')	4/15/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-21 (13-17')	4/15/2009	NA	NA	8.1	<1.0	<1.0	13	2.2	<1.0	<1.0	3.6	30	58	<2.0
B-21 (6-10')	4/15/2009	NA	NA	3.3	<1.0	<1.0	3.6	<1.0	<1.0	<1.0	<1.0	6.9	1.0	<2.0
B-22 (18-23')	4/14/2009	NA	NA	<20	<20	<20	<20	<20	<20	<20	53	190	<20	<40
B-22 (40-44')	4/14/2009	NA	NA	<1.0	<1.0	<1.0	13	<1.0	<1.0	<1.0	1.4	3.0	<1.0	<2.0
B-23a (14-18')	4/13/2009	NA	NA	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	4.8	<2.0	23	<2.0	<6.0
B-23a (14-18'), Dup-01	4/13/2009	NA	NA	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	5.0	<2.0	26	<2.0	<6.0
B-23a (30-34')	4/13/2009	NA	NA	<250	<250	<250	5500	<250	<250	<250	<250	1700	<250	<750
B-23b (14-16')	4/15/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	8.9	<1.0	<2.0
B-24a (6-10')	4/13/2009	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	150	<5.0	<15
B-24a (28-32')	4/13/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	6.7	<2.0
B-24b (5-7')	4/16/2009	NA	NA	<20	<20	<20	<20	<20	<20	<20	29	740	<20	<40
B-24b (5-7'), Dup-04	4/16/2009	NA	NA	<50	<50	<50	<50	<50	<50	<50	<50	770	<50	<100
B-25 (7-11')	4/17/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-25 (7-11'), Dup-06	4/17/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-25 (31-35')	4/17/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-26 (16-20')	4/14/2009	NA	NA	<1.0	<1.0	<1.0	3.2	<1.0	<1.0	1.2	<1.0	<1.0	3.1	<2.0
B-26 (29-33')	4/14/2009	NA	NA	<1.0	<1.0	<1.0	7.3	<1.0	<1.0	<1.0	<1.0	<1.0	140	<2.0
B-27b (8-10')	4/15/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	9.2	<1.0	<2.0
B-28b (16-18')	4/16/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<2.0
B29 (8-12')	4/13/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B29 (38-42')	4/13/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	1.1
B-30a (6-11')	4/14/2009	NA	NA	2.4	<1.0	<1.0	36	4.2	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-30a (30-34')	4/14/2009	NA NA	NA NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1
B-30a (30-34'), Dup-02	4/14/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0

#### Notes

Residential and Industrial Aesthetic Drinking Water Criteria (DWC), Residential and Industrial Health-Based DWC, Groundwater Surface Water Interface (GSI) Criteria, Residential and Industrial Groundwater Volatilization to Indoor Air Inhalation (IAI) Criteria, and Groundwater Contact Criteria (GCC) from MDEO RRD Op Memo 1 Part 201 Generic Cleanup Criteria/Part 213 Risk Based Cleanup Levels, January 23, 2006.

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- 2) Compound may exhibit characteristic ignitability as defined in 40 C.F.R. § 261.21
- 3) Compound may exhibit characteristic reactivity as defined in 40 C.F.R. § 261.23

Summary of Detected Volatile Organic Compounds in Groundwater
Perimeter and Off-Site Locations
Tecumseh Products Company
Tecumseh, Michigan

			Dichlorodi-		1,2-		cis-1,2-	trans-1,2-			1,1,1-			
Analyte		Carbon Disulfide <sup>(2,3)</sup>	fluoromethane	1,1-Dichloroethane	Dichloroethane <sup>(2)</sup>	1,1-Dichloroethene <sup>(2)</sup>	Dichloroethene	Dichloroethene	Tetrachloroethene	Toluene <sup>(2)</sup>	Trichloroethane	Trichloroethene	Vinyl Chloride	Xylenes <sup>(2)</sup>
Residential & Industrial A	Aesthetic DWC	NC	NC	NC	NC	NC	NC	NC	NC	790	NC	NC	NC	280
Residential Health-Ba	ased DWC	800	1,700	880	5.0	7.0	70	100	5.0	1,000	200	5.0	2.0	10000
Industrial Health-Bas	sed DWC	2,300	4,800	2,500	5.0	7.0	70	100	5.0	1,000	200	5.0	2.0	10000
GSI Criteria	a	NC	NC	740	360 <sup>(1)</sup>	65 <sup>(1)</sup>	620	1,500	45 <sup>(1)</sup>	140	200	200 <sup>(1)</sup>	15	35
Residential Volatilization	to IAI Criteria	2.5E+5	2.20E+05	1.0E+6	9,600	200	93,000	85,000	25,000	5.30E+05	6.6E+5	15,000	1,100	1.90E+05
Industrial Volatilization t	to IAI Criteria	5.5E+5	3.00E+05	2.3E+6	59,000	1,300	2.1E+5	2.0E+5	1.7E+5	5.30E+05	1.3E+6	97,000	13,000	1.90E+05
Groundwater Contac	ct Criteria	1.2E+6 (S)	3.00E+05	2.4E+6	19,000	11,000	2.0E+5	2.2E+5	12,000	5.30E+05	1.3E+6	22,000	1,000	1.90E+05
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
B31 (10-14')	4/13/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.4	<1.0	<1.0	8.1	<2.0
B31 (25-29')	4/13/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	390	<2.0
B-32a (10-14')	4/14/2009	NA	NA	<1.0	<1.0	<1.0	13	<1.0	<1.0	1.6	<1.0	<1.0	430	<2.0
B-32a (25-29')	4/14/2009	NA	NA	<100	<100	<100	1200	<100	<100	<100	<100	<100	360	<200
B-32b (8.5-10.5')	4/15/2009	NA	NA	<1.0	<1.0	<1.0	3.4	<1.0	1.7	<1.0	2.1	13	1.6	<2.0
B-33 (4-8')	4/15/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-33 (4-8'), Dup-03	4/15/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-33 (17-21')	4/15/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-34 (14-18')	4/20/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-34 (41-45')	4/20/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0
B-35 (5-9')	4/20/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<2.0
B-35 (30-34')	4/20/2009	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	450	<20
B-35 (5-9'), Dup-07	4/20/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<2.0
B-36 (12-16')	5/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
B-36 (16-20')	5/13/2009	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
B-36 (16-20'), Dup 01	5/13/2009	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
B-37 (38.5-42.5')	5/12/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<3.0
B-38 (15-19')	5/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<3.0
B-38 (36-40')	5/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
B-39 (15-19')	5/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
B-40 (16-20')	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
B-40 (42-46')	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
	03/13/2009	<20	<20	<20	<20	<20	<20	<20	<20	<20	750	2700	<20	<60
	03/13/2009	<20	<20	<20	<20	<20	<20	<20	<20	<20	720	2700	<20	<60
MW-01s	4/20/2009	NA	NA	<100	<100	<100	<100	<100	<100	<100	1100	2200	<100	<200
	03/13/2009	<2.0	<2.0	<2.0	<2.0	<2.0	2.4	<2.0	2.2	<2.0	2.5	280	<2.0	<6.0
MW-02s	4/20/2009	NA	NA	<10	<10	<10	<10	<10	<10	<10	<10	130	<10	<20

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#### Note

Residential and Industrial Aesthetic Drinking Water Criteria (DWC), Residential and Industrial Health-Based DWC, Groundwater Surface Water Interface (GSI) Criteria, Residential and Industrial Groundwater Volatilization to Indoor Air Inhalation (IAI) Criteria, and Groundwater Contact Criteria (GCC) from MDEQ RRD Op Memo 1 Part 201 Generic Cleanup Criteria/Part 213 Risk Based Cleanup Levels, January 23, 2006.

ug/L = micrograms per liter

NC = No Criteria

NA = Not Analyzed

**bold** font denotes concentrations detected above laboratory reporting limits

Denotes concentrations above one or more criteria

1) Criterion is not protective for surface water used as a drinking water source as described in footnote (X) of MDEQ Op Memo 1 Part 201, Attachment 1.

2) Compound may exhibit characteristic ignitability as defined in 40 C.F.R. § 261.21

3) Compound may exhibit characteristic reactivity as defined in 40 C.F.R. § 261.23

Summary of Detected Volatile Organic Compounds in Groundwater Perimeter and Off-Site Locations **Tecumseh Products Company** Tecumseh, Michigan

			Dichlorodi-		1,2-		cis-1,2-	trans-1,2-			1,1,1-			
Analyte		Carbon Disulfide <sup>(2,3)</sup>	fluoromethane	1,1-Dichloroethane	Dichloroethane <sup>(2)</sup>	1,1-Dichloroethene <sup>(2)</sup>	Dichloroethene	Dichloroethene	Tetrachloroethene	Toluene <sup>(2)</sup>	Trichloroethane	Trichloroethene	Vinyl Chloride	Xylenes <sup>(2)</sup>
Residential & Industrial A	Aesthetic DWC	NC	NC	NC	NC	NC	NC	NC	NC	790	NC	NC	NC	280
Residential Health-Ba	ased DWC	800	1,700	880	5.0	7.0	70	100	5.0	1,000	200	5.0	2.0	10000
Industrial Health-Ba	sed DWC	2,300	4,800	2,500	5.0	7.0	70	100	5.0	1,000	200	5.0	2.0	10000
GSI Criteria	a	NC	NC	740	360 <sup>(1)</sup>	65 <sup>(1)</sup>	620	1,500	45 <sup>(1)</sup>	140	200	200 <sup>(1)</sup>	15	35
Residential Volatilization	to IAI Criteria	2.5E+5	2.20E+05	1.0E+6	9,600	200	93,000	85,000	25,000	5.30E+05	6.6E+5	15,000	1,100	1.90E+05
Industrial Volatilization	to IAI Criteria	5.5E+5	3.00E+05	2.3E+6	59,000	1,300	2.1E+5	2.0E+5	1.7E+5	5.30E+05	1.3E+6	97,000	13,000	1.90E+05
Groundwater Conta	ct Criteria	1.2E+6 (S)	3.00E+05	2.4E+6	19,000	11,000	2.0E+5	2.2E+5	12,000	5.30E+05	1.3E+6	22,000	1,000	1.90E+05
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	03/13/2009	<2.0	<2.0	9.1	<2.0	<2.0	240	9.1	<2.0	<2.0	<2.0	<2.0	140	<6.0
MW-03s	4/20/2009	NA	NA	18	<10	<10	490	18	<10	<10	<10	<10	210	<20
	03/13/2009	<25	<25	<25	<25	<25	2100	70	<25	<25	<25	5000	460	<75
MW-04s	4/20/2009	NA	NA	<100	<100	<100	1700	<100	<100	<100	<100	4000	520	<200
	03/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.5	<1.0	<1.0	120	<1.0	<3.0
MW-05s	4/20/2009	NA	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	140	<5.0	<10
	03/16/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	21	<1.0	<3.0
MW-06s	4/20/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	23	<1.0	<2.0
	03/16/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	10	<1.0	<3.0
MW-07s	4/20/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	11	<1.0	<2.0
	03/16/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	<1.0	<3.0
	4/20/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10	<1.0	<2.0
MW-08s	4/20/2009	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10	<1.0	<2.0
	03/16/2009	<20	<20	<20	<20	<20	<20	<20	<20	<20	160	1700	<20	<60
MW-09s	4/20/2009	NA	NA	<100	<100	<100	<100	<100	<100	<100	220	2100	<100	<200
MW-10S (8-13')	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
MW-10S (8-13'), Dup 02	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
MW-11S (29-34')	5/14/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
MW-12S (12-17')	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<3.0
MW-13S (13-18')	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
MW-14S (4-9')	5/14/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
MW-15S (30-35')	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
MW-17S (3-8')	7/23/2009	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
Trip Blank-01a	03/04/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
Trip Blank-02	03/04/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
Trip Blank-03	03/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
Trip Blank-04	03/14/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
Trip Blank-01b	5/15/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0
Trip Blank-01c	7/23/2009	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0

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Residential and Industrial Aesthetic Drinking Water Criteria (DWC), Residential and Industrial Health-Based DWC, Groundwater Surface Water Interface (GSI) Criteria, Residential and Industrial Groundwater Volatilization to Indoor Air Inhalation (IAI) Criteria, and Groundwater Contact Criteria (GCC) from MDEQ RRD Op Memo 1 Part 201 Generic Cleanup Criteria/Part 213 Risk Based Cleanup Levels, January 23, 2006.

ug/L = micrograms per liter NC = No Criteria

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bold font denotes concentrations detected above laboratory reporting limits

Denotes concentrations above one or more criteria

1) Criterion is not protective for surface water used as a drinking water source as described in footnote {X} of MDEQ Op Memo 1 Part 201, Attachment 1.

- 2) Compound may exhibit characteristic ignitability as defined in 40 C.F.R. § 261.21
- 3) Compound may exhibit characteristic reactivity as defined in 40 C.F.R. § 261.23

## Table 5 Summary of Detected Volatile Organic Compounds in Water from Storm Sewers Tecumseh Products Company Tecumseh, Michigan

Analyte		1,1-Dichloroethene <sup>(2)</sup>	cis-1,2- Dichloroethene	Tetrachloroethene	1,1,1- Trichloroethane	Trichloroethene	Vinyl Chloride
Residential & Industrial	Aesthetic DWC	NC	NC	NC	NC	NC	NC
Residential Health-	Based DWC	7.0	70	5.0	200	5.0	2.0
Industrial Health-E	sased DWC	7.0	70	5.0	200	5.0	2.0
GSI Crite	ria	65 <sup>(1)</sup>	620	45 <sup>(1)</sup>	200	200 <sup>(1)</sup>	15
Residential Volatilization	on to IAI Criteria	200	93,000	25,000	6.6E+5	15,000	1,100
Industrial Volatilization	n to IAI Criteria	1,300	2.1E+5	1.7E+5	1.3E+6	97,000	13,000
Groundwater Con	act Criteria	11,000	2.0E+5	12,000	1.3E+6	22,000	1,000
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STW #1	4/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
STW #2	4/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	23
STW #3	4/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
STW #4	4/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
STW #5	4/13/2009	<1.0	1.6	<1.0	<1.0	<1.0	<1.0
STW #6	4/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
STW #7	4/13/2009	<1.0	<1.0	<1.0	<1.0	2.7	<1.0
STW #8	4/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

#### Notes:

Residential and Industrial Aesthetic Drinking Water Criteria (DWC), Residential and Industrial Health-Based DWC, Groundwater Surface Water Interface (GSI) Criteria, Residential and Industrial Groundwater Volatilization to Indoor Air Inhalation (IAI) Criteria, and Groundwater Contact Criteria (GCC) from MDEQ RRD Op Memo 1 Part 201 Generic Cleanup Criteria/Part 213 Risk Based Cleanup Levels, January 23, 2006.

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**bold** font denotes concentrations detected above laboratory reporting limits

Denotes concentrations above one or more criteria

<sup>1)</sup> Criterion is not protective for surface water used as a drinking water source as described in footnote {X} of MDEQ Op Memo 1 Part 201, Attachment 1.

<sup>2)</sup> Compound may exhibit characteristic ignitability as defined in 40 C.F.R. § 261.21

Table 6
List of Notified Property Owners
Tecumseh Products Company
Tecumseh, Michigan

Map ID#	Parcel # <sup>(1)</sup>	Property Address	Owner Name	Owner Address	Owner City	State	Zip Code	Notification Date
1	325-0170-00	201 E PATTERSON ST	CONSUMERS ENERGY CO	ONE ENERGY PLAZA	JACKSON	MI	49201	04/08/09
2	325-0180-00	209 E PATTERSON ST	IRELAN, DENNIS C & KAREN	BOX 66	TECUMSEH	MI	49286	04/08/09
3	325-0190-00	205 E PATTERSON ST BLK	CONSUMERS ENERGY CO	ONE ENERGY PLAZA	JACKSON	MI	49201	04/08/09
4	325-0200-00	223 E PATTERSON ST	M & S LAND HOLDINGS, LLC	8514 PENNINGTON RD	TECUMSEH	MI	49286	04/08/09
5	325-0100-00	415 S MAUMEE ST	D & P COMMUNICATIONS, INC	4200 TEAL RD	PETERSBURG	MI	49270	04/08/09
6	325-0401-00	414 S MAUMEE ST	BOOT, MARTIN & CAROL	807 RED MILL DR	TECUMSEH	MI	49286	04/08/09
7	325-0091-00	416 E CUMMINS ST	BOOT MARTIN JR & CAROL	416 E CUMMINS ST	TECUMSEH	MI	49286	04/08/09
8	325-0094-00	504 E CUMMINS ST	JF CALM LLC	962 FAIRWAY COVE	TECUMSEH	MI	49286	04/08/09
9	325-0085-00	500 E CUMMINS ST	RYAN, JOHN J & ANNE E	210 W CHICAGO BLVD	TECUMSEH	MI	49286	04/08/09
10	325-0410-00	500 E CUMMINS ST	RYAN, JOHN J	210 W CHICAGO BLVD	TECUMSEH	MI	49286	04/08/09
11	325-0081-00	600 DAVE WILLIAMS DR	CITY OF TECUMSEH	POB 396	TECUMSEH	MI	49286	04/08/09
12	325-0420-00	300 S WYANDOTTE ST BLK	CITY OF TECUMSEH	309 W CHICAGO BLVD	TECUMSEH	MI	49286	04/08/09
13	325-0390-00	424 S MAUMEE ST	SLUSARSKI INVESTMENT COMPANY LLC	119 GREENLY STREET	ADRIAN	MI	49221	04/08/09
14	325-0380-00	426 S MAUMEE ST	NOVAK LLC	426 S MAUMEE ST	TECUMSEH	MI	49286	04/08/09
15	325-0370-00	509 MOHAWK ST	BATYIK, FRANK L	3614 NOLAND DR	TECUMSEH	MI	49286	04/08/09
16	325-0432-00	607 MOHAWK ST	LOGAN, ROBERT W	1207 MURRAY DR	TECUMSEH	MI	49286	04/08/09
17	325-0434-00	611 MOHAWK ST	BIRCHFIELD, RONALD A & SHERRIE L	5371 NORTH RAISIN CENTER HWY	TECUMSEH	MI	49286	04/08/09
18	325-0435-00	615 MOHAWK ST	BIRCHFIELD, RONALD A & SHERRIE L	5371 N RAISIN CENTER HWY	TECUMSEH	MI	49286	04/08/09
19	325-0433-00	600 MOHAWK ST BLK	BIRCHFIELD, RONALD A & SHERRIE	5371 N RAISIN CENTER HWY	TECUMSEH	MI	49286	04/08/09
20	325-0431-00	707 BLOOD RD	HULL, EDWARD & DONALD	509 E CHICAGO BLVD	TECUMSEH	MI	49286	04/08/09
21	325-0361-00	502 MOHAWK ST	KLANKE, TODD E	502 MOHAWK ST	TECUMSEH	MI	49286	04/08/09
22	325-0340-00	508 MOHAWK ST	DERBY, KEVIN G & JASON E	508 MOHAWK ST	TECUMSEH	MI	49286	04/08/09
23	325-0351-00	505 S MAUMEE ST	MAUMEE TRUST, 505 S	210 W SHAWNEE ST	TECUMSEH	MI	49286	04/08/09
24	325-0322-00	507 S MAUMEE ST (2)	SPEER, HAROLD E	210 W SHAWNEE ST	TECUMSEH	MI	49286	04/08/09
25	325-0327-00	MOHAWK ST	G T E TELEPHONE OPER	19845 NORTH US 31 POB 407	WESTFIELD	IN	46074	04/08/09
26	325-0324-00	606 S MAUMEE ST	G T E TELEPHONE OPER	19845 NORTH US 31 POB 407	WESTFIELD	IN	46074	04/08/09
27	325-0325-00	610 S MAUMEE ST	CALLISON LEASING CORPORATION	610 S MAUMEE ST	TECUMSEH	MI	49286	04/08/09
28	325-0330-00	610 MOHAWK ST	LASK, SCOTT R	610 MOHAWK ST	TECUMSEH	MI	49286	04/08/09
29	325-0323-00	704 MOHAWK ST	HULL INVESTMENTS	119 W CHICAGO BLVD	TECUMSEH	MI	49286	04/08/09
30	325-0329-00	800 MOHAWK ST	TECUMSEH SELF STORAGE LLC	500 W KILBUCK ST	TECUMSEH	MI	49286	04/08/09
31	325-0328-00	800 MOHAWK ST	TECUMSEH SELF STORAGE LLC	500 W KILBUCK ST	TECUMSEH	MI	49286	04/08/09
32	325-0326-00	700 S MAUMEE ST	TECUMSEH PUBLIC SCHOOLS	212 N OTTAWA ST	TECUMSEH	MI	49286	04/08/09
33	325-0321-00	800 S MAUMEE ST	ROBERTS INVESTMENT COMPANY LLC	P.O. BOX 400	TECUMSEH	MI	49286	04/08/09
34	325-0312-00	701 MILL HWY	MAYNARD MINI SERVICES, INC	101 CARRIAGE DR	TECUMSEH	MI	49286	04/08/09
35	325-0261-00	805 S MAUMEE ST	MARTIN TRUST, DONALD J	145 W CHICAGO BLVD	TECUMSEH	MI	49286	04/08/09
36	325-0252-00	209 E RUSSELL RD	UNITED BANK & TRUST	P O BOX 248	TECUMSEH	MI	49286	04/08/09
37	325-0251-00	105 E RUSSELL RD	HERRICK, TODD & LINDA	3970 PENNINSULA DR	PETOSKEY	MI	49770	04/08/09
38	325-0253-00	101 E RUSSELL RD	CITY OF TECUMSEH	309 E CHICAGO BLVD	TECUMSEH	MI	49286	04/08/09

#### Notes:

<sup>1)</sup> Parcel identification numbers and owner information provided by the City of Tecumseh on March 12, 2009 and April 3, 2009.

<sup>2)</sup> The property at 507 S. Maumee Street (Map ID #24) is also known as 509 S. Maumee Street.

Table 6
List of Notified Property Owners
Tecumseh Products Company
Tecumseh, Michigan

Map ID#	Parcel # <sup>(1)</sup>	Property Address	Owner Name	Owner Address	Owner City	State	Zip Code	Notification Date
39	133-4800-00	705 S EVANS ST	JBM TECUMSEH MFG RE, LLC	707 S EVANS ST	TECUMSEH	MI	49286	06/01/09
40	128-4900-00	EVANS ST	SOUTHERN MICHIGAN RR SOCIETY	РО ВОХ К	CLINTON	MI	49236	06/01/09
41	325-0160-00	410 S OTTAWA ST	SWANGER, JESSICA A	410 S OTTAWA ST	TECUMSEH	MI	49286	06/01/09
42	325-0120-00	408 S OTTAWA ST	RICHARDS, FLOELLA	408 S OTTAWA ST	TECUMSEH	MI	49286	06/01/09
43	325-0110-00	210 E CUMMINS ST	MONEY, LARRY L	210 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
44	325-0101-00	220 E CUMMINS ST	HARRISON PROPERTIES, LLC	513 N OCCIDENTAL RD	TECUMSEH	MI	49286	06/01/09
45	305-2091-00	217 E CUMMINS ST	LEAR, JOSEPH L	217 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
46	305-2110-00	219 E CUMMINS ST	HERRERA, SALOME & ANGELINA	219 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
47	305-2120-00	221 E CUMMINS ST	BAUGHEY TRUST, HOWARD J	221 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
48	305-2131-00	223 E CUMMINS ST	COUNTS, THOMAS H & SHRON A	223 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
49	305-2140-00	227 E CUMMINS ST	TORREZ, DARIO R	227 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
50	305-2151-00	229 E CUMMINS ST	HIGNITE, LONNIE D	2223 SURREY COURT SE	MARIETTA	GA	30067	06/01/09
51	305-2170-00	231 E CUMMINS ST	WALKER, ROBERT L	231 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
52	305-2181-00	233 E CUMMINS ST	KENNEDY, CAROL A	233 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
53	305-2180-00	315 S MAUMEE ST	KEITH, DAVID A & KRISTINA D	315 S MAUMEE ST	TECUMSEH	MI	49286	06/01/09
54	325-0092-00	400 E CUMMINS ST BLK	WALLICH, MARTIN F & PHYLLIS	2800 W CHICAGO BLVD	TECUMSEH	MI	49286	06/01/09
55	305-2192-00	308 S MAUMEE ST	MASTERPEACE MANAGEMENT LLC	308 MAUMEE ST S	TECUMSEH	MI	49286	06/01/09
56	305-2194-00	406 E KILBUCK ST	MAURICIO, ARTHUR & REGINA R	406 E KILBUCK ST	TECUMSEH	MI	49286	06/01/09
57	305-2191-00	302 S MAUMEE ST	GATES, TERI	2690 DINIUS RD	TECUMSEH	MI	49286	06/01/09
58	305-2051-00	311 S MAUMEE ST	DUNCAN TRUST, HAROLD L	311 S MAUMEE ST	TECUMSEH	MI	49286	06/01/09
59	305-2030-00	307 S MAUMEE ST	LOWER LIGHT MISSION	20469 DEERFIELD RD.	DEERFIELD	MI	49238	06/01/09
60	305-2020-00	310 E KILBUCK ST	CAMBURN, ANNA M	310 E KILBUCK ST	TECUMSEH	MI	49286	06/01/09
61	305-2010-00	308 E KILBUCK ST	DEAVERS, NICKOLAS B & MICHELLE	308 E KILBUCK ST	TECUMSEH	MI	49286	06/01/09
62	305-2000-00	306 E KILBUCK ST	WILLIS, LEE E & VERNESE G	306 E KILBUCK ST	TECUMSEH	MI	49286	06/01/09
63	305-1990-00	304 E KILBUCK ST	DAWDY, HAZEL	304 E KILBUCK ST	TECUMSEH	MI	49286	06/01/09
64	305-1981-00	216 E KILBUCK ST	MURPHY, GEORGE F & CHERYL L	13516 CANTERBURY CT	PLYMOUTH	MI	48170-2448	06/01/09
65	000-0431-00	215 S MAUMEE ST	HERRELL TRUST, ORBIN	215 S MAUMEE ST	TECUMSEH	MI	49286	06/01/09
66	000-0432-00	211 S MAUMEE ST	HERRELL TRUST, ORBIN	215 S MAUMEE ST	TECUMSEH	MI	49286	06/01/09
67	000-0332-00	214 S MAUMEE ST	LOWER LIGHT MISSION	20469 DEERFIELD RD.	DEERFIELD	MI	49238	06/01/09
68	000-0341-00	409 E KILBUCK ST	GUENTHER, JERAME L	409 E KILBUCK ST	TECUMSEH	MI	49286	06/01/09
69	000-0351-00	415 E KILBUCK ST	HERRICK MEM HOSP INC	500 E POTTAWATAMIE ST	TECUMSEH	MI	49286	06/01/09
70	000-0291-00	207 S WYANDOTTE ST	LAUER, CHARLES & SALLY L	207 S WYANDOTTE ST	TECUMSEH	MI	49286	06/01/09
71	000-0331-00	210 S MAUMEE ST	ROBARGE, THOMAS & ROBERT ROBAR	210 S MAUMEE ST	TECUMSEH	MI	49286	06/01/09
72	000-0302-00	206 S MAUMEE ST	BILBY, RICHARD L & SHARON	206 S MAUMEE ST	TECUMSEH	MI	49286	06/01/09

#### Notes:

- 1) Parcel identification numbers and owner information provided by the City of Tecumseh on March 12, 2009 and April 3, 2009. 2) The property at 507 S. Maumee Street (Map ID #24) is also known as 509 S. Maumee Street.

Figure 1
Site Location Plan and Vicinity

Figure 2 Site Features

Figure 3 Sample Locations

Figure 4
Cross Section Location Map

Figure 5
Geologic Cross Section A-A'

Figure 6
Geologic Cross Section B-B'

Figure 7
Geologic Cross Section C-C'

Figure 8
Geologic Cross Section D-D'

Figure 9
Groundwater Contour Map

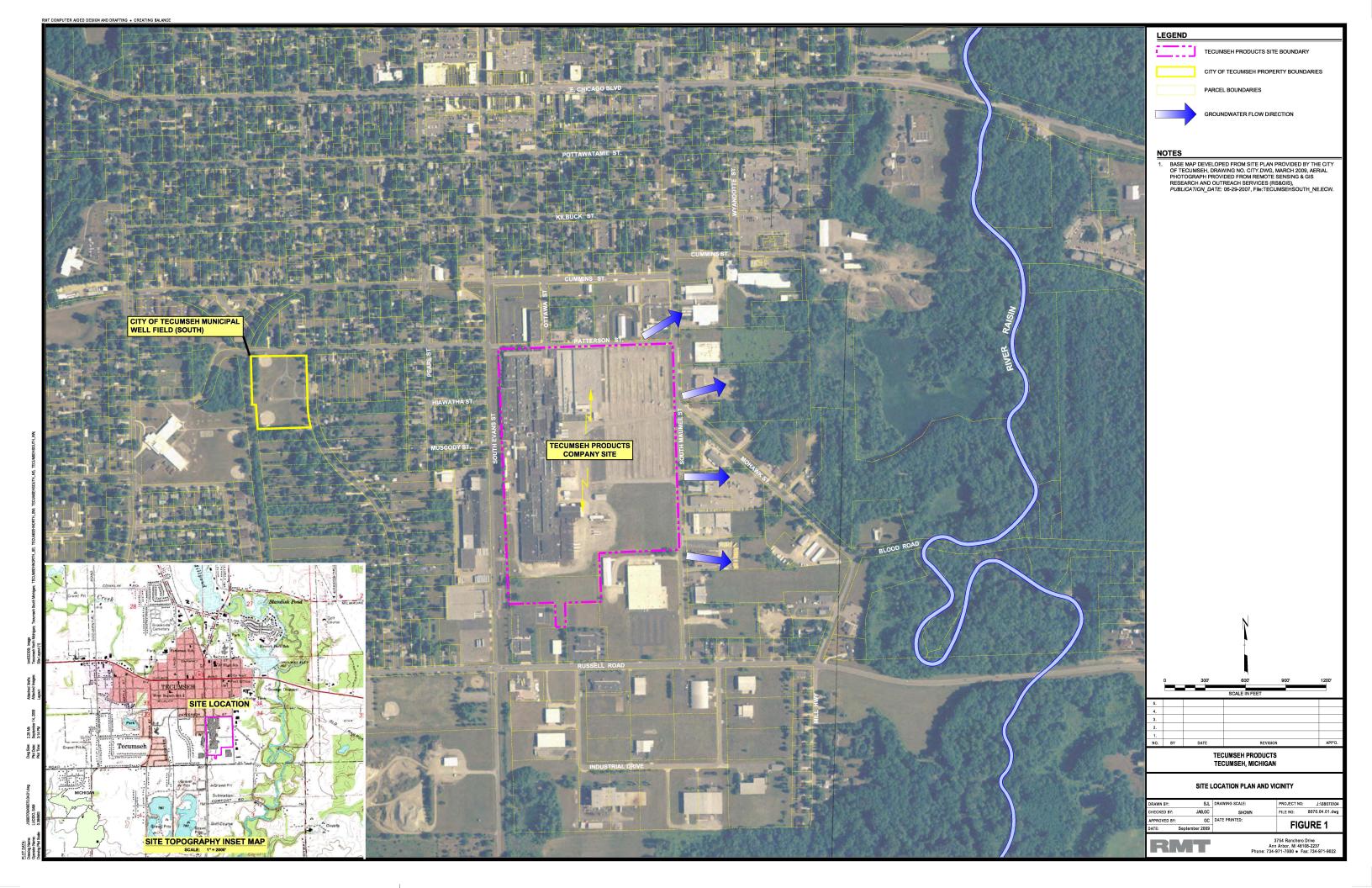
Figure 10
Summary of On-Site Soil Analytical Data

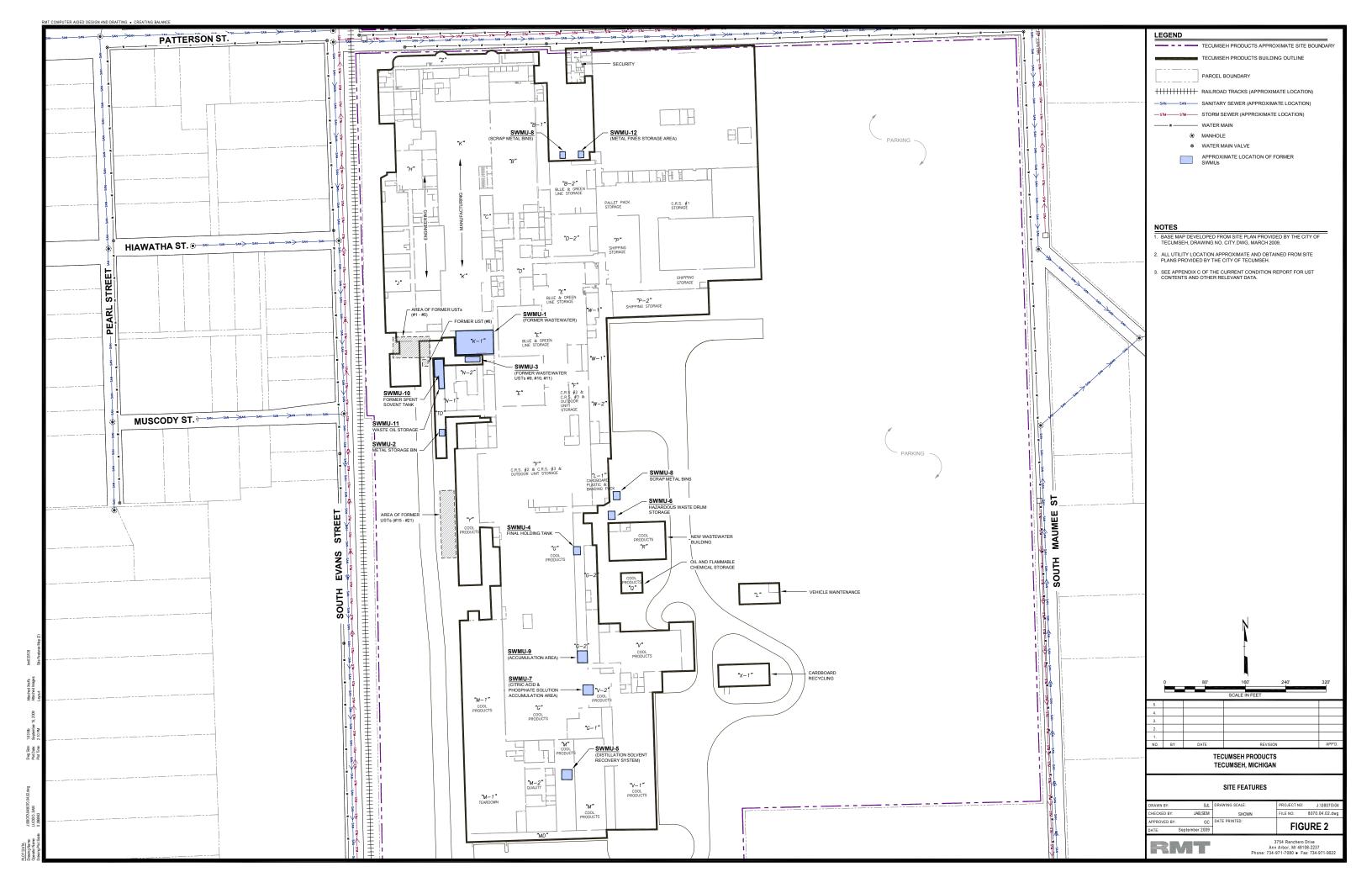
Figure 11
Summary of On-Site Groundwater Analytical Data

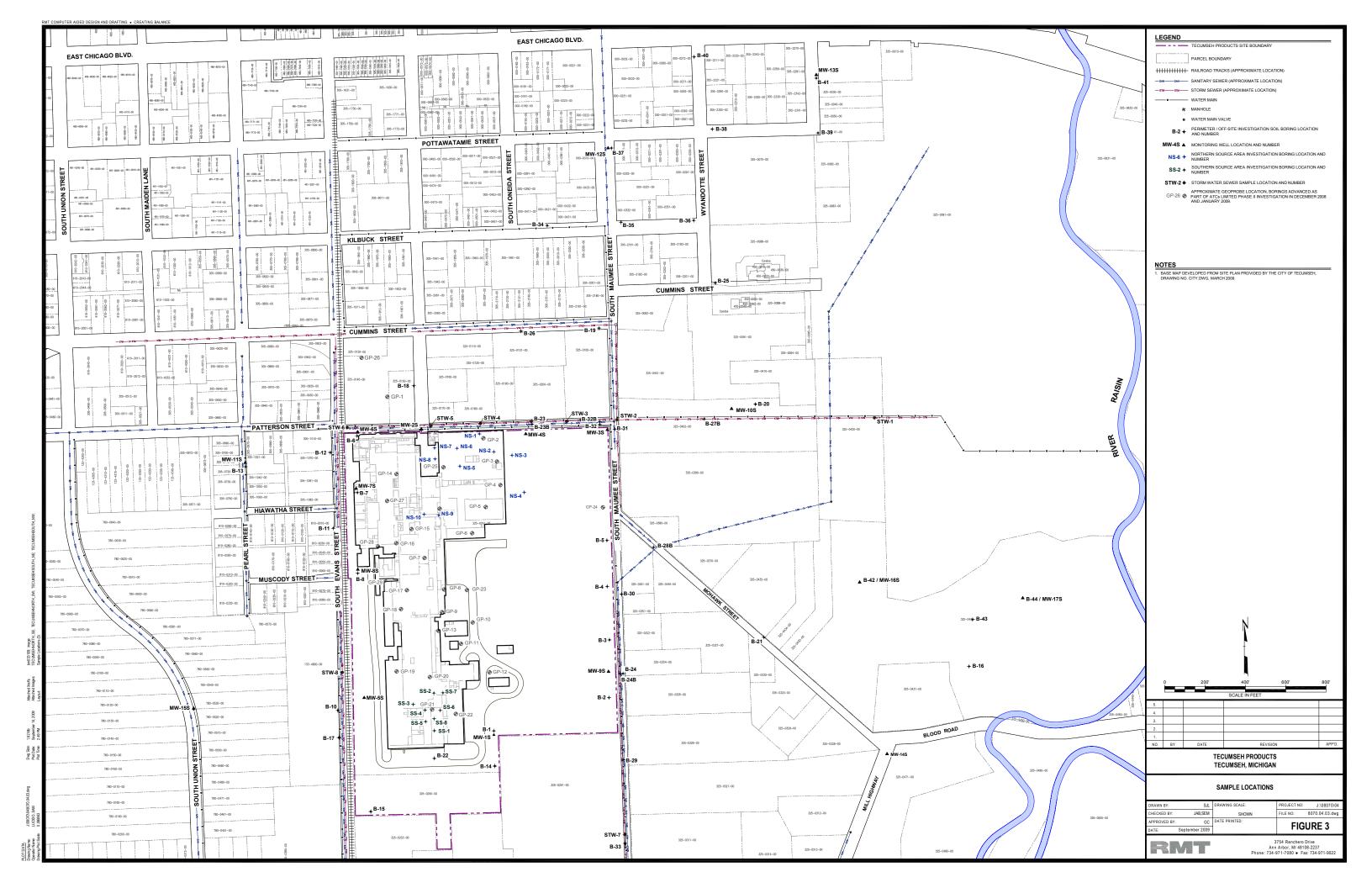
Figure 12
Summary of Off-Site Groundwater Analytical Data

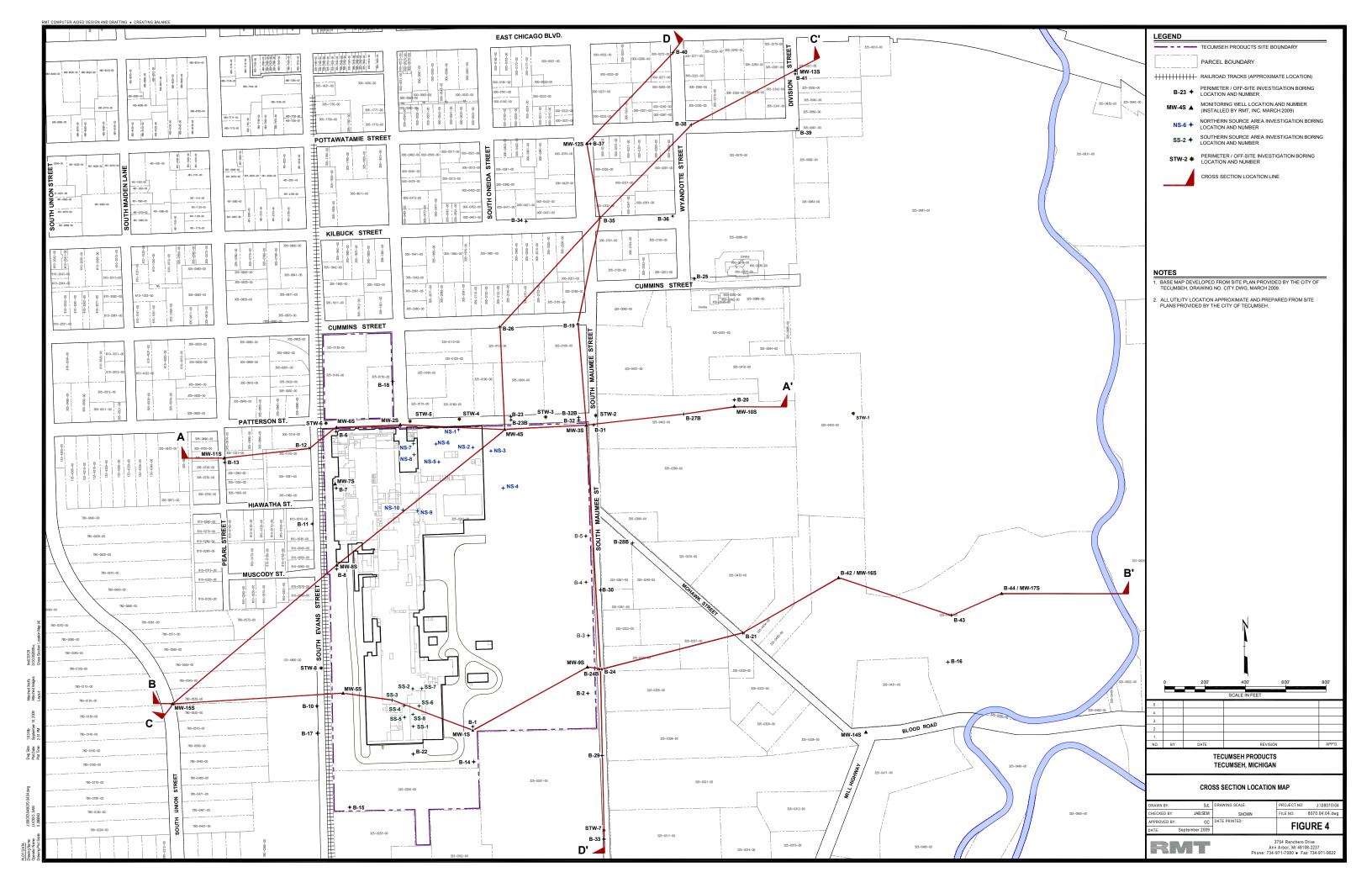
Figure 13
Extent of COCs Above Part 201 Drinking Water Criteria

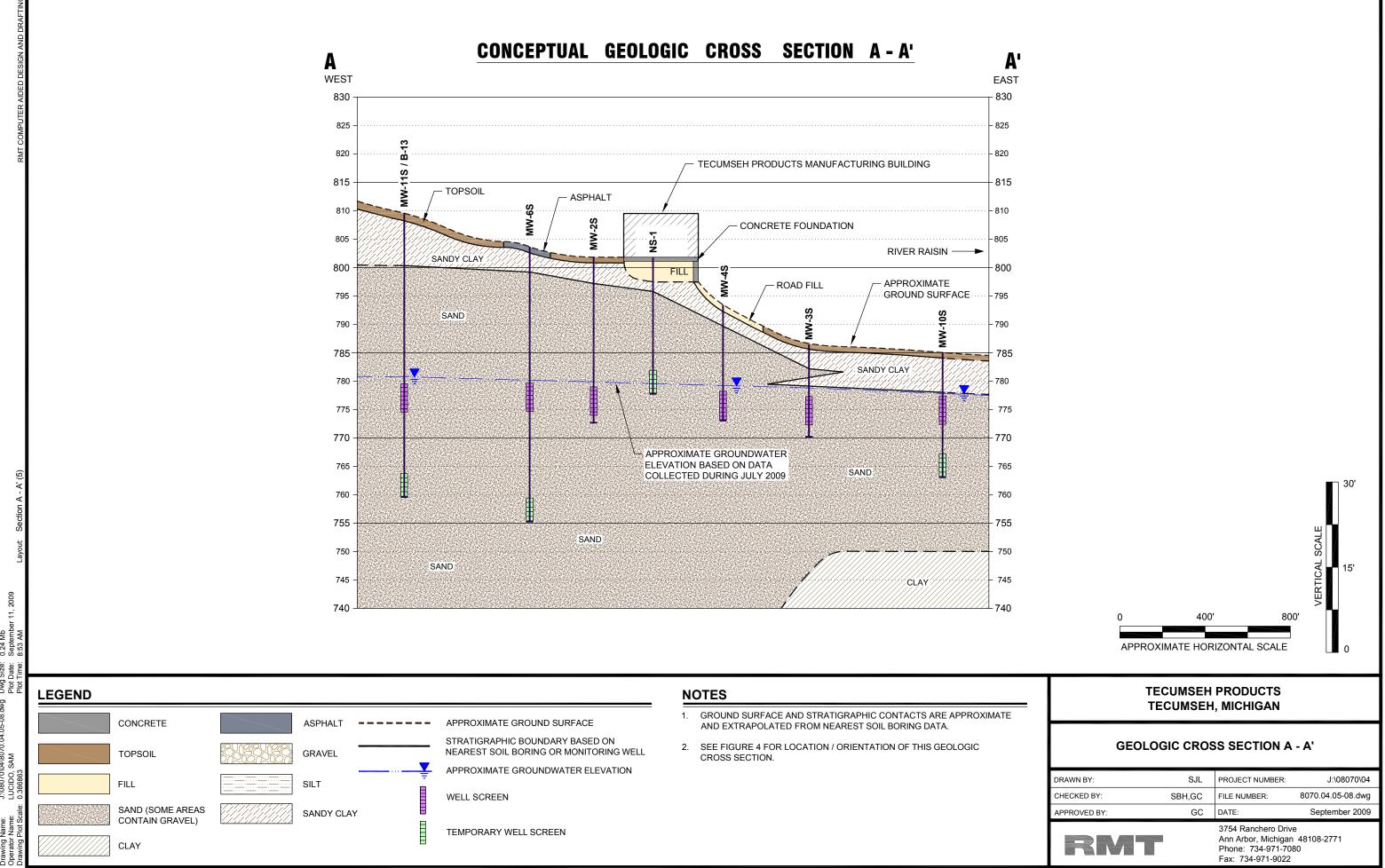
Figure 14 Notices of Potential Off-Site Migration

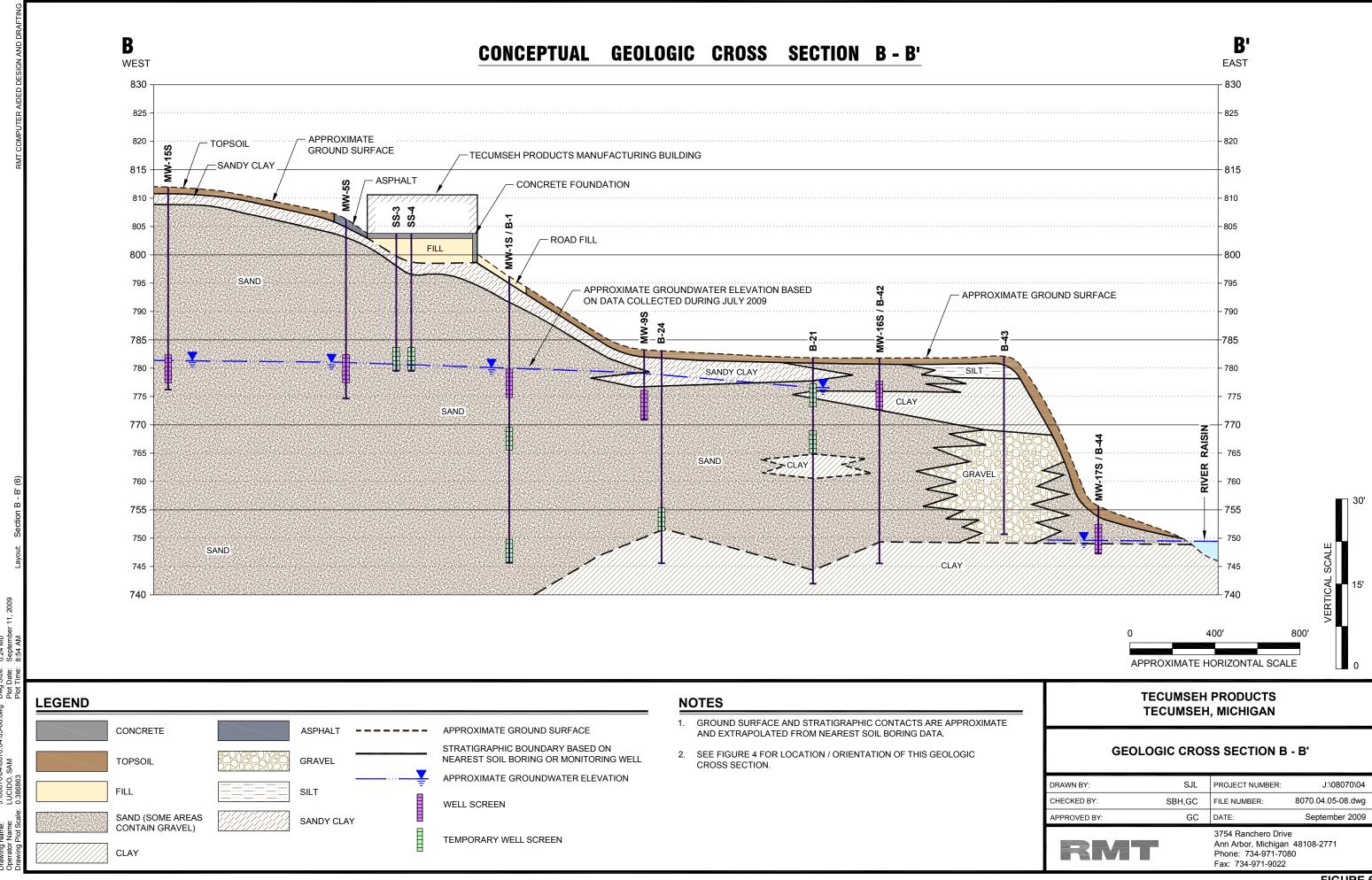


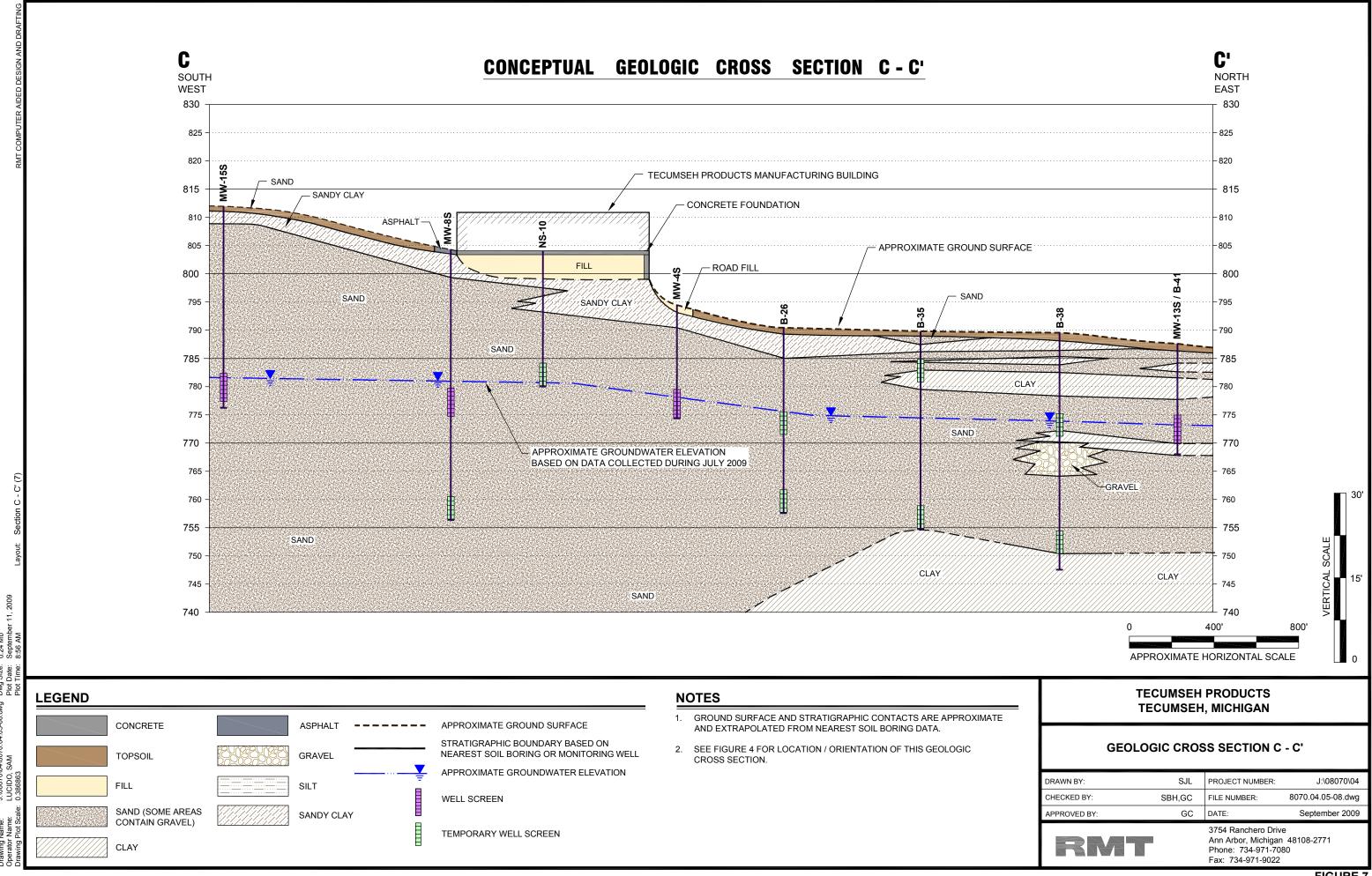


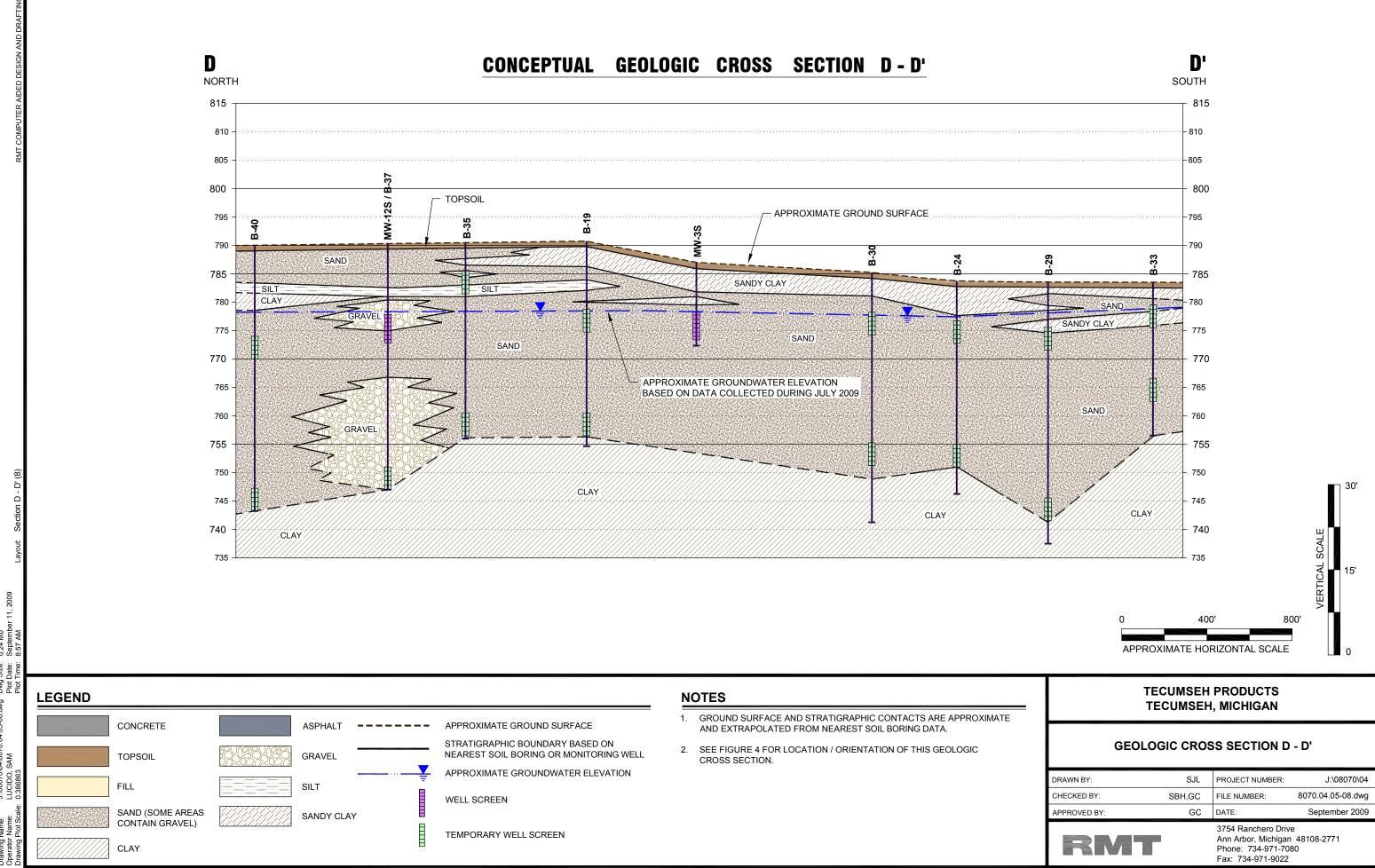


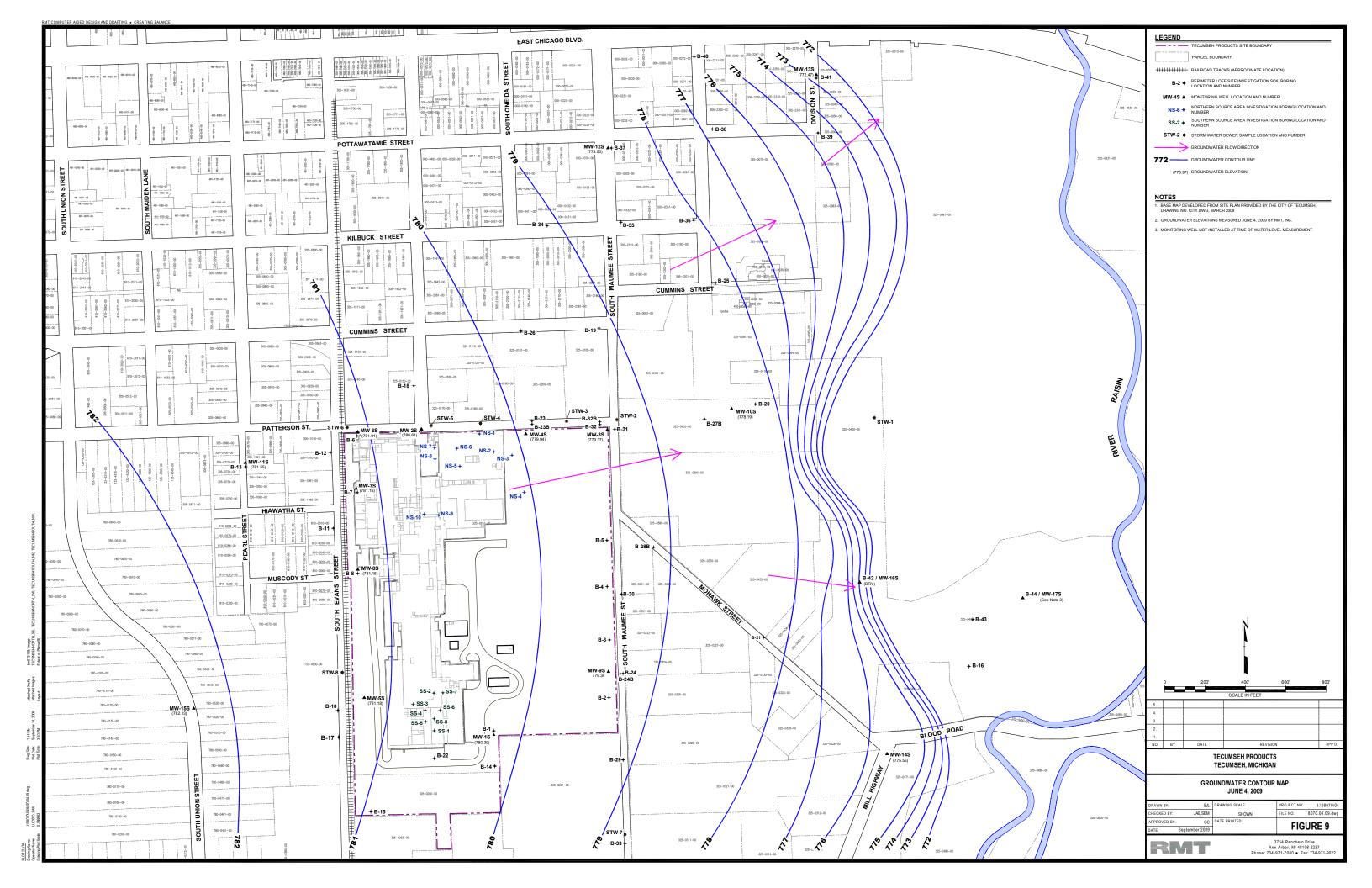


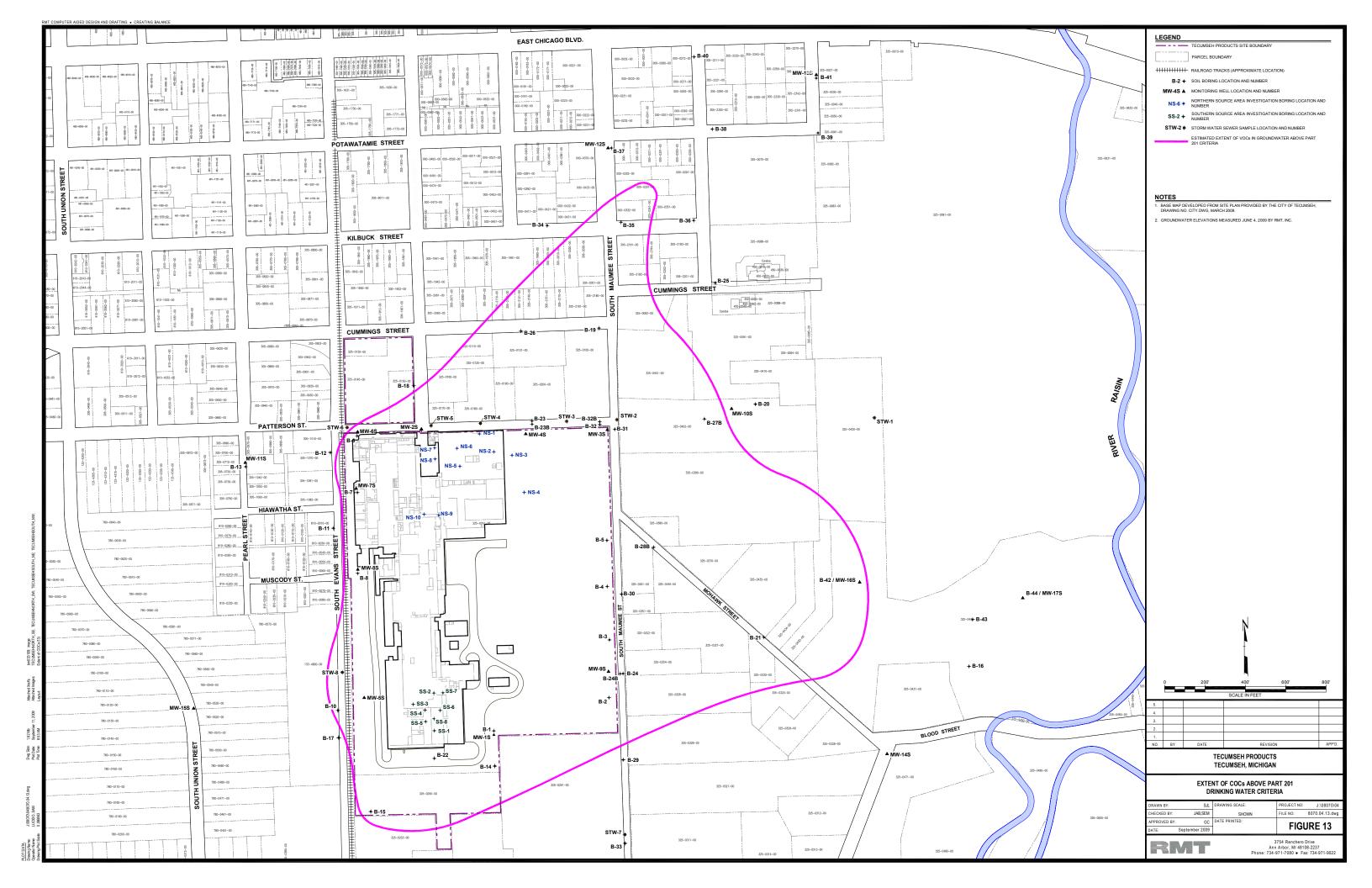


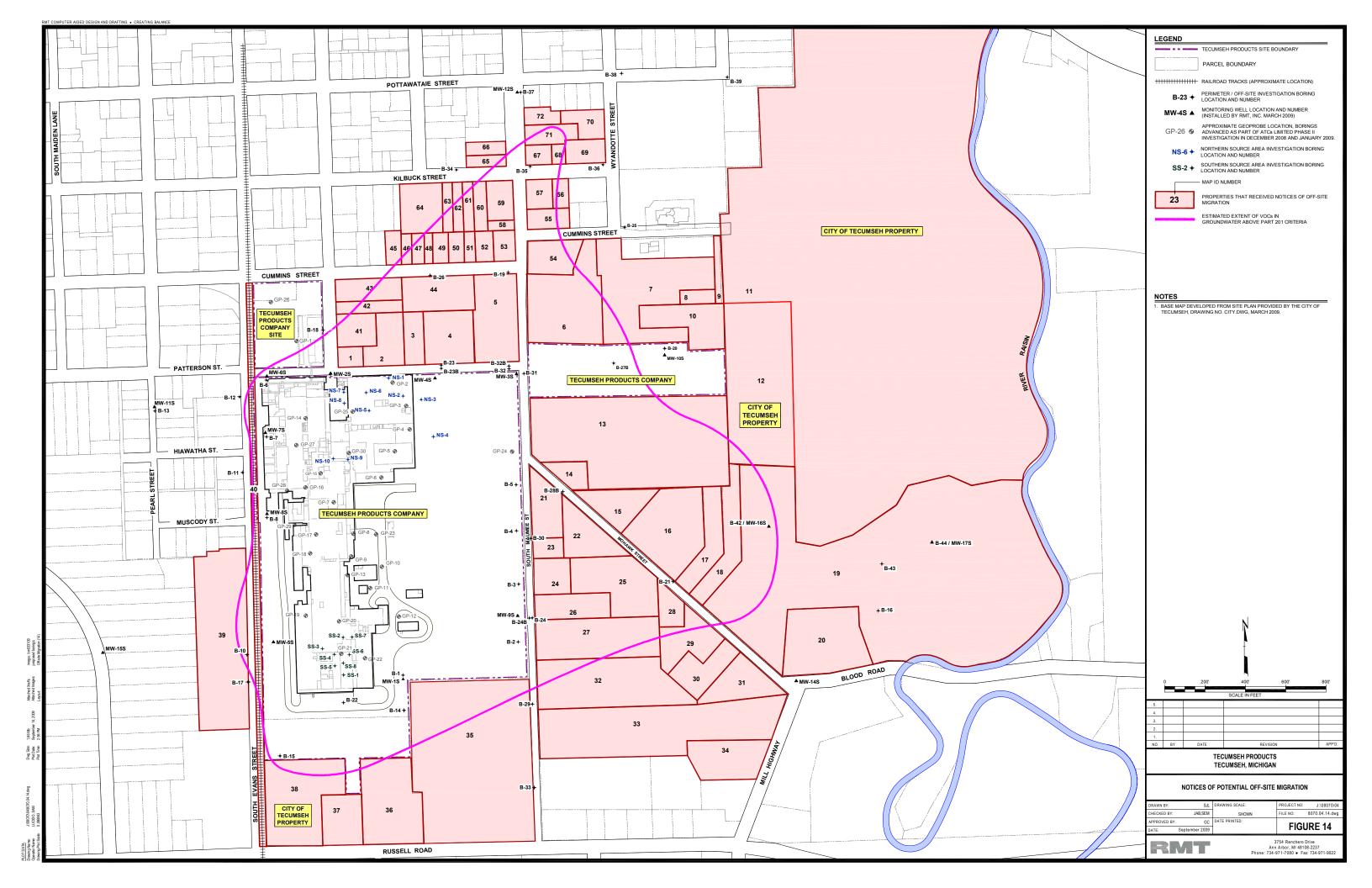












## Appendix A Soil Boring Logs and Monitoring Well Construction Information

***************************************	3380a. 2000	State decolumns				9	SOIL BO	RING LOG						
											во	RING	NO	. B-14
					=								Page 1	of 2
		ct Name						Date Drilling Started	i:	Date Drilling		eted:	Projec	t Number:
		nseh	Prod	ucts Comp		se II Investi	gation	4/14/09	1		4/09		<u> </u>	8070.02
Drilling					Drilling Meth			Surface Elev. (ft)	TOCI	Elevation (ft)	Total	Depth (	tt bgs)	Borehole Dia. (in
Borino	Te	rrapro			1	Direct Push		Personnel	<u> </u>		D*III:-	40.0	ment.	2
bung	Local	Ň	/W-1	, about 600	) feet west	0 feet south of Maume	e Street	Logged By - Stacy			מוווויט	g Equip		
Ob all T		a	and 16	600 feet so		erson Stree		Driller - Craig Tanio			<u></u>		Geor	robe
		ty/or Vi		County:		State:		While Drilling:		/Time _4/14/	09 00:0	<u>o</u> <u>V</u>	Dept	h (ft bgs) 16
		mseh		Lena	awee	<u> </u>	<u>/II</u>	After Drilling:	Date	/Time <u>4/14/</u>	09 00:0	<u>0</u>	Dept	h (ft bgs) <u>16</u> h (ft bgs) <u>16</u>
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				ITHOLOG ESCRIPTI			,	nscs	GRAPHIC LOG	C	OMMENTS
				TOPSOI	IL	-	<del></del>			<del></del> -		9		
1 GP	54	:	2-	dark bro	own (10YR	3/3), moist	sand, few	e to medium san			CL			
1 GP 2 GP	67		4— - 6— -		·	ar gravel at		lium dense.						
3 GP	73		8— - - 10— -	Change	to dense t	to very dens	se at 10.0	feet.			sw			
一目			12-		6									
4 GP   11   11   11   11   11   11   11	65		- 14— -	Same a	s above.									
5 GP	75		16— - - 18—	<b>⊻</b> Change	to saturate	ed at 16.0 f	eet.						Ground at 16-2	iwater sample collec 0 feet.
亅亅			-											
					<del>" ' " " " " " " " " " " " " " " " " " "</del>							<u> </u>	<u> </u>	
Signat	ure:	//		1		F	irm: RM1	□ Inc.					(	734) 971-708
	,	Mu	N	Mos				4 Ranchero Drive	Ann	Arbor, MI	48108	3		734) 971-902

				SOIL BORING LOG	· 1	BOI	RING	9 NO. B-14
SAM	IPLE						Ī	Page 2 of 2
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION		nscs	GRAPHIC LOG	COMMENTS
		į į		Blind drill to 40.0 feet.				
		E	22—					
	į	<u>}</u>	24-				i.	
			26-					
			28-					
		   	30-					
	1		32-					
			34-				  -  -	
			36-					Groundwater comple col
								Groundwater sample coll at 36-40 feet.
			38 -	Drilling change at 38.0 feet indicating likely change to clay.				
			40-	End of boring at 40.0 feet below ground surface.				
			42-		E			
			44-				]	
			46-					

R022500	10000a <b>100</b> 0	MS ///		198		SOIL BC	HING LOG							
		M		***						во	RING	NO	. <b>B</b> -16	
Facilit	y/Proje	ot Nam					Date Drilling Started	ł·	Date Drilling	Comple		Page	1 of 1 ct Number:	<del></del>
				ucte Comp	any - Pha	ase II Investigation	7/23/09	1.		3/09	eleu.	Floje	8070.0	
	Firm:	113011	- 100	ucta Comp	Drilling Me		Surface Elev. (ft)	TOCI	Elevation (ft)		Depth (	t bgs)	Borehole	
Ì		rrapr	obe, I	nc.		Direct Push					16.0	0,		2
Boring	Locati	on: (	On Bi		perty, ab	out 400 feet south of	Personnel			Drillin	g Equip	ment:	L	
		I	3-43				Logged By - Brent Driller - Joe Fotjik	Ritchie		l		Geor	orobe	
Civil T	own/Ci	ty/or V	ilage:	County:		State:	Water Level Observ							
	Tecu	mseh	١	Lena	awee	MI	While Drilling: After Drilling:		/Time <u>7/23/</u> /Time <u>7/23/</u>	09 00:0			th (ft bgs) th (ft bgs)	<u>NA</u> <u>NM</u>
SAM	PLE													
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOG DESCRIPT				nscs	GRAPHIC LOG	C	COMME	NTS
			_	SILTY S	AND mo	stly fine to medium sa	ind, some silt, trac	ce fine						
±IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	70		2-	Change	to dense	brown (10YR 7/4), dry at 2.0 feet. ay, brown (10YR 5/3)				SM				
			4-	SILTY C slight pla	CLAY few asticity, b	to little fine sand, few rown (10YR 5/3), dam	fine to medium g	ıravel,	, <u></u>	-				
1 G 2 G	100		6-											
	100		8-	Same a	s above.					CL- ML				
3 GP	100		10											
			-	<b>SILTY C</b> (10YR 5	LAY few /1), damp	fine to medium grave o, stiff.	I, slight plasticity,	gray		CL-				
GP IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	100		14	End of b	poring at 1	16.0 feet below ground	d surface.			ML				
			-		Ū	•								
										L				
Signat	ure: //	/	1	1-4		Firm: RM	T Inc.						734) 97	1-7080
_	16		Τ.	1			4 Ranchero Drive	Ann	Arbor, MI	48108	3		734) 97 <sup>.</sup>	

RMT Inc. 3754 Ranchero Drive Ann Arbor, MI 48108

(2000)							20IF RO	RING LOG						
				4404							во			. <b>B-18</b>
Facility	y/Proje	ct Name	 e:			<del></del>		Date Drilling Started	i:	Date Drilling	Compl		Page 1 Projec	of 2 t Number:
				ucts Comp	any - Pha	se II Inves	stigation	4/14/09		_	4/09		•	8070.02
Drilling	Firm:				Drilling Met	hod:		Surface Elev. (ft)	TOC	levation (ft)	Total	Depth (f	t bgs)	Borehole Dia. (in
		rrapro				Direct Pu					<u> </u>	28.0		2
Boring	Locati			est side of Contract		reet about	200 feet	Personnel Logged By - Scott	Middleb	rook	Drillin	ng Equipi	nent:	
			-		ii Siieei	·		Driller - Joe Fotjik					Geop	robe
Civil T	own/Ci	ty/or Vil	lage:	County:		State:		Water Level Observ While Drilling:		/Time _4/14/	/09 <u>00:</u> 0	<u>00</u> 又	Depti	h (ft bgs) <u>21.5</u>
		mseh		Lena	wee		MI	After Drilling:	Date	/Time _4/14,	/09 <u>00:</u> 0	00	Dept	h (ft bgs) <u>NM</u>
SAM	PLE .													
	~	S	<b>-</b>											
,,.	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			1	LITHOLOG DESCRIPTION					GRAPHIC LOG	С	OMMENTS
NUMBER AND TYPE	VER	8	Z I			•		<b>∵.</b> ₹				일		
89 I		NO.	EPTI				÷				SOSN	PAP		
	<u>«</u>	<u> </u>	Δ	TOPSOI	1	<del></del>					<del>  </del>	0		
目			-	10.30.	-									
			_	SII TV C	I AY WITI	H SAND n	nostly clay s	ome silt, little co	arse s	and	┼-			
			<del>.</del>	few fine	sand, trad	ce fine gra	avel, medium	plasticity, strong	g brow	n	CL- ML			
	56		2-		5/6), mois		and ac	modium acral III	Hle e''	for	<del> </del>			•
1 GP 2 GP			-					medium sand, lit 2), moist, mediu				翻		
亅			-		, <b>9</b> .	,	(1.10 1.1.0)				SM			
亅			_											
			4-	SAND n	nostly coa	arse sand	some medic	ım sand, few fine	e sand		┼-	11511		
			_	trace gra	avel, brow	n (10YR 5	5/3) grading f	to pale brown (1	0YR 6	, /3), dry,				
目			_	loose.		-		•		- J				
目			-	-										
	75		6-	1										
			-	-										
目			٠ -								sw			
			-											
	_		8-	ļ										٠
目			-	Coarse	sand and	gravel co	ntent decres	ses with depth.						
			-	Coarse	carra arra	914401001	mont doorda	ooo man dopan.						
			-	}										
3 GP	73		10-	SAND	nostly me	dium sand	<del>.</del>				<del> </del>			
			-		oony mo	aidili odili								
昌			-											
亅			-											
	_		12-											
			-											
昌			-	Same a	s above w	ith few co	arse sand at	13.0 feet			SP			
目			-	34		1011 00	Swille at							
₽₽	67		14											
目			-											
冒														
			-											
_=				<u> </u>		<del></del>					L	<u>153000</u>		
Signat	ure:	1.					Firm: RMT	Inc.					(7	734) 971-7080
		Sku	u	405				Ranchero Drive	Ann	Arbor, MI	4810	8 I		734) 971-9022

		M		SOIL BORING LOG	ВО		S NO. B-18
SAN	//PLE						Page 2 of 2
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS
5 GP 6 GP 7 GP	58		18-	Same as above with strong brown (7.5YR 5/6) staining in sand at 19.0 feet.	SP		No recovery on first attempt.
6 GP	60		22-	SAND mostly medium sand, some fine sand, trace coarse sand, brown (7.5YR 4/2), saturated, loose.			Groundwater sample collecte from 22 to 26 feet.
	4		24 —		SP		
			-	SAND mostly fine sand, little medium to coarse sand, pale brown (10YR 6/3), saturated, dense.	sw		
			28	Blind drill to 36.0 feet.			
	THE COLUMN TO TH		32-				Groundwater sample collecte from 32 to 36 feet.
			34 —			The second secon	
			36	End of boring at 36.0 feet below ground surface.			

							,	SOIL BOF	RING LOG		<u></u>	50	2010	NO 5 40	
												ВО		NO. B-19	
┠	acilit	y/Proje	ct Nam	e:					Date Drilling Starte	d:	Date Drilli	ng Comp		Page 1 of 2 Project Number	:
		Tecui	mseh	Prod	ucts Comp	anv - Phas	se II Investi	gation	4/15/09		Ì	15/09		8070.0	)2
-		Firm:				Drilling Met		9	Surface Elev. (ft)	тос	Elevation (f		Depth (	ft bgs) Borehole	
1		Те	rrapro	be, I	nc.		Direct Pus	h					34.0	2	-3
E	Boring		ion:  r	n RO	W on south		er of Cumn	nings	Personnel			Drillin	g Equip	ment:	_
					and Maum	nee Street	Tau i		Logged By - Scott Driller - Joe Fotjik					Geoprobe	
١			ity/or Vi mseh	illage:	County:	awee	State:	MI	Water Level Obsen While Drilling: After Drilling:	Date	/Time <u>4/</u>	15/09 00: 15/09 00:		Depth (ft bgs) Depth (ft bgs)	
H	SAM		113611		Lene	avvec		VII	Aiter Dilling.	Date	7111116 <u>47</u>	10/09 00.		Deptil (it bgs)	INIVI
	NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				LITHOLOGI ESCRIPTIO				nscs	GRAPHIC LOG	СОММЕ	NTS
					TOPSO	IL									
	1 22	69		- 2-	sand, tra medium	ace glass f stiff, fill.	ragments,	nonplastic,	coarse sand, fe black (7.5YR 2.5	5/1), m	noist,	CL- ML			
				-	sand, tra	CLAY mo ace gravel h yellow (1	ine es to	CL							
				4- - -	SAND I	mostly med	dium sand,	some fine s	and, trace coars	se sar	ıd,				
G	2 III	77		6 -	4/4), mo	n yellow ( i bist to satu	rated, med	ium dense.	ark yellowish bro	wn (i	UTK	SP			
60/83		<del></del>		8-	SILT WI plasticit	I <b>TH CLAY</b> y, yellowish	mostly silt a brown (10	, some clay, OYR 5/6), m	trace medium s oist, stiff.	and, I	ow	ML			
070.02 8/2			-	-	brownis	h yellow (1	dium sand, 0YR 6/8) g edium dens	rading to da	and, trace coars ark yellowish bro	se sar wn (1	id, 0YR	SP			
SDT 8	3	42		10-		CLAY med			h brown (10YR 5	5/6), d	ry,	CL- ML	W		
GPJ RMT CORP.				- - - 12	SAND i trace gr	mostly coa avel, yellov	wish brown	(10YR 5/4)	m sand, few fine , moist, dense.	sand	,				
SOIL BORING WELL CONSTRUCTION LOG 8070.02.GPJ RMT CORP.GDT 8070.02 8/28/09		40		- - 14-	Change	to crushed	a cobble, s	aturated at	ı∠.U feet.			sw	00.00.00.00.00.00.00.00.00.00.00.00.00.	Groundwater sams collected at 12-16	
NG WELL CONSTR				-									0000		
BORIE	Signa	ture:	1,				1	Firm: RMT	Inc					(734) 97	1-7080
SOIL			Mu	n	his	ta			Ranchero Drive	Ann	Arbor MI	48108		Fax (734) 97	

SAMI				SOIL BORING LOG	ВО	RING	3 NO. B-19 Page 2 of 2
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS
5 GP 6 GP 7 GP	45		20— 22— 24— 26— 28—	Change to mostly medium sand, some coarse sand, no gravel, dark yellowish brown (10YR 4/4) at 18.5 feet.  Change to trace gravel at 23.0 feet.	sw		
8 GP	100		30 32 34 36 3	SAND mostly medium sand, some fine sand, gray (10YR 5/1), saturated, dense.  CLAY mostly clay, some silt, trace coarse sand, high plasticity, greenish gray (GLEY1 5/1), moist, stiff.  End of boring at 34.0 feet below ground surface.	SP		Groundwater sample collected at 29-33 feet.

9.0	93a ==					SOIL BO	RING LOG							
7				***							ВО	RINC	NO. B	3-21
acility	/Projec	t Name	 <del>0</del> :				Date Drilling Started	d:	Date I	Drilling (	Comple	eted:	Page 1 of Project Nu	
7	Гесur	nseh	Prod	ucts Comp	any - Pha	se II Investigation	4/15/09			4/15			80	070.02
rilling	Firm:				Drilling Met		Surface Elev. (ft)	TOC	Elevation	on (ft)	Total	Depth (		rehole Di
orina	Te Locati	rrapro				Direct Push of Mohawk Street	Personnel				Drillin	40.0 g Equip		2
		b	etwe			nd Logan Properties	Logged By - Stacy Driller - Craig Tan				Dimini	g Equip	Geoprol	be
ivil To	own/Ci	ty/or Vil	llage:	County:		State:	Water Level Obsert While Drilling:		/Time	4/15/0	9 00:0	0 2	Depth (ft	bgs) _6
SAMI		mseh		Lena	wee	MI	After Drilling:	Date	/Time	4/15/0	9 00:0	<u>o</u> -	Depth (ft	bgs) <u>N</u>
AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOG DESCRIPT					SOSA	GRAPHIC LOG	CON	MENT
$\overline{}$				TOPSO	L							94		
亅					nostly fine	to coarse sand, little	clay, dark brown	(7.5Y	R		sw			
	52		2-	SANDY plastic,	CLAY mobrown (7.	ostly clay, some fine to 5YR 4/3), very soft, gr	ading to stiff at 2	:.0 feet	vel, t.	/	CL			
			4-			e to coarse sand, little 10YR 4/6), dense.	coarse gravel, d	ark			sw			
瞐	75		6-			m of high plasticity cla				$\Box$	CL	777	Groundwate	
			- 8-	saturate Above g	d, dense. grades to	mostly fine sand, som	·		-		SP		at 6-10 feet	•
			-	Blind dr	ill to 40.0	feet.								
			10-						•				i   	
			10-											
			12											
			-	1							ı		Groundwate at 13-17 fee	
	i		14-										:	
			-											
			- 16—											
												[ 		
			-								i		Dry from 17	to 29 feet
			18											
	ì		-											
	l		-											
			20—											
- 1												l	I	

		V		SOIL BORING LOG	во		<b>NO. B-21</b> Page 2 of 2
SAM	PLE						
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS
			22-				
			-				
			24-				
			26				
			- 28- - -				
			30— -				Dry from 30 to 34 feet.
			32— -				Attempted to collect water sample from 32 to 40 feet; little flow, no sample.
		,	34-				
			36-				
			38-	Drilling change at 38.0 feet indicating likely change to clay.			
		•	40	End of boring at 40.0 feet below ground surface.			
			42—				
			44				
			46-				
			48-				

800690000000	100a. pour	esse december				SOIL	BO	RING LOG						
													NO. Page 1	of 2
Facility/I				<del>,</del>				Date Drilling Starte	d:	Date Drilling		ted:	Project I	
		nseh	Prod	ucts Comp		e II Investigation	n	4/14/09	1	<u> </u>	4/09			8070.02
Drilling f		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.h. '	na	Drilling Meth			Surface Elev. (ft)	TOC	Elevation (ft)	Total	Depth (	π bgs)   E	3orehole Dia. (in)
Boring L		rrapro			1	Direct Push e of main buildir	าต	Personnel			Drillin	44.0 g Equip	ment:	2
		a	bout	400 feet ea	ast of Evar	ns Street	·9·	Logged By - Stacy Driller - Craig Tan	icala			9	Geopr	obe
Civil To		-	_	County:		State:		Water Level Obser While Drilling:		/Time _4/14/	09 00:0	<u>0                                    </u>	<u>Z</u> Depth (	(ft bgs) <u>19</u>
SAMP	_	mseh		Lena	awee	MI		After Drilling:	Date	/Time _4/14/	09 00:0	<u>0</u> ·	Depth (	(ft bgs) <u>NM</u>
	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHO DESCF				·	SS	GRAPHIC LOG	cc	DMMENTS
N A	RE	BLC	DEF								nscs	g.		
<u> </u>	58		2— - - - -	sand, lig SANDY brown (7 Gravel I	ght brown of CLAY modern of the	stly clay, some fi , moist, very stiff feet. <b>/EL</b> mostly fine t	ine to f.	coarse sand, p	lastic,	avel,	CL.			
1 GP 2 GP 3 GP 3 GP	79		4	Change	to fine to o	strong brown (7. coarse gravel at ew coarse sand,								
3 GP 11111111111111111111111111111111111	73		- 10— - - 12—	_		to coarse grave	el at 8	.0 feet.			sw	000000000000000000000000000000000000000		
4 GP [[] [] [] [] [] [] [] [] [] [] [] [] []	75		14— 		to loose a							000000000000000000000000000000000000000		
5 G	75		18—	<u>∇</u> Saturate	ed at 19.0 f	eet.						40 00 00 00 00 00 00 00 00 00 00 00 00 0	Groundwa at 18-23 f	ater sample collected eet.
			22-	Blind dri	iii to 44.0 fe	9 <b>6</b> 1.				,				
Signatur	re:	M	u,	sut			RMT 3754	Inc. Ranchero Drive	e Ann	Arbor, MI	48108	3		34) 971-7080 34) 971-9022

		W.		SOIL BORING LOG	ВО		NO. B-22 Page 2 of 2
SAI	MPLE						
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	SOSN	GRAPHIC LOG	COMMENTS
			24-				
1			24				
			26				
			28-			,	
			-				÷ .
			30-	•			
			32-				
			-				
			34-				
			-				
			36				
			38-				
60/			40-				Groundwater sample collected at 40-44 feet.
.02 8/26			-				
OT 8070			42				
SORP.GI			44-	Drilling change at 43.0 feet indicating likely change to clay.			
J RMT_C			-	End of boring at 44.0 feet below ground surface.			
0.02.GP.			46-				
06 807							
CTION L			48-				
NSTRU							
ÆLL CO			50-				
SOIL BORING WELL CONSTRUCTION LOG 8070.02.GPJ RMT_CORP.GDT 8070.02 8/26/09			52-				
SOIL BY			-				

200 AV			•		SOIL BOI	RING LOG						
			333						BO		NO. B-23	3
acility/Proje	ct Nam	e:				Date Drilling Started	:	Date Drilling	Comple		Project Number	r:
		Produ	ucts Comp		se II Investigation	4/13/09		L	3/09		8070	
Orilling Firm:				Drilling Meth		Surface Elev. (ft)	TOC	Elevation (ft)	Total	Depth (	ft bgs) Boreho	e Dia. (in)
Te Boring Locati		be, Ir		side of B	Direct Push atterson Street about	Personnel			Drillin	39.0 g Equip	ment:	2
	4	100 fe	et west of I		Street	Logged By - Scott I Driller - Joe Fotjik		rook	Diam	a cdaib	Geoprobe	
Civil Town/Ci	-		County:		State:	Water Level Observer While Drilling:			09 00:0			
Tecu SAMPLE	mseh I		Lena	wee	MI	After Drilling:	Date	/Time _4/13/	0 <u>9 00:0</u>	0_	Depth (ft bgs)	<u>NM</u>
SAIVIFLE	-											
NUMBEH AND TYPE RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGI DESCRIPTIO				nscs	GRAPHIC LOG	СОММ	ENTS
			TOPSOI	L								
		]										
33 1 AP 2 AP		2-	gravel, l	CLAY mo ow to med , very stiff.	stly clay, some fine to lium plasticity, dark ye	coarse sand, fevillowish brown (10	w fine OYR 4	4/6), dry	CL			
2 AP = 50		4— - - - 6—	high pla	sticity, dar	mostly clay, few to lik olive brown (2.5Y 3/	3), moist, soft.		d,	CL			
		- 8-			to coarse sand, few to 0YR 4/4), dry, very de		ark					
3 65 AP		10-	Change	to moist,	dense at 10.0 feet.							
		12-							sw			
4 III 69		- - 14-	∑ Change	to saturat	ed, medium dense at	13.0 feet.					Groundwater san at 14-18 feet. Groundwater san	nple collect
		16-									in adjacent utility 14-16 feet.	corridor at
	<u> </u>			•								
		1.			Firm: RMT						(734) 97	

		-		SOIL BORING LOG		-	
					ВО	RINC	G NO. B-23 Page 2 of 2
SAM	IPLE						
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS
5 GP 11 11 11 11 11 11 11 11 11 11 11 11 11	75 60		20-	Changes to loose at 20.5 feet.	sw		
	<b>-</b> i		26 —	SAND mostly medium sand, little fine sand, trace coarse sand, gray (10YR 5/1), saturated, medium dense, cobble at 25.0 feet.	SP		Hard pounding at 27.0 feet.
SOIL BORING WELL CONSTRUCTION LOG 8070.02.GPJ RMT_CORP.GDT 8070.02 8/28/09           Θω         Θω           Πητητη Πητη	92		32	SAND mostly coarse sand, little medium sand, trace fine sand, dark gray (10YR 4/1), saturated, loose.  Medium sand content increases with depth.	SP		Groundwater sample collected at 30-34 feet.
SOIL BORING WELL CONSTRUCTION LOG  8 &	100		36-	CLAY mostly clay, some silt, trace coarse sand, high plasticity, greenish gray (GLEY1 5/1), moist, very stiff.  End of boring at 39.0 feet below ground surface.	CL		

200000				**	<u>-</u>	SOIL BO	RING LOG							
		M								во	RING		. B-24	,
Facili	ty/Proje	ct Nam	e:				Date Drilling Started	:	Date Drilling	Comple	eted:	Page 1	l of 2 t Numbei	r:
				ucts Comp	any - Phas	se II Investigation	4/13/09		_	3/09			8070.	
Drillir	g Firm:				Drilling Meth		Surface Elev. (ft)	тос	Elevation (ft)		Depth (	ft bgs)		e Dia. (in)
			obe, l			Direct Push					37.5		2	2-3
Borin	g Locati					treet across from th of Mohawk Street	Personnel Logged By - Stacy Driller - Craig Tanio			Drillin	ng Equipment: Geoprobe			
Civil '	Town/Ci	ty/or Vi	llage:	County:		State:	Water Level Observ While Drilling:		/Time 4/13/	00.00.0	N 17	/ Dont	h (ft bgs)	6
	Tecu	mseh		Lena	awee	MI	After Drilling:			09 00:0			h (ft bgs)	6 <u>NM</u>
SAN	/PLE													•
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	·		LITHOLOG DESCRIPTI				nscs	GRAPHIC LOG	C	OMME	ENTS
					LT AND SU	JBBASE					///>			
	SAND									sw				
1 GP 11 11 11 11 11 11 11 11 11 11 11 11 11	100		2-	<b>SANDY</b> grayish	CLAY mo brown (10	stly clay, little fine sar YR 3/4), moist, stiff to	nd, plastic, very d very stiff, orange	ark e mot	lling.					
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			_	4-inch la	ayer of fine	e sand at 3.25 feet.				CL				
			4	Change	to very ha	ard at 4.0 feet.				J CL				
			-										cent utility of	ple collecte corridor at
			6	SAND r	mostly fine	to coarse sand, trace	fine to coarse su	ubrou	nded		//	Ground at 6-10		ple collecte
2			-	graver,	dark yenov	visit blown (1011t 4/4)	, saturateu, ueris	c.						
GP 3	100		8		•									
			-											
			10-	Changa	to modium	n dense at 10.0 feet.								
			-	Change	to mediun	i dense at 10.0 leet.								
			- 12							sw				
3 GP	50		-											
			, ,	,										
			14											
			-	Change	to dark gr	ay (10YR 4/1), loose t	o medium dense	at 15	5.5 feet.					

Firm:

RMT Inc. 3754 Ranchero Drive Ann Arbor, MI 48108

				SOIL BORING LOG	BORING NO. B-24 Page 2 of 2					
SAM		NTS	EET	LITHOLOGIC		90	COMMENTS			
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	DESCRIPTION	nscs	GRAPHIC LOG				
4 GP 5 GP 6 GP	0		20 — 22 — 24 —	Same as above.  Change to mostly fine to medium sand, trace coarse sand, no gravel at 25.0 feet.	sw		Logged based on cutting, could not be removed fron tooling.			
6 B 6 B			28-	Change to fine to coarse well graded sand with trace gravel at 30.0			Groundwater sample colle at 28-32 feet.			
			32-	CLAY WITH SAND mostly clay, few fine to coarse sand, slight plasticity, dark gray (10YR 4/1), moist, hard.						
7 GP 8 GP	100		34	Change to saturated at 35.0 feet.	CL					
			38-	End of boring at 37.5 feet below ground surface.						

***				Y400		SOIL B	ORING LOG			•			
BORING NO. B-26													
				F1-1111					I			Page 1	
Faci	lity/Proje			uata Cama	any Dha	an II Importantion	Date Drilling Started	1:	Date Drilling	Comple 4/09	eted:	Project	8070.02
Drilli	ng Firm:	nisen	Flou	ucts Comp	Drilling Met	se II Investigation	Surface Elev. (ft)	TOC	Elevation (ft)		Depth (	ft bgs)	Borehole Dia. (in)
	-	rrapro	obe, I	nc.		Direct Push					33.0	,	2
Bori	ng Locat	ion:	n RO	W on south		Cummings Street	Personnel			Drilling Equipment:			
		t	etwe	en Ottawa	Street and	d Maumee Street	Logged By - Scott Driller - Joe Fotjik	ivildaler	огоок			Geop	robe
Civil	Town/C	ty/or Vi	llage:	/Time 4/14/	09 00:0	0 V	Denth	n (ft bgs)15					
	Tecu	mseh			09 00:0			(ft bgs) <u>NM</u>					
SA	MPLE												
	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLO DESCRIP					90	င	OMMENTS
띪	KEB I	g	르			일							
NUMBER AND TYPE		<u>%</u>	<u>E</u>							nscs	GRAPHIC LOG		
-	<u> </u>	<u></u>		TOPSOI	i					5	U J		
[			-			H SAND mostly clay	some silt. little me	edium	<del>, _</del> ,		1		
. [			-	sand, fe	w fine sar	nd, medium plasticity	, dark yellowish br	own (	10YR				
			-	1 4/6), mo	oist, stiff.					CL			
GP	<b>44</b>		2										
			-	COBBL	E crushed	i.							
ŀ			-			nostly coarse sand, s		dium					
			-   4-	sand, st	rong brow	n (7.5YR 4/6), moist	, aense.			SP-	//		
			"-							sc			
	44		-	0.4115							//		
			-			rse sand, some med avel, brown (10YR 4							
2 GP	67		6-		,	, ,	,, ,,						
~"			-										
ı			-										
			-										
	-		8-							sw			
			-										
-			-										,
3	∄		-	-									
GP	67		10-										
			_			dium sand, trace coa 6/3), dry, loose.	arse sand, trace fin	ie sar	ıd,				
	<b></b>		12-	paio bio		(a), a), 10000.				SP			
			_	GAND.									
			-			rse sand, some med avel, brown (10YR 5							
			-										
4 GP	65		14—							sw			
			-							SVV			
			-	<u>∨</u> Change	to mostly	medium sand, little	fine sand, trace co	arse	sand, no				
			-	graveľ, t	orown (1Ó`	YR 5/3), saturated at	15.0 feet.						
		i		<u>,</u>							النست		
3 GP 4 GP	ature:			1 1			IT Inc.						34) 971-7080
		_/A	nul	lut		375	54 Ranchero Drive	: Ann	Arbor, MI 4	48108	3	Fax (7	34) 971-9022

		M.		SOIL BORING LOG	во	Rage 2 of 2	
SAM	PLE						
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS
5 GP	75		20 — 22 — 24 — 26 — 30 — 32 — 32 — 32 — 32 — 32 — 33 — 34 — 34	Blind drill to 33.0 feet.	SW		Groundwater sample collect 16-20 feet.  Groundwater sample collect at 29-33 feet.
			34	End of boring at 33.0 feet below ground surface.			
			_				

anningia. dan	SOIL BORING LOG												
	BORING NO. B-29 Page 1 of 3 Facility/Project Name: Date Drilling Started: Date Drilling Completed: Project Number:												
l.						Date Drilling Started	d:	Ī -	-	eted:	Project Number:		
		Prod	ucts Comp		e II Investigation	4/13/09 Surface Elev. (ft)	T00	<u> </u>	3/09	Danish	8070.02		
	rrapro				Direct Push		100	Elevation (ft)		46.0	(ft bgs) Borehole Dia. (in)		
Boring Locat			W on wests eet south c		mee Street about Street	Personnel Logged By - Stacy Driller - Craig Tani			Drillin	g Equi	Geoprobe		
Civil Town/C	ity/or V	illage:	County:	/Time _4/13/	09 00:	00 🌣	Depth (ft bgs) 8						
Tecu SAMPLE	mseh			09 00:		Depth (ft bgs) NM							
NUMBER AND TYPE RECOVERY (%)	BLOW COUNTS	nscs	GRAPHIC LOG	COMMENTS									
1 GP 10111111111111111111111111111111111		2- 4- 6- 10- 12- 14-	SANDY brown (**  SANDY brown (**  SAND f  CLAY W plasticity  SAND f  yellowisi	to very dan with CLAY 10YR 5/4), CLAY mod 10YR 5/3), ine to coan y, dark gray	stly clay, some fine to y dark grayish brown (10YR 2/2). The mostly fine to medium dense stly fine to medium swet, very stiff to stiff se sand, brown (10YR 4/2) mostly clay, little fir rish brown (10YR 4/2) se sand, trace to few DYR 4/6), saturated,	um sand, little claye.  and, little clay, hig R 5/3), saturated, ne to medium sand 2), moist, very stiff.	h plas	owish sticity,	SW-SC SW CL SW		Groundwater sample collected at 8-12 feet.		
Signature:		ku	, So	+		T Inc. 4 Ranchero Drive	Ann	Arbor Mi 4	8108	<u> </u>	(734) 971-7080 Fax (734) 971-9022		

				SOIL BORING LOG	во	RINC	<b>NO. B-29</b> Page 2 of 3
SAM	PLE						
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
			-	Blind drill to 46.0 feet.			
			-	Diffic drift to 40.0 feet.			
			18-				
			"				
		<u> </u>	-				
			20-				
			- 20				
			-				
			22				
			22				
			-				
							1
			24-				
			-				
			26-				
			-				
			28-				
			30-				
			-				
			32-				
			34-				
			-				
			36-				
							1

				SOIL BORING LOG	BORING NO. B-29 Page 3 of 3				
SAM	PLE								
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS		
			38-				Groundwater sample collected at 38-42 feet.		
			40-						
			42-				Dry from 42 to 46 feet.		
			44						
			46	Drilling change at 46.0 feet indicating likely change to clay.  End of boring at 46.0 feet below ground surface.					
			48-						
			50						
			52-						
			54— -						
			56-						
			58-						

Γ	SOIL BORING LOG  BORING NO. P.30													
	BORING NO. B-30 Page 1 of 3 Facility/Project Name: Date Drilling Started: Date Drilling Completed: Project Number:													
Ī									_	i:	Ī			Project Number:
Į,		Tecui Firm:	nseh	Prod	ucts Comp	any - Phas Drilling Meth		tigation	4/14/09 Surface Elev. (ft)	TOC	4/14 Elevation (ft)		Donth	8070.02 (ft bgs) Borehole Dia. (in)
ľ	אווווונע	<i>*</i>	rrapro	be. I	nc.	-	Direct Pu	sh	Surface Elev. (it)	100	===	iolai	44.0	2
ŀ	Boring		on: E	ast o	f Maumee	Street acro	ss from E		Personnel			Drillin	g Equip	
-			3	80 fe	et south of	Mohawk S	treet		Logged By - Stacy Driller - Craig Tanio					Geoprobe
[	Civil T	own/Ci	ty/or V	llage:	County:		State:		Water Level Observ While Drilling:			09 00:	00 <u>V</u>	Depth (ft bgs) 6.5
Ļ		-	nseh		Lena	wee		MI	After Drilling:		/Time <u>4/14/</u>			Depth (ft bgs) NM
ŀ	SAM	PLE												
	NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				LITHOLOGI DESCRIPTIO				nscs	GRAPHIC LOG	COMMENTS
t	甘				ASPHAL	T AND SU	<b>JBBASE</b>						///\	
d		79		2- -	<b>CLAY</b> n (2.5Y 4/	nostly clay, 3), moist, h	few fine inard.	to medium s	and, plastic, olive	brov	vn	CL		
				4 - -	wet, der	se.	gravel to	cobbles, wh	ellowish brown (1 ite (10YR 8/1), dr	y, ha	rd.	SP	, C	
		75		6 - - 8	yellowisl ⊻mostly fi	h brown (10 ine to medi	0YR 4/4), ium sand,	wet to satur little coarse	arse sand, little gr ated, dense. Cha sand.	ravel, inge t	dark o	sw	000000000000000000000000000000000000000	Groundwater sample collected at 6-11 feet.
SOIL BORING WELL CONSTRUCTION LOG 8070.02.GPJ RMT CORP.GDT 8070.02 8/28/09	8 Blind drill to 44.0 feet.													
RING WELL CONSTRUCTION LOG &				- 14 — - -										
	Signat	иге:		11	, lo			Firm: RMT		۸	A show \$41.44	2400		(734) 971-7080
ŏL				Mich	1 100	1		3/04	Ranchero Drive	AOO.	AIDUI IVII 48	סטוכ		Fax (734) 971-9022

			11.7934	SOIL BORING LOG					
				•	BOF		NO. B-30 Page 2 of 3		
SAM	PLE								
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS		
				Blind drill to 44.0 feet.					
			18-						
			20-						
			22-						
			24-						
			26-						
20070			28-						
			30-				Groundwater sample collected at 30-34 feet.		
2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5			32-						
			34-						
COLE DOMING WELL CONSTITUTION LOG SOFT, STORY CONT. SOFT SOFT STATES			36-				Dry from 36-44 feet.		

*	110	M		SOIL BORING LOG	BORING NO. B-30 Page 3 of 3					
SAM	IPLE									
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS			
			38-							
			40-							
			- 42-							
			44-	End of boring at 44.0 feet below ground surface.						
			46 -							
			48-							
			50— -							
			52— -							
			- 54 <i>-</i> -							
			56 — -							
			- 58							

						30	JIL DUI	HING LOG			В	OR	RING	NO.	. B-31
*******	*000K \$88	und 60007 0000	., 48000											Page 1	of 2
Facili	y/Proje	ct Name	e:	T				Date Drilling Starte	d:	Date Dr	illing Con	nplete		Projec	t Number:
			Prod	ucts Compa		se II Investiga	ıtion	4/13/09			4/13/0				8070.02
Drillin	g Firm:				Drilling Meth			Surface Elev. (ft)	TOC	Elevation	(ft) To			ft bgs)	Borehole Dia. (in)
		errapro				Direct Push		(					12.0		2
Borin	g Locat	tion: E	East c	of Maumee	Street, nea	ar Patterson S	Street	Personnel Logged By - Scot Driller - Joe Fotjik		brook	Dr	rilling	Equip	<sub>ment:</sub> Geop	robe
Civil	Fown/C	ity/or Vi	llage:	County:		State:		Water Level Obser	vations:						
	Tecu	ımseh		Lena	awee	МІ		While Drilling: After Drilling:		_	4/13/09 0 4/13/09 0				h (ft bgs) <u>7.5</u> h (ft bgs) <u>NM</u>
SAN	IPLE											T			
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				HOLOG SCRIPTIO				occi-	nscs	GRAPHIC LOG	С	OMMENTS
			_	TOPSOI	IL .							1			
			_												
1 GP	60	:	2	SILTY CLAY WITH SAND mostly clay, some silt, little coarse sand, few medium sand, nonplastic, yellowish brown (10YR 5/8), moist, stiff.  Sand content decreases with depth. Change to very stiff, dry at 3.5 feet.								:L-I			
2 GP	100		4— - - 6—	SILTY C dry, very		tly clay, some	e silt, non	plastic, brown (	7.5Y 5	5/3),	C	-1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/			
3   1   1   1   1   1   1   1   1   1			- - 8-	∑ <b>SAND</b> n 5/2), wet	nostly med t to satura	dium sand, fet ted, loose to d	w fine sa dense.	nd, grayish bro	wn (10	)YR	s	iP.			
3 GP	88		- - 10-	sand, fe	w fine san nedium der	d, high plastionse.	city, dark	ome silt, little m grayish brown	(10YF	1 4/2),	С	L- //		0	
3			-	SAND n dark gra	nostly coal	rse sand, som n (10YR 4/2),	ne mediu saturate	ım sand, few fin d, loose.	e san	d,	S	w		Ground at 10-14	water sample collected 4 feet.
			12-	Blind dri	ill to 29.0 fo	eet.	****								
			14—  												

SOIL BORING WELL CONSTRUCTION LOG 8070.02.GPJ RMT\_CORP.GDT 8070.02 8/26/09

Signature:

RMT Inc. 3754 Ranchero Drive Ann Arbor, MI 48108

				SOIL BORING LOG	BORING NO. B-31				
SAM	1PLE						Page 2 of 2		
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS		
			20 — 22 — 24 — 26 — 28 — 28 —				Groundwater sample collect		
			30	End of boring at 29.0 feet below ground surface.					

			W	p. 240320000000000000000000000000000000000	·	· —	SOIL BO	PRING LOC	à						
	, in		V								ВО	RING	NO.	. B-32	
													Page 1	of 2	
F	-	-	ct Name					Date Drilling S		Date Drilling		ted:	Projec	t Number:	
L			nseh	Prod	ucts Comp		e II Investigation	4/14			4/09	David di	fa la	8070.0	
l D	rılling	Firm:				Drilling Metho		Surface Elev.	(π)   <sup>TO</sup>	C Elevation (ft)	lotal	Depth (1	π bgs)		Dia. (in)
l <sub>D</sub>	oring	l e Locati	rrapro				Direct Push er of Patterson Stree	t Personnel			Drillin	12.0 g Equip	ment:		2
			а	ınd M	aumee Str		or or ratterson Stree	Logged By - Driller - Joe I		lebrook			Geop	robe	
С			ty/or Vil	_	County:		State:	Water Level C While Drilling	ı: Da	ate/Time <u>4/14/</u>	09 00:0		Deptl	h (ft bgs)	_8_
$\vdash$	SAM		mseh		Lena	awee	MI	After Drilling:	Da	ate/Time4/14/	09 00:0	<u>0_</u>	Depti	h (ft bgs)	<u>NM</u>
	AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOG DESCRIPT				nscs	GRAPHIC LOG	С	OMME	NTS
1 GI		52		- 2- -	few med	LAY WITH lium sand,	SAND mostly clay, low to medium plas e brown (10YR 7/4)	ticity, dark gra	ay (7.5Y	R 4/1)	CL- ML			-	
2 GI		67		6-	SAND n (10YR 5 SILTY C plasticity SAND n	nostly med (/4), moist, (LAY most y, dark yellonostly coar	ent increases with d ium sand, trace fine loose. ly clay, some silt, tra owish brown (10YR se sand, some med brown (10YR 6/3), di	sand, yellow ice medium s 4/4), moist, v ium sand, littl	and, hig ery stiff. e fine sa	h and,	SP CL- ML		50 50 50 50 50 50 50		
3 GH		71		8— - 10— -		to saturate	ed at 8.0 feet. Grave	I content dec	reases v	vith depth.	sw		in adjac 8.5-10.	cent utility c 5 feet. Iwater samp	ole collected orridor at ole collected
				14-	in a diff										
Si	gnat	ure:		//		-		T Inc.					(7	734) 97	1-7080
ğĹ			Λ	ker	is M	75	375	4 Ranchero [	Prive Ar	nn Arbor, MI	48108	3 1	Fax (7	734) 97	1-9022

				SOIL BORING LOG	ВО	ORING NO. B-32  Page 2 of 2			
SAM	IPLE								
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS		
ĺ			_						
			18-						
			20-						
			22-						
			24						
		į	26-				Groundwater sample co at 25-29 feet.		
		į	28-						
			}	End of boring at 29.0 feet below ground surface.	_				
			30-			and the second			
			32-						
		!	34-						
			36-						

<b>100</b> 0000000000000000000000000000000000			•			SOIL BOI	RING LOG						
										во		NO Page 1	. <b>B-33</b>
Facility/Pro	ect Nan	ne:	******			<del></del>	Date Drilling Started	:	Date Drilling	Comple		Projec	t Number:
Tec	umset	Prod	ucts Comp	any - Pha	se II Inves	tigation	4/15/09		4/1:	5/09			8070.02
Drilling Firm				Drilling Met			Surface Elev. (ft)	TOC	Elevation (ft)		Depth (	ft bgs)	Borehole Dia. (in)
T	errapı	obe, I	nc.		Direct Pu	sh					27.0		2
Boring Loca	ation:	in RO	W on west			treet, about	Personnel			Drillin	g Equip	ment:	
0: 1: 7			et north of	Russell R	_		Logged By - Stacy Driller - Craig Tanio	cala				Geor	orobe
Civil Town/ Tec	umsel		County:	awee	State:	MI	Water Level Observ While Drilling: After Drilling:	Date	/Time <u>4/15/</u>	09 00:0		Dept Dept	h (ft bgs) <u>4</u> h (ft bgs) <u>1</u>
SAMPLE	T		20110								<u> </u>	2050	(250)
NUMBER AND TYPE RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				LITHOLOGI DESCRIPTIO				nscs	GRAPHIC LOG	C	COMMENTS
1 GP 2 GP 777 Signature:		2— 2— 4— 6— 10— 12— 14—	SANDY plasticity  SAND r  SAND r  loose to  CLAY n brown (**	mostly fine medium o mostly clay 10YR 5/2)	e to coarse dense.  y, little fine y, moist, ha  O mostly fine YR 4/3), sa	sand, brown to coarse sard, interbedo	and, slight plastic ded with sand.	turate city, g	rayish	CL SW		feet, wa within r	first observed at 4.0 ater rose to 1 foot ninutes. water sample collected eet.
Signature:		Han	1-	+		Firm: RMT 3754	Inc. Ranchero Drive	Ann	Arbor MI	48104	3		734) 971-7080 734) 971-9022

				SOIL BORING LOG	ВО		<b>G NO. B-33</b> Page 2 of 2
SAM	PLE						
AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	SOSN	GRAPHIC LOG	COMMENTS
			18-				Groundwater sample coll at 17-21 feet.
			20-				Dry from 21 to 27 feet.
			22				
			24-				
				Drilling change at 27.0 feet indicating likely change to clay.			
			28-	End of boring at 27.0 feet below ground surface.			
			30-				
			32				
			32     -   -   -				
			34-			P. Samuel Co.	
			36-				

	ann. see	ia antiam					SOIL BOI	RING LOG						
											BOF		NO. Page 1	<b>B-34</b> of 3
Facilit	y/Proje	ct Nam	e:		****			Date Drilling Starte	d:	Date Drilling	Compl			t Number:
	Tecu	mseh	Prod	ucts Comp	any - Phas		stigation	4/20/09		4/20	0/09			8070.02
Drillin	g Firm:				Drilling Meth	od:		Surface Elev. (ft)	TOC	Elevation (ft)	Total	Depth (	(ft bgs)	Borehole Dia. (ir
		rrapro			1	Direct Pu	· - · · · · · · · · · · · · · · · · · ·					45.0		2
Boring	g Locat						et between	Personnel Logged By - Scott	Middle	brook	Drillin	g Equip	oment:	
		·	neia	a Street an	d Maumee	Street		Driller - Steve Bis		DIOOR			Geop	robe
Civil T	fown/C	ty/or Vi	llage:	County:		State:		Water Level Obser While Drilling:			/09 00:	00 57	Dont	/# has\ 12.5
	Tecu	mseh		Lena	awee		MI	After Drilling:		/Time <u>4/20</u> /Time <u>4/20</u>				n (ft bgs) <u>12.5</u> n (ft bgs) <u>NM</u>
SAM	IPLE													
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				LITHOLOG DESCRIPTION				nscs	GRAPHIC LOG	C	OMMENTS
I≡				TOPSOI	CLAY most	ily clay, s	ome silt, few	coarse sand, m	edium					
1 GP	44		2	plasticity Change	y, yellowish	i brown ('	10YR 5/6), m	ioist, stiff to very	stiff.		CL- ML			
			6 - - 8	clay, tra	ce gravel, t	trace silt,	brown (7.5Y	some medium s R 4/2), moist, m	edium	dense.	SP- SC			
3 GP			- - 10- - - -	trace gra	avel, pale t	orown (10	)YR 6/3), dry	se sand, little fin , medium dense	•		sw			
4 GP			14— - - 14— -	<del>-≚</del> increase	es with dep	th.	ed at 12.0 fe	et. Coarse sand	i conte	ent				water sample d at 14-18 feet.
Signa	ature:		-		ill to 45.0 fe	et.	Firm: RMT	Inc.					(7	<sup>(</sup> 34) 971-708
		1	feer	1 h	-4			Ranchero Drive	Ann	Arbor MI 4	8108			'34) 971-902:

		1		SOIL BORING LOG	ВО		6 NO. B-34 Page 2 of 3		
SAM	PLE						,		
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS		
			18-	Blind drill to 45.0 feet.					
			20-						
			- - -						
			22— - -						
			24						
			26- -						
			28-						
			30-						
		-	32-						
			34-						
			36						
			36-						
			38-						

BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION		907	COMMENTAL
	10	·	SOSN	GRAPHIC LOG	COMMENTS
	40-				Groundwater sample collected at 41-45 feet.
	42-				collected at 41-45 feet.
	44-				
	46-	End of boring at 45.0 feet below ground surface.			
	48-				
	50-				
	52 — -				
	54-				
	56-				
	58-				
	60-				
		46 — 48 — 50 — 52 — 54 — 558 — 58 — 58 — 58 — 58 — 58 — 5	End of boring at 45.0 feet below ground surface.  48- 48- 50- 52- 54- 58-	End of boring at 45.0 feet below ground surface.  48- 50- 52- 54- 58-	End of boring at 45.0 feet below ground surface.  48 –  50 –  52 –  54 –  58 –  58 –

20000000				•		S	OIL BO	RING LOG							
				**							во	RING	G NO	. <b>B-</b> 35	,
								I					Page 1		
	y/Proje			uata Cama	any Dha	oo II lawaatia	uation.	Date Drilling Started	1:	Date Drilling	•	eted:	Projec	t Number	
	Firm:	nsen	Prod	ucts Comp	Drilling Met	se II Investig	jation	4/20/09 Surface Elev. (ft)	TOCE	4/2 Elevation (ft)	0/09 Total	Denth	(ft bgs)	8070.	02 Dia. (in)
Dimini	-	rranr	obe, I	nc	Dining West	Direct Push	1	Carlado Elov. (it)	1001		Total	34.0		DOTOTION	2
Boring	Locati				east corn	er of Kilbuck		Personnel	1		Drillin	g Equip			<u></u>
				aumee Str				Logged By - Stacy Driller - Craig Tank					Geop	robe	
Civil 1	own/Ci	ty/or Vi	llage:	County:		State:		Water Level Observ While Drilling:		Time _4/20/	09 00:0	<u> </u>	<u>7</u> Dept	h (ft bgs)	5_
_	Tecu	mseh	· · ·	Lena	awee	M	11	After Drilling:	Date/	Time _4/20/	09 00:0	0 <u>0</u>	Dept	h (ft bgs)	<u>NM</u>
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				ITHOLOGI ESCRIPTIO			·	nscs	GRAPHIC LOG	C	ОММЕ	ENTS
				TOPSOI	IL							1			
			_	SAND r dark yel	nostly fine lowish bro	e sand, little i own (10YR 4	medium sa /6), moist	and, trace coarse to wet, loose.	sand	,	SP				
1 G 2 G	42		2— -					coarse sand, sli , moist to wet, st			CL				
			4					and, trace coarse to wet, loose.	e sand	,	SP				
			_	SANDY	CLAY mo	ostly clay, so	me fine to	coarse sand, pla	astic,		CL	//			
			-	SAND r	nostly fine		medium sa	and, trace coarse	sand	,		//	Ground at 5-9 f	water sam	ple collecte
2 GP	83		6-	_		own (10YR 4 ayer at 6.0 fe		ted, loose.			SP		DUP-0	7	
			8-	interbed	nostly clay Ided with	sand.	rk gray (10	YR 4/1), wet, m	edium	stiff,	CL				
			10— 12— 14—												
											l	<u> </u>	L		
Signat	ure:		/H	Tic 1	16	Fi	rm: RMT	Inc.		Arbor Mi	40104			(34) 97	
			100	ul 1	un		3/54	Ranchero Drive	ADD.	MIDUI, WII	4010	י	r-ax (/	O4) 9/	1-9022

				SOIL BORING LOG	ВО	BORING NO. B-35 Page 2 of 2					
SAM	PLE										
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS				
	:		18-								
			20-								
			22-								
	į		24								
			26-								
			28-								
			30-				Groundwater sample colle at 30-34 feet.				
			32-								
			34-	Drilling change at 34.0 feet indicating likely change to clay.  End of boring at 34.0 feet below ground surface.							
			36-								

							SOIL BOI	RING LOG			<b>D</b> 2	DI :-	NO 5 00
14.0	λl	7.									BO	RING	<b>NO. B-36</b> Rage 1 of 2
Facili	ty/Proje							Date Drilling Started	d:	Date Drilling		eted:	Project Number:
Drillir	l ecu g Firm:	mseh	Prod	ucts Comp	any - Phas Drilling Meth		tigation	5/13/09 Surface Elev. (ft)	TOC	5/13 Elevation (ft)		Depth (	8070.02 ft bgs) Borehole Dia. (in)
	Te	rrapro			I	Direct Pu						25.0	2-3
Borin	g Locati			W on north /yandotte S		er of Kilbu	ck Street	Personnel Logged By - Stacy Driller - Joe Fotjik		ve Bischoff	Drillin	g Equip	Geoprobe
Civil	Town/C	ty/or Vi	llage:	County:	<u> </u>	State:		Water Level Observ		/Time 5/13/0	09 00:0	0 🌣	Depth (ft bgs) 12
- SA	Tecu	mseh		Lena	awee		MI	After Drilling:	Date	/Time <u>5/13/</u> (	09 00:0	o -	Depth (ft bgs) NM
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				LITHOLOG DESCRIPTIO				nscs	GRAPHIC LOG	COMMENTS
				TOPSO	IL								
1 GP	67		- 2-	gravel, l very stif	low plastic	ity, dark y	ellowish brov	coarse sand, fe vn (10YR 4/4), c	dry to i	moist,	CL		
		:	-	brown (1	10YR 4/4),	moist, de	nse.	ne gravel, dark			sw		
			4-	to low pl	lasticity, gi	ray (10ÝŘ	5/1), dry, ha	coarse sand, no ard, orange mott ne gravel, dark	ling.		CL		
2 GP	88		6-	brown (*	10YR 4/4),	moist to	wet, dense.	-	•		sw	777	
			- - 8—	(10YR 3	3/1), moist	, rew siit, i to wet, ve	race tine sa ry stiff.	nd, plastic, very	dark (	gray			
			- -	Same as	s above.		•				CL		
GP	92		10— - -	_	to little fin			· · · · · · · · · · · · · · · · · · ·					·
			- 12-	gray (10 ▽	mostly med YR 3/1), w to saturate	vet, loose	to medium d	and, little coarse lense.	sand,	dark			
3 GP IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	100		- - 14- - -								SW		Groundwater sample collected at 12-16 feet.
	=				<del>-</del>					<u>.</u>	-	p (94)44	<u></u>
Signa	iture:	Sta	u,	m (			Firm: RMT 3754	Inc. Ranchero Drive	e Ann	Arbor, MI	18108	3	(734) 971-7080 Fax (734) 971-9022

				SOIL BORING LOG	во		6 NO. B-36
SAM	PLE						Page 2 of 2
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS
				Change to mostly coarse sand, some medium sand at 16.0 feet.	sw		Groundwater sample collected at 16-20 feet.
5 GP	83		18-	<b>GRAVEL WITH SAND</b> mostly fine to coarse sub-rounded gravel, little coarse sand, few fine to medium sand, dark gray (10YR 3/1), saturated, dense.	GW	000	
			20_	SAND mostly medium sand, little fine sand, little coarse sand, dark gray (10YR 3/1), saturated, loose to medium dense.	sw		
១២ e e	100		22-	CLAY mostly clay, little silt, trace coarse sand, high plasticity, dark gray (10YR 3/1), wet, medium stiff to stiff.	CL		
			24-	End of boring at 25.0 feet below ground surface.			
			26				
0.02 8/26/09			28				
Wi_COAP.GDI 80/			30				
JG 80/0.02.GPJ HI			32-				
CONSTRUCTION			34				
SOIL BOHING WELL CONSTRUCTION LOG 80/0.02.GFJ HMT_COFF'.GDT 80/0.02 8/28/09			36-				

Γ			0000	0 3003000000000000000000000000000000000			SOIL BO	RING LOG						
													NO. B-38	
F			ct Name					Date Drilling Started		Date Drilling		ted:	Project Number	
Ļ			nseh	Prod	ucts Comp		e II Investigation	5/13/09	T00	5/10		Do-4- 1	8070.0	02 Dia. (in)
ľ	rilling	Firm:		ا ما		Drilling Meth	od: Direct Push	Surface Elev. (ft)	1001	Elevation (ft)	lotal	Depth ( 42.0		: Dia. (in) 2-3
L	orina	Locati	rrapro				er of Potawatamee	Personnel	į		Drillin	42.0 g Equip		2-3
			9	Street	and Wyan		et	Logged By - Stacy Driller - Joe Fotjik a	ind Ste	ve Bischoff		9 — 4 ··· P	Geoprobe	
С			ty/or Vil mseh	•	County:	awee	State:	Water Level Observe While Drilling: After Drilling:	Date	/Time <u>5/13/0</u> /Time 5/13/0	09 00:0 09 00:0		Depth (ft bgs) Depth (ft bgs)	<u>16</u> NM
	SAM		113011		Lone	awcc	I IVII	Arter Drilling.	Date	71111e <u>37137</u> 0	39 00.0		Depiri (it bgs)	INIVI
NIMBER	AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOG DESCRIPT				SOSO	GRAPHIC LOG	СОММЕ	NTS
				-	TOPSOI	IL	·	•						
1 Gi		63		2— - -	SANDY sand, lit moist, s	tle gravel,	H GRAVEL mostly c slight plasticity, dark	lay, some fine to o yellowish brown (	coars 10YR	e 1 4/6),	CL			
				4-			to coarse sand, dark very dense.	yellowish brown	(10YF	7	sw			
				_			stly clay, some fine to y (10YR 7/2), dry to r			ling.	CL			
G G		83		6	SAND m	nostly fine	sand, yellowish brow	n (10YR 5/6), wet	, dens	se.	SP			
				-		nostly fine t, very den	to coarse sand, dark se.	yellowish brown	(10YF	3	sw			
				_			ly clay, some silt, slig moist, very stiff.	ght plasticity, dark	yello	wish	CL- ML			
				8	SILTY C moist, v		ly clay, some silt, pla	istic, dark gray (10	OYR 4	¥/1),				
3 Gl		75		10							CL- ML			
				- 12—		nostly fine ense to ve	sand, little medium s ry dense.	and, brown (10YF	R 5/3)	,		<i>A</i> 22		
3 GI		71		- 14- -	,						SP			
		·		_	∇								Groundwater sam at 15-19 feet.	ple collected
													/main -	1 000
	ignat	ure:	She	u	let			Γ Inc. 4 Ranchero Drive	Ann	Arbor, MI	48108	3	(734) 97 Fax (734) 97	1-7080 1-9022

				SOIL BORING LOG	ВО	RING	G NO. B-38
SAN	MPLE	Τ	i I		<del></del>	<u> </u>	Page 2 of 3
NUMBER AND TYPE	(%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS
			-	SAND mostly fine to coarse sand, dark brown (10YR 4/3), saturated, dense.	011		
5 GP	96		18	SILTY CLAY mostly clay, some silt, plastic to high plasticity, dark gray (10YR 4/1), moist to wet, stiff.	CL- ML		
		-	20-	<b>GRAVEL WITH SAND</b> mostly fine to coarse sub-rounded gravel, some fine to coarse sand, very dark gray (10YR 3/1), saturated, dense.			
6 GP	77		22-		GW	0000	
			24-	SAND mostly fine sand, some medium sand, dark gray (10YR 4/1),		2000	
	=1		26— - -	saturated, dense.			
			28-		SP		
מותר כיובי ביותר מוליון וווווווווווווווווווווווווווווווווו			32-	SAND mostly fine to coarse sand, few gravel, very dark gray (10YR 3/1), saturated, dense.  No recovery from 32.0 to 38.0 feet. Sand in shoe is same as above.			
	0		34-		sw		
SOIL BORING WELL			36-				Groundwater sample collected at 36-40 feet.

				SOIL BORING LOG	ВО		NO. B-38
SAM	PLE						
NUMBEH AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	SOSN	GRAPHIC LOG	COMMENTS
	100		38-	Same as above.  Change to some gravel at 38.0 feet.	sw		
			40	CLAY mostly clay, few silt, trace sand, plastic to high plasticity, dark gray (10YR 4/1), wet, stiff to very stiff.  SAND mostly fine to coarse sand, few gravel, very dark gray	CL		
壨			42	(10YR 3/1), saturated, dense.  End of boring at 42.0 feet below ground surface.	sw		
				End of boiling at 42.0 166t below ground sufface.			
			44		15 15 15 15 15		
			40				
			46				
			50-				
			52-				
			54-				
			56				
}			58				

	K200-A-0	300mm	eta kuran		**			SOIL BOR	RING LOG							
												BO	_	NO. Page 1		
F	acilit	y/Proje	t Name	э:				* * * * * * * *	Date Drilling Started:	,	Date Drilling	Comple			Number:	
L			nseh	Prod	ucts Comp			tigation	5/13/09		5/13				8070.02	
	Orilling	g Firm: Te	rrapro	be, l	nc.	Drilling Metho	<sup>od:</sup> Direct Pu	sh	Surface Elev. (ft)	TOC	Elevation (ft)	Total	Depth ( 24.0	ft bgs)   E	Borehole Dia. (i	1)
F	Boring	J Locati	on: E	ast c	orner of Po			and Division	Personnel			Drilling	g Equip	ment:		
			F	otaw	, 8 feet nor <u>atamee St</u> i			dge	Logged By - Stacy Driller - Joe Fotjik a		ve Bischoff			Geopre	obe	
ſ	Civil T	own/Ci	ty/or Vil	lage:	County:		State:	•	Water Level Observa		/Time _5/13/0	9 00:0		Depth	(ft bgs) <u>16</u>	
F	SAM		mseh		Lena	awee		MI	After Drilling:	Date	/Time <u>5/13/0</u>	09 00:0	<u> </u>	Depth (	(ft bgs) NM	
	AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				LITHOLOGI DESCRIPTIO	_			nscs	GRAPHIC LOG	cc	DMMENTS	
-		44		2		CLAY WIT		EL mostly cla n (10YR 4/4)	y, some sand, fo , moist, stiff.	ew gra	avel,	SC- SM			·	
G		81		4— - - 6—	coarse of dense.  SANDY yellowish coarse of	gravel, dark CLAY mos h brown (19 VITH GRAV gravel, dark	k yellowis stly clay, 0YR 5/4) (EL most k yellowis	h brown (10) little sand, tra moist, stiff to ly fine to coa h brown (10)	rse sand, few fin (R 3/6), moist, make ace gravel, plastion o very stiff. rse sand, few fin (R 3/6), wet, meace gravel, plasti	c, ie to dium		sw CL sw				
, G		69		10-	CLAY m moist, m	nostly clay, nedium stiff	little silt, to stiff.		o very stiff. grayish brown (		4/2),	CL				
		75		12-	Change	to yellowis	h brown	(10YR 5/4) a edium sand a				SP		Groundw at 15-19 f	ater sample collec eet.	ded ,
. –																
ع اد کال	ignat	ure:	M	im	Sk			Firm: RMT 3754	Inc. Ranchero Drive	Ann	Arbor, MI	18108	l		34) 971-708 34) 971-902	

				SOIL BORING LOG	ВО		NO. B-39 age 2 of 2
SAM	/IPLE						
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS
	88		18—	SAND fine to coarse sand, dark yellowish brown (10YR 3/4), saturated, dense.  SILTY CLAY mostly clay, some silt, plastic, dark gray (10YR 4/1), wet to saturated, stiff.	sw		
5. 6.第	42		20	Change to medium stiff at 20.0 feet.	CL- ML		
			26	End of boring at 24.0 feet below ground surface.			
			30-				
			34-				

	21250000			. 200400000000	***			SOIL BOR	RING LOG						
					**							BOF	RING	NO.	B-40
L	- allih	/Drain	ct Nam						Date Drilling Started	d.	Date Drilling	Compl		Page 1	of 3 Number:
ľ		•			ucts Comp	any - Phas	a II invas	tigation	5/15/09	u.	5/15	-	eleu.	Piojeci	8070.02
-		Firm:	IISCII	riou	ucts Comp	Drilling Meth		nigation	Surface Elev. (ft)	тос	Elevation (ft)		Depth (	(ft bgs)	Borehole Dia. (in)
		Te	rrapro	be, l	nc.		Direct Pu	ısh	nortes .				46.0		2
Ī	Boring		ion: Ţ	wo fe	et west of			Street, 57	Personnel			Drillin	g Equip	oment:	
			fe	eet so	outh of edg	e of Chicaç	go Bivd		Logged By - Brent Driller - Joe Fotjik	Ritchie	•			Geop	robe
ſ	Civil T	own/Ci	ty/or V	illage:	County:		State:		Water Level Observ While Drilling:			09 00:0	<u> </u>	Depth	(ft bgs) <u>5.5</u>
F	SAM	_	nseh	_	Lena	awee		MI	After Drilling:	Date	/Time <u>5/15/</u>	09 00:0	00_	Depth	(ft bgs) <u>NM</u>
F	SAM	PLE													
ı		<u>%</u>	<u>1</u>	Ħ				LITHOLOGI	C				စ္ခ		
۱,	ᄱ	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				DESCRIPTION					GRAPHIC LOG	C	OMMENTS
Į	<u>₹</u> [	Š	Š.	Ĕ								တ္က	표		
	NUMBER AND TYPE	Ä	BLO	当								USCS	GR/		
					TOPSO	iL .									
1				-	·										
1	目			_											
ı	₁誾	E0		-					arse sand, little to				<b>77</b> 7		
G		50		2-	and clay moist. m	, tew tine t nedium der	o coarse ise.	gravei, dark	yellowish brown	(1011)	< <i>3/4</i> ),	SC-	W		
ı				_	,							SM	$M\lambda$		
ı				_									XX		
١	冒			4-	GRAVE	LLY SAND	mostly f	ine to coarse	sand, some fine	to	!4				
				4		medium d		ciay, yellowi	sh brown (10YR	5/0),	moist,		0 0		
	E											sw	, o		
ı	目				$\nabla$								9 8		
		75		6		to saturate							, ° 0		
9	<b>門</b> 冒	,5		٠.	CLAYE	Y SILT mo	stly silt, s	ome clay, tra , damp to mo	ce fine sand, pla	ıstic,					
				_		•	·	•	ist, still.			ML	州州		
ı				_	Change	to gray (10	OYR 5/1)	at 7.0 feet.							
	耳		ļ	8-									M		
28/08				_	moist, s		tly clay, s	ome silt, high	plasticity, gray (	(10YR	t 5/1),				
02 8/	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3			_	1110.01, 0	ort.									
8070				_								CL-			
Ď,	3   ] 3P   ]	75		10-								ML			
<u>8</u>	"冒			_											
ŏ				_	CAND "		and for	امدياط المالمين	llevelele berger (46	VD 6	145				
R				-	damp to	mostly line moist, me	dium den	v siit, light yei ise.	lowish brown (10	JIKO	/ <del>4</del> ),				
2.GP				12-	-							SP			
070.0				-	SAND -	mostly fine	to coerec	sand trace	silt, trace clay, p	ale hr	OWD				
ğ	昌			-	(10YR 6	3/3), moist,	medium	dense to den	se.	ai <del>c</del> Di	CAALL				
	亅			_	Change	to brownis	h yellow	(10YR 6/8) at	t 13.0 feet.						
틸	4	60		14-	Change	to pale bro	אטר) משל	Ř 6/3) at 13.5	) ieet.						
STRU	· 眉			-								SW			
S	冒			-											
SOIL BORING WELL CONSTRUCTION LOG 8070.02.GPJ RMT CORP.GDT 8070.02 8/28/09	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			-											
M L	Signat	ure: 🚄	,	<u></u>	15-11			Firm: RMT	Inc					17	34) 971-7080
S		1	1	7	1/6				Ranchero Drive	Ann	Arbor MI 4	8108			34) 971-9022

		BORING NO. B-4			
				-	
BLOW COUNTS DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS	
24— 24— 26— 33— 33— 34—	GRAVELLY SAND mostly medium to coarse sand, some fine to medium gravel, little fine sand, trace silt and clay, yellowish brown (10YR 5/4), saturated, loose. Change to no clay at 17.0 feet.  Blind drill to 46.0 feet.	sw		Groundwater sample collected at 16-20 feet.	
	20— 22— 24— 26— 30— 32—	GRAVELLY SAND mostly medium to coarse sand, some fine to medium gravel, little fine sand, trace silt and clay, yellowish brown (10YR 5/4), saturated, loose. Change to no clay at 17.0 feet.  Blind drill to 46.0 feet.  Blind drill to 46.0 feet.	GRAVELLY SAND mostly medium to coarse sand, some fine to medium gravel, little fine sand, trace slit and clay, yellowish brown (10/N 5/4), saturated, loose. Change to no clay at 17.0 feet.  SW  Blind drill to 46.0 feet.	LITHOLOGIC DESCRIPTION  GRAVELLY SAND mostly medium to coarse sand, some fine to medium gravel, little fine sand, trace silt and clay, yellowish brown (10/YR 5/4), saturated, loose. Change to no clay at 17.0 feet.  SW  Blind drill to 46.0 feet.	

				SOIL BORING LOG	ВО		6 NO. B-40 Page 3 of 3
SAM	IPLE						1 aye 5 01 5
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS
			38— - - 40— - - - 42— - - - - - - - - - - - - - - - - - - -	Drilling change at 46.0 feet indicating likely change to clay.			Groundwater sample collected at 42- 46 feet,
			46	End of boring at 46.0 feet below ground surface.			
			56				

2000000	(FEE					SOIL BO	ORING LOG							
			2.50	*****						во	RING	NO.	B-43	
												Page 1		
		ct Nam					Date Drilling Started	l:	Date Drilling		eted:	Project	Number:	
			Prod	ucts Comp		se II Investigation	7/23/09	1 1		3/09			8070.0	
Drilling	g Firm:				Drilling Meth		Surface Elev. (ft)	TOCE	levation (ft)	Total	Depth (f	ft bgs)	Borehole	,
		rrapro				Direct Push		ļ .			32.0		- 1	2
Boring	g Locati	ion: (	On Bii	rchfield pro	perty along	g ridge line, about ner of tire shop	Personnel Logged By - Brent	Ritchie		Drillin	g Equip	ment:		
				ieet east oi	HOTHI COII	iei oi tile shop	Driller - Joe Fotjik					Geop	robe	
Civil T	Town/Ci	ty/or Vi	llage:	County:		State:	Water Level Observ While Drilling:	ations: Date/	Timo 7/22/	09 00:0	·^	Donth	(ft bgs)	
_		mseh		Lena	awee	MI	After Drilling:	Date/				•		 _NM
SAM	1PLE													
		"	_											
	8)	Ĕ				LITHOLOG					90	C	OMME	NTS
NUMBER AND TYPE	Œ	중	=			DESCRIPT	ION				12			-
MA D T	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET							၂ ဗွ	GRAPHIC LOG			
N N	Æ	畄	🗒							nscs	GP,			
				TOPSO	L					<u> </u>				
			-	1										
			-	†										
E			-	SANDY	SILT mos	tly silt, some fine to i	medium sand, few	fine						
			2-	gravel,	ellowish b	prown (10YR 5/4), dry	/, stiff.							
			-			•								
			_							ML.				
目														
目			-											
			4	SILTY C	LAY few f	line sand, few fine gr	avel, slight plastic	ity, bro	own					
			-	(10YR 5	/3), dry to	damp, stiff.								
目			-	-							KXX			
			-	-									,	
	100		6											
IIII			-								XX			
			_											
目														
I			-	1										
圕			8							<u></u>	KKA			
			-							CL- ML				
目			-	Ahove o	rades to d	ark grayish brown (1	0YR 4/2) at 9.0 fa	et						
昌			-	, 10000 9	, to u	and grayion brown (1	5.11 1/2/ at 5.0 10	. J			W			
	100		10-	,							KKA			
[]			_											
冒														
目														
亅				]										
貫			12-											
			-											
目			-	SANDY	GRAVEI.	mostly fine to coarse	gravel some fine	to co	arse					
目			-	sand, tra	ace silt, bro	own (10YR 5/3), dam	p to moist, mediu	m den	se to		$\lceil n \rceil$			
	100		14—	dense.	•						54			
٦₫										GW	0			
										۵,,	οV			
											a ( )			
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ianat	huro					Cione   Das	Tina					,_	04\ 0=	1 700
Signat	ure:	1	1	1.7		Firm: RM	T Inc. 4 Ranchero Drive	Ann	Arbor MI	18109	<b>2</b> 1	(7) Fav (7)	34) 97 <sup>.</sup> 34) 97 <sup>.</sup>	1-708( 1-000
	_/_	~/	/	<u> </u>		3/5	+ nanchero Drive	AUU /	TIDOI, IVII 4	+0 I U	, 1	ax (/	J4) y/	1-902

RMT Inc. 3754 Ranchero Drive Ann Arbor, MI 48108

SAM				SOIL BORING LOG	ВО		NO. B-43
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS
<u> </u>	50		18-	Change to moist at 16.0 feet.			
6 GP 7 GP	50		22-	Change to damp at 20.0 feet.			
7 GP	50	in the second se	24-	Same as above.	GW		
ន ទំនួ	50		30-	Same as above.			
			34-	End of boring at 32.0 feet below ground surface.			
			36-				

### **SOIL BORING LOG**

												ı NU.	
Facilit	y/Proje	nt Nam	o.				Date Drilling Started	ı	Date Drilling	Comple	tod:	Page 1	of 2 t Number:
				uete Comp	any Phas	se II Investigation	4/17/09		_	7/09	icu.	1 10,00	8070.02
	g Firm:	iiseii	FIUU	ucis Comp	Drilling Meth		Surface Elev. (ft)	TOCE	Elevation (ft)		Denth (	(ft bgs)	Borehole Dia. (in)
Dimin	•	rronr	obe, l	20	1	Direct Push	Curace Liev. (it)	'00'	-icvation (it)	Jolai	24.0		2
Boring	Locati				1	13 feet south of north	Personnel			Drillin	24.0 g Equip		
	_	١	wall	et west or	easi wan,	15 leet south of north	Logged By - Scott Driller - Joe Fotjik	Middleb	rook	Braining	y Equip	Geop	robe
	fown/Ci			County:		State:	Water Level Observ While Drilling:		Time <u>4/17</u>	/09 00:0	<u>0 ∑</u>	 Z Depth	n (ft bgs) 20
	Tecu	mseh		Lena	awee	MI	After Drilling:	Date	Time <u>4/17</u>	/09 00:0	0	Depti	n (ft bgs) <u>NM</u>
	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGIC DESCRIPTION				GRAPHIC LOG		С	OMMENTS
NUMBER AND TYPE	RECO	ВГОМ	DEPT						nscs	GRAP	PID (PPM)		
1-	50		2-	FILL modern (in the content of the c	ostly media 10YR 6/3)	um sand, some fine sa grading to dark grayis	and, trace gravel h brown (10YR 4	, pale 4/2), d	ry,	///\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1.3	Soil sar feet.	nple collected at 0-4
1 GP	30		- 4	few fine		mostly clay, some sil plasticity, very dark bi stiff.			D CL		0.7		
2 GP			6-	SAND V little coa medium	VITH GRAV	TEL mostly medium satrace silt, trace gravel, at 6.5 feet.	and, some fine s	and,		000000000	. 0.5		
			8-	Chango	to trace	oarse sand, no gravel	at 10.0 fact			00000000000	1.2		
3 GP			12-	Onange	to nace co	oarse sand, no graver	at 10.0 (66).		sw		1.1 0.4		
4 GP	67		14	Change	to few coa	arse sand at 14.0 feet.					0.8		

Signature:

				SOIL BORING LOG		BOF		NO. NS-1
SAM	PLE							
AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	PID (PPM)	COMMENTS
<del></del>			18	Change to dark grayish brown (10YR 4/2) at 16.0 feet.  Change to trace fine gravel, dense at 17.0 feet.			0.6	Soil sample collected at feet.
	77		22-	Change to saturated at 20.0 feet.  End of boring at 24.0 feet below ground surface.	SW			Groundwater sample coll at 20-24 feet.
			26					·
			30-					·
			34					

rilling Fin	rojec cun rm: Ter catic	t Name nseh rrapro	erod	ucts Comp	oany - Pha		Data Datiliar Otasta					Page	. NS-2 1 of 2
Tecrilling Fin	cun rm: Ter catio	rapro on: 4	Prod be, l	· · · · · · · ·	any - Pha		Data Daillian Otantani						
rilling Fin	rm: Ter catio	rapro on: 4	be, l	· · · · · · · ·	any - Pha		Date Drilling Started	f:   [	Date Drilling	Comple	ted:	Projed	t Number:
oring Loc ivil Town Tec SAMPLE	Ter catio	on: 4 V	8 fee			se II Investigation	4/16/09		4/1	6/09			8070.02
oring Loc ovil Town Tec SAMPLE	catio	on: 4 V	8 fee		Drilling Met	•	Surface Elev. (ft)	TOC Ele	evation (ft)	Total	Depth (	ft bgs)	Borehole Dia.
Tec	n/Cit	٧				Direct Push				D.111:-	20.0		2
Tec	cur	y/or Vil		t west of e	astwall, 10	07 feet south of north	Personnel Logged By - Scott Driller - Joe Fotjik	Middlebro	ok	Drillin	g Equip		orobe
SAMPLE			age:	County:		State:	Water Level Observ While Drilling:	ations: Date/T	ime 4/16	09 00:0	0	Dent	h (ft bgs) _19
(%)	-	nseh		Lena	awee	MI	After Drilling:	Date/T		09 00:0		-	h (ft bgs) <u>19.</u> h (ft bgs) <u>NM</u>
>		TS	ЕТ			LITHOLOGIC				g			·
AND TYPE RECOVERY (%)	COVERT (	BLOW COUNTS	DEPTH IN FEET			DESCRIPTION	I		SOS	GRAPHIC LOG	PID (PPM)	C	COMMENTS
	Ć	面	٥	CONCR	ETE				<u> </u>	1	<u>a</u> 6	Soil on	mple collected at
			_	CONCH	16 I E							feet.	mpre conected at
昌			_			dium sand, some fine	sand, brown (7.5	YR			0		
目.,				4/2), ary	y, dense, f	III.			SP		0.5		
<u>-</u>	8		2-								0.5		
			_	_ <u></u>				· · · · · · · ·			0		
<u> </u>			-		L road fill	ostly clay, some mediu	m sand little sit	fow	GP	ومريا			
<del>-</del>	$\dashv$		4-	fine san	nd, nonpla	stic, very dark gray (7.	5YR 3/1), dry, ve	ry stiff.	CL				
			1			dium sand, some fine I, brown (7.5YR 5/3), d		)					
	3		6-	Crushed	d cobble a	t 6.0 feet.					1.9	Poor re	ecovery at 5.5 feet
			8-	Same a	s above.						5.2	Soil sa feet.	mple collected at
	9	Š	- 10-			÷					2.4		
			12-	Same a	s above.				sw		3.1		
60	0		- 14-								4.2		
			16								2.0		
			16—	Same a	s above.						2.0		

(734) 971-7080 Fax (734) 971-9022

	M	SOIL BORING	BORING NO. NS-2 Page 2 of 2
NUMBER AND TYPE RECOVERY (%)	BLOW COUNTS	LITHOLOGIC DESCRIPTION	USCS GRAPHIC LOG PID (PPM) (PPM)
A NUMBER IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		Change to saturated at 19.5 feet.  Blind drill to 24.0 feet.	SW 1.3 Groundwater sample collect at 20-24 feet.
		End of boring at 24.0 feet below ground surfac	е.
		- - - - - - - - - - - -	
		- - - - - - -	
	-	34 — — — — — — — — — — — — — — — — — — —	

		ORDER ANDORS				9	SOIL BOI	RING LOG								
												BOF	RING	NO.	NS-3	
														Page 1		
Facili	ity/Proje						•	Date Drilling Started	<b>d</b> :	Date 0		Comple	ted:	Projec	t Number	
<u> </u>			Prod	ucts Comp	any - Phas		gation	4/15/09	1=00			5/09		<u> </u>	8070.	
Drillir	ng Firm:				Drilling Metho			Surface Elev. (ft)	TOC	Elevatio	n (ft)	Total	•	(ft bgs)		Dia. (in)
			obe, I		l	Direct Push			<u>.</u>			5	20.0			2
Borin	ng Locat		On 11 150 fe	et south of	east of ma Patterson	ain building Street	j, about	Personnel Logged By - Scott Driller - Joe Fotjik	Middleb	rook		Drillin	g Equip	Geop	robe	
Civil	Town/C	ity/or Vi	illage:	County:		State:		Water Level Observ		/Time	A/4 E/	20.00.0		7 Danii	- /# b>	
1	Tecu	mseh	1	Lena	awee	l N	/II	After Drilling:				09 00:0 09 00:0			n (ft bgs) n (ft bgs)	<u>16</u> <u>NM</u>
SA	MPLE															
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				HOLOGIC CRIPTION				nscs	GRAPHIC LOG	PID (PPM)	С	ОММЕ	NTS
				TOPSO								99	0	<del>                                     </del>		
			-	sand, fe		sand, trace	e fine sand	ome silt, little co , trace gravel, lo very stiff			CL					
GP =	54		2-					m sand, little fin	<u></u>			XV.	0			
1 GP			-	sand, tra	ace silt, bro	own (7.5ÝR	1 5/3), dry, i	medium dense.					0			
┝╌┋	-		4-													
			-										0			
			-													
GP	77		6-								sw		0			-
			-										0	Į		
		1	8-	Change	to come o	naraa aand	l at 0 0 fact									
			-	Change	to some co	Jaise Sanu	i at o.0 leet	•					0			
			-													
0 1-			10-	- CAND									0			
			_	yellowis	nostly med h brown (10	ium sand, i 0YR 5/4), c	little coarse dry, mediun	sand, few fine n dense.	sana,				0			
	<b>]</b>		12-													
			-				•						0			
		[	-								i			3		
4	63		14-										0			
4 GP			'										Ů			
			-	$\nabla$							sw		0			
		ł	16—	Change	to trace gr	avel, browr	n (10YR 4/	5), saturated at	16.0	l				Ground at 16-20		ole collected
				feet.									0	at 10-2t	J 1661.	
5 GP			-										0			
5 GP =	69		18													
			_	]										<u> </u>		
			20-										0			
				Blind dri	II to 41.0 fe	et.	_			Ţ						
		<u> </u>			_									<u></u>		
Signa	ature:			, ,		F	irm: RMT	Inc.						(7	734) 97	1-7080
4 4 GP Signa			Zus	M				Ranchero Drive	Ann	Arbor	, MI 4	48108	3			1-9022

				SOIL BORING LOG		BOI		i <b>NO. NS-3</b> Page 2 of 2
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	60	GRAPHIC LOG	(	COMMENTS
AND	REC	BLO	22-		nscs	GRA	(PPM)	
			24					
			26-					
			30-					
			32-					
			36-					Groundwater sample collin
			38-					Groundwater sample coll at 37-41 feet.
			42-	End of boring at 41.0 feet below ground surface.				
			44-					
			46 — - - - 48 —					

2000000				<b>36</b>		SOIL BO	RING LOG					
										BOF	RING	NO. NS-4
			<del></del>									Page 1 of 2
	-	ct Name			<b>-</b> .	. 11.1	Date Drilling Started:	Date		Comple	ed:	Project Number:
	Tecu g Firm:		Prod		ny - Phase Drilling Metho	e II Investigation	4/16/09 Surface Elev. (ft)	TOC Elevation		6/09 Total I	Penth /	8070.02 t bgs) Borehole Dia. (in)
חווווזט		errapro	nha li		_	a: Direct Push	Juliace Elev. (II)	TOC Elevation	лт (IL)	Į.	æріп (і 20.0	2
Boring	g Locat					in building, about	Personnel				Equip	
		3	300 fe	et south of M	/IW-4s		Logged By - Scott N Driller - Joe Fotjik					Geoprobe
Civil 1		ity/or Vil		County:	,,,	State:	Water Level Observa	Date/Time		09 00:00		
SAN	T ecu IPLE	mseh		Lenaw	/ee	MI	After Drilling:	Date/Time	4/16/	09 00:00	<u>)                                    </u>	Depth (ft bgs) <u>NM</u>
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGIC DESCRIPTION			nscs	GRAPHIC LOG	PID (PPM)	COMMENTS
			_	ROAD GR	RAVEL					300	0	
1 GP   1   1   1   1   1   1   1   1   1	33		2	sand, som brown (5Y <b>SAND</b> mo	ne mediur 'R 4/4), m ostly medi	um sand, some coa	, low plasticity, recorse sand, little fine	ddish	CL .		0	
			4 -	sand, trac	e gravei,	brown (10YR 5/3), d	iry, meaium aense	<del>)</del> .			0	
2 GP	67		6-								0	
			8-	Change to	o little to s	some coarse sand, tr	ace cobble at 8.0	feet.			0.9	Soil sample collected at 8-12 feet.
3 GP			10-						sw		0.6	
			12-								0.3	
4 GP	60		14— - -	∑ Change to	o saturate	d at 14.0 feet.					0	Groundwater sample collected at 14-18 feet.
			16— - -	Same as a	above.							
5 GP	81		18 -									
			20 — -	Blind drill	to 36.0 fe	et.						

SOIL BORING WELL CONSTRUCTION LOG 8070.02 GPJ RMT\_CORP.GDT 8070.02 8/26/09

Firm:

RMT Inc. 3754 Ranchero Drive Ann Arbor, MI 48108

		VI.		SOIL BORING LOG		воі		NO. NS-4 Page 2 of 2
SAM	//PLE							
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	SOS	GRAPHIC LOG	PID (PPM)	COMMENTS
			- 22					
			24-				:	
			26-					
			28-					
			30-					
			32— -					Groundwater sample collecte at 32-36 feet.
			34-			:		
60/5			36	End of boring at 36.0 feet below ground surface.				
1 8070.02 8/28			38-	·				
SOIL BOHING WELL CONSTHUCTION LOG 80/0.02, GPJ, HMT_COHP, GDT, 80/0.02, 8/28/09			40-					·
9070.06.913			42—					
SOI NOI DOL			44 <i>-</i>					
WELL CONST			46—					
SOIL BOHING			- 48-		·			

		M									E	BORI		NO. NS-	
Facilit	v/Proie	ct Nam	e:				Da	ate Drilling Started	<del>j</del> :	Date Dri	lling (	Comple		Page 1 of 2 Project Num	
				ucts Comp	anv - Phas	se II Investigation	1	4/21/09			-	/09			0.02
	Firm:			<u> </u>	Drilling Meth			ırface Elev. (ft)	TOCE	levation (			Depth (1		nole Dia. (
	Te	rrapr	obe, la	nc.		Direct Push							24.0		2
Boring					"D" and "	Shipping Storage	L	ersonnel ogged By - Stacy Priller - Steve Bisc				Drilling	g Equip	ment: Geoprobe	ı
		ity/or Vi mseh	•	County:	awee	State:	Į v	ater Level Observ Vhile Drilling: after Drilling:	/ations: Date/			09:00:00	<u> </u>	Depth (ft bo	js) <u>21</u>
SAM		III3CII		LOTTE	14400	1411		ater Draining.	Date	111116	72170	75 00.00		Deptir (it be	S  _ <u></u>
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLO DESCRIP					nscs	GRAPHIC LOG	PID (PPM)	COM	MENTS
目				CONCR	ETE							/// <u>\</u>			
1 G 2 GP	69	×	2-	CLAYE' few fine	<b>/ SAND</b> m gravel, ve	iostly fine sand, li ry dark brown (7. 7.5YR 2.5/1), stro	5YR 2.5	i/3), dry, dens	se.	.5 ,	SC		1.9 0.9 4.9 28.9		
			4		odor at 4.0	feet. , trace to few fine	sand. h	iah plasticity	. verv	.*			43.0		
2 GP	54		-			/1), strong odor,			, ,		CL		54.6		
GP	54		6-			ostly fine sand, li ry dark brown (7.					SC		97.1 180.0		
			8			, little fine sand, s ng odor, dry, stiff		isticity, black			CL		377.0 242.0	Soil sample co feet.	llected at 8
3 P	75		10	brown (	10R 3/2), s	, few fine sand, p strong odor, mois	t, very s	oft to medium	n stiff.		CL :		214.0 52.5	Soil sample co feet.	llected at 1
			12			to coarse sand, I wn (10YR 4/6), si							32.5 21.8		
4 AP	65		14	Change	to trace g	ravel at 14.0 feet				8	SW		13.6 8.0		
-			-							1	ľ	:::::::			

RMT Inc. 3754 Ranchero Drive Ann Arbor, MI 48108

				SOIL BORING LOG	ı	BOR		NO. NS-10
SAM	IPLE				T			Page 2 of 2
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	PID (PPM)	COMMENTS
$\overline{}$			-	Same as above.			10.3	
5 G 6 G	67		18				6.0	
_	•		20-		sw		9.5	
								Coundaria
6 GP IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII			22-	Change to saturated at 21.0 feet.				Groundwater sample coll at 21-25 feet.
			24	End of boring at 24.0 feet below ground surface.				
			26-					
			28			· · · · · · · · · · · · · · · · · · ·		
4.00			30-					
			32-					
			34		1 1112			
			36					

						٠.	SOIL BO	RING LOG					•	
		N/		***							BOI	_	NO.	. <b>SS-1</b> of 3
Faci	lity/Proje							Date Drilling Started	:	Date Drilling		ted:	Projec	t Number:
Drilli	Tecuing Firm:	mseh	Prod	ucts Comp	any - Phas Drilling Meth		tigation	4/15/09 Surface Elev. (ft)	TOC	4/15 Elevation (ft)		Depth (	ft hae\	8070.02 Borehole Dia. (in)
	•	rrapro	obe. I	nc.	1	Direct Pu	sh		100		Total	49.0	it bgs/	2
Bori		ion:	nside	main build	ling about	100 feet s	outh of	Personnel			Drillin	g Equip	ment:	
l		. (	GP-21					Logged By - Stacy Driller - Craig Tanio					Geop	orobe
Civil	Town/C	ty/or Vi	llage:	County:		State:		Water Level Observ While Drilling:		/Time 4/15/0	09 00:0	<u> </u>	Dent	h (ft bgs) _23.5_
		mseh		Lena	awee		MI	After Drilling:			09 00:0			h (ft bgs) NM
SA	MPLE													
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				LITHOLOG DESCRIPTIO				SOSN	GRAPHIC LOG	C	OMMENTS
				CONCR			W-1					/// <u>\</u>		
1 GP	54		2-		nostly fine I/4), dry, de		v coarse san	d, dark yellowish	i brow	ın	SP		Soil sai 1.0-1.5	mple collected at feet.
2 GP	29		6—	slight pla	asticity, da	rk yellowi	some fine to sh brown (10 el at 6.25 fee	medium sand, fe DYR 3/6), dry to r et.	ew granoist,	avel, stiff.	CL			
			8- 8- -	SAND r dark yel	nostly fine lowish bro	to coarse wn (10YR	sand, few fi 4/6), dry.	ne to coarse gra	vel, lo	oose,				
3 GP 4 GP	75		- 10- - -						•					
4 GP	75		12	Same a	s above.						sw			
C	<b>at</b>						Elema Da a	L					,-	704\ 074 700
Sign	ature:		Has	y h	-		Firm: RMT 3754	inc. Ranchero Drive	Ann	Arbor, MI	18108	3		734) 971-7080 734) 971-9022

				SOIL BORING LOG	ВО		6 NO. SS-1 Page 2 of 3
SAM	IPLE						. ago z or o
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS
5 GP 6 GP 6 GP	73		18—	Same as above.  Same as above.	sw		
	75		22-	SAND WITH GRAVEL mostly sand, little to some fine gravel, very dark brown (10YR 2/2), wet to saturated, dense.  Saturated at 23.5 feet.  Blind drill to 49.0 feet. No drilling change from 24.0 to 49.0 feet.	sw		Groundwater sample coll at 24-28 feet.
			26				
			28-				
			30— - -				
			32— -				
			34-				
		-	36-				

		M		SOIL BORING LOG	во		<b>R NO. SS-1</b> Page 3 of 3
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	COMMENTS
			38 — 40 — 42 — 44 — 46 — 48 —				Groundwater sample collect at 45-49 feet.
			50 — 52 — 54 — 56 —	End of boring at 49.0 feet below ground surface.			

	\$00000eee	5550a- 400**	005 com	n jujecusooo			SO	IL BOF	RING LOG						
					•								BOI	RING	NO. SS-2 Page 1 of 3
Fa			ct Name						Date Drilling Started	d:	Date Drill	-		ted:	Project Number:
L			nseh	Prod	ucts Comp		e II Investigati	ion	4/16/09	1===			5/09		8070.02
Dr	rilling	Firm: Te	rrapro				Direct Push		Surface Elev. (ft)	TOC	Elevation (	ft)		Depth ( 24.0	2
Во	oring	Locati	on: [	nside 3P-21	main build	ing about 1	00 feet north	of	Personnel Logged By - Scott Driller - Joe Fotjik	Middleb	rook		Drillin	g Equip	ment: Geoprobe
Ci	vil T	own/Ci	ty/or Vi	lage:	County:		State:		Water Level Observ		/Time 4	(4.6)/	09 00:0		
	SAM		mseh		Lena	awee	MI		After Drilling:				09 00:0		Depth (ft bgs) 20.5 Depth (ft bgs) NM
	AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOI DESCR					USCS	GRAPHIC LOG	(MAA)	COMMENTS
				-	CONCR								///	·	,
1 GF		38	~	2	trace co	arse sand,	mostly clay, s nonplastic, br	rown (10	ne sand, little sill OYR 4/3), dry, ve in tip of rods.	t, ery stif		CL			
GPJ RMT_CORP.GDT 8070.02 8/26/09		67		10-	SAND n trace gra	nostly med avel, pale b	ium sand, little rown (10YR 6	e coarse 6/3), slig	sand, few fine ht odor, dry, loo	sand, se.				<ul><li>2.3</li><li>6.1</li><li>2.5</li></ul>	Soil sample collected at 8-12 feet.
SOIL BORING WELL CONSTRUCTION LOG 8070.02.GPJ RMT_CORP.GDT 8070.02 8/26/09		67		12	Change	to few to life	ttle coarse sar	nd at 12	.0 feet.			W		10.4	
ORIN-							· · · · · · · · · · · · · · · · · · ·								
	gnati	ıre:	_/	Bu	y M	+	Firm:		Inc. Ranchero Drive	Ann	Arbor, I	<b>VII</b> 4	18108	3	(734) 971-7080 Fax (734) 971-9022

SOSU		(Wdd) 6.9 10.7 18.0 3.7 7.4	COMMENTS  Soil sample collected at 1 feet.  Groundwater sample colle at 20-24 feet.
		6.9 10.7 18.0 3.7	Soil sample collected at 1 feet.
		6.9 10.7 18.0 3.7	feet.
SW		10.7 18.0 3.7	Groundwater sample colle at 20-24 feet.
			at 20-24 feet.
		7.4	
		3.1	
:			

				SOIL BORING LOG				
						BOI		NO. SS-2
SAM	IPLE							
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	PID (PPM)	COMMENTS
			38					
		:	-					
			40— -					
			-					
		·	42-					Groundwater sample collected at 42-46 feet.
			44					
			44					
			46					
			-	End of boring at 46.0 feet below ground surface.				
			48-					
60			-					
70.02 8/26/			50-					
P.GDT 807			-					
RMT_COR			52-					
70.02.GPJ								·
N LOG 80			54-					
SOIL BOHING WELL CONSTRUCTION LOG 8070.02.GPJ RMT_CORP.GDT 8070.02 8/26/09			-					
WELL CO			56-					
L BORING			1					
g J			58 —					

Γ								SOIL BOP	RING LOG						
					***								BOI	RINC	NO. SS-3 Page 1 of 2
Fa	cility	/Projec	t Name	 э:				,	Date Drilling Started:		Date D	rilling	Comple	ted:	Project Number:
	٦	Tecur	nseh	Prod	ucts Comp	any - Phas	e II Inves	tigation	4/16/09			4/16	6/09		8070.02
Dr	illing	Firm:			•••	Drilling Metho	od:	****	Surface Elev. (ft)	TOCE	Elevation	n (ft)	Total	Depth (	(ft bgs) Borehole Dia. (in)
		Te	rrapro				Direct Pu							24.0	
Вс	ring	Locati			main build	ing along s	outhern v	wall of	Personnel Logged By - Scott N	Drilling Equipment:			ement:		
			٦	Sectio	n G				Driller - Joe Fotjik	/IIIuulebi	OOK				Geoprobe
Ci	vil To	own/Ci	ty/or Vil	lage:	County:		State:		Water Level Observa		/Time	4/46/	00.00.0	Λ <u>Γ</u>	7 Donth (# has) 10.75
L			mseh		Lena	wee		МІ	While Drilling: After Drilling:		Time .		09 00:0 09 00:0		Depth (ft bgs) 19.75 Depth (ft bgs) NM
F	IMA8	PLE							•						
NUMBER	AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				THOLOGIC SCRIPTION				nscs	GRAPHIC LOG	PID (PPM)	COMMENTS
F	┰╛	ш.	ш		CONCR	ETE		-,					///>		1
1 GF	<u>abilahahahahalahin daminintistishahalahahakalada</u>	25		2	CLAY W coarse s	<b>TITH SAND</b> sand, nonp	lastic, bro	own (10YR 4	dium sand, trace /3), dry, very stiff	•		CL			
2 GF		60		6	sand, tra	ace gravel, dense.	dark yell	owish brown	sand, few coarse (10YR 4/6), dry,					6.0	
3 G		58		10-				l at 8.0 feet.	ıt.			sw		6.7	Soil sample collected at 8-12 feet.
SOIL BOHING WELL CONSTRUCTION LOG 80/0.02 GF7 HMT_COHP.GDT 80/0.02 8/28/09		69		12 - - 14 -			·•	at 13.0 feet. d at 15.0 fee	. *· t.					1.5	
<b></b>	Ħ					•					l.		Live Sid	8.3	<u> </u>
El Sid	gnati	ıre:		7,	,	1 -		Firm: RMT	Inc.						(734) 971-7080
<u>ặ</u> Ĺ				ton	Ix	1			Ranchero Drive	Ann	Arbor	, MI 4	48108	3	Fax (734) 971-9022

				SOIL BORING LOG		ВОІ		<b>3 NO. SS-3</b> Page 2 of 2
SAM	PLE							rage z or z
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION Same as above.	nscs	GRAPHIC LOG	OID (PPM)	COMMENTS  Soil sample collected at 16
6.8 6.3 11.11.11.11.11.11.11.11.11.11.11.11.11.	79		18	Same as above.  ☑ Change to wet at 19.5 feet.  Change to saturated at 19.75 feet.	sw		18.6 12.1 1.9	Groundwater sample collect at 20-24 feet.
6 GP	81		22	End of boring at 24.0 feet below ground surface.			1.4	
			26-					
			30-					
			34					
•			36-					

Terraprobe, Inc.  Boring Location: Inside main building in Section M about 50 feet west of GP-21  Civil Town/City/or Village: County: State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00 ▼ Depth (ft bgs) № SAMPLE  SAMPLE  Terraprobe, Inc.  Direct Push  24.0 2  Personnel Logged By - Scott Middlebrook Driller - Joe Fotjilk  Geoprobe  Civil Town/City/or Village: County: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00 ▼ Depth (ft bgs) № NI SAMPLE					SOIL BO	RING LOG					
Facility/Project Name: Tecumseh Products Company - Phase II Investigation									BO	RING	9 NO. SS-4
Tecumseh Products Company - Phase II Investigation  Drilling Firm: Terraprobe, Inc.  Direct Push  Boring Location: Inside main building in Section M about 50 feet west of GP-21  Civil Town/City/or Village: Tecumseh  Lenawee  Drilling Method: Terraprobe, Inc.  Direct Push   Personnel Logged By - Scott Middlebrook Driller - Joe Fotjik  Geoprobe  Civil Town/City/or Village: Tecumseh  Lenawee  MI  After Drilling: Date/Time  A/17/09 00:00  A/17/09 00:00  Depth (ft bgs)  Depth (ft bgs)  Depth (ft bgs)  NI  SAMPLE  LITHOLOGIC DESCRIPTION  COMMENT:  SUBJECTION  SUBJECTION  COMMENT: SUBJECTION	E 12 / Dulas No				· · · · · · · · · · · · · · · · · · ·	T		- F III			
Drilling Firm:				any Phanail	Investigation		:  L	_		tea:	'
Terraprobe, Inc.  Boring Location: Inside main building in Section M about 50 feet west of GP-21  Civil Town/City/or Village: County: State: Water Level Observations: While Drilling: Date/Time After D	<b></b>	en Flou	<del></del>	<u> </u>	mvestigation		TOC Ele			Depth (	
Boring Location: Inside main building in Section M about 50 feet west of GP-21  Civil Town/City/or Village: County: State: Water Level Observations: While Drilling: Date/Time A/17/09 00:00 \$\frac{\text{Depth (ft bgs)}}{\text{Depth (ft bgs)}}\$\frac{\text{Depth (ft bgs)}}{D	1 °	probe, l	*	•	ect Push						` • '
Driller - Joe Fotjik  Civil Town/City/or Village:  Tecumseh  Lenawee  MI  After Drilling: Date/Time 4/17/09 00:00  4/17/09 00:00  Depth (ft bgs) NI  SAMPLE  LITHOLOGIC DESCRIPTION  COMMENT:  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  After Drilling: Date/Time 4/17/09 00:00  Depth (ft bgs) NI  COMMENT:  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Depth (ft bgs) NI  COMMENT:  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Depth (ft bgs) NI  COMMENT:  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Depth (ft bgs) NI  COMMENT:  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Depth (ft bgs) NI  COMMENT:  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Date/Time 4/17/09 00:00  Size   State: Water Level Observations: While Drilling: Water Level Observations: Water Level Observations		Inside	Inside main buildir	ing in Section	M about 50 feet		l		Drilling		
Tecumseh Lenawee MI While Drilling: Date/Time 4/17/09 00:00 \$\frac{\text{\$\text{Drilling:}}}{\text{date}/\text{Time}}\$ \frac{\text{\$\text{\$\text{date}}/\text{Time}}}{\$\text{\$\tex		west c	west of GP-21				Middlebro	ok			Geoprobe
Tecumseh Lenawee MI After Drilling: Date/Time 4/17/09 00:00 Depth (ft bgs) NI  SAMPLE  LITHOLOGIC DESCRIPTION  COMMENT:  (Wadd)  (Wadd)  (Wadd)	Civil Town/City/or	r Village:	Village: County:	Sta	ate:			ma 4/17/	20.00.0	0 57	7 Donath (ft hore) 00
NUMBER AND TYPE RECOVERY (%) BLOW COUNTS DEPTH IN FEET COPPUTE BLOW COUNTS DEPTH IN FEET COPPUTE COPPU	Tecumse	eh	eh Lenav	wee	МІ						
	SAMPLE										
CONCRETE  SAND mostly fine sand, some medium sand, light yellowish brown (10YR 6/4) grades to yellowish brown (10YR 5/4), dry, dense, fill.  2-  CLAYEY SAND mostly coarse sand, some clay, little medium sand, few fine sand, few silt, brown (10YR 4/3), dry, dense.  CLAYEY SAND mostly coarse sand, some clay, little medium sand, few fine sand, few silt, brown (10YR 4/3), dry, dense.  SAND mostly medium sand, some coarse sand, little medium sand, pale brown (10YR 6/3), dry, loose.	NUMBER AND TYPE RECOVERY (%)	DEPTH IN FEET	L = 1					nscs	GRAPHIC LOG	PID (PPM)	COMMENTS
SAND mostly fine sand, some medium sand, light yellowish brown (10YR 6/4), dry, dense, fill.  2-  CLAYEY SAND mostly coarse sand, some clay, little medium sand, few fine sand, few silt, brown (10YR 4/3), dry, dense.  SAND mostly medium sand, some coarse sand, little medium sand, pale brown (10YR 6/3), dry, loose.			CONCRE	ETE					///		
CLAYEY SAND mostly coarse sand, some clay, little medium sand, few fine sand, few silt, brown (10YR 4/3), dry, dense.  SAND mostly medium sand, some coarse sand, little medium sand, pale brown (10YR 6/3), dry, loose.	1 GP 1111111111111111111111111111111111	2-	brown (10 dense, fil	0YR 6/4) grad	nd, some medium des to yellowish b	sand, light yellow prown (10YR 5/4),	rish dry,	SP		2.5	
SAND mostly medium sand, some coarse sand, little medium sand, pale brown (10YR 4/3), dry, derise.  SW. SC. 9.5  SAND mostly medium sand, some coarse sand, little medium sand, pale brown (10YR 6/3), dry, loose.		4-	CLAYEY							5.0	
	2 GP 60	6-	6-	nostly medium	n sand, some coa	rse sand, little me				9.5	
		8-		rades to most	lv coarse sand. s	ome medium san	d. trace				Soil sample collected at 8-12 feet.
gravel, yellowish brown (10YR 5/4) at 8.5 feet.  GREAT TO		10-	gravel, ye	ellowish brow	ท์ (10YR 5/4) at 8	5.5 feet.				69.7	
SW 28.8   Soil sample collected at feet.		12-	12-					sw			Soil sample collected at 12-1 feet.
SW 28.8 Soil sample collected at feet.  12- Change to mostly medium sand, little fine sand, trace coarse sand, pale brown (10YR 6/3) at 14.5 feet.  Signature:  Signature:  Aug.  Firm: RMT Inc. 3754 Ranchero Drive Ann Arbor, MI 48108  Fax (734) 971-79	4	14	Change to				arse				
						· ·					
Signature: RMT Inc. (734) 971-76 (735) 8754 Ranchero Drive Ann Arbor, MI 48108 Fax (734) 971-98	Signature:	Mrs.	May An	12/			Ann A	rbor, MI 4	48108	}	(734) 971-7080 Fax (734) 971-9022

				SOIL BORING LOG				
		M				BOI		NO. SS-4 Page 2 of 2
SAM	/IPLE							I ayo & UI &
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	PID (PPM)	COMMENTS
5 GP	69		18-	Change to few coarse sand at 17.5 feet.	sw		9.0 20.7 18.2	
6 GP	75		22	Change to saturated at 22.0 feet.  End of boring at 24.0 feet below ground surface.			14.4	Groundwater sample collected at 22-24 feet.
	T T T T T T T T T T T T T T T T T T T		26— -					
T 8070.02 8/26/09	Mark Salar		28-					
GPJ RMT_CORP.GD			30-					
SOIL BORING WELL CONSTRUCTION LOG 8070.02.GPJ RMT_CORP.GDT 8070.02 8/26/09			32-					
SOIL BORING WELL CON			36					

Manuel	State State and State St		# ####################################	***		WELL CONST	<b>RUCTION LO</b>	G					
		M							W	ELL N	IO. I	<b>//W-1</b> Page 1	<b>is/B-1</b>
Facili	ty/Proje	ct Nam	e:				Date Drilling Started	l:	Date Drilling	Comple	ted:		ot Number:
			Prod	ucts Comp		e II Investigation	3/12/09		3/1	2/09			8070.02
Drillir	ng Firm:			7,1,1,1	Drilling Metho		Surface Elev. (ft)	TOC	Elevation (ft)	Total I		-	Borehole Dia. (in)
			obe, I			ect Push/HSA					24.0		2-8
Borin	g Locati	6	800 fe	'C property et west of l of Patterso	Maumee S	outh of B-1, about treet and 1400 feet	Personnel Logged By - Scott i Driller - Craig Tanio		rook	Drilling	j Equip		orobe
Civil	Town/Ci	ty/or Vi	llage:	County:	2.421 1	State:	Water Level Observ		/Time 0/40	/00 00:0			h //t h> 10.5
	Tecu	mseh	<del></del>	Lena	wee	MI	While Drilling: After Drilling:			/09 00:00 /09 00:00			h (ft bgs) <u>16.5</u> h (ft bgs) <u>NM</u>
SAI	MPLE T								!				
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGIC DESCRIPTION	ı		nscs	GRAPHIC LOG	WELL DIAGRAM	C	COMMENTS
$\overline{}$				ROAD G	RAVEL dr	y.			GP	600			
			-	SAND r	nostly med sand and g	ium sand, some fine ravel, dark brown (7.	sand, little silt, tra 5YR 3/2), dry, de	ace nse.	sw				
1 GP	79		2- -	coarse s	sand, trace	stly clay, some mediu gravel, low plasticity arse sand content inc	, strong brown (7	.5YR	CL				
			4-	SAND n sand, tra	nostly coar ace clay, pa	se sand, some medit ale brown (10YR 6/3)	um sand, little find , dry, loose.	e					
1 GP	-1		6-	Change	to no clay	at 6.0 feet.		, est	sw				
			8— - - 10—	Change	to mostly r	medium sand, some o	coarse sand at 8.	.5 feet					
3 GP			- 12-										
4 GP			14-	SAND n sand, pa	nostly med ale brown (	ium sand, some fine 10YR 6/3), dry, loose	sand, trace coars	se	SP				
Signa	ture:	M	jung	lu	1	Firm: RMT 3754	Inc. Ranchero Drive	Ann	Arbor, MI	48108			734) 971-7080 734) 971-9022

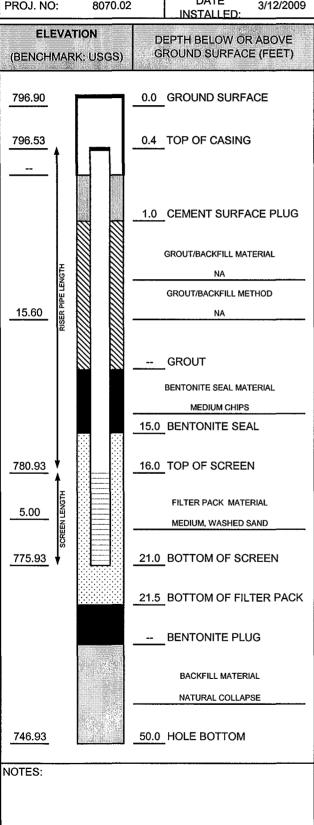
BUNDON OF BUNDON	LITHOLOGIC DESCRIPTION  Sold Bayes  Sold Bayes  Sold Bayes  Sold Bayes  Sold Bayes  COMMENTS  CO	(%)						
SAND mostly medium sand, some fine sand, few coarse sand, trace gravel, brown (7.5YR 4/2), saturated, loose.  18-  Change to trace coarse sand, no gravel at 20.5 feet.  Blind drill to 50.0 feet.	SAND mostly medium sand, some fine sand, few coarse sand, trace gravel, brown (7.5YR 4/2), saturated, loose.  Change to trace coarse sand, no gravel at 20.5 feet.  Blind drill to 50.0 feet.  Croundwater sample col at 28-30 feet.	NUMBER AND TYPE RECOVERY	BLOW COUNTS DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
Blind drill to 50.0 feet.  26 — Groundwater sample col at 26-30 feet.	Blind drill to 50.0 feet.  26—  28—  30—  30—		18-	SAND mostly medium sand, some fine sand, few coarse sand, trace gravel, brown (7.5YR 4/2), saturated, loose.	SP			
Blind drill to 50.0 feet.  26 — Groundwater sample col at 26-30 feet.	Blind drill to 50.0 feet.  26—  28—  30—  30—	6 GP 98			SW			
			26-	Blind drill to 50.0 feet.				Groundwater sample col at 26-30 feet.

				WELL CONSTRUCTION LOC				<u> </u>
		M		WELL CONSTRUCTION LOG	WE	ELL I		<b>MW-1s/B-1</b> Page 3 of 3
SAM	IPLE							
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
			38-					
:			- -					
			40 <del>-</del> -					-
			42— -					
		-	44 —					
			- - 46-		Total Control of the			Groundwater sample collected at 46-50 feet.
	i		48-					
70,02 8/26/09			50-	End of boring at 50.0 feet below ground surface.				
ORP.GDT 80.			-					
2.GPJ RMT_C			52-		: :			
ON LOG 8070.0			54-					
SOIL BORING WELL CONSTRUCTION LOG. 8070.02.GPJ. RMT_CORP.GDT. 8070.02.8/26/09			56-					
SOIL BORING W			58					

# RMT

## **WELL CONSTRUCTION DIAGRAM**

PROJ. NAME:	Tecumseh Prod	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-1S
PROJ. NO:	8070.02	DATE INSTALLED:	3/12/2009	INSTALLED BY:	Scot Middlebrook		CHECKED BY: BR



CASING AND SCREEN DETAILS					
TYPE OF RISER:	2-INCH PVC				
PIPE SCHEDULE:	40				
PIPE JOINTS:	THREADED O-RINGS				
SOLVENT USED?					
SCREEN TYPE:	2-INCH PVC				
SCR. SLOT SIZE:	<u>0.01-INCH</u>				
BOREHOLE DIAMETER:    8.0   IN. FROM   0.0   TO   21.5   FT.     2.0   IN. FROM   21.5   TO   24.0   FT.     1.0   IN. FROM   24.0   TO   50.0   FT.     NA   IN. FROM   NA   TO   NA   FT.					
WELL DEVELOPMENT					
DEVELOPMENT METHOD: <u>SURGE AND PUMP</u>					
TIME DEVELOPING: 25 MINUTES					
WATER REMOVED	25 GALLONS				
WATER ADDED:	0 GALLONS				
WATER CLARITY BEFORE / AFTER DEVELOPMENT					
CLARITY BEFORE: <u>TURBID</u>					
COLOR BEFORE:	BROWN				
CLARITY AFTER:	CLEAR				
COLOR AFTER:	CLEAR				
ODOR (IF PRESENT): NA					
WATER LEVEL SUMMARY					
MEASUREMENT (FEET)				DATE	TIME
DTB BEFORE DEVELOPING:		20.80	T/PVC	3/12/2009	1804
DTB AFTER DEVELOPING:		20.80	T/PVC	3/12/2009	1835
SWE BEFORE DEVELOPING:		16.09	T/PVC	3/12/2009	1804
SWE AFTER DEVELOPING:		16.11	T/PVC	3/12/2009	1835
OTHER SWE: DURING DEVEL.		16.20	T/PVC	3/12/2009	1818
OTHER SWE:		T/PVC			
PROTECTIVE CASING DETAILS					
PERMANENT, LEGIBLE WELL LABEL ADDED?				☑ YES	□ NO
PROTECTIVE COVER AND LOCK INSTALLED?				✓ YES	□ NO

LOCK KEY NUMBER: 3120

5.0 GALLONS OF WATER ADDED TO SET WELL.

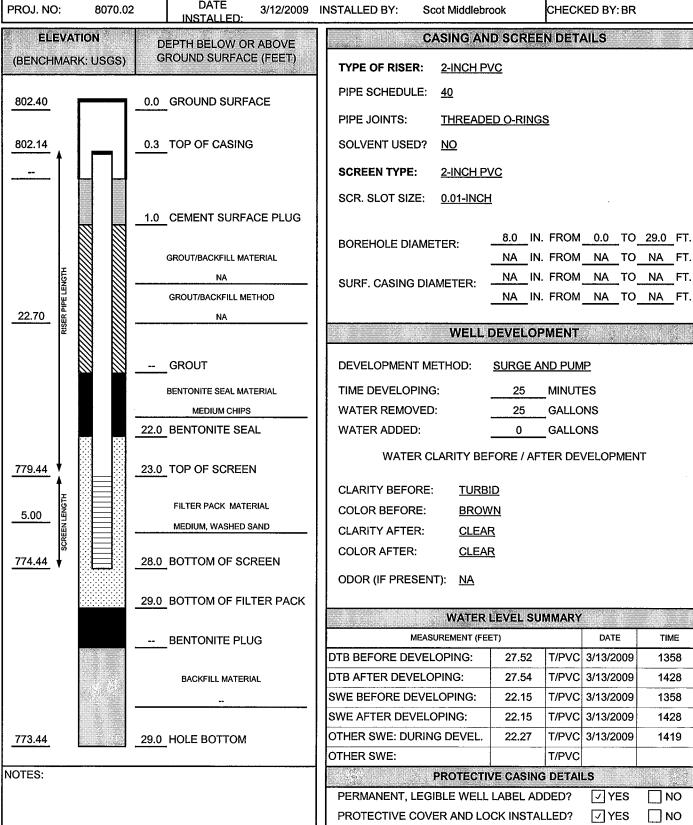
	icharitmiana. A					WELL CO	ONST	RUCTION LO	G				
		W		**							WE	LL î	NO. MW-2s
Fac	ility/Proj	ect Nam	e:					Date Drilling Started	:	Date Drilling	Comple	ted:	Page 1 of 2 Project Number:
1	Teci	ımseh	Prod	ucts Comp	any - Phas	e II Investigatio	on	3/12/09	}	3/1	2/09		8070.02
Drill	ing Firm	:			Drilling Meth	od:		Surface Elev. (ft)	TOCE	levation (ft)	Total I	Depth	(ft bgs) Borehole Dia. (in)
		errapr			L	ect Push/HSA					<u> </u>	28.0	
Bori	ing Loca	5	Street		ast of flagp	eet and Patters ole, 20 feet sou		Personnel Logged By - Scott   Driller - Craig Tanio		ook	Drilling	) Equi	pment: Geoprobe
Civi	Town/0	City/or Vi	llage:	County:		State:		Water Level Observ While Drilling:	ations: Date/	Time 2/10	/09 00:00	, ,	Z Depth (ft bgs) 23
		umseh	) T	Lena	awee	МІ	-	After Drilling:	Date/		/09 00:00   		Z Depth (ft bgs) 23 Depth (ft bgs) NM
SF	MPLE												
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOL DESCRI				nscs	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
1			_	TOPSOI	IL black (1	0YR 2/1), mois	st, soft.					Ť	
HA	100		-									<b>}</b>	
2 GP	39	i i dalah	2-	SILTY C coarse s wet, sof	sand, high	ly clay, some s plasticity, dark	silt, few yellowi	medium sand, ti sh brown (10YR	race 3/4),	CL- ML			
			4-	sand, fe grayish	w medium brown (10)	sand, trace gra YR 3/2), moist,	avel, hi	ome silt, little co gh plasticity, ver	y dark	CL- ML			
GP	71		6-	sand, tra	mostly coa ace silt, tra 4/6), dry, lo	ce gravel, trace	e mediu e cobbl	m sand, few fine es, dark yellowis	e sh brov	sw			
SOIL BOARING WELL CONSTRUCTION LOG 8070.02.GFD RMCORP.CBD 8070.02 8720.09 BD 4 BD	63		10-	SAND r large gra loose.	mostly med avel, browi	lium sand, little n (10YR 5/3) to	coarse strong	sand, trace silt, brown (7.5YR 5	, trace /8), dr	у,			
P G B G G G G G G G G G G G G G G G G G	65		14-	Coarse	sand conte	ent increases w	rith dep	th.		SP			
			-										
Sigr	nature:		1 Azu	y M	In t	Firm:	RMT 3754	Inc. Ranchero Drive	Ann	Arbor, MI	48108		(734) 971-7080 Fax (734) 971-9022

SAMI	PI E	\ <u> </u>		WELL CONSTRUCTION LOG	T	WE		IO. MW-2s
NUMBER II AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION  Change to some coarse sand, little fine sand, pale brown (10YR	SOSN	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
1990年1910年1910年1910年1910年1910年1910年1910	63		20 — 22 — 24 — 26 — —	Change to strong brown (7.5YR 5/6) at 22.5 feet.  Change to brown (10YR 4/3), saturated at 23.0 feet.  Same as above.	SW			
			32-34-36-36-36-36-36-36-36-36-36-36-36-36-36-	Blind drill to 29.0 feet during well installation.  End of boring at 29.0 feet below ground surface.				

## 

### WELL CONSTRUCTION DIAGRAM

PROJ. NAME:	Tecumseh Prod	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-2S
PROJ. NO:	8070.02	DATE INSTALLED:	3/12/2009	INSTALLED BY:	Scot Middlebro	ook	CHECKED BY: BR



LOCK KEY NUMBER: 3120

TIME

1358

1428

1358

1428

1419

□ NO

Пио

9000					<u>.</u>	WELL CONST	<b>RUCTION LO</b>	G						
											WE	LL N	NO. N Page 1	IW-3s
Faci	lity/Proje						Date Drilling Started	l:	Date Dr			ed:	Projec	t Number:
<u></u>		mseh	Prod	ucts Comp		e II Investigation	3/11/09	LTOO			1/09		<u> </u>	8070.02
Drilli	ng Firm:	****	اماما		Drilling Metho	oa: ect Push/HSA	Surface Elev. (ft)	1001	Elevation	(π)	lotail		(ft bgs)	Borehole Dia. (in)
Bori		rrapro				west corner of	Personnel	L,			Drifling	16.0		2-8
		F	Patter	son Street		ee Street	Logged By - Scott I Driller - Craig Tanio	cala	rook			, — -,,	Geop	robe
Civil	Town/C	ty/or Vi	llage:	County:		State:	Water Level Observ While Drilling:		/Time _	3/11/0	00:00	<u> </u>	<u>Z</u> Depth	n (ft bgs) _6_
		mseh		Lena	awee	MI	After Drilling:	Date	/Time _:	3/11/0	09:00	)	Depth	(ft bgs) NM
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGIC DESCRIPTION	<b>.</b>			nscs	GRAPHIC LOG	WELL DIAGRAM	С	OMMENTS
				ROAD C	RAVEL lig	ht gray (10YR 7/1), v	et.			GP	229	TT		
			_	FILL as								1.	1	
1 GP	60		2-	medium (10YR 5	sand, trac 5/4), wet, so		low plasticity, bro			CL- ML				
	60		4			stly clay, some mediu ı brown (10YR 5/4), v		, low		CL			·	
2 GP	65		6-	grayish	brown (10)	ium sand, some fine /R 4/2), saturated, lo	ose.		/+	SP				
			-	SILTY C plasticity	LAY most y, dark yell	ly clay, some silt, trac owish brown (10YR 4	ce medium sand, /6), moist, stiff.	high		CL- ML			]	
			8-	SAND r trace sill dry, loos	nostly coar t, strong br se.	se sand, some medi own (7.5YR 5/6) and	ım sand, little gra light brown (7.5Y	′R 6/3	),	sw				
-COHP.GD1 80/0.02 8/2 Θ Β	71		10-	SAND n	nostly med rown (7.5Yl	ium sand, some coa R 4/2), saturated, loo	se sand, little find se.	e						
OB 4 G SOLEDON TOUR TOUR SOLEDON SOLED	38		12	Same as	s above.					sw				covery due to crushed 12.0 feet.
	<b>=</b>		16-		···	-								
WELL			10-	End of b	oring at 16	5.0 feet below ground	surface.							
<u></u>													<u> </u>	
Sign	ature:		//		1	Firm: RMT	Inc.						(7	734) 971-7080
5			Hu	y Me	the		Ranchero Drive	Ann	Arbor,	MI 4	48108			34) 971-9022

### WELL CONSTRUCTION DIAGRAM

PROJ. NAME:	Tecumseh Prod	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-3S
PROJ. NO:	8070.02	DATE INSTALLED:	3/11/2009	INSTALLED BY:	Scot Middlebro	ook	CHECKED BY: BR

PROJ. NO:	8070.02	DATE INSTALLED:	3/11/2009	INSTALLED BY:
ELEVATIO	N D	EPTH BELOW OR	ABOVE	
(BENCHMARK:	USGS) G	ROUND SURFACE	E (FEET)	TYPE OF RISE
797 60		CDOLIND SLIDEA	CE.	PIPE SCHEDUL
787.60		_GROUND SURFA	CE	PIPE JOINTS:
787.00	0.6	TOP OF CASING		SOLVENT USE
		<b>-</b>		SCREEN TYPE
				SCR. SLOT SIZ
		_CEMENT SURFA	CE PLUG	
				BOREHOLE DIA
		GROUT/BACKFILL MAT	ERIAL	
I I I I I I I I I I I I I I I I I I I		GROUT/BACKFILL MET	THOD	SURF. CASING
104.8 PIPE LENGTH		NA NA		
ISI				
	-	GROUT		DEVELOPMEN
		BENTONITE SEAL MAT	FRIAI	TIME DEVELOR
		MEDIUM CHIPS	C. 1 (1/ 1C	WATER REMO
	7.0	BENTONITE SEA	L	WATER ADDED
		_		WATE
778.60	9.0	TOP OF SCREEN	1	
]				CLARITY BEFC
5.00		FILTER PACK MATER	RIAL	COLOR BEFOR
SCREEN COU.5		MEDIUM, WASHED SA	AND	CLARITY AFTE
773.60	14.0	BOTTOM OF SCF	REEN	COLOR AFTER
				ODOR (IF PRES
	14.0	BOTTOM OF FILT	TER PACK	
		_		
		_BENTONITE PLU	G	N
				DTB BEFORE DE
		BACKFILL MATERIA	AL	DTB AFTER DEV
		NATURAL COLLAPS	SE .	SWE BEFORE DI
				SWE AFTER DEV
771.60	16.0	_HOLE BOTTOM		OTHER SWE:
NOTES:				Officit GVVC.
				PERMANENT, I
				PROTECTIVE (

CASING AND SCREEN DETAILS												
TYPE OF RISER:	2-INCH P\	<u>/C</u>										
PIPE SCHEDULE:	<u>40</u>											
PIPE JOINTS:	THREADE	D O-RING	S									
SOLVENT USED?	NO		-									
		10										
SCREEN TYPE:												
SCR. SLOT SIZE:	0.01-INCH	Į.										
BOREHOLE DIAME	TER:			0.0 TO 14.0 TO								
SURF. CASING DIA	METER:	NA IN.	FROM	NA TO	NA FT.							
		<u>NA</u> IN.	FROM	NA TO	NA FT.							
	WELL	DEVELOP	MENT									
DEVELOPMENT ME	TUOD:	SUDCE M	UD DUIN	ID.								
DEVELOPMENT METHOD: SURGE AND PUMP												
TIME DEVELOPING: 25 MINUTES  WATER REMOVED: 25 GALLONS												
WATER REMOVED: 25 GALLONS WATER ADDED: 0 GALLONS												
	ADITY DE		•		177							
WATER C	LARITE	-URE / AF	EK DE	VELOPMEN	11							
CLARITY BEFORE:	TURB	<u>D</u>										
COLOR BEFORE:	BROW	<u>/N</u>										
CLARITY AFTER:	CLEA	3										
COLOR AFTER:	CLEA	3										
ODOR (IF PRESEN	T): <u>NA</u>											
	WATER	LEVEL SU	MMARY									
MEAS	UREMENT (FE	ET)		DATE	TIME							
DTB BEFORE DEVEL		13.49	T/PVC		1750							
DTB AFTER DEVELO	PING:	13.49	T/PVC		1820							
SWE BEFORE DEVE	LOPING:	7.75	T/PVC	3/11/2009	1750							
SWE AFTER DEVELO	PING:	7.76	T/PVC	3/11/2009	1820							
OTHER SWE:			T/PVC									
OTHER SWE:			T/PVC									
	PROTECTI	VE CASING	DETAI	LS								
PERMANENT, LEG	BLE WELL	LABEL AD	DED?	✓ YES	□NO							
PROTECTIVE COV	ER AND LO	CK INSTAL	LED?	✓ YES	□NO							

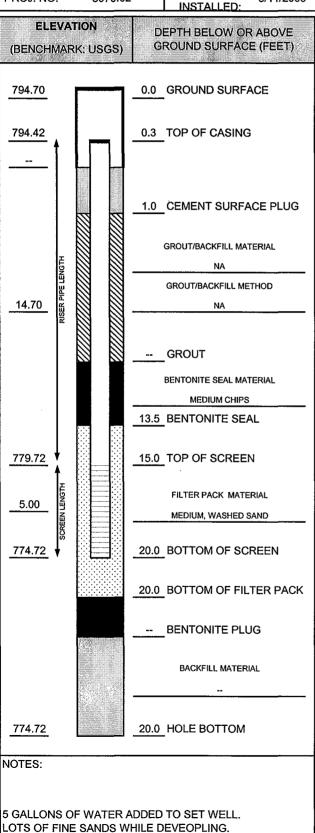
LOCK KEY NUMBER: 3120

							WELL CONST	<b>TRUCTION LO</b>	G						
												WE	LL I	VO. N	/IW-4s
														Page 1	
Fac	_		t Name			Disease	a II lavos allocations	Date Drilling Started	:	Date I	-	Complet	ted:	Projec	et Number:
Dri		ecur Firm:	nseh	Prod	ucts Comp	any - Phas Drilling Metho	e II Investigation	3/11/09 Surface Elev. (ft)	TOCI	Elevatio		1/09	Denth.	(ft bgs)	8070.02 Borehole Dia. (in)
	III IG		rranro	be, l	nc	-	ect Push/HSA		'00'		()	1	20.0		2-8
Во	ring	Location					Patterson Street,	Personnel	<u> </u>					pment:	<u> </u>
			а	bout	400 feet we	est of Mau	mee Street	Logged By - Scott I Driller - Craig Tanio		rook				Geop	orobe
Civ	/il To	own/Cit	y/or Vil	llage:	County:		State:	Water Level Observer While Drilling:		/Time	3/11/	09 00:00	7 (	Z Dept	h (ft bgs)15
<u> </u>			nseh		Lena	awee	MI	After Drilling:				00:00		_	h (ft bgs) NM
s	AME	PLE													
NUMBER	AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGIC DESCRIPTION			:	nscs	GRAPHIC LOG	WELL DIAGRAM	C	COMMENTS
Г					ROAD G	RAVEL						.0°			
1 GP		25		2— 2- -	medium	sand, few	SAND mostly clay, coarse sand, trace of (R 5/6), dry, stiff.	some silt, little gravel, medium pla	asticit	y,	CL- ML				
				4-	CRUSHI	ED WHITE	COBBLE					·0°			
2 GP		29		6-	SAND n sand, fe dry, loos	w gravel, p	ium sand, some coa ale brown (10YR 6/3	rse sand, little find 3) to brown (10YR	e 5/3),			<b>\</b>			
3 GP		73		10-	Same as	s above.				***					
20.0700				12-	Same as	s above, tra	ace gravel.				sw				
4 GP		69	5	14-	<u>∇</u> Change	to very da	h yellow (10YR 6/8) rk grayish brown (10		d at						
טייטייטים פיטייטים ביטי				16—		to mostly	coarse sand, some n R 5/3) to grayish brov								
4 G 5 G G G G G G G G G G G G G G G G G		75		18—											
WELL					End of b	ooring at 20	0.0 feet below ground	d surface.							
ي <b>ا</b> ر أ					l							<u></u>		<u>.L</u>	
Sig	natu	ure:		1ku	h	eth		Γ Inc. 4 Ranchero Drive	Ann	Arbo	r, MI	48108			734) 971-7080 734) 971-9022

RMT Inc. 3754 Ranchero Drive Ann Arbor, MI 48108

### **WELL CONSTRUCTION DIAGRAM**

PROJ. NAME:	Tecumseh Prod	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-4S
PROJ. NO:	8070.02	DATE INSTALLED:	3/11/2009	INSTALLED BY:	Scot Middlebro	ook	CHECKED BY: BR



C/	ASING AN	D SCREE	N DET	AILS	
TYPE OF RISER:	2-INCH P\	<u>/C</u>			
PIPE SCHEDULE:	<u>40</u>				
PIPE JOINTS:	THREADE	D O-RINGS	<u> </u>		
SOLVENT USED?			-		
SCREEN TYPE:	<del></del>	(C			
		_			
SCR. SLOT SIZE:	0.01-INCH				
BOREHOLE DIAME	TER:			0.0 TO	
SURF. CASING DIA	METER:			NA TO	<del></del>
	WELLI	DEVELOP	MENT		
		JETELO.			
DEVELOPMENT ME	THOD:	SURGE AN	ND PUM	<u>IP</u>	
TIME DEVELOPING	<b>:</b> :	20	MINUT	ES	
WATER REMOVED	:	25	GALLO	NS	
WATER ADDED:		0	GALLO	NS	
WATER CI	ARITY BEI	FORE / AFT	ER DE	/ELOPMEN	т
CLARITY BEFORE:	CLOU	<u>DY</u>			
COLOR BEFORE:	BROW	<u>/N</u>			
CLARITY AFTER:	CLEA	3			
COLOR AFTER:	CLEAF	3			
ODOR (IF PRESEN	T): <u>NA</u>				
	WATER	LEVEL SUI	MARY		4
MEASI	JREMENT (FEE	ET)		DATE	TIME
DTB BEFORE DEVEL	OPING:	20.03	T/PVC	3/12/2009	1011
DTB AFTER DEVELO	PING:	20.03	T/PVC	3/12/2009	1040
SWE BEFORE DEVE	LOPING:	15.06	T/PVC	3/12/2009	1011
SWE AFTER DEVELO	PING:	15.06	T/PVC	3/12/2009	1040
OTHER SWE: DURIN	G DEVEL.	15.19	T/PVC	3/12/2009	1026
OTHER SWE:			T/PVC		
	PROTECTI	/E CASING	DETAI	LS	

PERMANENT, LEGIBLE WELL LABEL ADDED?

PROTECTIVE COVER AND LOCK INSTALLED?

3120

LOCK KEY NUMBER:

√ YES

✓ YES

☐ NO

\_\_ NO

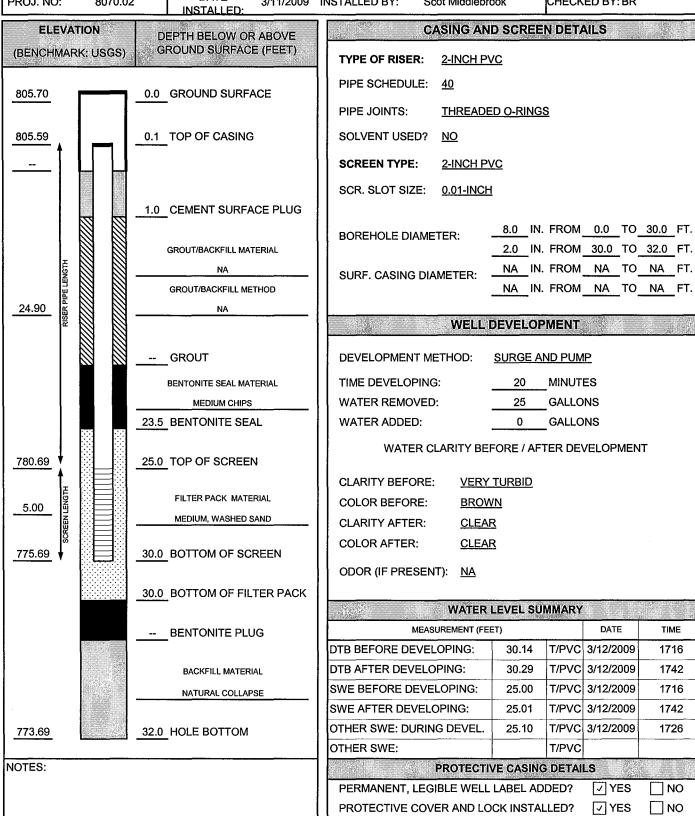
ſ							WELL CONST	RUCTION LO	G						
												WE	LL N	NO. N Page 1	<b>1W-5s</b>
F			ct Nam					Date Drilling Started	d:	Date Dri	_	•	eted:		t Number:
_ _		Tecu Firm:		Prod	ucts Comp	any - Phas	e II Investigation	3/11/09 Surface Elev. (ft)	TOCE	levation		1/09	Denth	(ff hose)	8070.02 Borehole Dia. (in)
ו	, 111111 <u>1</u>		rrapro	be. I	nc.	_	rect Push/HSA	Sunace Elev. (II)	100 =	.cvau011	(11)	i Utal	32.0	1	2-8
В	oring		ion: (	On TF	C property	1	vans Street, about	Personnel Logged By - Scott		rook		Drillin		ipment:	orobo
c	ivil T	own/C	ity/or V	illage:	County:		State:	Driller - Craig Tani Water Level Observ						Geop	лоре
L		Tecu	mseh		Lena	awee	MI	While Drilling: After Drilling:	Date/ Date/	_		09 00:0			h (ft bgs) <u>25</u> h (ft bgs) <u>NM</u>
-	SAM	PLE													
A BEE	AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGIC DESCRIPTION	I			USCS	GRAPHIC LOG	WELL DIAGRAM	C	COMMENTS
	目				TOPSO	IL very dar	k gray (10YR 3/1), mo	oist.							
1 G		63		2- 2-	sand, fe brown (7	ew coarse s 7.5YR 4/6),	SAND mostly clay, s and, trace gravel, me moist, stiff.	dium plasticity, si	trong		CL- ML				of steel and clay tile up with augers while well.
ļ				-	gravel, ¡	mostly coar pale brown d cobble at	se sand, some mediu (10YR 6/3), dry, dens	ım sand, little silt, se.	trace	,	SP				
G G	PP	54		4- - - 6- -	SAND i	mostly coar	se sand, little mediun vish brown (10YR 5/4)				sw				
9J RMT_CORP.GDT_8070.02_8/28/09		56		8- - - 10- -			w to little gravel at 8.0		ie.						
SOIL BORING WELL CONSTRUCTION LOG 8070.02.GPJ RMT CORP.GDT 8070.02 8/28/09		65		12- - - 14- -			10YR 6/3), dry, dense		ng.		SP				
SOIL BORING	ignat	ture:	1	Hu	, su	4	Firm: RMT	Inc. Ranchero Drive	Ann A	Arbor M	/II 48	8108			734) 971-7080 734) 971-9022

Firm: RMT Inc. 3754 Ranchero Drive Ann Arbor MI 48108 (734) 971-7080 Fax (734) 971-9022 Signature:

<b>-</b>				WELL CONSTRUCTION LOG		WE		O. MW-5s Page 2 of 2
AND TYPE AND TYPE BECOVERY (%)		BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	sosn	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
5 SP 13	'1		- - 18 — -	Change to few to little coarse sand, trace gravel at 17.0 feet.				
	33		22-	Change to trace coarse sand at 20.0 feet.	SP		<b>S</b>	
7	57		24— 26— 28—	SAND mostly medium sand, some coarse sand, little fine sand, trace gravel, very dark grayish brown (10YR 3/2), saturated, dense.				
3.P. 11111111111111111111111111111111111	'3		30-	Same as above.  End of boring at 32.0 feet below ground surface.	sw			
			34—	End of boiling at oz.o iset below ground surface.				
			36					

### WELL CONSTRUCTION DIAGRAM

PROJ. NAME:	Tecumseh Prod	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-5S
PROJ. NO:	8070.02	DATE INSTALLED:	3/11/2009	INSTALLED BY:	Scot Middlebro	ook	CHECKED BY: BR



DATE

TIME

1716

1742

1716

1742

1726

. ,	WELL CONSTRUCTION LOG																
			V		****							WE	LL N	10.	MW-6s/E	3-6	
Fac	cilitv/	Projec	t Name	 e:					Date Drilling Started	l:	Date F	Orillina :	Comple	ted:	Page 1 of Project Nur		
"					ucts Comp	anv - Phas	e II inve	stigation	3/13/09		Julio	_	3/09	.ou.	1 -	70.02	
Dri		Firm:				Drilling Metho		<u> </u>	Surface Elev. (ft)	TOC	Elevatio			Depth		ehole Dia. (in)	
			rrapro				ect Push							28.0			
Bo	ring l	Locati	on: (	On TF	C property	, on southe	east of co	orner of n parking lot	Personnel Logged By - Scott	Middleb	rook		Drilling	g Equi	pment:		
						allo(50)		· paining lot	Driller - Craig Tani	cala					Geoprob	e	
Civ			y/or Vil	•	County:		State:		Water Level Observ While Drilling:				00:00		Z Depth (ft b		
- 8	T AMP		nseh		Lena	awee		MI	After Drilling:	Date.	/Time	3/13/0	09:00	)	Depth (ft b	ogs) <u>NM</u>	
-	AIVIF	LE															
		8	TS.				1.1	THOLOGIC					g	₹			
	ш	۳ ۳	NOC					SCRIPTION		•			ğ	AGR/	COM	MENTS	
 	<u></u>	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET								δί	GRAPHIC LOG	WELL DIAGRAM			
NUMBER	AN	E E	BLO	DEP								nscs	GRA	WEL			
_	_				- ASPHAL								<del>ر</del> ک	TT			
				-	ROAD		otly alov	come cestes	cand little med	lium	/			11	1		
				-	sand, fe	w silt, trace	e gravel,	medium plas	sand, little med ticity, very dark	num brown	1				ĺ		
1				_	(7.5YR 2	2.5/2), wet,	stiff.	•				01					
GP		56		2				orn 5/6), cla creases with	ly content decre depth.	ases		CL					
									·								
			.1	_													
L	且			4-				some mediu 5YR 5/3), dry	m sand, little fin	е							
				´	Jana, 10	graver, L	7. Ovvii (7.	o i i co/o/, ury	, 10000.								
				_											i		
				_	05	4 - 4 · ·	<b>k</b>	alla ala di con	andalı konon (4.6	WB 4	(4)						
2 GP		63		6-	Change at 5.5 fe		ay, trace	siit, dark yell	owish brown (10	γ H 4/	(4)						
uP				_													
	昌			_							,						
	亅			+													
├-	1			8-	Change	to few to li	ittle arav	el, trace crust	hed cobble at 8.	0 feet		sw					
				-	Jinange	.0 .011 (0 11	grave	on trace crust	Jud Juddio at O.		•	244					
				-													
				-													
З GP		54		10-	1												
	亅																
				-													
l																	
t-				12-								;					
	冒			-							_						
	昌		,	-					se sand, little fin	e							
4		58		14-	sand, ye	MOWISH DIC	איוו ( 101	R 5/4), moist	, uense.			i					
GР		55		,								SW					
				_													
				~	SAND -	noetly coor	ea cand	some modiu	m sand, few fine	<u></u>		C) 1 1					
3 GP 4 GP					SAIND II	nosity coar	se sand,	Some mealu	in Sanu, iew fine	7		SW					
Sia	natu	re:					<del></del>	Firm: RMT	Inc.	·					(734)	971-7080	
			M	us	In t				Ranchero Drive	Ann	Arbor	<u>, MI</u>	48108			971-9022	

	M		WELL CONSTRUCTION LOG	WE	LLN		<b>1W-6s/B-6</b> Page 2 of 3
AND TYPE AND TYPE RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
5 AP 60 63 73 73 73 73 73 73 73 73 73 73 73 73 73	8	18	sand, trace gravel, brown (10YR 5/3), moist, loose.  Change to mostly medium sand, little coarse sand, dense at 18.0 feet.	sw	5	۸	-
		22-	SAND mostly coarse sand, some medium sand, little fine sand, few silt, trace gravel, brown (10YR 5/3), moist, dense.  Change to yellowish brown (10YR 5/8) 21.5 feet.  Change to no silt, brown (7.5YR 5/3) at 23.0 feet.	sw			
7 73 P 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		24	SAND mostly medium sand, some coarse sand, little fine sand, dark grayish brown (10YR 4/2), saturated, loose.  Coarse sand content decreases with depth.	sw			
		30-	Blind drill to 48.0 feet.				
		32-					
		36-					

				WELL CONSTRUCTION LOG	WE	LL I		<b>MW-6s/B-6</b> Page 3 of 3
SAM	PLE							
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
			38-					
			40-					
			42-					
İ								
			44-					Groundwater sample col
								at 44-48 feet.
		 	46-					
		i						
		<u> </u>	40					
			48-	End of boring at 48.0 feet below ground surface.				
		 	-					
			50-					
								ł 
			52-					
						<b>!</b>		
			54-					
			56					
ľ			58-					

## **WELL CONSTRUCTION DIAGRAM**

PROJ. NAME:	Tecumseh Prod	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-6S
PROJ. NO:	8070.02	DATE INSTALLED:	3/13/2009	INSTALLED BY:	Scot Middlebro	ook	CHECKED BY: BR

PROJ. NO:	8070.02	DATE INSTALLED:	3/13/2009 II
ELEVAT (BENCHMAR		DEPTH BELOW OF BROUND SURFAC	
804.30	0.0	_GROUND SURF	ACE
803.73	0.6	_TOP OF CASING	;
_ <del></del>			1
		_CEMENT SURFA	ACE PLUG
HT0		GROUT/BACKFILL MAT	TERIAL
73.40 RISER PIPE LENGT		GROUT/BACKFILL ME	THOD
_23.40 kg		NA	
[			
	<u> </u>	_GROUT	
		BENTONITE SEAL MAT	TERIAL
[		MEDIUM CHIPS	:
	22.5	BENTONITE SEA	AL
780.33	24.0	TOP OF SCREE	N
5.00 H		FILTER PACK MATE	ERIAL
SCREEN LENGT		MEDIUM, WASHED S	SAND
775.33 V	29.0	_BOTTOM OF SC	REEN
	29.5	BOTTOM OF FIL	TER PACK
		_BENTONITE PLU	JG
		BACKFILL MATERI	IAL
		NATURAL COLLAP	'SE
756.33	48.0	HOLE BOTTOM	
NOTES:	<u> </u>		

NSTALLED BY: Scot Middlebrook CHECKED BY: BR											
CA	SING AN	D SCREE	N DETA	AILS							
TYPE OF RISER:	2-INCH P\	<u>/C</u>									
PIPE SCHEDULE:	<u>40</u>										
PIPE JOINTS:	THREADE	D O-RINGS	<u>3</u>								
SOLVENT USED?	<u>NO</u>										
SCREEN TYPE: 2-INCH PVC											
SCR. SLOT SIZE: <u>0.01-INCH</u>											
BOREHOLE DIAMETER: 8.0 IN. FROM 0.0 TO 29.5 FT.  1.0 IN. FROM 29.5 TO 48.0 FT.  OURS CASING DIAMETER: NA IN. FROM NA TO NA FT.											
SURF. CASING DIAMETER:  NA IN. FROM NA TO NA FT.											
WELL DEVELOPMENT											
WELL DEVELOPMENII 1											
DEVELOPMENT ME	DEVELOPMENT METHOD: <u>SURGE AND PUMP</u>										
TIME DEVELOPING		30	MINUT								
WATER REMOVED:		25	GALLO								
WATER ADDED:		0	GALLO	NS							
WATER CL	ARITY BEI	FORE / AFT	ER DE	VELOPMEN	IΤ						
CLARITY BEFORE:	VERY	TURBID									
COLOR BEFORE:	BROW	<u>/N</u>									
CLARITY AFTER:	CLEA	3									
COLOR AFTER:	CLEAR	3									
ODOR (IF PRESENT	Γ): <u>NA</u>										
					_						
MEAOL		LEVEL SUI	MMARY		TIME						
DTB BEFORE DEVELO	DPING:	28.49	T/PVC	3/16/2009	1314						
DTB AFTER DEVELO		28.49	T/PVC	3/16/2009	1354						
SWE BEFORE DEVEL		23.29	T/PVC		1314						
SWE AFTER DEVELO		23.30	T/PVC		1354						
OTHER SWE: DURING		23.34	T/PVC		1340						
OTHER SWE:			T/PVC								
	ROTECTI	VE CASING	DETAI	LS							
PERMANENT, LEGI	BLE WELL	LABEL AD	DED?	√ YES	□ NO						
PROTECTIVE COVE	R AND LO	CK INSTAL	LED?	✓ YES	□NO						
Ī					ı						

LOCK KEY NUMBER: 3120

2/888	****						12 2 2	F.2.				/IW-7s/ Page 1 of	3
		t Name		_			Date Drilling Started	Date	_	Complet	ed:	Project Nu	
		nseh	Prod	ucts Comp		se II Investigation	3/16/09			6/09			70.02
rilling	Firm:				Drilling Meth		Surface Elev. (ft)	TOC Elevat	ion (ft)	Total D		nt bgs)   Boi	ehole Dia
		rrapro				rect Push/HSA				28.0 Drilling Equipment:			2-8
soring	Locati	on: C	on 1 P 00 fe	of property et south of	r, east of E Patterson	vans Street, about Street	Personnel Logged By - Scott I Driller - Craig Tanic			Drilling		ment: Geoprol	e
Civil To	own/Ci	ty/or Vil	age:	County:		State:	Water Level Observe		0404			5 " "	
-	Геси	mseh		Lena	awee	М	While Drilling: After Drilling:	Date/Time Date/Time		<u>09 00:00</u> 09 00:00		Depth (ft Depth (ft	
SAMI	PLE				<del>-</del>								
AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGIC DESCRIPTION			nscs	GRAPHIC LOG	WELL DIAGRAM	CON	1MEN7
				ASPHAL	T, ROAD	GRAVEL				1115	111		
			-			ium sand, little coarse prown (7.5YR 2.5/2), r		trace	SP		1 1		
	50	7. F. B.	2	coarse s (7.5YR	sand, trace 5/8), wet, s	tly clay, some silt, few e gravel, medium plas soft. gravel content increas	ticity, strong brow		CL- ML			; ;	
	67		6	little fine	sand, yel	se sand, some mediu lowish brown (10YR 5 dry to moist, loose to	5/4) grading to pa		sw	<i>2</i> 1212			
			8-			dium sand, some coal	rse sand, trace gr	 avel,					
	38		10-	pale bro	wn (10YR	6/3), dry, loose.							
	7-1		12-	Change feet.	to little to	some coarse sand, c	rushed cobble at	12.0	SP				
<u>प्रात्तानामानामाना</u>	54		- 14 - -										

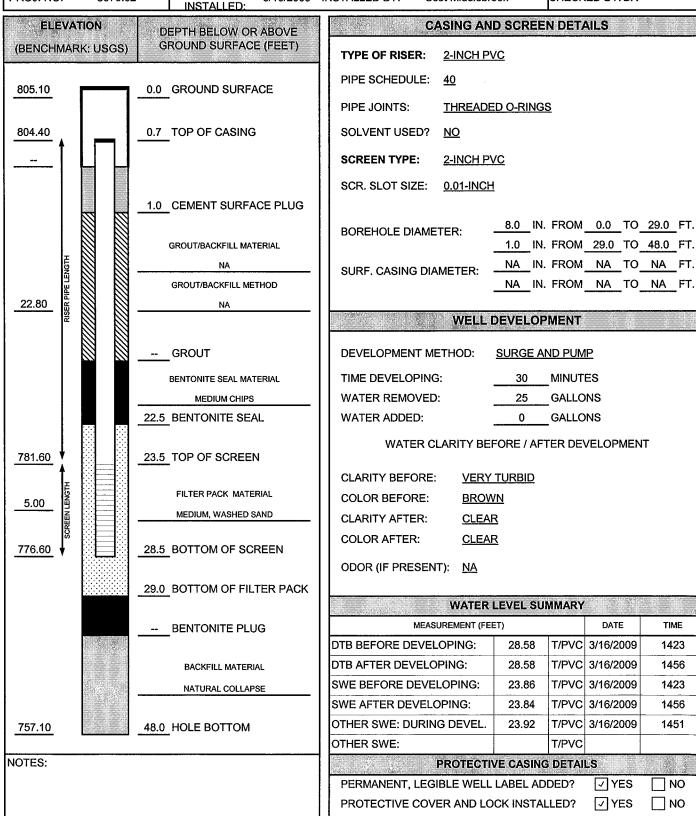
(734) 971-7080 Fax (734) 971-9022 RMT Inc. 3754 Ranchero Drive Ann Arbor, MI 48108 Signature: Firm:

				WELL CONSTRUCTION LOG	WE	ELL N		<b>MW-7s/B-7</b> Page 2 of 3
NUMBER AND TYPE	RECOVERY (%) 표	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
5 G 6 G 7 G 7 G 7 G 7 G 7 G 7 G 7 G 7 G 7		3	18-	Same as above, no gravel at 16.0 feet.	SP			
68 	65	-	22-	SAND mostly coarse sand, some medium sand, little fine sand, few gravel, pale brown (10YR 6/3) grading to yellowish brown (10YR 5/8), dry, dense.  Change to pale brown (10YR 6/3), wet at 23.0 feet.  SAND mostly medium sand, some coarse sand, little fine	sw			
7 GP			26-	sand, grayish brown (10YR 5/3), saturated, loose.	sw			
	·		30-	Blind drill to 48.0 feet.				
			32-					
			36					

				WELL CONSTRUCTION LOG	· ·			
		İ			WE			MW-7s/B-7 Page 3 of 3
SAM	PLE							
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	SOSU	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
			38-					
			-					
			40 <i>-</i> -				1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
			42				i	
			_					
			44					Groundwater sample collect at 44-48 feet.
			46—				7	
			- - 48-	End of boring at 48.0 feet below ground surface.	<u> </u>		-	
			_					
			50—					
			- - 52					
			54-					
			56 — -			ender i		
			- - 58-					

### WELL CONSTRUCTION DIAGRAM

PROJ. NAME:	Tecumseh Pro	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-7S
PROJ. NO:	8070.02	70.02 DATE 3/16		3/16/2009 INSTALLED BY:		ook	CHECKED BY: BR



LOCK KEY NUMBER: 3120

DATE

TIME

1423

1456

1423

1456

1451

NO □ NO

SLIGHT SHEEN IN BUCKET DURING DEVELOPMENT.

#### WELL CONSTRUCTION LOG WELL NO. MW-8s/B-8 Page 1 of 3 Date Drilling Completed: Facility/Project Name: Date Drilling Started: Project Number: Tecumseh Products Company - Phase II Investigation 8070.02 3/13/09 3/13/09 Total Depth (ft bgs) **Drilling Method:** Surface Elev. (ft) TOC Elevation (ft) Borehole Dia. (in) Direct Push/HSA Terraprobe, Inc. 28.0 2-8 Boring Location: On TPC property, east of Evans Street, about Personnel Drilling Equipment: Logged By - Scott Middlebrook 700 feet south of Patterson Street Geoprobe Driller - Craig Tanicala Civil Town/City/or Village: County: State: Water Level Observations: While Drilling: Date/Time 3/13/09 00:00 □ Depth (ft bgs) 24 **Tecumseh** Lenawee MI After Drilling: Date/Time 3/13/09 00:00 Depth (ft bgs) SAMPLE WELL DIAGRAM RECOVERY (%) BLOW COUNTS DEPTH IN FEET LITHOLOGIC GRAPHIC LOG COMMENTS DESCRIPTION NUMBER AND TYPE **ASPHALT ROAD GRAVEL** TOPSOIL roots present. SILTY CLAY WITH SAND mostly clay, some silt, little medium sand, trace coarse sand, trace gravel, medium 65 2 plasticity, dark brown (7.5YR 3/2) grades to strong brown (7.5YR 5/6), wet, soft. SAND mostly coarse sand, some medium sand, few fine sand, few gravel, brown (10YR 5/3) grading to pale brown (10YR 6/3), dry to moist, loose. 2 GP 54 SW 8 3 GP 10-63 SAND mostly medium sand, some fine sand, trace coarse sand, dark yellowish brown (10YR 4/4), moist, loose. 12 SP

Signature:

CORP.GDT

NG WELL CONSTRUCTION LOG 8070.02.GPJ RMT

4 GP

63

RMT Inc.

SAND mostly coarse sand, some medium sand, few fine sand, trace gravel, dark yellowish brown (10YR 5/4), dry, loose.

SAND mostly medium sand, little fine sand, trace coarse

3754 Ranchero Drive Ann Arbor, MI 48108

SW

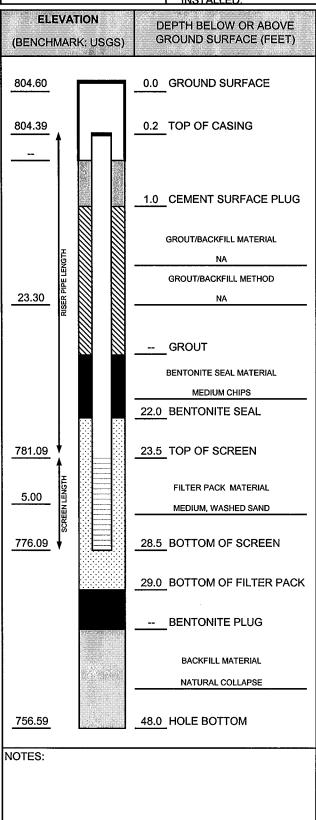
SW

				WELL CONSTRUCTION LOG				
					WE	ELL I		<b>MW-8s/B-8</b> Page 2 of 3
SAM	PLE							
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
				sand, trace gravel, dark yellowish brown (10YR 5/4), moist, loose.				
5 GP 6 GP 7 GP	67		- 18- -					
			20-	Same as above.				
6 GP	65		22- - -		sw			
			24-	☑ Change to wet at 23.5 feet.  Change to saturated at 24.0 feet.				
7 GP	44		26	Crushed cobble at 26.0 feet.				
			28	Blind drill to 48.0 feet.	-			
		, o Permi	30-					
			32-					
	;		34					
			36-					

				WELL CONSTRUCTION LOG	<b>3.4</b> ***	-,		WW 0-/D 0
					WE	LL r		WW-8s/B-8 Page 3 of 3
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	SOSN	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
SOIL BORING WELL CONSTRUCTION LOG 8070.02.GPJ RMT_CORP.GDT 8070.02 8/28/09			38 - 40 - 42 - 44 - 46 - 50 - 52 - 56 - 58 - 58 - 58 - 58 - 58 - 58 - 58	End of boring at 48.0 feet below ground surface.				Groundwater sample collected at 44-48 feet.

## **WELL CONSTRUCTION DIAGRAM**

PROJ. NAME:	Tecumseh Pro	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-8S
PROJ. NO:	8070.02	DATE INSTALLED:	3/13/2009	INSTALLED BY:	Scot Middlebro	ook	CHECKED BY: BR



CASING AND SCREEN DETAILS											
TYPE OF RISER:	2-INCH P\	<u>/C</u>									
PIPE SCHEDULE:	<u>40</u>										
PIPE JOINTS:	THREADE	D O-RINGS	3								
SOLVENT USED?			_								
		10									
SCREEN TYPE:											
SCR. SLOT SIZE:	0.01-INCH										
BOREHOLE DIAME	TER:			0.0 TO 29.0 TO							
SURF. CASING DIA	METER:			NA TO							
JON . CASING DIA	avil t LIX.	NA IN.	FROM	NA TO	NA FT.						
	WELL	SEVEL OR	MENT								
	WELL	JEVELUP	MEM								
DEVELOPMENT ME	ETHOD:	SURGE AN	ND PUM	<u>IP</u>							
TIME DEVELOPING	<b>;</b> :	25	MINUT	ES							
WATER REMOVED	•	25	GALLO	NS							
WATER ADDED:		0	GALLO	NS							
WATER CI	LARITY BEI	FORE / AFT	ER DE	VELOPMEN	IT						
CLARITY BEFORE:	VERY	TURBID									
COLOR BEFORE:	LIGHT	BROWN									
CLARITY AFTER:	CLEAF										
COLOR AFTER:	CLEAF										
ODOR (IF PRESEN	T): <u>NA</u>										
	WATER	LEVEL SU	MARY								
MEAS	UREMENT (FE	ET)		DATE	TIME						
DTB BEFORE DEVEL	OPING:	28.13	T/PVC	3/16/2009	1209						
DTB AFTER DEVELO	PING:	27.17	T/PVC	3/16/2009	1246						
SWE BEFORE DEVE	LOPING:	23.70	T/PVC	3/16/2009	1209						
SWE AFTER DEVELO	PING:	23.70	T/PVC	3/16/2009	1246						
OTHER SWE: DURIN	G DEVEL.	23.81	T/PVC	3/16/2009	1232						
OTHER SWE:			T/PVC								
	PROTECTIV	/E CASING	DETAI	LS							
PERMANENT, LEGI	BLE WELL	LABEL AD	DED?	✓ YES	□ NO						

PROTECTIVE COVER AND LOCK INSTALLED?

LOCK KEY NUMBER: 3120

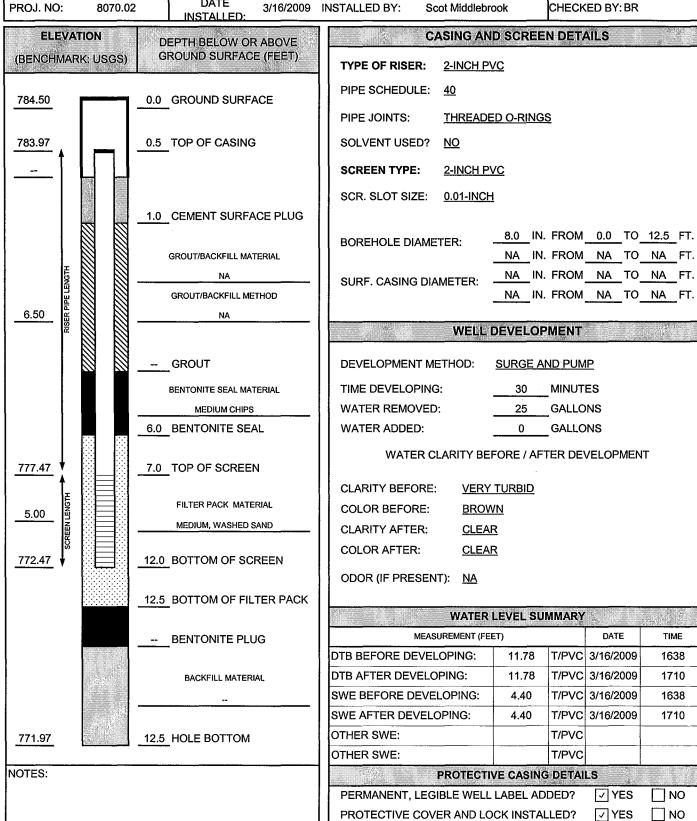
✓ YES NO

		. /				WELL CONS	STRUCTION LO	)G		_				-	
										1	WEI			1W-9s	
acility	//Projed	ct Name					Date Drilling Started	d:	Date Dri	lling Co	mplet		Page 1 Projec	t Number:	
7	Tecui	nseh	Produ	ucts Comp		e II Investigation	3/16/09			3/16/0	09			8070.0	
Prilling	Firm:		_		Drilling Meth		Surface Elev. (ft)	TOC E	levation (	(ft) T			ft bgs)	Borehole	•
Porina	Te	-	be, Ir			ect Push/HSA	Personnel	<u> </u>		-		12.0	ment:	2	:-8
oning	Locali	а	bout	eastern sid 1000 feet s and Maum	south of co	facility property, rner of Patterson	Logged By - Scott Driller - Craig Tani		ook		y minig	Equip	Geop	robe	
ivil T	own/Ci	ty/or Vil	llage:	County:		State:	Water Level Obser While Drilling:	vations: Date/	Time 3	16/09	00.00	$\nabla$	' Denti	h (ft bgs)	
-	Tecu	mseh	_	Lena	wee	MI	After Drilling:	Date/	_	16/09				h (ft bgs)	NM
SAM	PLE													·- ·	
AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGI DESCRIPTIO				nscs	GRAPHIC LOG	WELL DIAGRAM	C	ЮММЕ	NTS
				TOPSO	L ,					7					
	79		2-	medium brown (7 sand, no	sand, few 7.5YR 4/2) onplastic, g	SAND mostly clay coarse sand, trace, moist, stiff. Changray (7.5YR 6/1).	gravel, low plastic ge to few to little co			CL O					
		:	4-	SAND	nostly coal	rse sand, some me ace gravel, brown (	dium sand, little fin	ne pose.		sw .	<i>'•</i> '⁄.		į		
	85		6-	SILTY Comedium stiff.	<b>LAY</b> most plasticity,	ly clay, some silt, tr dark yellowish brov	ace coarse sand, vn (10YR 4/6), dry	, very		CL- ML					
	96		8-			lium sand, some co R 4/2), saturated, lo		ne		SP					•
			12 <del></del>			eet during well insta 2.5 feet below grou						<b>H</b> .			
			14								1				
	ure:				, , _	Firm: RN	//T Inc.	·					·	734) 97	1.70

# BMT

### WELL CONSTRUCTION DIAGRAM

PROJ. NAME:	Tecumseh Prod	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-9S
PROJ. NO:	8070.02	DATE INSTALLED:	3/16/2009	INSTALLED BY:	Scot Middlebro	ook	CHECKED BY: BR



DATE

✓ YES

√ YES

LOCK KEY NUMBER: 3120

TIME

1638

1710

1638

1710

□NO

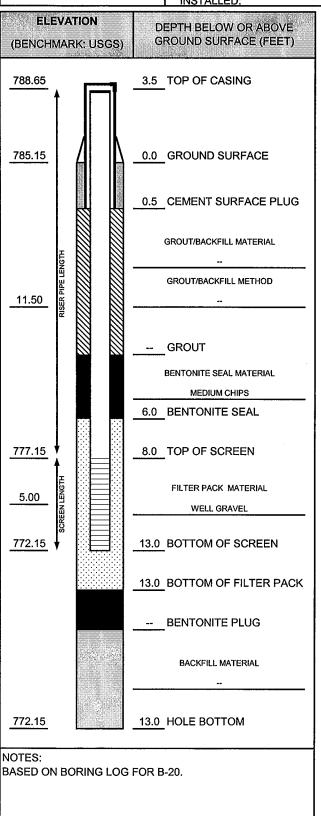
□ио

Ξ					WELL CONS	TRUCTION LC	_	WELI	L NO	. MV		s/B-20
Facility/Proje	ct Nam	ie:		***		Date Drilling Started	d: Date	Drilling	Complet	ted:	Page 1	t Number:
			ucts Comp	anv - Phas	se II Investigation	4/15/09	2410		5/09			8070.02
Drilling Firm:		1 1001	aoto oomp	Drilling Meth		Surface Elev. (ft)	TOC Elevat			Depth	(ft bgs)	Borehole Dia. (in)
- 0	rranr	obe, lı	nc.	_	rect Push/HSA			1.7	1	16.0		2-8
Boring Locat					o feet east of the	Personnel	1				pment:	
	•	corner	of Patters	on Street	and Maumee Street	Logged By - Scott Driller - Joe Fotjik					Geop	orobe
Civil Town/C	-	_	County: Lena	awee	State:	Water Level Observille While Drilling: After Drilling:	vations: Date/Time Date/Time		09 00:00 09 00:00			h (ft bgs) <u>5</u> h (ft bgs) <u>NM</u>
SAMPLE				_	<u> </u>							
NUMBER AND TYPE RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGIC DESCRIPTIO			SSN	GRAPHIC LOG	WELL DIAGRAM	C	COMMENTS
1 GP 2 GP 75		2 -	medium 5/6), mo	ELAY WITH sand, low pist, very s mostly med	I SAND some silt, lit to medium plasticity tiff.  dium to coarse sand, I SAND some silt, lit	v, strong brown (7	.5YR	CL- ML SP		1		
2 GP 75		6-	medium 5/6), mo SAND n SANDY medium 5/6), mo	sand, low bist, very s mostly med CLAY modusand, med sand, med bist, very semostly coa	to medium plasticity tiff. dium to coarse sand, stly clay, some silt, li dium to low plasticity	wet. ittle coarse sand, strong brown (7	.5YR trace .5YR	SP CL SW				
1 444		8—	CLAY n grading SAND W silt, gree SAND n	nostly clay to greenis VITH SILT enish gray nostly med	h, little silt, low plastic h gray (GLEY1 5/1), mostly medium sand (GLEY1 5/1), satura dium sand, little fine saturated, medium	ity, brown (7.5YR dry, hard. d, some fine sand ted, dense. sand, light greenis	l, little	CL SW- SC	1111		Ground at 8-12	dwater sample collecte feet.
3 GP 4 GP 4 GP		10—	SAND	nostly med	dium sand, little fine	sand trace to few		SP				
		12-	coarse s medium	sand, light dense, co	greenish gray (GLE) parse sand increasing medium sand, some	Y1 7/1), saturated g with depth.	,	sw			<u>.</u>	
4		14	sand at	13.5 feet.								
											<u></u>	
Signature:		Street	. 1.			T Inc. 4 Ranchero Drive	Ann Δrh	or MI	48108	<u> </u>		734) 971-7080 734) 971-9022

SAM	PLE				WELI	V-10s/B-20 Page 2 of 2		
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
			18-					Groundwater sample collegat 18-22 feet.
			20-					
			22-	End of boring at 22.0 feet below ground surface.	1 1 1 1 1 1			
			24-					
			26-					
			28-					
			-					
			30-					
			32-					
			34-					
			-					
			36-					
			38-					

### **WELL CONSTRUCTION DIAGRAM**

PROJ. NAME:	Tecumseh Pro	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-10S
PROJ. NO:	8070.02	DATE INSTALLED:	5/12/2009	INSTALLED BY:	Brent Ritchie		CHECKED BY: JB



CASING AND SCREEN DETAILS												
TYPE OF RISER:	2-INCH P	<u>/C</u>										
PIPE SCHEDULE:	<u>40</u>											
PIPE JOINTS:	THREADE	D O-RINGS	<u>3</u>									
SOLVENT USED?	NO		-									
SCREEN TYPE:	_	.rc		-								
		<del></del>										
SCR. SLOT SIZE:	0.01-INCF	<u>!</u>										
BOREHOLE DIAME	TER:				13.0 FT.							
SURF. CASING DIA	METED:				NA FT.							
SORF. CASING DIA	IVIE I EIK.	NA IN.	FROM	NA TO	NA FT.							
	\A/E1	DEVELOP	MENT									
	AAFFF I	DEVELOR	IAITIAI									
DEVELOPMENT ME	THOD:	SURGE A	ND PUM	<u>IP</u>								
TIME DEVELOPING	i:	10	MINUT	ES								
WATER REMOVED:	:	15	GALLO	NS								
WATER ADDED:		0	GALLO	NS								
WATER CL	ARITY BEI	FORE / AFT	ER DE	VELOPMEN	IT							
CLARITY BEFORE:	<u>VERY</u>	TURBID										
COLOR BEFORE:	DARK	GRAY										
CLARITY AFTER:	SLIGH	ITLY TURB	<u>ID</u>									
COLOR AFTER:	CLEA	R/TAN										
ODOR (IF PRESEN	T): <u>NA</u>											
	WATER	LEVEL SUI	MMARY									
MEASU	JREMENT (FE	<b>≣</b> T)		DATE	TIME							
DTB BEFORE DEVEL	OPING:	15.26	T/PVC	5/12/2009	1710							
DTB AFTER DEVELO	PING:	15.34	T/PVC	5/12/2009	1725							
SWE BEFORE DEVEL	OPING:	9.52	T/PVC	5/12/2009	1710							
SWE AFTER DEVELO	PING:	9.54	T/PVC	5/12/2009	1725							
OTHER SWE:		-	T/PVC									
OTHER SWE:			T/PVC									

PROTECTIVE CASING DETAILS

✓ YES

☐ NO

☐ NO

PERMANENT, LEGIBLE WELL LABEL ADDED?

LOCK KEY NUMBER: 3120

PROTECTIVE COVER AND LOCK INSTALLED? YES

Г							WE	LL CONST	RUCTION L	OG						
											,	WELI	_ NO	MV	V-11s	s/B-13
Ļ	ooilib	/Project	ct Name						Date Drilling Start	od:	Doto	Drilling	Comple	od:	Page 1	t of 3 ct Number:
- [					ucts Comp	any - Phas	a II Invas	etination	5/14/09		Date	_	4/09	eu.	riojec	8070.02
<u> </u>		Firm:	113611	1100	ucts Comp	Drilling Metho		Sugation	Surface Elev. (ft)		C Elevat		Total I	Depth	(ft bgs)	Borehole Dia. (in)
ı	-	Te	rrapro	be, l	nc.	Dir	ect Push	/HSA						36.0		2-8
В	oring	Locati			W on the e			outh of	Personnel Logged By - Brei	nt Dital			Drilling	Equip	oment:	
					ection with	Patterson :	Street		Driller - Joe Fotji		ile				Geop	orobe
С	ivil T	own/Ci	ty/or Vi	lage:	County:		State:	•	Water Level Obse While Drilling:		ns: ate/Time	5/14/	09 00:00		7 Dept	h (ft bgs) <u>28</u>
L			mseh		Lena	awee		MI	After Drilling:		ate/Time		09 00:00			h (ft bgs) NM
L	SAM	PLE														•
NIMBEB	AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				THOLOGIC ESCRIPTION				nscs	GRAPHIC LOG	WELL DIAGRAM	C	COMMENTS
T	$\overline{}$				TOPSOI	L			<del>, , , , , , , , , , , , , , , , , , , </del>							
1 G 2 G		10		2—	to mediu yellowisi	um sand, fe h brown (1	ew grave 0YR 4/4)	l, trace roots, , damp, med	silt, little to sor medium plasti ium stiff.	icity,	ne dark	CL- ML			Crushe little so	ed rock in liner, very il recovery at 4.0 feet.
SOIL BOHING WELL CONSTRUCTION LOG 8070.02.GPJ RMT_COHP.GDT 8070.02 8/26/09		60		10	fine grav dense.  Change	to moist to	wet at 1	3.0 feet.	ne to coarse get to medium de	o med		SP				
<u></u>	H															
B S	gnat	ure:	, ,	1	1-1			Firm: RMT								734) 971-7080
ي ا		/K	4					3754	Ranchero Driv	/e Ar	nn Arb	or, MI	48108			734) 971-9022

			7.4	WELL CONSTRUCTION LOG				
	<b>-</b>	N/L			WELL	NO.	. MV	V-11s/B-13 Page 2 of 3
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
5 GP 6 GP 7 GP	60		18 — 20 — 22 —	Change to moist at 16.0 feet.				No soil recovery due to rock i shoe, dry.
			26-	Same as above. ∇	sw			
8 GP	50		30-	Change to few to little fine gravel, few medium to coarse gravel, saturated at 28.0 feet.				Groundwater sample collecte at 29-33 feet.
8 GP 9 GP	71		32-					
			36	Blind drill to 50.0 feet.				

		V		WELL CONSTRUCTION LOG	w	ELL	. NO		<b>V-11s/B-13</b> Page 3 of 3				
SAM		JNTS	FEET	LITHOLOGIC DESCRIPTION		~ .	-06		COMMENTS				
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	DESCRIPTION		SOSO	GRAPHIC LOG	WELL DIAGRAM					
			38-										
			40-										
-			42-										
	<u>.</u>		44-		***************************************				:				
			46-						Groundwater sample col at 46-50 feet.				
			48-										
			50-	End of boring at 50.0 feet below ground surface.		-							
			52-			ļ							
			54										
			56-										
			58-										

## WELL CONSTRUCTION DIAGRAM

PROJ. NAME:	Tecumseh Pro	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-11S
PROJ. NO:	8070.02	DATE INSTALLED:	5/14/2009	INSTALLED BY:	Brent Ritchie		CHECKED BY: JB

PROJ. NO:	8070.02		DATE INSTALLED	5/14/2009
ELEVA (BENCHMAF			EPTH BELOW ROUND SURFA	OR ABOVE
810.20	<u> </u>	0.0	GROUND SUF	RFACE
809.64		0.6	TOP OF CASI	NG
		0.5	CEMENT SUR	RFACE PLUG
СТН			GROUT/BACKFILL	MATERIAL
28.40 LENGTH			GROUT/BACKFILL	METHOD
			GROUT	
			BENTONITE SEAL	MATERIAL
			MEDIUM CH	·
	55 55 ·	27.0	BENTONITE S	SEAL
<u>781.24</u> ★		29.0	TOP OF SCRE	EEN
E OO HI			FILTER PACK MA	ATERIAL
SCREEN LENGT			WELL GRAV	/EL
<u>776.24</u> ▼		34.0	BOTTOM OF	SCREEN
		34.0	BOTTOM OF I	FILTER PACK
	·		BENTONITE F	PLUG
			BACKFILL MAT	ERIAL
			NATURAL COL	LAPSE
<u>774.24</u>		36.0	HOLE BOTTO	M
NOTES:				

CASING AND SCREEN DETAILS												
TYPE OF RISER:	2-INCH P	<u>/C</u>										
PIPE SCHEDULE:	<u>40</u>											
PIPE JOINTS:	PIPE JOINTS: THREADED O-RINGS											
SOLVENT USED? NO												
SCREEN TYPE: 2-INCH PVC												
	SCR. SLOT SIZE: 0.01-INCH											
OOK. OLOT OIZE.	0.01 11101	1										
BOREHOLE DIAME	TER:	<u>8.0</u> IN.	FROM	0.0 TO	34.0 FT.							
					36.0 FT.							
SURF. CASING DIA	METER:				NA FT.							
			TROW	<u> </u>	11/4							
	WELL DEVELOPMENT											
DEVELOPMENT ME	ETHOD:	SURGE A	ND PUM	<u>IP</u>								
TIME DEVELOPING	<b>3</b> :	1 HOURS										
WATER REMOVED	:	3	GALLO	NS								
WATER ADDED:		0	GALLO	NS								
WATER CI	LARITY BEI	FORE / AFT	TER DE	VELOPMEN	١T							
CLARITY BEFORE:	VERY	TURRIO										
COLOR BEFORE:			N/M									
CLARITY AFTER:		IT TURBIDI										
COLOR AFTER:			<del></del> ,									
ODOR (IF PRESEN	T)· NA											
05011 (11 1120211	. ,											
X	WATER	LEVEL SUI	MMARY									
	UREMENT (FE	ET)		DATE	TIME							
DTB BEFORE DEVEL	OPING:	33.41	T/PVC	5/14/2009	1503							
DTB AFTER DEVELO	PING:	33.42	T/PVC	5/14/2009	1610							
SWE BEFORE DEVE	LOPING:	28.26	T/PVC	5/14/2009	1503							
SWE AFTER DEVELO	PING:	28.25	T/PVC	5/14/2009	1610							
OTHER SWE:			T/PVC									
OTHER SWE:			T/PVC									
	PROTECTI											
PERMANENT, LEGI	BLE WELL	LABEL AD	DED?	✓ YES	□ NO							

PROTECTIVE COVER AND LOCK INSTALLED?

LOCK KEY NUMBER: 3120

✓ YES NO

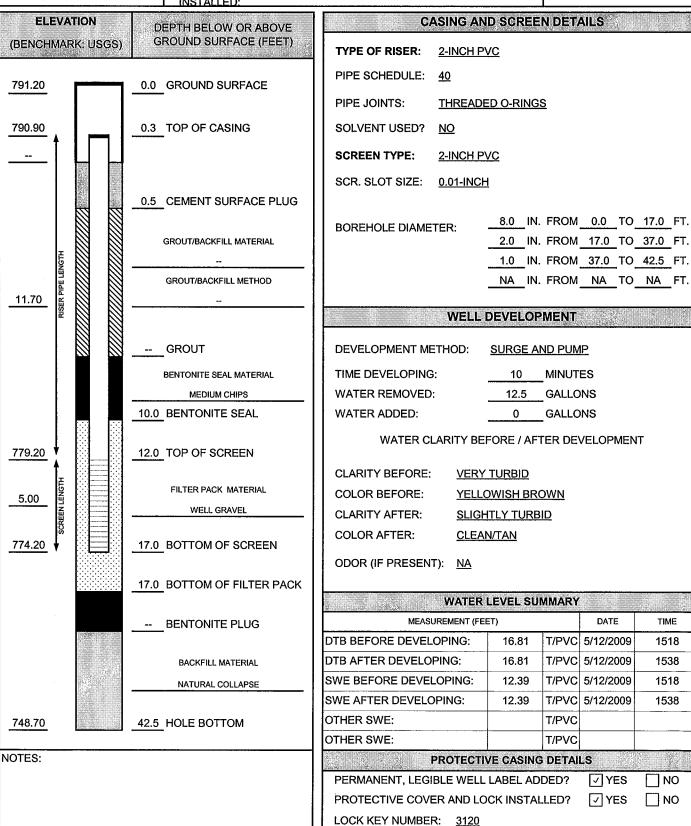
						WEI	LL CONST	RUCTION LO	G							
		M								W	ELL	NO.	. MV	V-12	s/B-37	
	· / / / / / / / / / / / / / / / / / / /						714	T Data Dallia - Obat	-1.	D-4- D		0			1 of 3	
Fac	ility/Proje				Dhaa		-4!4!	Date Drilling Started	a:	Date D	-	Complet	iea:	Project Number:		
Dril	I ecu ing Firm		Prod	ucts Comp	any - Phas Drilling Meth		stigation	5/12/09 Surface Elev. (ft)	Ттосі	Elevation	5/12/09 evation (ft)   Total Depth			(ft has)	8070.0	
T Dill	·	errapr	nhe l	nc	_	ou. ect Push	/HSA	Currace Liev. (II)	1001		(II)	ļ	43.0			
Bor	ing Loca			W on south									43.0 2-8  Orilling Equipment:			
			Street	and Maum				Logged By - Brent Driller - Joe Fotjik					,	Geo	probe	
Civ	il Town/C	ity/or Vi	llage:	County:		State:		Water Level Obser While Drilling:		/Time _	5/12/0	09 00:00	<u> </u>	Z Dep	th (ft bgs)	6
$\vdash$		ımseh		Lena	awee		<u>MI</u>	After Drilling:	Date	/Time _	5/12/	09 00:00	)	Dep	th (ft bgs)	NM
NUMBER	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				THOLOGIC ESCRIPTION				nscs	GRAPHIC LOG	WELL DIAGRAM	(	COMMEN	NTS
1 GP	42		2-	some si	SAND WITH	tle clay, f		coarse sand, lit edium gravel, ye e.		h	SM					
	71		6-	SAND r brown (* \frac{}{\text{Change}}	mostly fine 10YR 6/4), to saturate	to coarse moist, m	edium dense	ilt, light yellowis			SW					
80/82/	目			light yell	lowish brov	vn (10YF	8 6/4), mediu	m stiff to stiff.			ML_					
OB 4 B SOLON SOLON TOOL TOOL TOOL TOOL TOOL TOOL TOOL	71 71 81 81	The state of the s	10— 10— 12— 12— 14—	brown (** SANDY coarse s moist, d	SAND mostly fine to coarse sand, few silt, light yellowish prown (10YR 6/4), moist, medium dense.  SANDY GRAVEL mostly fine to coarse gravel, some fine to coarse sand, trace silt, trace clay, yellowish brown (10YR 5/4), moist, dense.  GW  Change to saturated at 12.5 feet.											
GP GP GP GP GP GP GP GP GP GP GP GP GP G			-	SANDW	gravel, tra	ÆL mos	tly fine to coa	arse sand, little f 5/3), saturated, l		· · ·	sw					
 5																
5 Sig	nature:		1	11			Firm: RMT			ماير A	N A I	40100			734) 971	
∤	u	رسر	<u> </u>				3/54	Ranchero Drive	<u> Ann</u>	Arbor,	IVII 4	48108		<u>гах (</u>	734) 971	-9022

	WELL CONSTRUCTION LOG WELL NO. MW-12s/B										
					WEL	LINU		-12S/D-3/ Page 2 of 3			
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	WELL DIAGRAM	COMMENTS			
5 GP 11 11 11 11 11 11 11 11 11 11 11 11 11			18—	Same as above.	sw	\$ 2 2 5 2 5 2 5 5 5 5 5 5 5 5 5 5 5 5 5					
	100		24-	GRAVEL mostly fine to medium gravel, little to some coarse gravel, trace fine to coarse sand, brown (10YR 5/3), saturated, loose to medium dense.							
02.GPJ RMT_CORP.GDT 8070.02 8/28/09	100		30-	Same as above.  Change to yellowish brown (10YR 5/8) at 29.0 feet.  Change to gray (10YR 5/1) at 32.0 feet.	GW						
SOIL BORING WELL CONSTRUCTION LOG 8070.02.GPJ RMT_CORP.GDT 8070.02 8/28/09  \$ \times \text{Q}	80		34-	Change to gray (10111 of 1) at 02.0 1661.							

				WELL CONSTRUCTION LOG					
					WELL	_ NO		V-12s/B-37 Page 3 of 3	
SAM	1PLE								
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	SOS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS	
			-	Blind drill to 43.0 feet.				The second secon	
			38-					Groundwater sample collected at 38.5-42.5 feet.	
			40-						
			-	Drilling change at 41.0 feet indicating likely change to clay.	-				
			42						
			†	End of boring at 43.0 feet below ground surface.			*.		
	,		44						
			-		٠.				
			46-						
			-						
			48-						
58/09		,							
8070.02 8			50						
RP.GDT 8			_						
RMT_CO			52-						
0.02.GPJ			-						
LOG 807			54—						
AUCTION			-						
L CONST			56-						
SOIL BORING WELL CONSTRUCTION LOG 8070.02.GPJ RMT_CORP.GDT 8070.02 8/28/09			-						
SOIL BO			- 58—						

### WELL CONSTRUCTION DIAGRAM

PROJ. NAME:	Tecumseh Pro	ducts Co Tecum	seh Mfg. Fac	cility	:	WELL ID:	MW-12S
PROJ. NO:	8070.02	DATE INSTALLED:	5/12/2009	INSTALLED BY:	Brent Ritchie		CHECKED BY: JB



	WELL CONSTRUCTION LOG  WELL NO. MW-13s/B-41  Page 1 of 2											. MV			
Facil	ity/Proje	ct Nam	e:					Date Drilling Started:	: 1	Date D	rilling	Comple	ted:		t Number:
	Tecu	mseh	Prod	ucts Comp	any - Phas	e II Inves	stigation	5/12/09			5/12/09				8070.02
Drillin	ng Firm:		_		Drilling Meth	od:	<del></del>	Surface Elev. (ft)	TOCE	Elevation	(ft)	Total I	Depth (	ft bgs)	Borehole Dia. (in)
<u></u>		rrapro			/HSA						20.0		2-8		
Borir	ng Locat	(	Chica	st side of D go Blvd, in ments				Personnel Logged By - Brent I Driller - Joe Fotjik	Ritchie			Drilling	g Equip	ment: Geop	probe
Civil	Town/C			County:		State:		Water Level Observa							
_		mseh	-	Lena	awee		МІ	While Drilling: After Drilling:		_		09 00:00 09 00:00		•	h (ft bgs) <u>5.5</u> h (ft bgs) <u>NM</u>
SAI	MPLE	-													
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				THOLOGIC SCRIPTION				nscs	GRAPHIC LOG	WELL DIAGRAM	С	COMMENTS
			_	TOPSOI	L								1		
1 GP	50		2-	little silt, yellowis	little clay, h brown (1	trace to f 0YR 4/4)	ew fine to me , damp, medi		rk		SW- SM				
			4-	yellowis	h brown (1	0YR 6/4)	, dry to damp	race fine sand, li , medium stiff.			ML.				
			-	few fine	to medium dense.	n gravel, l	brown (10YR	to few silt, trace 5/3), damp to m	oist,		sw	747		!	
gP	80		6-	yellow ( <sup>-</sup> Change	10YR 6/6), to moist a	saturate t 6.0 feet	d, medium st	asticity, brownish iff.	1		CL- ML				
			8-	Change	to mostly s	silt, wet a	t 8.5 feet.							!	
			_			e fine sar	nd, yellow (10	YR 7/6), moist to	0		ML				
3 GP	80		10-	SAND n			e sand, few si wet, medium	lt, light yellowish dense.	ŀ						
3 GP			12-								sw				
4 G	80		14					se sand, trace fin ted at 14.0 feet.	16						
<u> </u>															
Signa	ature:	4	1	- /~	7		Firm: RMT 3754	Inc. Ranchero Drive	Ann	Arbor,	MI 4	18108			734) 971-7080 734) 971-9022

	******			WELL CONSTRUCTION LOG	WELI	NO		-13s/B-41 lage 2 of 2
SAM	PLE							
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	nscs	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
				Change to mostly fine to medium sand at 16.0 feet.				=
					sw		1	
							目	
5.8	100		18—	OH TO OLAY Justin Labing Institution (40VD F/4)		777		
" 🗐				SILTY CLAY plastic to high plasticity, gray (10YR 5/1), saturated, soft.				
			-	Change to moist to wet, medium stiff at 19.0 feet.	CL- ML			
圓								
			20	End of boring at 20.0 feet below ground surface.		7.7.7		
			22-					•
			24-	•				
			-					
			26-					
			20					
ļ			-{					
		-	28					
			30-					
			32-					-
			-					
					}			
			34-					
			36-					
						]		

# RMT

# **WELL CONSTRUCTION DIAGRAM**

PROJ. NAME:	Tecumseh Prod	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-13S
PROJ. NO:	8070.02	DATE INSTALLED:	5/12/2009	INSTALLED BY:	Brent Ritchie		CHECKED BY: JB

PROJ. NO:	8070.02		INSTALLED:	5/12/2009	IN	STALLED BY:	3rent	Ritchie
ELEVATION (BENCHMARK: USGS)		D	EPTH BELOW OF	ABOVE			CASI	NG AN
(BENCHMAR	K: USGS)		ROUND SURFAC			TYPE OF RISER:	<u>2-</u>	INCH P
787.70		0.0	GROUND SURFA	ACE		PIPE SCHEDULE	: <u>40</u>	<u>)</u>
1	<sup>-</sup>		-		$\ $	PIPE JOINTS:	TH	IREADE
787.35	╽ <sub>┍┻</sub> ╽	0.4	TOP OF CASING	i		SOLVENT USED?	? <u>N</u>	<u>C</u>
<u></u> - [						SCREEN TYPE:	<u>2-</u>	INCH P
				a= =:a		SCR. SLOT SIZE:	<u>0.0</u>	01-INCH
	<b>8</b> 8 -	0.5	CEMENT SURFA	CE PLUG	П			
_			GROUT/BACKFILL MAT	ERIAL		BOREHOLE DIAM	IETEF	₹:
ENGTH	<b>3</b> .					SURF. CASING D	IAME	TER:
12.60_			GROUT/BACKFILL ME	THOD				
RISE								WELL
			GROUT			DEVELOPMENT I	METH	IOD:
			BENTONITE SEAL MAT	ERIAL	П	TIME DEVELOPIN	NG:	
			MEDIUM CHIPS		П	WATER REMOVE	D:	
		11.0	BENTONITE SEA			WATER ADDED:		
774.75		13.0	TOP OF SCREEN	١		WATER	CLAR	RITY BE
<b>1 2 2 2 3 3 3 3 3 3 3 3 3 3</b>						CLARITY BEFORE	E:	<u>VERY</u>
SOREEN LENGTH			FILTER PACK MATE	RIAL		COLOR BEFORE	1 1	DARK
REEN	<b>1</b>		WELL GRAVEL		Ш	CLARITY AFTER:		SLIGH
769.75 ¥		18.0	BOTTOM OF SCI	REEN		COLOR AFTER:		MOSL
		40.0	DOTTOM OF FILE			ODOR (IF PRESE	NT):	<u>NA</u>
	_	16.0	BOTTOM OF FIL	IER PAUK			٧	VATER
			BENTONITE PLU	IG		MEA	SURE	MENT (FE
						DTB BEFORE DEVE	ELOP	ING:
			BACKFILL MATERI	AL		DTB AFTER DEVEL	.OPIN	IG:
			NATURAL COLLAP	SE		SWE BEFORE DEV	ELOF	PING:
						SWE AFTER DEVE	LOPII	NG:
767.75		20.0	HOLE BOTTOM		Ιŀ	OTHER SWE:		
						OTHER SWE:		
NOTES:								OTEGTI
					$\  \ $	PERMANENT, LE		
					$\  \ $	PROTECTIVE CO		AND LO
	· · · · · · · · · · · · · · · · · · ·					LOCK KEY NUMB	ER:	<u>3120</u>

	CASING AND SCREEN DETAILS							
	TYPE OF RISER:	2-INCH P\	<u>/C</u>					
	PIPE SCHEDULE:	<u>40</u>				:		
	PIPE JOINTS:	THREADE	D O-RINGS	<u>S</u>				
	SOLVENT USED?	NO.						
	SCREEN TYPE:	2-INCH P\	/C					
	SCR. SLOT SIZE:							
	JOIN. SEOT SIZE.	<u>0.01-114C1</u>	<u>.</u>					
	BOREHOLE DIAME	TER:	8.0 IN.	FROM	0.0 TO	18.0 FT.		
						20.0 FT.		
	SURF. CASING DIA	METER:				NA FT.		
			<u> </u>	FROIVI	NA TO	NA FT.		
		WELLI	DEVELOP	MENT				
	DEVELOPMENT METHOD: SURGE AND PUMP							
	TIME DEVELOPING	i:	5 MINUTES					
	WATER REMOVED		7.5	-				
	WATER ADDED:		0	GALLO	NS			
	WATER CI	ARITY BEI	FORE / AFT	TER DE	VELOPMEN	JT .		
	CLARITY BEFORE:	VFRY	TURRID					
	COLOR BEFORE:							
	CLARITY AFTER:		·	<u>ID</u>				
	COLOR AFTER:	MOSL	TY CLEAR					
	ODOR (IF PRESEN	T): NA						
	,	<i>'</i> —						
		WATER	LEVEL SU	MMARY				
	MEASI	JREMENT (FE	≣T)	,	DATE	TIME		
	DTB BEFORE DEVEL		17.74	T/PVC		1005		
	DTB AFTER DEVELO		17.74		5/12/2009	1025		
	SWE BEFORE DEVEL		14.74 14.77		5/12/2009	1005		
	SWE AFTER DEVELO		5/12/2009	1025				
	OTHER SWE:		NA NA	T/PVC	NA NA	NA NA		
	PROTECTIVE CASING DETAILS							
	PERMANENT, LEGI				✓ YES	□ NO		
-	l					_		

PROTECTIVE COVER AND LOCK INSTALLED?

✓ YES

□ NO

20020000	000000000 000000	388 2003	. 2000000000000000000000000000000000000	***		WELL CONST	TRUCTION LO	G				
	- }									WEL	LNO	<b>D. MW-14s</b> Page 1 of 1
1	y/Proje						Date Drilling Started	:	Date Drilling		ted:	Project Number:
		nseh	Prod	ucts Comp		e II Investigation	5/14/09	LTOO		4/09	Danile (	8070.02 ft bgs) Borehole Dia. (in)
Drilling	g Firm:	rrapro	sho li	no	Drilling Meth	ect Push/HSA	Surface Elev. (ft)	1001	Elevation (ft)	lotai	Depth ( 19.0	π bgs) Borenole Dia. (in)
Boring		•					Personnel			Drilling	Equip	
Highway, and Blood Street intersection  Logged By - Br Driller - Joe Fo												Geoprobe
		-	_	County:		State:	Water Level Observe While Drilling:		/Time <u>5/14/</u>	09 00:0	<u>⊃</u>	Depth (ft bgs) 4.5
	Tecu	mseh		Lena	awee	MI	After Drilling:	Date	/Time <u>5/14/</u>	09 00:0	2	Depth (ft bgs) NM
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGIC DESCRIPTION			nscs	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
				TOPSOI	IL							
1			2-	some si damp to	ILTY SAND WITH CLAY mostly fine to coarse sand, little to ome silt, little clay, few fine gravel, yellowish brown (10YR 5/4), amp to moist, medium dense.							
22 GP	79		4— 4— - 6—	clay, ligl	SAND WITH SILT mostly fine sand, little silt, trace to few lay, light yellowish brown (10YR 6/4), moist, medium dense to lense.  Change to saturated at 4.5 feet.  Change few clay at 6.0 feet.  Above grades to trace to few medium sand at 6.5 feet.							
3 GP			8— - - 10— -	gray (10	SILTY CLAY trace to few medium gravel, medium plasticity, gray (10YR 5/1), moist, stiff.  1-inch thick layer of wet gravelly sand at 10.5 feet.							
4 GP	100		12— - - 14—	·	CL- ML							
4 GP	100		16— - - 18—	3-inch th	Same as above.  3-inch thick layer of saturated sandy gravel at 18.0 feet.  End of boring at 19.0 feet below ground surface.							
Signa	ture:	~/j	1	13			Γ Inc. 4 Ranchero Drive	Ann	Arbor, MI	48108	3	(734) 971-7080 Fax (734) 971-9022

# RMT

# WELL CONSTRUCTION DIAGRAM

PROJ. NAME:	Tecumseh Prod	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-14S
PROJ. NO:	8070.02	DATE INSTALLED:	5/14/2009	INSTALLED BY:	Brent Ritchie		CHECKED BY: JB

PROJ. NO:	8070.02	INSTALLED: 5/14/2009
ELEV (BENCHMA	ATION ARK: USGS)	DEPTH BELOW OR ABOVE GROUND SURFACE (FEET)
780.90	<u> </u>	0.0 GROUND SURFACE
780.67		0.2 TOP OF CASING
		0.5 CEMENT SURFACE PLUG
INGTH		GROUT/BACKFILL MATERIAL
3.80 SER PIPE LENGTH		GROUT/BACKFILL METHOD
		GROUT  BENTONITE SEAL MATERIAL
		3.0 BENTONITE SEAL
	额 選	3.0 BENTONITE SEAL
776.87		4.0 TOP OF SCREEN
5.00 HONE		FILTER PACK MATERIAL
NE N		WELL GRAVEL
<u>771.87</u> ▼		9.0 BOTTOM OF SCREEN
		9.0 BOTTOM OF FILTER PACK
		BENTONITE PLUG
		BACKFILL MATERIAL
		NATURAL COLLAPSE
761.87		19.0 HOLE BOTTOM
NOTES:		
· - · <del>- · ·</del>		

CASING AND SCREEN DETAILS							
TYPE OF RISER: 2-INCH PVC							
PIPE SCHEDULE:	<u>40</u>						
PIPE JOINTS:	THREADE	D O-RINGS	<u> </u>				
SOLVENT USED?	<u>NO</u>						
SCREEN TYPE:	2-INCH P\	/C					
SCR. SLOT SIZE:							
SCR. SLOT SIZE.	<u>0.01-INCF</u>	!					
BOREHOLE DIAME	TER:	8.0 IN.	FROM	0.0 TO	9.0 FT.		
		2.0 IN.	FROM	<u>9.0</u> TO	19.0 FT.		
SURF. CASING DIA	METER:				NA FT.		
		NA IN.	FROM	<u>NA</u> 10	NA FT.		
	WELL	DEVELOP	MENT				
DEVELOPMENT METHOD: SURGE AND PUMP							
TIME DEVELOPING	<b>3</b> :	20	MINUT	ES			
WATER REMOVED	:	10	GALLO	NS			
WATER ADDED:		0	GALLO	NS			
WATER C	LARITY BEI	FORE / AFT	ER DE	VELOPMEN	IT		
CLARITY BEFORE:	TURBI	<u>D</u>					
COLOR BEFORE:	<u>LIGHT</u>	YELLOWI	SH BRO	<u>NWN</u>			
CLARITY AFTER:	<u>SLIGH</u>	IT TURBIDI	<u>TY</u>				
COLOR AFTER:	CLEA	R/TAN					
ODOR (IF PRESEN	T): <u>NA</u>						
73	WATER	LEVEL SU	MMARY				
MEAS	UREMENT (FEE	ET)		DATE	TIME		
DTB BEFORE DEVEL	OPING:	NM	T/PVC	5/14/2009	952		
DTB AFTER DEVELO	PING:	NM	T/PVC	5/14/2009	1015		
SWE BEFORE DEVE	LOPING:	4.87	T/PVC	5/14/2009	952		
SWE AFTER DEVELO	PING:	4.85	T/PVC	5/14/2009	1015		
OTHER SWE:			T/PVC				
OTHER SWE: T/PVC							
	PROTECTI	VE CASING	DETAI	LS			

PERMANENT, LEGIBLE WELL LABEL ADDED?

LOCK KEY NUMBER: 3120

PROTECTIVE COVER AND LOCK INSTALLED? YES NO

✓ YES

NO

2502000	SEESEROON SOM	esta aperican	. 2000000000			WEL	L CONST	RUCTION LO	G					
		M		***							WI	ELL		). MW-15s
I .	ty/Proje							Date Drilling Started: Date Drilling Completed: Project			Project Number:			
		mseh	Prod	ucts Comp	any - Phas Drilling Metho		tigation	5/15/09	Troo					8070.02
Drillin	g Firm: Te	rrapro	be, li	nc.	-	oa: ect Push.	/HSA	Surface Elev. (ft)	1001	Elevation (π	evation (ft) Total Depth (ft bgs) Borehole Di 36.0 2-8			borenole Dia. (In)
Boring Location: On Union Street, east side of road, south of Patterson Street								Personnel Logged By - Brent	Ritchie		Dr	illing E		
Civil	Town/Ci	ty/or Vil	lage:	County:		State:		Driller - Joe Fotjik Water Level Observ	ations:					Geoprobe
	Tecu	-	_	Lena	wee		MI	While Drilling: After Drilling:			15/09 0 15/09 0		Ā	Depth (ft bgs) 29 Depth (ft bgs) NM
SAN	//PLE													
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET				THOLOGIC SCRIPTION	· · .		y <u>y</u>	OC CIHAVA	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
			_	TOPSOI	L									
1 GP	40		2—	gravel, h	nigh plastic	ity, yellov	vish brown (1	e sand, trace fin	soft.	CI M				
	50		4	GRAVEI coarse c dense.	GRAVELLY SAND mostly fine to coarse sand, some fine to coarse gravel, brownish yellow (10YR 6/6), moist, medium dense.									
3 GP 4 GP Signa	50 70		10— 12— 14—	few fine dense to	sand, light dense.	yellowisl	h brown (10Y	ew to little fine g 'R 6/4), moist, m	nediun	n SV	٧	. σ σ σ σ σ σ σ σ σ σ σ σ σ σ σ σ σ σ σ		
Signa	ture:	h	A	1	1		Firm: RMT 3754	Inc. Ranchero Drive	e Ann	Arbor, N	11 481	108		(734) 971-7080 Fax (734) 971-9022

-				WELL CONSTRUCTION LOG		WEL	L N	<b>O. MW-15s</b> Page 2 of 2
	APLE %	NTS	EET	LITHOLOGIC		00	RAM	COMMENTS
NUMBER AND TYPE		BLOW COUNTS	DEPTH IN FEET	DESCRIPTION	nscs	GRAPHIC LOG	WELL DIAGRAM	OGMINIZITIO
5 GP 11 11 11 11 11 11 11 11 11 11 11 11 11	70 70		18— 20— 22— 24— 26—	Change to dense at 19.5 feet. Change to few fine to medium gravel, wet at 20.0 feet.  Same as above.	sw			
ων στο στο στο στο στο στο στο στο στο στο			28	∑ Change to saturated at 29.0 feet.	To the state of th			
800 8 B B B B B B B B B B B B B B B B B		and the second s	34-	Same as above.  End of boring at 36.0 feet below ground surface.	7			

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RMT

# **WELL CONSTRUCTION DIAGRAM**

PROJ. NAME:	Tecumseh Prod	ducts Co Tecum	seh Mfg. Fac	cility		WELL ID:	MW-15S
PROJ. NO:	8070.02	DATE INSTALLED:	5/15/2009	INSTALLED BY:	Brent Ritchie		CHECKED BY: JB

PROJ. NO:	8070.02	INSTALLED: 5/15/2009
ELEVA		DEPTH BELOW OR ABOVE GROUND SURFACE (FEET)
811.90		0.0 GROUND SURFACE
811.72		0.2 TOP OF CASING
NGTH		0.5 CEMENT SURFACE PLUG  GROUT/BACKFILL MATERIAL
RISER PIPE LENGTH		GROUT/BACKFILL METHOD
<u> </u>		GROUT
		BENTONITE SEAL MATERIAL
		MEDIUM CHIPS
		28.0 BENTONITE SEAL
781.92		30.0 TOP OF SCREEN
5.00 H		FILTER PACK MATERIAL
SOREEN LENGT		WELL GRAVEL
776.92		35.0 BOTTOM OF SCREEN
		35.0 BOTTOM OF FILTER PACK
		BENTONITE PLUG
		BACKFILL MATERIAL
		NATURAL COLLAPSE
775.92		36.0 HOLE BOTTOM
NOTES:		

CASING AND SCREEN DETAILS									
TYPE OF RISER:	2-INCH PV	ر. د							
PIPE SCHEDULE:	·	<u> </u>							
PIPE SCHEDULE:	<u>40</u>								
PIPE JOINTS: <u>THREADED O-RINGS</u>									
SOLVENT USED? <u>NO</u>									
SCREEN TYPE: 2-INCH PVC									
SCR. SLOT SIZE: <u>0.01-INCH</u>									
BOREHOLE DIAMETER:         8.0         IN. FROM         0.0         TO         35.0         FT.           2.0         IN. FROM         35.0         TO         36.0         FT.           SURF. CASING DIAMETER:         NM         IN. FROM         NM         TO         NM         FT.           NA         IN. FROM         NA         TO         NA         FT.									
NA IN. FROM NA TO NA FT.  WELL DEVELOPMENT									
	WELL	DEVELOP	MENI						
DEVELOPMENT METHOD: <u>SURGE AND BAIL</u>									
TIME DEVELOPING	TIME DEVELOPING: 0.5 HOURS								
WATER REMOVED	:	10	GALLO	NS					
WATER ADDED:		0	GALLC	NS					
WATER CI	ARITY BEF	FORE / AFT	ER DE	VELOPMEN	<sub>IT</sub>				
CLARITY BEFORE:	VERY	TURBID							
COLOR BEFORE:	YELLO	WISH BRO	OWN						
CLARITY AFTER:									
COLOR AFTER:		WISH BRO	<u>NWC</u>						
ODOR (IF PRESEN	Г): <u>NA</u>								
MEAG		LEVEL SUI	MARY		TIME				
DTB BEFORE DEVEL	OPING:	34.65	T/P\/C	5/15/2009	1035				
DTB AFTER DEVELO		34.66	T/PVC		1102				
SWE BEFORE DEVEL		29.65		5/15/2009	1035				
SWE AFTER DEVELO		29.65	T/PVC	5/15/2009	1102				
OTHER SWE:			T/PVC	2					
OTHER SWE:									
PROTECTIVE CASING DETAILS									
PERMANENT, LEGIBLE WELL LABEL ADDED? YES NO									
PROTECTIVE COVER AND LOCK INSTALLED? YES NO									

LOCK KEY NUMBER: 3120

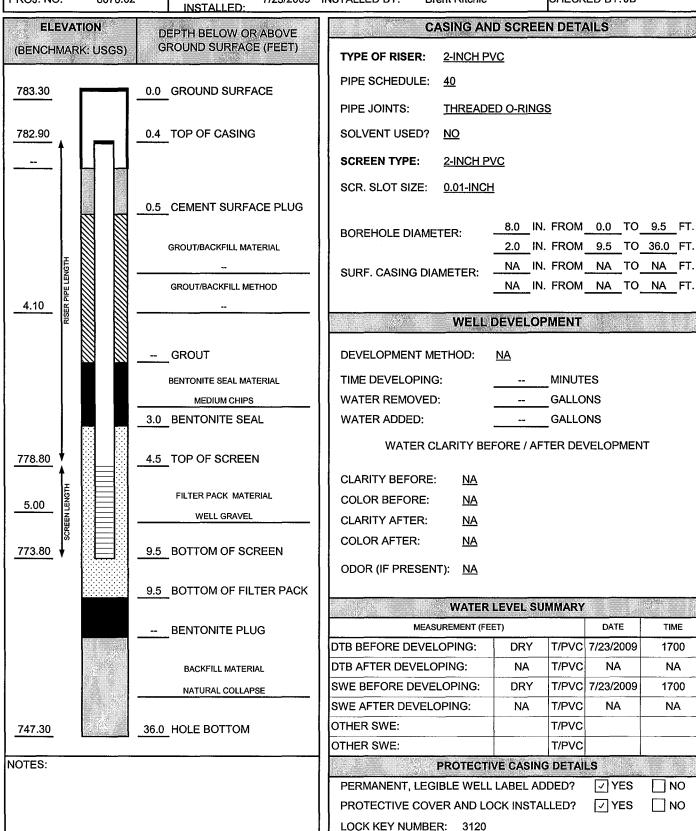
													Page	s/B-42 1 of 2
Facil	lity/Proje —						Date Drilling Starte	ed:	Date Dr			eted:	Proje	ct Number:
Drilli	Tecung Firm		n Proc	ducts Comp	pany - Phas Drilling Meth	e II Investigation	7/23/09 Surface Elev. (ft)	TOCE	levation		3/09   Total	Denth	(ft bgs)	8070.02 Borehole Dia
) (JII)			obe, li	nc.		rect Push/HSA	Garage Liev. (it)	1001		(14)	lotta	36.0		2-8
Borir		ion:	On Te	cumseh Tir	et northeas	along edge of ridge t of tire shop	Personnel Logged By - Bren Driller - Joe Fotjil				Drillin		pment:	
Civil	Town/C	ity/or \	/illage:	County:		State:	Water Level Obse While Drilling:		Time _	7/23	lua nu-(	)O 7	7 Den	th (ft bgs) _Z
	Tecu	mseh		Lena	awee	MI	After Drilling:	Date/			/09 00:0			th (ft bgs) _N
SA	MPLE													
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGK DESCRIPTIO				nscs	GRAPHIC LOG	WELL DIAGRAM	(	COMMENT
			ļ <del></del> .	TOPSOI	L							J		
right first results			-			y fine to medium sar sh brown (10YR 6/4)		fine		SM				
	50		-			o coarse sand, trace (10YR 6/3), dry, loos		dium		sw				
22 = = = = = = = = = = = = = = = = = =	30		4-	SILTY C	at 5.0 feet LAY mostly (10YR 7/2	y silty clay, trace fine 2), dry, medium stiff.	gravel, slight plast	ticity,						
¥P   3			-		·					CL- ML				
			8	<del>V</del> nonplasi	tic, yellowis	v silt, little fine sand, t h brown (10YR 5/6),	saturated at 7.5 f			ML				
			-	GRAVEL medium damp, d	gravel, trad	mostly fine to coarse ce coarse gravel, trad	e sand, little fine to be silt, brown (10Y	R 5/3),			0 0 0			
3P	75		10 - -											
			12-	Same as	s above.					sw	9 4 6 6 9 4			
4 SP	60		14								500000000000000000000000000000000000000			
Signa	ature:		1	A		Firm: RM	IT Inc.				b. *2. 0.		<u>                                     </u>	734-971-7

1959	Jo II			WELL CONSTRUCTION LOG	15,	,	<b>.</b>	N 40-/D 40
		I VIVE			WEL	L NC		V-16s/B-42 Page 2 of 2
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET	LITHOLOGIC DESCRIPTION	SOSO	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
V 如如如如如如如如如如如如如如如如如如如如如如如如如如如如如如如如如如如如	70 40 60	18	20 24 26 30 34	Same as above.  Same as above.  Same as above.  Change to wet to saturated at 31.5 feet.  CLAY few fine to medium gravel, slight plasticity, gray (10YR 5/1), dry to damp, stiff.	SW			Not enough water to sample at 31.5 feet.
			36-	End of boring at 36.0 feet below ground surface.				

BMT

### WELL CONSTRUCTION DIAGRAM

PROJ. NAME:	Tecumseh Pro	WELL ID:	MW-16S				
PROJ. NO:	8070.02	DATE INSTALLED:	7/23/2009	INSTALLED BY:	Brent Ritchie		CHECKED BY: JB



DATE

NA

NA

√ YES

√ YES

TIME

1700

NA

1700

NA

NO

Пио

				-		WELL CONST	RUCTION LO	G	WEI	LL NC	). MV	V-17s/I		
Facili	y/Proje	ct Name	<b></b> :				Date Drilling Started	: [	Date Drillin	ng Comple	eted:	Page 1 o		
	Tecu	nseh	Prod	ucts Comp	any - Phas	e II Investigation	7/23/09		7/	23/09		ε	3070.02	2
Drillin	g Firm:	•			Drilling Metho	od:	Surface Elev. (ft)	TOCE	levation (ft)	Total	Depth	(ft bgs) B	orehole [	Dia. (in)
		rrapro				ect Push/HSA					8.0		2-	8
	g Locati	n	orth	rchfield pro corner of ti		ut 1800 feet east of	Personnel Logged By - Brent Driller - Joe Fotjik	Ritchie		Drillir	ig Equip	oment: Geopro	be	
Civil	Fown/Ci	ty/or Vil	lage:	County:		State:	Water Level Observer While Drilling:	ations: Date/	Time 7/2	3/09 00:0	00 Z	7 Denth (i	ft bgs)	5.0
	Tecu IPLE	mseh		Lena	awee	MI	After Drilling:	Date/		3/09 00:0		Depth (		NM
NUMBER AND TYPE	RECOVERY (%)	BLOW COUNTS	DEPTH IN FEET			LITHOLOGIC DESCRIPTION			USCS	GRAPHIC LOG	WELL DIAGRAM	СО	MMEN	ITS
1 GP			2—	Coarse of damp, no damp, no damp, no damp, no damp, no damp damp damp damp damp damp damp damp	to saturate LAY few filoyr 5/3),	EL mostly fine to coae to few silt, yellowish se.  ed at 5.0 feet.  ine to medium gravel, damp, stiff.	slight plasticity,	ne to '4),	CL					
Signa	ture:	h/	J	-1:	t_	Firm: RMT 3754	Inc. Ranchero Drive	Ann	Arbor, M	I 4810	3	(73 Fax (73	4) 971 4) 971	

RMT Inc. 3754 Ranchero Drive Ann Arbor, MI 48108

# RMT

# WELL CONSTRUCTION DIAGRAM

PROJ. NAME:	Tecumseh Prod	WELL ID:	MW-17S				
PROJ. NO:	8070.02	DATE INSTALLED:	7/23/2009	INSTALLED BY:	Brent Ritchie		CHECKED BY: JB

PROJ. NO:	8070.02	DATE INSTALLED:	7/23/2009	INSTALLE	DBY: B	rent Ritchie	. !	CHECK	ED BY: JB	
ELEVAT	ION D	EPTH BELOW OR	ABOVE		C	ASING A	ND SCREE	N DETA	AILS	
(BENCHMARI		ROUND SURFACE		TYPE (	OF RISER:	2-INCH F	<u>'VC</u>			
755.20		CDOLIND SHDEA	CE	PIPE S	CHEDULE:	<u>40</u>				
755.20		GROUND SURFA	ICE	PIPE J	OINTS:	THREAD	ED O-RING	<u>s</u>		
754.49	0.7	TOP OF CASING		SOLVE	NT USED?	<u>NO</u>				
<b>│</b>				SCREE	N TYPE:	2-INCH F	<u>VC</u>			
				SCR. S	LOT SIZE:	0.01-INC	<u>H</u>			
	0.5	CEMENT SURFA	CE PLUG							
				BOREH	OLE DIAM	ETER:	<u>8.0</u> IN.	FROM	0.0 TO	8.0 FT.
		GROUT/BACKFILL MAT	ERIAL							NA FT.
ENGT	░			SURF.	CASING DI	AMETER:		•	·	NM FT.
7.30 RISER PIPE LENGTH		GROUT/BACKFILL MET	THOD				<u>NA</u> IN.	FROM	NA IO	NA FT.
7:30 RISE						WELL	DEVELOP	MENT		
		GROUT		DEVEL	OPMENT M	ETHOD:	SURGE A	ND PUM	IP	
		· BENTONITE SEAL MAT	ΕΡΙΔΙ		EVELOPIN			HOURS	_	
		MEDIUM CHIPS	LINAL		R REMOVE		3	GALLO		
	2.0	BENTONITE SEA	.L		R ADDED:		0	GALLO		
					WATER O	LARITY BE	FORE / AFT	- FER DE\	VELOPMEN	ΙΤ
752.19	3.0	TOP OF SCREEN	1							
T <sub>E</sub>		EU TED DAOK MATER	7141	CLARIT	Y BEFORE	: VER	/ TURBID			
5.00 N		FILTER PACK MATER WELL GRAVEL	KIAL		R BEFORE:		OWISH BRO			
OO.5		WELL GIAVEL	······································		TY AFTER:		HT TO MED			
747.19	8.0	BOTTOM OF SCF	REEN	COLOR	R AFTER:	<u>SLIG</u>	HT YELLOW	<u>/ISH BR</u>	<u>OWN</u>	
				ODOR	(IF PRESEN	NT): <u>NA</u>				
	8.0	BOTTOM OF FILT	TER PACK			14/4755	LEVEL OU	MMARY		
			_		MEA	WATER SUREMENT (FI	LEVEL SUI	MMARY	DATE	TIME
		BENTONITE PLU	G	DTB BEE	ORE DEVE		7.63	T/PVC	7/23/2009	1616
		BACKFILL MATERIA	ΔI		ER DEVELO		7.63		7/23/2009	1633
		=			ORE DEVE		5.33	_	7/23/2009	1616
				SWE AF	TER DEVEL	OPING:	5.34	T/PVC	7/23/2009	1633
747.19	8.0	HOLE BOTTOM		OTHER S	SWE:			T/PVC		
		-		OTHER S	SWE:			T/PVC		
NOTES:							IVE CASING			
				] [	•		LABEL AD		✓ YES	□ NO
1				LL PROTE	CTIVE COV	ER AND LO	OCK INSTAL	LED?	✓ YES	∐ NO

		DEVELO	MENT							
DEVELOPMENT METHOD: <u>SURGE AND PUMP</u>										
TIME DEVELOPING: 0.25 HOURS										
WATER REMOVED: 3 GALLONS										
WATER ADDED: 0 GALLONS										
WATER CLARITY BEFORE / AFTER DEVELOPMENT										
CLARITY BEFORE: <u>VERY TURBID</u>										
COLOR BEFORE:	YELLO	WISH BR	<u>OWN</u>							
CLARITY AFTER:	SLIGH	IT TO MED	IUM TUI	RBID						
COLOR AFTER:	SLIGH	IT YELLOV	VISH BR	<u>own</u>						
ODOR (IF PRESENT): <u>NA</u>										
WATER LEVEL SUMMARY										
V	VATER	LEVEL SU	MMARY							
MEASUREM			MMARY	DATE	TIME					
	MENT (FEI				TIME 1616					
MEASURE	MENT (FEI	ET)	T/PVC	DATE						
MEASUREN DTB BEFORE DEVELOPI	MENT (FEI NG: G:	ET) 7.63	T/PVC	DATE 7/23/2009	1616					
MEASUREN DTB BEFORE DEVELOPIN DTB AFTER DEVELOPIN	MENT (FEI NG: G: PING:	7.63 7.63	T/PVC T/PVC T/PVC	DATE 7/23/2009 7/23/2009	1616 1633					
MEASUREN DTB BEFORE DEVELOPI DTB AFTER DEVELOPI SWE BEFORE DEVELOP	MENT (FEI NG: G: PING:	7.63 7.63 5.33	T/PVC T/PVC T/PVC	DATE 7/23/2009 7/23/2009 7/23/2009	1616 1633 1616					
MEASUREN DTB BEFORE DEVELOPIN DTB AFTER DEVELOPIN SWE BEFORE DEVELOPIN SWE AFTER DEVELOPIN	MENT (FEI NG: G: PING:	7.63 7.63 5.33	T/PVC T/PVC T/PVC	DATE 7/23/2009 7/23/2009 7/23/2009	1616 1633 1616					
MEASUREN DTB BEFORE DEVELOPIN DTB AFTER DEVELOPIN SWE BEFORE DEVELOPIN SWE AFTER DEVELOPIN OTHER SWE:	MENT (FEI NG: G: PING: NG:	7.63 7.63 5.33	T/PVC T/PVC T/PVC T/PVC T/PVC	DATE 7/23/2009 7/23/2009 7/23/2009 7/23/2009	1616 1633 1616					
MEASUREN DTB BEFORE DEVELOPIN DTB AFTER DEVELOPIN SWE BEFORE DEVELOPIN SWE AFTER DEVELOPIN OTHER SWE:	MENT (FEI NG: G: PING: NG:	7.63 7.63 5.33 5.34 VE CASING	T/PVC T/PVC T/PVC T/PVC T/PVC T/PVC	DATE 7/23/2009 7/23/2009 7/23/2009 7/23/2009 LS: YES	1616 1633 1616					
MEASUREN DTB BEFORE DEVELOPIN DTB AFTER DEVELOPIN SWE BEFORE DEVELOPIN OTHER SWE: OTHER SWE: PRO	MENT (FEI NG: G: PING: NG:	7.63 7.63 5.33 5.34 VE CASING	T/PVC T/PVC T/PVC T/PVC T/PVC T/PVC	DATE 7/23/2009 7/23/2009 7/23/2009 7/23/2009	1616 1633 1616 1633					

SEE APPENDIX J OF BEA FOR FINAL ANALYTICAL SUMMARY TABLES

# Appendix C Historical Data for Possible Sources of Contamination

AG - Above Ground UG - Under Ground

# STORAGE TANK & BULK SYSTEM IDENTIFICATION

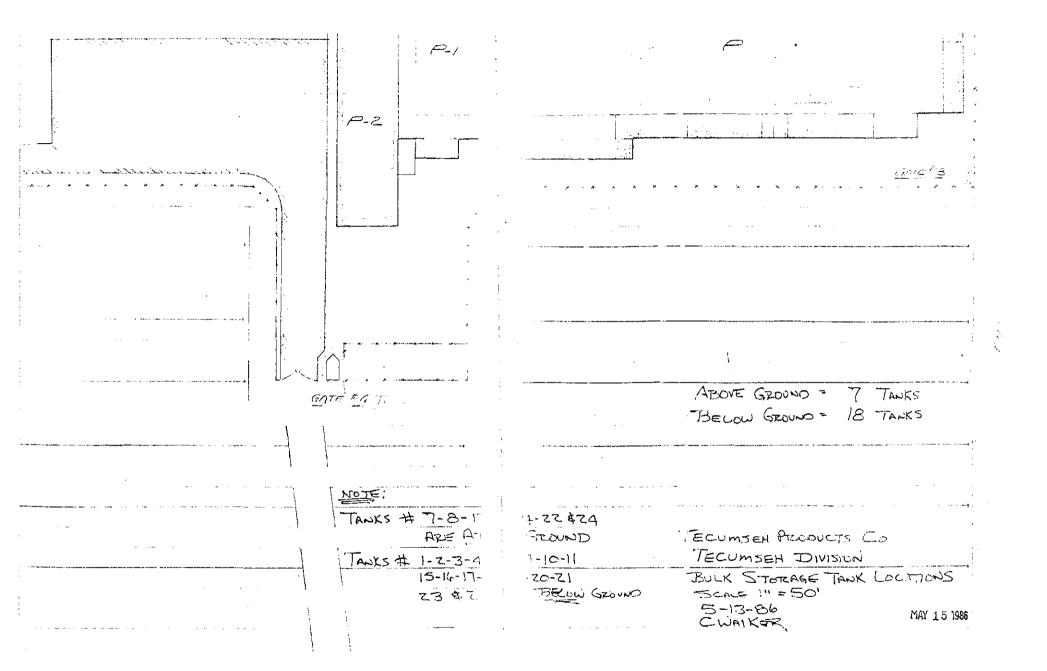
5-1-86
TECUMSEH PROPOCTSCO.
TECUMSEH DIVISION
CLAUDE WALKESZ.
GOTZAND BUTTON

STORAGE TANK #	LOCATION	AG UG	PRODÚCT	GALLON CAPACITY	LENGTH & DIAMETER	REMARKS
. 1	South end of Build: " $J^n$	ng UG	Reclaimed Hydraulic Oil .	6,000	16'-1"x8'-0"	Buried under concrete No manhole Remobile Aug 1990
2	South end of Building "J"	IJG	Etna #25 Hydraulic Oil	6,000	16 <sup>3</sup> -1 <sup>11</sup> x8 <sup>3</sup> -0 <sup>11</sup>	Pried under concrete  manhole Renoved Aug 1990
3	South end of Building "J"	UG	Kerosene	1,000	10'-0"x4'-0"	Tried under concrete  manhole Removed any 1990
4	South end of Building "J"	UG	Lapping Vehicle Oil	6,000	16'-1"x8'-0"	ried under concrete manhole Removed aug 1990
.5	South end of Building "J"	υG	#6 Fuel Oil	14,723	10'-4"x22	Steam Heater Installed 1993 Pumped, CleAned & Filled with INERT MATERIALS
. 6	West side of Building "T"	UG	Scrap Oil (Hauled away)	7,500	7' x 26'	Under cement with Manhole Removed any 1990
7	Inside Building	AG ;	Chlorothene	•		On Old Dock
. 8	Inside Building	AG	Used Burn Oil Teardown	2,880	5'-6"x17'	On Old Dock
9-10	Under Building	υG	Waste Chemicals Oil Split	20,000	10'-6"x31"	old fuel oil tank 9-24-93 split into 2-10K E./led with
1.1	Under Building "K-1"	υG	Boiler Oil #6	20,000	10'-6"x31'	Abandoned 11-85. Filled with concrete
12	Inside Building	AG	Refrigeration Oil (Light)	12,500	8' x 32'-6"	Old tanks in a heated building
. 13	Inside Building	AG	Refrigeration Oil (Light)	12,500	8' x 32'-6"	Old tanks in a heated building

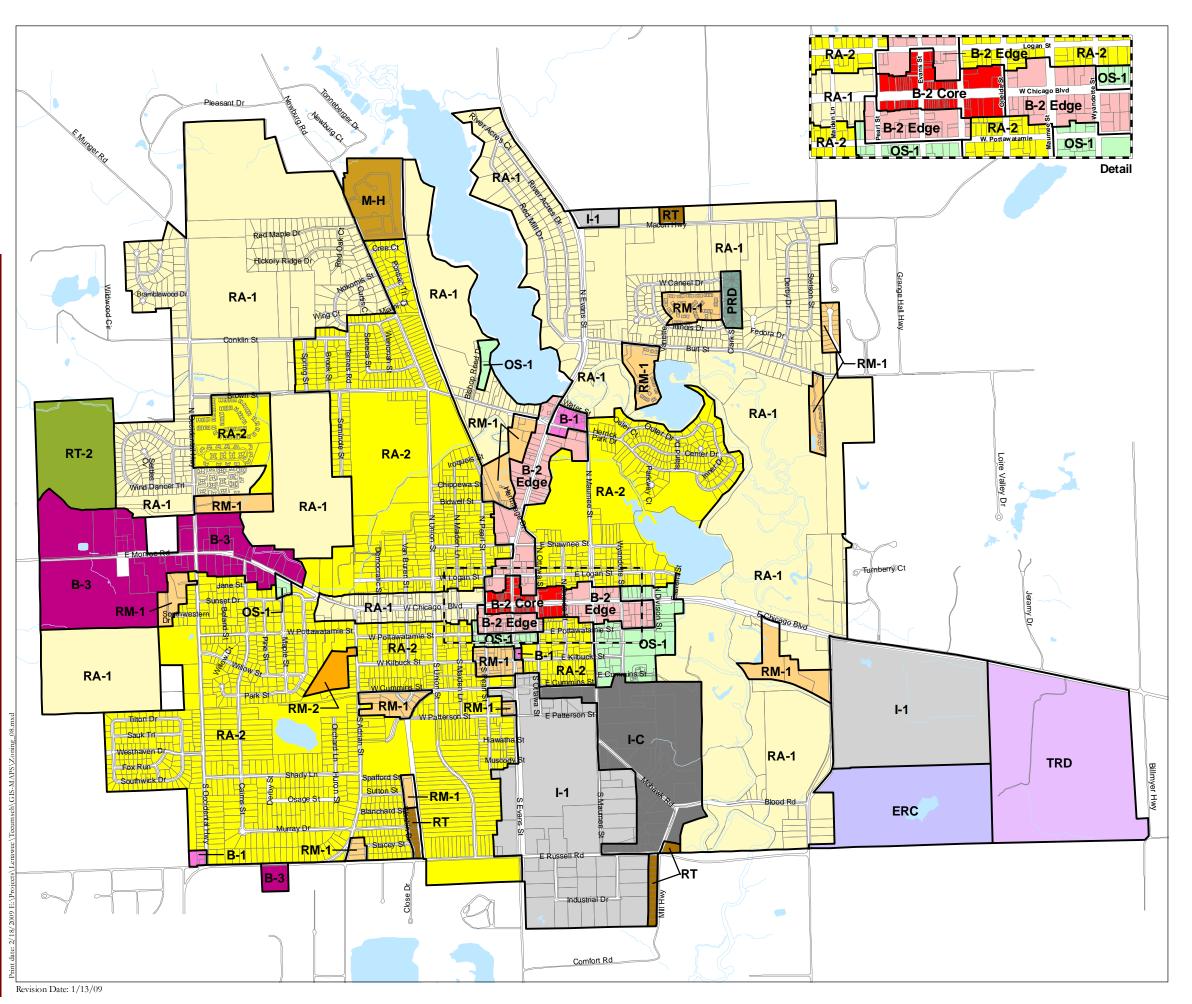
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STORAGE	UG - Under Ground			GALLON	LENGTH &	DEMARKS
TANK #	LOCATION	AG. UG	PRODUCT	CAPACITY	DIAMETER	REMARKS
14	Inside Building	AG	Refrigeration Oil (Heavy-HR)	8,000		Automotive Oil New in 1982
1.5	West Side Building - "Y"	υG	Removed in 1989	6,000	8'x16'-1"	Under slab: - Has manhole - Piped into building
16	West Side Building - "Y"	UG	//	6,000	8'x16'-1"	Under slaps - Has manhole - Piped into building
. 17	West Side Building - "Y"	UG .	11	6,000	8'x16'-1"	Under slabs - Has manhole - Piped into building
18	West Side Building - "Y"	UG	/ / /	6,000	8 x 16 -1"	Under slabs - Has manhole - Piped into building
19	West Side Building - "Y"	UG	• [[	6,000	8'x16'-1"	Under slab: - Has manhole - Piped into building
20	West Side Building - "Y"	UG	11	6,000	8 * x16 * -1"	Under slab - Has manhole - Piped into building.
21	West Side Bilding - "Y"	ŪG	11	6,000	8'x16'-1"	Under slab - Has manhole - Piped into building
22	Between "Y" & "G"- Outdoors	AG	Over flow tank - Oil Towers	500	4'x7'	Oil piped back to boiler burn tank
<i>2</i> 3	North Side Building "V"	UG	Quench Oil	20,000	10'-6"x31'	Abandoned early '60's. Filled with ? Removed
24	East side Bldg."L"	1	Acid from De-Rust	10,000	Removed 199	Old beer tank on jacks
25	East of Bldg. "W"	UG	Alcohol Refriguration Oil	6,000	8'x16'	Cleaned and not in use Removed E
26.	South END OF Bldg"F"	AG	KEFRI geration Oil			removed

1 -30



# Appendix D City of Tecumseh Zoning Map



# Zoning Map

# City of Tecumseh, Michigan

### Zoning Districts



Revision	Date	Revision	Date	Revision	Date

I, \_\_\_\_\_\_, Clerk of the City of Tecumseh, do hereby certify that this map is a true copy of the map adopted by the Tecumseh City Council on \_\_\_\_\_, as well as amendments made as of revised date.

### City Clerk

The lot lines of this map are representative of the actual lot lines and are not intended to be substituted for an official survey or used to resolve boundary or area issues. Secure a survey, consult County records or City of Tecumseh Clerk





Base Map Source: City of Tecumseh, 2008

# Appendix E Well Survey Information

GEOLOGICAL SURVEY NO

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

WATER WELL AND PUMP RECORD

	W	$\int$	2	S	3	1
PE	RMIT'	'NL	JMB	ER		

1 LOCATION OF WELL		PART 127	ACT 368, P.A	1978			
County	Ownship Name	1	Fraction	EVAS /nya	Section Number	Town Number	Range Nymber
Distance And Direction From Road Inte	rsection 3	san	NE	3 OWNER OF		- 0	
Russell ,	on the	۱۳۰۰ می چهران متعداد د	1		akuon	mu	nare
diale of	mill she	my	AL-V	Address	701	· · · · ·	m
Street Address & City of Well Location	701	mile	Huy	Address S	ame As Well Location	mach i	J No.
Locate with "X" in Section Below		keto <b>li N</b> ap	· · · · · ·		TH: (completed)	Date of Comple	
	* /	"h O		75	ft.		29-85
▋ <b>┝╼</b> ╃╌╣╴╌┈┈	Jan Jan Jan Jan Jan Jan Jan Jan Jan Jan	) i		5 Cable to			∐ Dug [
w         Emp-		<del></del>	- 0	6 USE: La Dor			Type III Public
1	Russe	all p	ec 0	☐ Irrig	gationType	la Public	Heat pump
				7 CASING:	t Well Type I Steel Thread		15.1.4
\$ 1 Μ Lε				Diameter 💆	ີ່ Steel		
2 FORMATION DESCR	RIPTION	THICKNESS	DEPTH TO BOTTOM OF	1 -	to 4/ ft. depth	Weight	- (
		STRATUM	STRATUM	Grouted Dri	to ft. depth Il Hole Diamoter	Drive Shoe	Yes
SAND 3 CLAS	٧	7	7		to ft_depth to ft_depth	1	No
, .	<del>,</del>		1	8 SCREEN		Not	nstalled
SAND		20	27	1 '	OHNSON		
Clay		10	37		<u>zo</u> ^ <u>_</u> 4/		
5			J. 7	FIFTINGS	K-Packor	Lead Packer	Bramer Check
SAND 3 Clay			40	Blank a		fi. Other	INFAD ON
SAND 3 GAA	$y \in I$	6	46	'	ft_below land	l surface	Flow
	<u></u>			10 PUMPING L	EVEL: below land si	urface	
		<del> </del>	ļ 		ft. after 22 hrs		
					_ ti. after hrs	primping at	G.P.M.
			<u> </u>	11 WELL HEAR COMPLETION		=	above grade
	<u> </u>			12 WELL GRO	UTED? No	Ares From _	// toft.
		<del> </del>	ļ	Neat co	ement 4-Bento	oruto 🗌 Othe 🕻	CIAY
					Benseal 2		
					urco of possible cont		1
		<del></del> .		Type S	EP+, C Dista	nce <b>/Ø</b> 0ft Dir	ectionV
REC	EIVED			Well disinfer	cted upon completion	ا مینند	] No
einir, Dept. 0	Public Bassis			14 PUMP	Not Installed	Pump In	stallation Only
	<del>7 1965</del>	<del></del>			er's name		<u>d</u>
******	•			Model num	her Drop Pipe <b>44</b>	HP	Volts 2 2 5
	fromfrontal and in-			1	Submarsible	it copocity	
Occupanoea.	Heeth - GWQS	-		PRESSURE Manufactur	TANK: er's name	and	
USE A 2ND SHEET IF N	NEEDED			Model num			Gallons
15. Remarks, elevation, source of o	<del> </del>		L .	R WELL CONT	RACTOR'S CERTIF	ICATION:	
,				ell was drilled uni past of my knowl			
				Toslor	3 for	TAC. 5	8-0551
			Address	1 - 74	pters )	nedistrat	UN  NO.
			Signed	Dan	1 Horse	les Date	8-055/ ION NO. Jug 29-8:
D67d   Rev 10-80}		<del>-</del> -	_ signed	AUTHO	ZED REPRESENTATIVE	Sato (	my a la

GEOLOGICAL SURVEY SAMPLE NO.			
Permit # 8445	WATER		
1 LOCATION OF WELL SEP - 9 1976	ACT 29		PUBLIC HEALTH
Lenawee Ted		Fraction	Section Number Town Number Range Number  1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		1/4 4	
Distance And Direction from Road Intersections  200 ff Enf Maumee St	7	a	3 OWNER OF WELL: Mar Jay Plastics, Address Maumee St. Tecumsek.
Street address & Chry of Well Location	mod	10	maumeest, Tecumsek.
Locate with "X" in section below Sket	<u>ان برور - T-بورور</u> در در  emsen	4 WELL DEPTH: (completed) Date of Completion	
No. of the contract of the con	Manya		99 tc. 9-13-76
			5 🖟 Cable tool 🔲 Rotary 🔲 Driven 🔲 Que
w K i i	-		Hollow rod Jettod Bared
	*		Irrigation Air Conditioning Commercial
[			Test Well
Mans	nee		7 CASING: Throaded Welded Height: Above Below Surface ft.
	THICKNESS	DEPTH TO	
2 FORMATION	OF STRATUM	BOTTOM OF STRATUM	# in. to 99ft. Depth Weight   Ibs./ft.   in. to ft. Depth   Drive Shoe? Yes No   8 SCREEN:
and all intall	20	20	Type: Stavillary Stad Dia.; 3 in
gravely soil to soft,			
Clay	40	60	Slot/Genze 10 Length 4 ft. Sot botween 79 ft. and 95 ft.
dirty gravel to 64	14	64	Fittings: 1/2 ft Tril pipe + K packer
2824	26	90	9 STATIC WATER LEVEL
Culy		10	ft, below land surface  10 PUMPING LEVEL below land surface
gravet + clay mix	5	95	
pand tour	.4	99	ft, after hrs, pumping g,p,m.
The state of the s	<del>- /</del>	7.7	11 WATER QUALITY in Parts Per Million:
Clay bolow			Iron (Fe) Chlorides (CI)
			Nordenan Other
			Hardness Other  12 WELL HEAD COMPLETION: In Approved Pit
			Pitless Adapter 12" Above Grado
			13 Well Grouted? Yes No Noat Comont Bentonite
	+		Depth: Fromft.
			14 Nearest Source of possible contamination
			feetDirectionTypo
			Well disinfected upon completion  Yes No  No Not installed
			Manufacturer's Name . Realise
			Model Number HP 2 Volts 2 20
			Length of Drop Pipe ft. capacity 40 G.P.M.
			Type: Z Submersible  Jet Reciprocating
			]
use A 2ND SHEET IF NEEDED  16 Remarks, elevation, source of data, etc.	<u></u>	17 WATER	WELL CONTRACTOR'S CERTIFICATION:
		This wel	t was drilled under my jurisdiction and this report is true
ASSET THE OF INDIVISED ITEM	NO	- 0	Pas Classific and beliefuk 002/
ADDED INFO BY DRIVLER, ITEM	17 <b>0</b> ,		STERED BUSINESS NAME REGISTRATION NO.
Country of		Address	comen -
£. EVATION V		Signed _	Char Ruesiak Date 7-22-76
DOWN TOOM TO ROCK	. 1935	_	AUTHORIZED REPRESENTATIVE

GEOLOGICAL SURVEY SAMPLENNO.				<u> </u>		· · · · · · · · · · · · · · · · · · ·	6
83/0 NOV 0 3 1977		WATER V			i baard baard ba I	——————————————————————————————————————	1 <u>4</u> 1
1 LOCATION OF WELL		ACT 29	4 PA 196	j j		OF PUBLIC HEALTH	
County	Township Name		Fraction	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Section Number	Town Number Range Number	r
LENAWEE	TECUMS	E h	SWIAL	E4SW4	34	75 NS R46	w.
Distance And Direction from Road M 50 Cach m Tecum	Intersections		— <del></del>			Then BIRCHFIEld	
		the	~ <u>^</u> ^	166	umsey +	IRE	1
South to my land	Roft 4 Blog	on her	ck j	Address		de als	
Street address & City of Well Local						t teemson mich	
Locate with "X" in section bet	ow Sketc	th Map:				Date of Completion	1
				59		7-15-71	
	IM SO			5 🗶 Cable to			18
				Hollow r			
<b>!</b>	1	o€	The second	6 USE: ∏□om		lic Supply Industry	
		, P	TIPE	j ∐lrrig ∏Test	_	Conditioning ( Commercial	
			, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	7 CASING: Th	rended X Welde	d Height: Above-Berow	<del></del>
1 MILE		,	The same of the sa	Diam.	101110	Surfaceft.	ŀ
2 CORMATIO	N.	THICKNESS OF	DEPTH TO	in, to	ft, Dep		1
2 FORMATIO	IN	STRATUM	BOTTOM OF STRATUM	in. to	ft, Dop	·	]
~ 0 0	•()	T	. <u>.</u>	8 SCREEN:	_	*/	
Clay Sandy	yellow	5	5	Type/HOU	STON S.S	Dia.: 3"	
100 1 30 0	V		1				
Clay Were		+	6	Set between § Fittings:	<b>5</b> ft. and	<u>\$9</u> ft.	
tranel 1	Qry	30	36	2'0 (3"	PIDE W	ith K-PACKER	
San () 4000	020 0. 1		:	9 STATIC WATE	ft, below land su	:	
general green	Trusuum		J. 18	10 PUMPING L	EVEL below land	surface	
to Canone will	th water	8	44		ft. after hrs.	pumpingg,p,m,	
10 00	77-0-10-			1.50	DO PPR	pumping g.p.m g.p.m.	
Blue Clay		8	S 2.			pumping g.p.m.	
CA. D. O.	P	3	55	Fedd (	LITY in Parts Per	Million:	1
Clalle Sand	fine	<u></u>	33	Iron (Fe)	Chic	orides (CI)	
water land	1. F			Hardness _	Othe	er .	Ì
· · · · · · · · · · · · · · · · · · ·	por	<del> </del>			COMPLETION:	In Approved Pit	
me dun	•	4	59	<b>⊠</b> Pit	tloss Adapter	12" Above Grade	
		† **			ed? X Yes 🔲 No		
					oment 🔲 Bento		
					mft.		
					rca of possible o		
1000 Andr						·	/ре
AUDED INFO BY DRILLER, IT	EM NO.			Woll disinte 15 P∪MP: ↑		ation X Yes No	
*CORRECTED BY PJ2				7	er's Name	Not installed オルビビ	
ELEVATION				Manufacture	er's Name	4 HP/2 Volts 230	
<b>-</b> 0€₽₹H- <b>4</b> 0-406K	-					t. capacity 22 G.P.M.	
					Submersible	tr capacity <u>Exp.</u> On this	
3.			<b></b>		Jet [	Reciprocating	
16 Remarks, elevation, source	of data_etc	_l	17 WATER V	VELL CONTRA	CTOR'S CERTIF	ICATION:	,
Rel 59' 111	ten Sand 6	2	This well	was drilled un	dor my jurisdicti	on and this report is true	
below 59 wo Change back		· ·			edge and belief.	11,NG 0983	
Change back	to Very to	m.k	REGIS	TERED BUSINESS	DETT DRI	MING 0983	
San Q.	U		Address	K# 3	3 ADR	IAN MICH	
,				00.1	1 at	,	
			Signed 🖊	AUTHORIZED REE	RESENTATIO	Date 10-10-77	
D67d 100M (Rev. 12-68)							

3 GEOLOGICAL SURVEY SAMPLEANO.

GEOLOGICAL SURVEY SAMPLE No.			
\$ 5.30 Tel. 200	WATER \		
1 LOCATION OF WELL			PUBLIC HEALTH
Lenauree Tecumse	h	Fraction .	Sw Sw Section Number Town Number Range Number 5 WS. # E/W.
Distance And Direction from Road Intersections	· · · · · · · · · · · · · · · · · · ·		3 OWNER OF WELL: Clauda Blumbing
100 \$1 6 of Maumees1,			Address Tec mich
Street address & City of Well Location	on Map:		4 WELL DEPTH: (campleted) Date of Completion
			132 ft.
W			Hollow rod Jetted Bored
	! *		O USE: Domestic Public Supply Industry
	Russel	CRd,	7 CASING: Threaded X Welded Height: Above/Below
1 MILE MALE	mes st		Surface ft.
2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM	in. toibs./ftin. toft. Depth Drive Shoo? Yos No [] 8 SCREEN:
Sand to 15ft.	15	15	
clay to 110 ft.	95	110	Type: Ned brass. Dia.: 3 cm  Slot/Ginze 10 Slot Longth 4ft.  Set between 12 2ft. and 128 ft.
	18	128	Fittings: 3 Of Tail & Khankus
fine sand,		132+	9 STATIC WATER LEVEL  10 PUMPING LEVEL bolow land surface
Coarse sang	#	1324	ft, safeW land surface  10 PUMPING LEVEL below land surface
			ft. afterhrs. pumpingg.p.m.
	-	:	ft. after hrs. pumping g.p.m.  11 WATER QUALITY in Parts Per Million:
			tron (Fe) Chlorides (CI)
			HardnessOther
1			12 WELL HEAD COMPLETION: In Approved Pit
1 1 11 11 11 11 11 11 11 11 11 11 11 11	<del> </del>		Pitless Adapter 2 12" Above Grade
			13 Well Grouted? Yes No Neat Cement Bantonite
	<del></del>		Depth: Fromft. toft.
	ļ		14 Nearest Source of possible contamination
			50 Teet Direction MONK. Type
	<del></del>		Well disinfected upon completion   Yes □ No  15 PUMP:   Yes □ No
,			Manufacturer's Name
ADDED INFO BY DRILLER, IYEM NO.	1		Medel Number HP Volts
*CORRECTED BY ADDITION BY	<b></b>		Length of Drop Pipeft. capacityG.P.M.
ELEVATION BY		1	Type: Submersible
DEPTH TO ROCK	+		
USE A 2ND SHEET IF NEEDED			
16 Remarks, elevation, source of data, etc.		17 WATER	WELL CONTRACTOR'S CERTIFICATION:
for Poly Meric Processe Gene Stiman owner	s Ync	This well to the be	I was drilled under my jurisdiction and this report is true est of hy knowledge and belief.  A SAA R We Lenke OOL
Gene Stiman owner	<u>}</u>	REGI	STERED BUSINESS NAME REGISTRATION NO.
		Address	adrian R.3
D67d 100M (Rev. 12-68)		Signed <u>(</u>	Chas Rulsing Date 4-6-74  AUTHORIZED REPRESENTATIVE

— III III III III III III III III III I	14	16				
---	----	----	--	--	--	--

# WATER WELL RECORD

MICHIGAN DEPARTMENT

1 LOCATION OF WELL	<u> </u>	AUT 25	+ PA 196		•	PUBLIC HEA	LTH	
County	Township Name		Fraction	1 -	Section Number		Range Nur	mber
Lennuec	Tecumse. h		NW1/4 )	U 4 56 4	34	্র <b>সু</b> সুহ/s.	4	E∕₩.
Distance And Direction from I	Road Intersections よった munce	A 21 A 1	a. 41	3 OWNER OF	NELL: July 10	CAND C	Arma	,
			4 )   ( q	i e	11 mohe			
Side mohaw (11 mohaw 12 Stroot address & City of Well	Beamseh m	,					1 .	
Locate with "X" in section		h Map:		4 WELL DEPTH	l: (completed) (	/ ぐ <i>にっと</i> の。	ь <i>ев 1</i> 1.	<b>)</b> )
		1 Marie		6	f*	1 2 17 18	., .c7	
	MAUMER			5 郷 Cable to	ft.	ry Drive	,	Dug
	1	人		Hollow		ed Bore		Dog
w		J		6 USE: Dor	nestic Publ	ic Supply	Industry	<del></del>
		Ohaw.	K			Conditioning		ial
	MI. 			Tes				
	<u>L</u>			7 CASING: The Diam.	nreaded 🌃 Welder			·
1 MILE		*********	05070 74	71	lail	Surface	•	
2 FORMA	ATION	THICKNESS OF	DEPTH TO BOTTOM OF	Z_in. to	₹Zft, Dept	h Weight 💯	′lbs./ft. वरोगी	·
	<del> </del>	STRATUM	STRATUM	8 SCREEN:	ft. Dept	h Drive Shoe	Yes [# No	<u>, П</u>
F. Car	in Fine Sand	12	12		Sec. 1 2	S. 3	•	
		1	/34_	Type:	100 %	_ Dia,:	,	<del></del>
GrAJ C	10-1	36	48	Sat between	<u> </u>	_Lengtn <u> </u>		
	,			Fittings:	•			
Fine B	rown sand	10	58	/<	PAC /<65	- [m.Z)	$r^{\circ}_{r} r^{\circ} C$	
				9 STATIC WAT	ER LEVEL			
				-> /	(t. below land su	rface		
; t					LEVEL below land			
					ft, afterhrs.	pumping	g.p.m	١.
				46	ft, after $\underline{\underline{\mathcal{L}}}$ hrs,	oumning 16	) a.n.m	۱.
				<del>,</del>	ALITY in Parts Per	<del></del>	841577	
				Iron (Fe)	Chlo	rides (C))		
				1				
					Othe			
				4		n Approved P		
- · · · · · · · · · · · · · · · · · · ·				<del></del>		12" Above Gr	ade	
Programme Commence				i	ed? 🚺 Yos 🗌 No Cement 🔁 Bentor			
					omft,		<del> </del>	<del>                                     </del>
				14 Nearest So	urce of possible c	ontamination		1.
					t Nas / Direct		Fie	_Тура
					ected upon comple	etion 🖼 Yes 🔲 I	10	
	· ——			15 PUMP:	er's Name	Vot installed		
		ļ		Manufactur	er's Name	14 2001	CCT -	
				Model Num	hber 9002	HP 22. Volt	s <u>23 c</u>	<del></del>
		····		7	Drop Pipa <u>575</u> f	t, capacity <u>/ - / - /</u> -(	S.P.M.	
					Submersible Jet [	Reciprocating		
	•		<u>-</u> .	1 4	761 [	necibiocating		
USE A 2ND SHE	ET IF NEEDED							:
16 Remarks, elevation, so	urce of data, etc.				CTOR'S CERTIF			
			This well	II was drilled u qstofmy knowl	nder my jurisdictio edgę and belief,	on and this report	∣s true s	
				TO DO STERED BUSINES	edge and belief	9 10170	ATION NO.	
						· REGISTR	ATION NO.	
			Address	<u> 4 5 0</u>	10 S RI	90 00		
			e:	Leans 6	alcook.	D	27-8	9
L			) Signed_	AUTHORIZED RE	PRESENTATIVE	Data	<u> </u>	

M BEOLOGICAL SURVEY NO	ATER WELL		IMP RECORD HI 162
		ACT 366, P.A	PERMIT NUMBER . A
1 LOCATION OF WELL County Township Nan	16 ~ ,	Fraction	Section Number   Range Number
LENAWEE 7000	m50h	NE14	SWE NEW 27 5 N/S 4 EA
Distance And Direction From Road Intersection 4	Block Enst	\	3 OWNER OF WELL A STATE OF A STATE OF THE ST
MANINE On North		\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	LOUIS SCHNEADER
	and of I form	We of	Address 607 MOHAWK ST. TECUMSEN, MICH. 49286
			LICOMOEN' LUCIN LUCIO
Street Address & City of Well Location  Locate with "X" in Section Below	Skeich Map		Address Same As Well Location? Yes No 4 WELL DEPTH (completed) Date of Completion
well Mu	/		78 Det 18-82
	Ent !		5 Cable tool Rotary Driven Dug
	12		Hollow rod Auger Jelted
₩	* 18 18 18 18 18 18 18 18 18 18 18 18 18		6 USE Domestic Type I Public Type III Public
	IN E		trigation 🔲 Type lla Public 🔲 Heat pump
4	/ell ( )		Tage Well Type Ilo Public
<u> </u>	2		7 CASING. Sleet Thresded Height Above/Belent
I MILE	THIOKNESS	рерти то	Piesuc Welder Surfoce ft
2 FORMATION DESCRIPTION	OF STRATUM	BOTTOM OF STRATUM	/ waight / w
0	-1 / ·		Grouted Drill Hole Diameter  In to ft depth Drive Shoe Yes
C/AV 3 SAND	8	\$	in toh dupth
6 1 1	21	9.1	8 SCREEN Not Installed
SAND SGRAVE!	26	34	Type SONNSON Diameter #"
A Lan	.70	64	Slot/Gauze Length
		\$ /	Set betweenft andft
SAND	14	118	FITTINGS K-Packer Lead Packer Beamer Chuck
		<b>-</b> ₹. ¥—	Blank obove screen h Other Blank of STATIC WATER LEVEL
			1t below land surface Flow
			10 PUMPING LEVEL below land surface
			42 ft. siter 2 hrs pumping at 45 GPM
			ft afterhrs pumping atGPM
			11 WELL HEAD THIS adaptor 12 above grade
			COMPLETION Basement offset Approved pit
			12 WELL GROUTED? No Yes From 70 to 0 ft
			Neal cement
		~=:-	No of bage of cement Additives
•			13 Nearest source of possible contamination
			Type SEPTIC Distance 58 11 Direction E
			Well disinfected upon completion?
			14 PUMP Not Installed Pump Installation Only
<u></u>		:	Manufacturer's name AERMO+012
Mar. 100 (100 (100 (100 (100 (100 (100 (100			Model number HP Volts
			Length of Drop Pipe fr capacity G.P.M
			TYPE -SUBmersible Jet
	<del></del>	<del>-</del>	PRESSURE TANK Menufacturer's name WEXTD
ling 4 gain <i>budet is weene</i> n			Model number 12 2 2 3 4 Geoenly Gallon
UBE A 2ND SHEET IF NEEDED  15 Remarks, elevation, source of data, etc		16 WATER	WELL CONTRACTOR'S CERTIFICATION:
which electrically as every disconnection of the		This well	ll was drilled under my jurisdiction and this report is true sat of my knowledge and belief
	)		I have seen
	ì		
			REGISTERED BUSINESS NAME SEGISTRATION NO
m the		Address	
PLRMIT # H-11626_		Address Signed	

GEOLOGICAL SURVEY SAMPLE No.			
	WATER WEI	LL RECO	RD MICHIGAN DEPARTMENT
<del>                                     </del>	ACT 294	PA 1965	OF Public Health
LOCATION OF WELL  County  Two.	<u> </u>	Feaction	
County  LENA WEE  Distance And Direction from Road Intersections	ECUNSER	SWA SE	E45W4 34 5 1/s. 4 E
Distance And Direction from Road Intersections	OWNER No		3 OWNER OF WELL: WILLIAM MACKEY
Cannes of Pursell 1700.  Street address & City of Well Location	AT		Address 4747 MILL HWY
Street address & City of Well Location	May		
2 FORMATION	THICKNESS	DEPTH TO BOTTOM OF	4 WELL DEPTH: (completed) Date of Completion
TORMATION :	STRATUM	STRATUM	5 Cable tool Rotary Driven C
Yellow Clay & Grand	, a	24	5 Cable tool Rotary Driven C
femore erry of frances		~7	6 USE: Damostic Dublic Supply Industry
			Irrigation 🔲 Air Conditioning 🔲 Commerc
Gray Strand	22.1	/	Test Weil
ray atravel		<b>I</b> /	7 CASING: Threaded Welded Height: Abave/Belov
<u> </u>			1 in. to 28 ft. Depth surface f Weight 275 bs/f
			in. toft. Depth Drive Shoe? Yes 20 No
			8 SCREEN:
•			Type STAINLESS STEEL Dia 19
			Slot/Gauze / 6 Length J4
			Set between 2.8 ft. and 3./ft.
A feet and the second s			Fittings: DRIVE CUPLING
			9 STATIC WATER LEVEL
<u> </u>			ft. below land surface
			10 PUMPING LEVEL below land surface
35 IN			ft. after Z_hrs. pumping \( \psi \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
3 - 1 1/1			ft. afterhrs. pumpingg.p.
13			11 WATER QUALITY in Ports Per Million:
			tron (Fe)
E			*Hordness
			12 WELL HEAD COMPLETION: In Approved Pit
<u> </u>			Pitless Adapter 12" Above Grade 13 GROUTING:
			Well Grouted? Yes 🔀 No
:	45		Material: Neat Cement
			Depth: Fromft. toft.  14 SANITARY:
·			Nearest Source of possible contamination
			Total Manual PAL Jyps
· · · · · · · · · · · · · · · · · · ·			Well disinfected upon completion Yes No
			15 PUMP: Monufacturer's Name /// ERCURY
			Model Number 1571 - ST HP HP
			Length of Drop Pipe 2 / ft. capacity 32 & G. P.M.
			Type: Submersible Reciprocating
16 Remarks, elevation, source of data, etc.	I	17 WATER	WELL CONTRACTOR'S CERTIFICATION:
-		This we	ll was drilled under my jurisdiction and this report is true est of my knowledge and belief.
ADDED INFO. BY DRILLER, ITEM NO.		CO 46-4-4	est of my knowledge and collet.

D67D

\*CORRECTED BY:

\*\* ""ITION BYK

100M

AN 1 5 10 hill

Signed Authorized REPRESENTATIVE





Completion is required under authority of Part 127 Act 368 PA 1978.

**Well ID**: 46000000087 Failure to comply is a misdemeanor. **Import ID**: 46757433305

Township: Tecumseh Tax No: Permit No: County: Lenawee Source ID/Well No: Fraction: Section: Town/Range: WSSN: **TECUMSEH WELL** SE1/4 NW1/4 SE1/4 05S 04F 6560 #3 Well ID: 4600000087 Distance and Direction from Road Intersection: WSSN# 06560; Elevation: 819 ft Latitude: 41.99789 Well Owner: City Of Tecumseh Well Address: Owner Address: Longitude: -83.950959 TECUMSEH WELL #3 309 EAST CHICAGO BLVD TECUMSEH MI TECUMSEH MI 49286

Drilling Method: Unknown Pump Installed: Yes Pump Installation only: No Well Depth: 82.00 ft. Well Use: Type I public Pump Installation date: HP: Date Completed: 6/28/1941 Well Type: New Manufacturer: Other Pump Type: Other Casing Type: Unknown Model Number Pump Capacity: 475.00 GPM Casing Joint: Unknown Length of Drop Pipe: 0.00 ft. Id of Well: Diameter: 14.00 in. to 63.00 ft. depth **Diameter of Drop Pipe:** Draw Down Seal Used: No Bore Diameter 1: Pressure Tank Installed: No Bore Diameter 2: Pressure Tank Type: Bore Diameter 3: Manufacturer: Height: 0.00 ft. above grade Model Number Tank Capacity: Gallons Casing Fitting: None Pressure Relief Valve Installed: No Static Water Level: 40.00 ft. Below Grade(Not Flowing) Depth to Thickness **Formation Description Bottom** Yield Test Method: Unknown 3.00 Topsoil 3.00 Measurement Taken During Pump Test: 37.00 40.00 58.00 ft. after 1.00 hrs. pumping at 1,200.00 GPM Gravel 82.00 59.00 ft. after 10.00 hrs. pumping at 1,250.00 GPM Sand & Gravel Coarse 42.00 Abandoned Well Plugged: No Reason for not plugging Well: Abandoned well ID: Screen Installed: Yes Well Intake: Filter Packed: No Screen Diameter: 14.00 in. Length: 20.00 ft. Screen Material Type: Slot: 10.00 in. Set Between 0.00 ft. and 0.00 ft. Blank: 0.00 ft. Above Fittings: Other Well Grouted: No Grouting Method: Geology Remarks: 1. [TOP SOIL] [3] [3] 2. [DRY BANK GRAVEL] [40] [37] 3. No. of Bags: Additives: [COARSE, CLEAN SAND AND GRAVEL] [82] [42] **Grouting Materials:** Well Head Completion: 12 inches above grade, Other Contractor Type: Unknown Registration Number: Nearest source of possible contamination: **Business Name** Type Distance Direction **Business Address** Unknown 0.00 ft. WATER WELL CONTRACTOR'S CERTIFICATION: Unknown This well was drilled under my supervision and this report is true to the best of my knowledge and belief. **Drilling Machine Operator Name:** Employment: Unknown Signature of Registered Contractor Date General Remarks: LIMITED INFORMATION ON WELL LOG; PUMP TYPE IS VERTICLE TURBINE; OTHER REMARKS Screen Fittings: Type Unknown Well Head Completion: 12 inch Above Grade Pump Type: Type Unknown Pump

Manufacturer: Pump Manufacturer unknown EQP 2017C (2/2000)

ATTENTION WELL OWNER: FILE WITH DEED

2/17/2000 18:45





Completion is required under authority of Part 127 Act 368 PA 1978.

Well ID: 46000000083 Failure to comply is a misdemeanor. Import ID: 46757433301

	р.у					iniport ib. 40707433301		
Tax No:	Permit No:		County: L	enawee	Townshi	Township: Tecumseh		
		Fraction:	Section:	Town/Range:	WSSN:	Source ID/Well No:		
Wall ID: 46000	200002	SE¼ NW¼ SE¼	33	05S 04E	6560	TECUMSEH WELL #8		
Well ID: 46000000083		Distance and Direction from Road Intersection: WSSN# 06560;						
Elevation: 819 ft								
Latitude: 41.998849		Well Owner: City Of	Tecumseh					
Longitude: -83.95083		Well Address: TECUMSEH WELL:	#8		Address: .ST CHICAGO	) BLVD		
		TECUMSEH MI		TECUN	MSEH MI 492	286		

Drilling Method: Unknown		Pump Installed: Yes	Pump Installa	ation only: No	)				
Well Depth: 82.00 ft.	Well Use: Type I public	Pump Installation date: HP:							
Well Type: New	Date Completed: 9/28/1962	Manufacturer: Other Pump Type: Other							
Casing Type: Unknown Casing Joint: Unknown Diameter: 16.00 in. to 72.00 ft. depth		Model Number:	Pump Capaci	ity: 726.00 G	PM				
		Length of Drop Pipe: 0.00 ft.	Id of Well:						
		Diameter of Drop Pipe:							
		Draw Down Seal Used: No							
Bore Diameter 1:		Pressure Tank Installed: No							
Bore Diameter 2:		Pressure Tank Type:							
Bore Diameter 3:		Manufacturer:							
Height: 0.00 ft. above gra		Model Number :	Tor	sk Canaaitu :	Callons				
Casing Fitting: Drive	shoe			nk Capacity :	Gallons				
<b>a</b>	( D   0   M ( E   )	Pressure Relief Valve Installed : No		1 1	<b>D</b> 41.4				
Yield Test Method: Unkno	ft. Below Grade(Not Flowing)	Formation Description	1	Thickness	Depth to Bottom				
Measurement Taken Duri	ing Pump Test:	Clay & Sand W/Stones		3.00	3.00				
59.00 ft. after 1.00 hrs. p	pumping at 1,725.00 GPM	Sand & Gravel		79.00	82.00				
	oumping at 1,000.00 GPM								
Abandoned Well Plugged									
Reason for not plugging	weii:								
Abandoned well ID:	W 11 4 1								
Screen Installed: Yes Filter Packed: No	Well Intake:			-					
	in Longth: 10 50 ft								
Screen Diameter: 16.00   Screen Material Type:	in. Length: 10.50 ft.								
Slot: 35.00 in. Set Betwe	on 0.00 ft and 0.00 ft								
Blank: 0.00 ft. Above	en 0.00 it. and 0.00 it.								
Fittings:									
None									
110110									
Well Grouted: Yes Grou	uting Method: Unknown								
No. of Bags:	Additives: None	Geology Remarks: 1. [CLAY, SAND A	AND STONES]	[3] [3] 2. [SAN	D AND				
Grouting Materials:		GRAVEL] [82] [79]							
Unknown	From 0.00 ft. to 0.00 ft.								
OTIKITOWIT	110111 0.00 10.00 10.								
Well Head Completion:	12 inches above grade, Other								
	3	Contractor Type: Unknown							
		Registration Number:							
Nearest source of possib		Business Name:							
Туре	Distance Direction	Business Address:							
Unknown	0.00 ft.	WATER WELL CONTRA	ACTOR'S CERT	TIFICATION:					
Unknown		This well was drilled under my supervis my knowledge and belief.	sion and this rep	oort is true to t	he best of				
Drilling Machine Operato	r Name: RUSS HOFACRE	my knowledge and belief.							
Employment: Unknown									
Linployment. Onknown		Signature of Registered Contractor	Date						
General Remarks:   IMITE	ED INFORMATION PROVIDED ON W	ELL LOG; SCREEN FITTINGS WERE WELL	DED; PUMP TY	PE VERTICLE	TURBINE				

OTHER REMARKS Well Head Completion: 12 inch Above Grade Pump Type: Type Unknown Pump Manufacturer: Pump Manufacturer unknown EQP 2017C (2/2000) 2/17/2000 18:45

ATTENTION WELL OWNER: FILE WITH DEED

Page 1 of 1





Completion is required under authority of Part 127 Act 368 PA 1978.

Well ID: 46000000084 Failure to comply is a misdemeanor. Import ID: 46757433302

Township: Tecumseh Tax No: Permit No: County: Lenawee Source ID/Well No: Fraction: Section: Town/Range: WSSN: **TECUMSEH WELL** SE1/4 NW1/4 SE1/4 05S 04F 6560 #9 Well ID: 4600000084 Distance and Direction from Road Intersection: WSSN# 06560; Elevation: 819 ft Latitude: 41.997895 Well Owner: City Of Tecumseh Well Address: Owner Address: Longitude: -83.95096 TECUMSEH WELL #9 309 EAST CHICAGO BLVD TECUMSEH MI TECUMSEH MI 49286

Drilling Method: Unknown Pump Installed: Yes Pump Installation only: No Well Depth: 79.50 ft. Well Use: Type I public Pump Installation date: HP: Well Type: New Date Completed: 10/9/1962 Manufacturer: Other Pump Type: Other Casing Type: Unknown Model Number: Pump Capacity: 800.00 GPM Casing Joint: Unknown Length of Drop Pipe: 0.00 ft. Id of Well: Diameter: 18.00 in. to 70.00 ft. depth **Diameter of Drop Pipe:** Draw Down Seal Used: No Bore Diameter 1: Pressure Tank Installed: No Bore Diameter 2: Pressure Tank Type: Bore Diameter 3: Manufacturer: Height: 0.00 ft. above grade Model Number Tank Capacity: Gallons Casing Fitting: None Pressure Relief Valve Installed: No Static Water Level: 50.50 ft. Below Grade(Not Flowing) Depth to Thickness **Formation Description Bottom** Yield Test Method: Unknown 40.00 Yellow Sand & Gravel 40.00 Measurement Taken During Pump Test: 22.00 62.00 63.00 ft. after 1.00 hrs. pumping at 1,750.00 GPM Gray Sand & Gravel Coarse 59.00 ft. after 5.00 hrs. pumping at 1,000.00 GPM Sand Coarse 11.00 73.00 Sand & Gravel Coarse 6.50 79.50 Abandoned Well Plugged: No Reason for not plugging Well: Abandoned well ID: Screen Installed: Yes Well Intake: Filter Packed: No Screen Diameter: 18.00 in. Length: 10.50 ft. Screen Material Type: Slot: 37.00 in. Set Between 0.00 ft. and 0.00 ft. Blank: 0.00 ft. Above Fittings: None Well Grouted: Yes Grouting Method: Unknown Geology Remarks: 1. [YELLOW SAND AND GRAVEL] [40] [40] 2. [COARSE No. of Bags: Additives: None GREY SAND AND GRAVEL] [62] [22] 3. [COARSE SAND] [73] [11] 4. **Grouting Materials:** [COARSE SAND AND GRAVEL] [79.5] [6.5] From 0.00 ft. to 0.00 ft. Unknown Well Head Completion: 12 inches above grade, Other Contractor Type: Unknown Registration Number: Nearest source of possible contamination: **Business Name:** Type **Distance Direction Business Address** Unknown 0.00 ft. WATER WELL CONTRACTOR'S CERTIFICATION: Unknown This well was drilled under my supervision and this report is true to the best of my knowledge and belief. Drilling Machine Operator Name: D. FLECK Employment: Unknown Signature of Registered Contractor Date General Remarks: PUMP TYPE IS VERTICLE TURBINE; LIMITED INFORMATION PROVIDED ON WELL LOG; DRILLERS STOPPED AT 79.5' IN

OTHER REMARKS Well Head Completion: 12 inch Above Grade Pump Type: Type Unknown Pump Manufacturer: Pump Manufacturer unknown 2/17/2000 18:45

EQP 2017C (2/2000)

ATTENTION WELL OWNER: FILE WITH DEED





Completion is required under authority of Part 127 Act 368 PA 1978.

**Well ID**: 46000000085 Failure to comply is a misdemeanor. **Import ID**: 46757433303

Township: Tecumseh Tax No: Permit No: County: Lenawee Source ID/Well No: Fraction: Section: Town/Range: WSSN: **TECUMSEH WELL** SE1/4 NW1/4 SE1/4 05S 04F 6560 #10 Well ID: 4600000085 Distance and Direction from Road Intersection: WSSN# 06560; Elevation: 818 ft Latitude: 41.998157 Well Owner: City Of Tecumseh Well Address: Owner Address: Longitude: -83.950664 TECUMSEH WELL #10 309 EAST CHICAGO BLVD TECUMSEH MI TECUMSEH MI 49286

Drilling Method: Rotary Pump Installed: Yes Pump Installation only: No Well Depth: 77.00 ft. Well Use: Type I public Pump Installation date: HP: Well Type: New Date Completed: 4/13/1964 Manufacturer: Other Pump Type: Other Casing Type: Unknown Pump Capacity: 400.00 GPM Casing Joint: Unknown Length of Drop Pipe: 0.00 ft. Id of Well: Diameter: 12.00 in. to 67.00 ft. depth **Diameter of Drop Pipe:** Draw Down Seal Used: No Bore Diameter 1: Pressure Tank Installed: No Bore Diameter 2: Pressure Tank Type: Bore Diameter 3: Manufacturer: Height: 0.00 ft. above grade Model Number Tank Capacity: Gallons Casing Fitting: None Pressure Relief Valve Installed: No Static Water Level: 48.50 ft. Below Grade(Not Flowing) Depth to Thickness **Formation Description Bottom** Yield Test Method: Unknown 1.00 Red Clay & Gravel Measurement Taken During Pump Test: 1.00 56.00 57.00 Yellow Sand & Gravel Blue Sand & Gravel 20.00 77.00 Abandoned Well Plugged: No Reason for not plugging Well: Abandoned well ID: Screen Installed: Yes Well Intake: Filter Packed: No Screen Diameter: 12.00 in. Length: 10.00 ft. Screen Material Type: Slot: 25.00 in. Set Between 0.00 ft. and 0.00 ft. Blank: 0.00 ft. Above Fittings: Other Well Grouted: Yes Grouting Method: Unknown Geology Remarks: 1. [RED CLAY & GRAVEL] [1] [1] 2. [YELLOW SAND & No. of Bags: Additives: None GRAVEL] [57] [56] 3. [BLUE SAND & GRAVEL] [77] [20] **Grouting Materials:** From 0.00 ft. to 0.00 ft. Unknown Well Head Completion: 12 inches above grade, Other Contractor Type: Unknown Registration Number: Nearest source of possible contamination: **Business Name:** Type **Distance Direction Business Address** Unknown 0.00 ft. WATER WELL CONTRACTOR'S CERTIFICATION: Unknown This well was drilled under my supervision and this report is true to the best of my knowledge and belief. Drilling Machine Operator Name: DALE DUNBAR Employment: Unknown Signature of Registered Contractor Date General Remarks: PUMP TYPE IS VERTICLE TURBINE; SCREEN FITTINGS ARE LISTED AS STANDARD OTHER REMARKS Screen Fittings: Type Unknown Well Head Completion: 12 inch Above Grade Pump Type: Type Unknown Pump

Manufacturer: Pump Manufacturer unknown EQP 2017C (2/2000)

ATTENTION WELL OWNER: FILE WITH DEED

2/17/2000 18:45





Completion is required under authority of Part 127 Act 368 PA 1978.

**Well ID**: 46000000086 Failure to comply is a misdemeanor. **Import ID**: 46757433304

Township: Tecumseh Tax No: Permit No: County: Lenawee Source ID/Well No: Fraction: Section: Town/Range: WSSN: **TECUMSEH WELL** SE1/4 NW1/4 SE1/4 05S 04F 6560 #11 Well ID: 4600000086 Distance and Direction from Road Intersection: WSSN# 06560; Elevation: 819 ft Latitude: 41.9986309754 Well Owner: City Of Tecumseh Well Address: Owner Address: Longitude: -83.9507754619 TECUMSEH WELL #11 309 EAST CHICAGO BLVD TECUMSEH MI TECUMSEH MI 49286

Drilling Method: Rotary Pump Installed: Yes Pump Installation only: No Well Depth: 77.00 ft. Well Use: Type I public Pump Installation date: HP: Well Type: New Date Completed: 4/13/1964 Manufacturer: Other Pump Type: Other Casing Type: Unknown Model Number: Pump Capacity: 390.00 GPM Casing Joint: Unknown Length of Drop Pipe: 0.00 ft. Id of Well: Diameter: 12.00 in. to 67.00 ft. depth **Diameter of Drop Pipe:** Draw Down Seal Used: No Bore Diameter 1: Pressure Tank Installed: No Bore Diameter 2: Pressure Tank Type: Bore Diameter 3: Manufacturer: Height: 0.00 ft. above grade Model Number Tank Capacity: Gallons Casing Fitting: None Pressure Relief Valve Installed: No Static Water Level: 48.50 ft. Below Grade(Not Flowing) Depth to **Formation Description** Thickness **Bottom** Yield Test Method: Unknown 1.00 Red Clay & Gravel Measurement Taken During Pump Test: 1.00 56.00 57.00 Yellow Sand & Gravel Blue Sand & Gravel 20.00 77.00 Abandoned Well Plugged: No Reason for not plugging Well: Abandoned well ID: Screen Installed: Yes Well Intake: Filter Packed: No Screen Diameter: 12.00 in. Length: 10.50 ft. Screen Material Type: Slot: 25.00 in. Set Between 0.00 ft. and 0.00 ft. Blank: 0.00 ft. Above Fittings: Other Well Grouted: Yes Grouting Method: Unknown Geology Remarks: 1. [RED CLAY & GRAVEL] [1] [1] 2. [YELLOW SAND & No. of Bags: Additives: None GRAVEL] [57] [56] 3. [BLUE SAND & GRAVEL] [77] [20] **Grouting Materials:** From 0.00 ft. to 0.00 ft. Unknown Well Head Completion: 12 inches above grade, Other Contractor Type: Unknown Registration Number: Nearest source of possible contamination: **Business Name:** Type **Distance Direction Business Address** Unknown 0.00 ft. WATER WELL CONTRACTOR'S CERTIFICATION: Unknown This well was drilled under my supervision and this report is true to the best of my knowledge and belief. Drilling Machine Operator Name: DALE DUNBAR Employment: Unknown Signature of Registered Contractor Date General Remarks: PUMP TYPE IS VERTICLE TURBINE; FITTINGS LISTED AS STANDARD ON SCREEN; OTHER REMARKS Screen Fittings: Type Unknown Well Head Completion: 12 inch Above Grade Pump Type: Type Unknown Pump Manufacturer: Pump Manufacturer unknown

EQP 2017C (2/2000)

ATTENTION WELL OWNER: FILE WITH DEED

2/17/2000 18:45

# Appendix F Notices of Off-Site Migration

# **US EPA ARCHIVE DOCUMENT**



April 8, 2009

CITY OF TECUMSEH 309 E CHICAGO BLVD TECUMSEH, MI 49286

RE: Property at 101 E RUSSELL RD (325-00253-00), 300 S WYANDOTTE ST (325-0420-00), 600 DAVE WILLIAMS DR (325-0081-00)

### Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

In addition to the enclosed Notice of Migration, we want to provide you with as much information as possible in order to address possible questions or concerns. Therefore, we have developed a Questions & Answers document, which we have enclosed with this letter. We are working cooperatively with the MDEQ to address this soil and groundwater contamination at our facility. As part of that effort we have installed numerous monitoring wells around the site to conduct regular testing.

Sincerely,

Randy Kopke
Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



JOHN J & ANNE E RYAN 210 W CHICAGO BLVD TECUMSEH, MI 49286

RE: Property at 500 E CUMMINS ST (325-0085-00 & 325-0410-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



MARTIN JR & CAROL BOOT 416 E CUMMINS ST TECUMSEH, MI 49286

RE: Property at 416 E CUMMINS ST (325-0091-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Randy Kopke

Facilities Manager

Enclosures:

Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc:

Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



JF CALM LLC 962 FAIRWAY COVE TECUMSEH, MI 49286

RE: Property at 504 E CUMMINS ST (325-0094-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Randy Kopke

Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



D & P COMMUNICATIONS, INC 4200 TEAL RD PETERSBURG, MI 49270

RE: Property at 415 S MAUMEE ST, TECUMSEH, MI (325-0100-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Randy Kopke
Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

ce: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



CONSUMERS ENERGY CO ONE ENERGY PLAZA JACKSON, MI 49201

RE: Property at 201 E PATTERSON ST (325-0170-00), 205 E PATTERSON ST (325-0190-00), TECUMSEH, MI

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



DENNIS C & KAREN IRELAN BOX 66 TECUMSEH, MI 49286

RE: Property at 209 E PATTERSON ST (325-0180-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Randy Kopke
Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



M & S LAND HOLDINGS, LLC 8514 PENNINGTON RD TECUMSEH, MI 49286

RE: Property at 223 E PATTERSON ST (325-0200-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Randy Kopke

Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



TODD & LINDA HERRICK 3970 PENINSULA DR PETOSKEY, MI 49770

RE: Property at 105 E RUSSELL RD, TECUMSEH, MI (325-0251-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Randy Kopke
Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



UNITED BANK & TRUST P O BOX 248 TECUMSEH, MI 49286

RE: Property at 209 E RUSSELL RD (325-0252-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

US EPA AKCHIVE DOCUMENI

We hope that this letter and the enclosed information answer any questions or concerns. If you wish to discuss this further, please do not hesitate to contact me at (734) 585-9439, or any of the persons listed below.

Sincerely,

Randy Kopke
Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



DONALD J MARTIN TRUST 145 W CHICAGO BLVD TECUMSEH, MI 49286

RE: Property at 805 S MAUMEE ST (325-0261-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

S EPA AKCHIVE DOCUMENI

We hope that this letter and the enclosed information answer any questions or concerns. If you wish to discuss this further, please do not hesitate to contact me at (734) 585-9439, or any of the persons listed below.

Sincerely,

Randy Kopke

Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



ROBERTS INVESTMENT COMPANY LLC P.O. BOX 400 TECUMSEH, MI 49286

RE: Property at 800 S MAUMEE ST (325-0321-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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US EPA AKCHIVE DOCUMENI

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Sincerely,

Randy Kopke

Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



G T E TELEPHONE OPER 19845 NORTH US 31 POB 407 WESTFIELD, IN 46074

RE: Property at 606 S MAUMEE ST, TECUMSEH, MI (325-0324-00 & 325-0327-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke
Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



CALLISON LEASING CORPORATION 610 S MAUMEE ST TECUMSEH, MI 49286

RE: Property at 610 S MAUMEE ST (325-0325-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures:

Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc:

Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



TECUMSEH PUBLIC SCHOOLS 212 N OTTAWA ST TECUMSEH, MI 49286

RE: Property at 700 S MAUMEE ST (325-0326-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke

Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



TECUMSEH SELF STORAGE LLC 500 W KILBUCK ST TECUMSEH, MI 49286

RE: Property at 800 MOHAWK ST (325-0329-00 & 325-0328-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



KEVIN G & JASON E DERBY 508 MOHAWK ST TECUMSEH, MI 49286

RE: Property at 508 MOHAWK ST (325-0340-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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S EPA AKCHIVE DOCUMEN I

We hope that this letter and the enclosed information answer any questions or concerns. If you wish to discuss this further, please do not hesitate to contact me at (734) 585-9439, or any of the persons listed below.

Sincerely,

Randy Kopke

Facilities Manager

Enclosures:

Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



HAROLD E SPEER 210 W SHAWNEE ST TECUMSEH, MI 49286

RE: Property at 505 S MAUMEE ST (325-0351-00), 507 S MAUMEE ST (325-0322-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



TODD E KLANKE 502 MOHAWK ST TECUMSEH, MI 49286

RE: Property at 502 MOHAWK ST (325-0361-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke

Facilities Manager

Enclosures: Que

Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



NOVAK LLC 426 S MAUMEE ST TECUMSEH, MI 49286

RE: Property at 426 S MAUMEE ST (325-0380-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke

Facilities Manager

Enclosures:

Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc:

Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



SLUSARSKI INVESTMENT COMPANY LLC 119 GREENLY STREET ADRIAN, MI 49221

RE: Property at 424 S MAUMEE ST, TECUMSEH, MI (325-0390-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke

Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



MARTIN & CAROL BOOT 807 RED MILL DR TECUMSEH, MI 49286

RE: Property at 414 S MAUMEE ST (325-0401-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke

Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



HULL INVESTMENTS 119 W CHICAGO BLVD TECUMSEH, MI 49286

RE: Property at 704 MOHAWK ST (325-0323-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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S EPA AKCHIVE DOCUMENI

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumsel Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager

ROBERT W LOGAN 1207 MURRAY DR TECUMSEH, MI 49286

RE: Property at 607 MOHAWK ST, (325-0432-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Our review of public records and discussions with the City indicate that your property may not be connected to the City's public water supply system. We would like to verify whether your property uses its own private water supply well, and if so we would like to collect a water sample from your well and have it tested at our cost by our environmental consultant, RMT, Inc. Please contact me at the number below to arrange this.

Sincerely,

Randy Kopke

Facilities Manager

Enclosures:

Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc:

Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



EDWARD & DONALD HULL 509 E CHICAGO BLVD TECUMSEH, MI 49286

RE: Property at 707 BLOOD RD, (325-0431-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



MAYNARD MINI SERVICES, INC 101 CARRIAGE DR TECUMSEH, MI 49286

RE: Property at 701 MILL HWY (325-0312-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

US EPA AKCHIVE DOCUMENI

We hope that this letter and the enclosed information answer any questions or concerns. If you wish to discuss this further, please do not hesitate to contact me at (734) 585-9439, or any of the persons listed below.

Sincerely,

Randy Kopke Facilities Manager

Enclosures:

Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc:

Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



RONALD A & SHERRIE L BIRCHFIELD 5371 N RAISIN CENTER HWY TECUMSEH, MI 49286

RE: Property at 600 MOHAWK ST (325-0433-00), 611 MOHAWK ST (325-0434-00), 615 MOHAWK ST (325-0435-00)

### Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Our review of public records and discussions with the City indicate that your property may not be connected to the City's public water supply system. We would like to verify whether your property uses its own private water supply well, and if so we would like to collect a water sample from your well and have it tested at our cost by our environmental consultant, RMT, Inc. Please contact me at the number below to arrange this.

Sincerely,

Randy Kopke Facilities Manager

**Enclosures:** 

Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc:

Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager

SCOTT R LASK 610 MOHAWK ST TECUMSEH, MI 49286

RE: Property at 610 MOHAWK ST, (325-0330-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Our review of public records and discussions with the City indicate that your property may not be connected to the City's public water supply system. We would like to verify whether your property uses its own private water supply well, and if so we would like to collect a water sample from your well and have it tested at our cost by our environmental consultant, RMT, Inc. Please contact me at the number below to arrange this.

Sincerely,

Randy Kopke

Facilities Manager

Enclosures: Quest

Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



FRANK L BATYIK 3614 NOLAND DR TECUMSEH, MI 49286

RE: Property at 509 MOHAWK ST (325-0370-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Randy Kopke

Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Kevin Welch, Tecumseh City Manager



Tecumseh Products Company Tecumseh, Michigan Notice of Migration of Contamination Page 1

### **Questions and Answers**

### 1. I received a notice of off-site migration. What do I do now?

In most cases you do not need to do anything. Because chemical concentrations were detected in groundwater above the criteria established by the Michigan Department of Environmental Quality near the perimeter of the Tecumseh Products Company site, the Michigan Department of Environmental Quality requires that the Tecumseh Products Company notify property owners whose property might be affected by off-site migration of affected groundwater. If you receive your water from the City's public water supply system, rather than water from an on-site well, you are not likely to come in contact with the groundwater. However, if you have a private well on your property, see the response to Questions 4 and 5 below.

### 2. What is groundwater, and how far below ground is it?

Groundwater is water located beneath the ground surface in soil pore spaces (i.e., space between grains of sand). The depth at which these soil pore spaces become completely saturated with water is called the groundwater table. The depth at which the soil becomes saturated in the vicinity of the Tecumseh Products Company site is approximately 10 to 25 feet below the ground surface. This groundwater is stored in and moves through layers of soil and sand called aquifers. These materials are permeable because they have connected spaces that allow water to flow through. Data collected at the Tecumseh Products Company site show that groundwater is generally flowing towards the east.

### 3. Can I drink/use my tap water?

The Tecumseh Products Company is not aware that this condition affects the City's public water supply system. Please contact your water utility if you have specific questions on the condition of your tap water. If you have a private well see the response to Questions 4 and 5 below.

Tecumseh Products Company Tecumseh, Michigan Notice of Migration of Contamination Page 2

### **Questions and Answers (Continued)**

### 4. What if I have a well on my property?

The Tecumseh Products Company is currently unaware of any evidence that chemicals are present in groundwater at typical well depths (greater than 50 feet). However, if you have a well on your property, as a precautionary measure Tecumseh Products Company would like to collect and analyze a water sample from your well. Please notify Randy Kopke at Tecumseh Products Company (734) 585-9439 at your earliest convenience to arrange for this. The sample will be collected by our environmental consultant, RMT Inc., and a chemical analysis will be performed at no cost to you. We will provide you with the results of the laboratory analysis of the sample when we receive it, and we will be available to answer any questions or concerns you may have.

# 5. If I have a private water supply well as my water supply source, can I continue to use it?

At this time, the Tecumseh Products Company has no data that shows water from any private water supply wells has chemical concentrations above the Michigan Department of Environmental Quality criteria. If you have a well on your property, please arrange to have the water tested as indicated in Question 4 above.

# 6. Do I have to be concerned above migration of chemicals into the air in my basement or house?

The Michigan Department of Environmental Quality has established groundwater criteria to evaluate when there might be a risk that groundwater contaminant vapors might enter buildings. Concentrations detected at the Tecumseh Products Company perimeter are below these criteria.

### 7. Is it safe for my children/pets to play outside in the yard?

Off-site migration is in subsurface groundwater; therefore children and pets playing outside are typically not exposed to chemicals that may be migrating from the Tecumseh Products Corporation site.



# MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY REMEDIATION AND REDEVELOPMENT DIVISION

For DEQ Use Only	
ITS #	
Site ID #	
Category Code:	
• •	

### NOTICE OF MIGRATION OF CONTAMINATION

This notice must be sent to the DEQ office that serves the county in which the property is located. A list of DEQ offices is available at <a href="www.michigan.gov/bea">www.michigan.gov/bea</a>, or by calling the Remediation and Redevelopment's Lansing office at 517-373-9837. The DEQ will not prepare acknowledgement of receipt of these notices. The sender is responsible for sending the report using a method that provides proof of delivery if such proof is desired. Please label the outside of the envelope "Migration Notice." Additional guidelines for the compliance with the requirements of R 200.51017(1) or R 299.5522 are available at <a href="www.michigan.gov/bea">www.michigan.gov/bea</a>.

THIS NOTICE IS PROVIDED I	<b>PURSUANT</b>	TO:
---------------------------	-----------------	-----

R 299.5522

 $\boxtimes$ 

R 299.51017

 $\bowtie$ 

(check both, if applicable)

Please provide the following information as completely as possible.

 Name and location of the property that hazardous substances are emanating from: 2. Status relative to the property: (Check one or both, as applicable.)

Name: Tecumseh Products Company Address: 100 E. Patterson Street Location: Tecumseh, Michigan City/County: Tecumseh, Lenawee Owner Department Depar

Property Tax Identification Number, or if applicable, the ward and item number: 325-0241-00 & 325-0250-00

Provide any additional ID numbers associated with the property (e.g., EPA ID No., BEA No., Part 213 facility ID No., etc.):

3. Name, address, and telephone number of the property owner, operator, or other party submitting the notice:

Name: Tecumseh Products Company Address: 1136 Oak Valley Drive City/State: Ann Arbor, Michigan Telephone number: 734-585-9500

4. Name, address and telephone number of a contact person familiar with the content of the notice:

Name: Mr. Randy Kopke- Corporate Facilities and Property Manager

Address: 1136 Oak Valley Drive City/State: Ann Arbor, Michigan Telephone: 734-585-9439

5. If this Notice is provided pursuant to R 299.51017, provide the address and other location information for the *adjacent* property(s) onto which contamination is migrating, has migrated, or is likely to migrate. If this Notice is provided pursuant to R 299.5522, provide the address and other location information for *each* property onto which contamination has migrated. Notice should be sent to the property owner of record. If the impacted property is owned by the State of Michigan, notice should be sent to the department managing the property (i.e. a prison, state park, etc.). Notices to the Michigan Department of Transportation (MDOT) for state owned roadways should be sent to Ms. Heather Hicks, MDOT-Bureau of Transportation Planning, 425 W. Ottawa Street, P.O. Box 30050, Lansing, MI 48989. If it isn't readily apparent what state department manages the property, notices should be sent to Mr. Thomas Saxton, Tenant and Land Services, Department of Management and Budget, 1<sup>st</sup> Floor Lewis-Cass Building, P.O. Box 30026, Lansing, MI 48909.

See Attached List of Notified Property Owners for Pertinent Information.

6. Complete the Table on Page 3 of this Form for each hazardous substance which has migrated, or is likely to have migrated, beyond the property boundary at a concentration that exceeds a Generic Residential Cleanup Criterion developed by the DEQ pursuant to MCL 324.20120a(1). Complete and attach additional copies of Page 3, if necessary, to list all hazardous substances that must be reported. Include a scaled map or drawing that shows the location of sampling points identified on the Table on Page 3, the property boundaries, and the adjacent property owners if providing notice pursuant to R 299.1017(1) or all impacted property owners if providing notice pursuant to Rule 299.5522.

### See Completed Table 3 and Attached Figure

7. Provide a summary of the information which shows that contamination is emanating from, or has emanated from, and is present beyond the boundary of the source property at a concentration which exceeds that allowed by MCL 324.20120a(1)(a). This summary shall identify the environmental media affected, specific hazardous substances, and the concentrations of those hazardous substances in all affected environmental media at the property boundary and in any sample locations beyond the property boundary. The summary shall also describe the basis for the conclusion that the contamination is emanating, has emanated, or is present beyond the boundary of the source property, including whether the conclusion is based on groundwater analytical data or fate and transport modeling, both, or neither.

On February 23, 2009 Tecumseh Products Company (TPC) received a draft of the Phase II Subsurface Investigation conducted on behalf of the potential purchaser of the site, Consolidated Biscuit Company (CBC). Data in the Phase II report indicated that groundwater beneath the TPC manufacturing facility in Tecumseh, Michigan contained concentrations of trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), vinyl chloride, 1,1,1-trichloroethane (1,1,1-TCA), and 1,1-dichloroethene (1,1-DCE) above generic Michigan Department of Environmental Quality (MDEQ) criteria. Two samples collected near the facility property boundary indicated the potential for off-site migration. In March 2009 RMT Inc. (RMT) on behalf of TPC conducted a perimeter investigation to determine groundwater flow direction and to evaluate the potential for off-site migration.

Data for the March 2009 investigation indicate that groundwater near the site perimeter contains concentrations of TCE, cis-1,2-DCE, vinyl chloride, and 1,1,1-TCA above generic MDEQ criteria. The maximum concentrations for TCE, cis-1,2-DCE vinyl chloride, and 1,1,1-TCA were 5,000  $\mu$ g/L, 2,100  $\mu$ g/L, 140  $\mu$ g/L, and 750  $\mu$ g/L, respectively. The highest concentrations of these constituents were found near the water table. Water levels collected from nine shallow monitoring wells installed on-site indicate that groundwater flow is generally to the east toward the River Raisin.

At present no groundwater samples have been collected off-site. Given the concentrations of TCE, cis-1,2-DCE vinyl chloride, and 1,1,1-TCA near the property boundary and the direction of groundwater flow, TPC has conservatively identified 38 properties that may be affected by off-site migration. These properties include all properties between the TPC manufacturing facility and the River Raisin and those properties adjacent to the north or south side of the TPC manufacturing facility.

### See Attached Summary

8. If the person making this notice has reason to believe that a migrating hazardous substance has affected, or is likely to affect, a private or public water supply, then that water supply must be identified here:

Water quality for the City of Tecumseh municipal well field have not detected any of the hazardous substances identified above. Furthermore, the municipal well field is located west of the TPC facility, and data collected at the TPC site show that groundwater flow is towards the east. Concurrent with submittal of this notice, TPC is working with the City of Tecumseh and the County Health Department to identify if properties downgradient of the site may be using groundwater from an on-site well. As a precautionary measure will sample the well at not cost to the owner.

^		YES	NO
9.	Is this notice being submitted within the timeframes established under R 299.5522 and/or R 299.51017, as applicable?	$\boxtimes$	1.
10.	Is this notice in addition to a notice submitted prior to <i>December 21, 2002?</i> (R 299.51017(4)(c))		$\boxtimes$
11.	Is this notice related to an oil and gas well permit (R 299.51017(2))? Permit #:		$\boxtimes$
12.	Is this notice related to an easement (R 299.51017(3))? (NOTE: All easement grantors <i>must</i> receive this notice.)		$\boxtimes$
13.	Has surface water been affected (R 299.51017(1) and R 299.5522(2))? (If yes, please identify the affected surface water body.)		
CEI	OTIFIC ATION:		

With my signature below, I certify that I am the owner of the facility or that I am legally authorized to execute this notice on behalf of the owner or operator named on this form, and that to the best of my knowledge and belief the above representations are complete and accurate. I understand that intentionally submitting false information to the DEQ is a felony and may result in fines up to \$25,000 for each violation.

Signature

Date: April 9, 2009

Name (Typed or Printed) Randy Kopke

Title (Typed or Printed) Corporate Facilities and Property Manager See Item 6 on Page 2 of this Form for instructions to be used in completing this Table. Attach additional pages if necessary. The information to be included in each column of the Table is:

Column A	7	Mame	of ha	zardous	s substance.
COMMITTER	٦ .	ivaille	UI IIa	zaruous	s substance.

Column B Chemical Abstract Service (CAS) Number for the hazardous substance.

Column C Maximum hazardous substance concentration measured on the property, expressed in parts per billion (e.g., ug/L or ug/Kg). Report

maximum concentration separately for each environmental medium.

Column D Sample location for Column C (relate to label on map).

Column E Environmental medium in which concentration reported in Column C was measured (e.g., soil or groundwater).

Column F Distance from point of maximum measured concentration (Column D) to property boundary, in direction of contaminant migration, if

direction is known or can reasonably be inferred. If direction is unknown, list distance to nearest property boundary.

Column G Direction of contaminant migration, if known.

Column H Concentration closest to property boundary, if known. If a concentration lower than the maximum concentration reported in Column C has

been measured at a point closer to the property boundary in the direction of contaminant migration, use Column I to list the concentration

that was measured closest to the property boundary in the direction of contaminant migration.

Column I Sample location for Column H (relate to label on map).

Column J Environmental medium for measurement reported in Column H, if applicable.

A Hazardous Substance	B CAS Number	C Maximum Concentration	D Sample Location for "C"	E Environmental Medium for "C"	F Distance to Property Boundary	G Direction of Migration	H Boundary Concentration	I Sample Location for "H"	J Environmental Medium for "H"
1,1- Dichloroethene	75354	920	GP-21	Groundwater	~ 500	East	5.9	B-1	Groundwater
cis-1,2- Dichloroethene	156592	2100	MW-4s	Groundwater	~100 ft	East	NA	NA	NA
1,1- Trichloroethane	71556	8500	GP-21	Groundwater	~ 500 ft	East	750	MW-1s	Groundwater
Trichloroethene	79016	5000	MW-4s	Groundwater	~100 ft	East	NA	NA	NA
Vinyl Chloride	75014	140	MW-3s	Groundwater	~25 ft	East	NA	NA	NA

Total Number Samples Collected: \_\_<u>53</u> \_\_\_\_ Total Number of Samples Exceeding Criteria: \_<u>43</u>

A scaled map or drawing showing these locations and the property boundaries must be submitted with this Notice

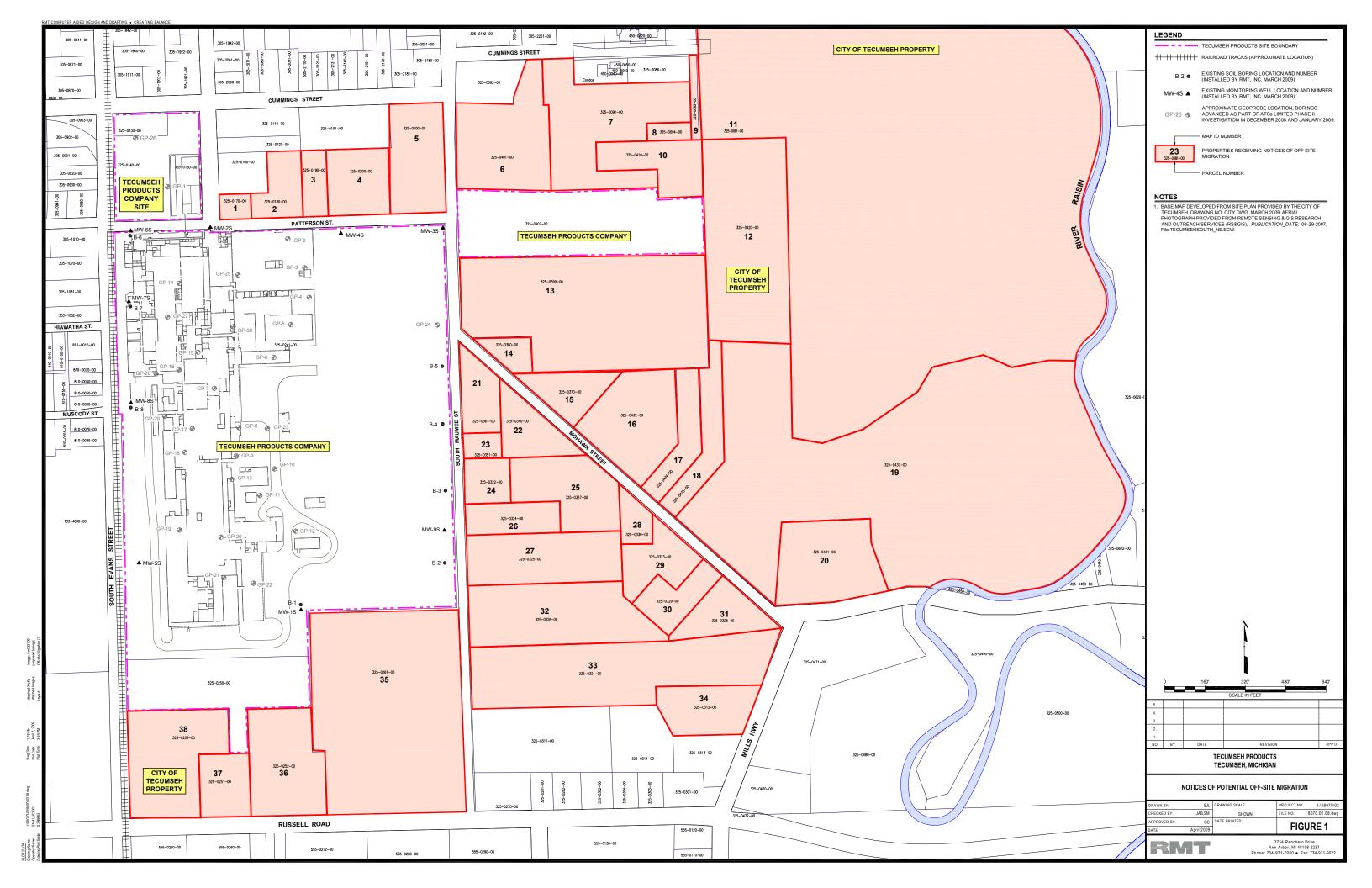
### **Tecumseh Products Company**

List of Notified Property Owners Tecumseh, Michigan April 8, 2009

Map ID #	Parcel #	Property Address	Owner Name	Owner Address	Owner City	ST	Zip Code	Notification Date
1	325-0170-00	201 E PATTERSON ST	CONSUMERS ENERGY CO	ONE ENERGY PLAZA	JACKSON	MI	49201	04/08/09
2	325-0180-00	209 E PATTERSON ST	IRELAN, DENNIS C & KAREN	BOX 66	TECUMSEH	MI	49286	04/08/09
3	325-0190-00	205 E PATTERSON ST BLK	CONSUMERS ENERGY CO	ONE ENERGY PLAZA	JACKSON	МІ	49201	04/08/09
4	325-0200-00	223 E PATTERSON ST	M & S LAND HOLDINGS, LLC	8514 PENNINGTON RD	TECUMSEH	MI	49286	04/08/09
5	325-0100-00	415 S MAUMEE ST	D & P COMMUNICATIONS, INC	4200 TEAL RD	PETERSBURG	MI	49270	04/08/09
6	325-0401-00	414 S MAUMEE ST	BOOT, MARTIN & CAROL	807 RED MILL DR	TECUMSEH	МІ	49286	04/08/09
7	325-0091-00	416 E CUMMINS ST	BOOT MARTIN JR & CAROL	416 E CUMMINS ST	TECUMSEH	MI	49286	04/08/09
8	325-0094-00	504 E CUMMINS ST	JF CALM LLC	962 FAIRWAY COVE	TECUMSEH	MI	49286	04/08/09
9	325-0085-00	500 E CUMMINS ST	RYAN, JOHN J & ANNE E	210 W CHICAGO BLVD	TECUMSEH	MI	49286	04/08/09
10	325-0410-00	500 E CUMMINS ST	RYAN, JOHN J &	210 W CHICAGO BLVD	TECUMSEH	MI	49286	04/08/09
11	325-0081-00	600 DAVE WILLIAMS DR	CITY OF TECUMSEH	POB 396	TECUMSEH	MI	49286	04/08/09
12	325-0420-00	300 S WYANDOTTE ST BLK	CITY OF TECUMSEH	309 W CHICAGO BLVD	TECUMSEH	МІ	49286	04/08/09
13	325-0390-00	424 S MAUMEE ST	SLUSARSKI INVESTMENT COMPANY LLC	119 GREENLY STREET	ADRIAN	MI	49221	04/08/09
14	325-0380-00	426 S MAUMEE ST	NOVAK LLC	426 S MAUMEE ST	TECUMSEH	MI	49286	04/08/09
15	325-0370-00	509 MOHAWK ST	BATYIK, FRANK L	3614 NOLAND DR	TECUMSEH	МІ	49286	04/08/09
16	325-0432-00	607 MOHAWK ST	LOGAN, ROBERT W	1207 MURRAY DR	TECUMSEH	MI	49286	04/08/09
17	325-0434-00	611 MOHAWK ST	BIRCHFIELD, RONALD A & SHERRIE L	5371 NORTH RAISIN CENTER HV	TECUMSEH	MI	49286	04/08/09
18	325-0435-00	615 MOHAWK ST	BIRCHFIELD, RONALD A & SHERRIE L	5371 N RAISIN CENTER HWY	TECUMSEH	MI	49286	04/08/09
19	325-0433-00	600 MOHAWK ST BLK	BIRCHFIELD, RONALD A & SHERRIE	5371 N RAISIN CENTER HWY	TECUMSEH	MI	49286	04/08/09
20	325-0431-00	707 BLOOD RD	HULL, EDWARD & DONALD	509 E CHICAGO BLVD	TECUMSEH	МІ	49286	04/08/09
21	325-0361-00	502 MOHAWK ST	KLANKE, TODD E	502 MOHAWK ST	TECUMSEH	MI	49286	04/08/09
22	325-0340-00	508 MOHAWK ST	DERBY, KEVIN G & JASON E	508 MOHAWK ST	TECUMSEH	MI	49286	04/08/09
23	325-0351-00	505 S MAUMEE ST	MAUMEE TRUST, 505 S	210 W SHAWNEE ST	TECUMSEH	MI	49286	04/08/09
24	325-0322-00	507 S MAUMEE ST	SPEER, HAROLD E	210 W SHAWNEE ST	TECUMSEH	MI	49286	04/08/09
25	325-0327-00	MOHAWK ST	G T E TELEPHONE OPER	19845 NORTH US 31 POB 407	WESTFIELD	IN	46074	04/08/09
26	325-0324-00	606 S MAUMEE ST	G T E TELEPHONE OPER	19845 NORTH US 31 POB 407	WESTFIELD	IN	46074	04/08/09
27	325-0325-00	610 S MAUMEE ST	CALLISON LEASING CORPORATION	610 S MAUMEE ST	TECUMSEH	MI	49286	04/08/09
28	325-0330-00	610 MOHAWK ST	LASK, SCOTT R	610 MOHAWK ST	TECUMSEH	MI	49286	04/08/09
29	325-0323-00	704 MOHAWK ST	HULL INVESTMENTS	119 W CHICAGO BLVD	TECUMSEH	MI	49286	04/08/09
30	325-0329-00	800 MOHAWK ST	TECUMSEH SELF STORAGE LLC	500 W KILBUCK ST	TECUMSEH	МІ	49286	04/08/09
31	325-0328-00	800 MOHAWK ST	TECUMSEH SELF STORAGE LLC	500 W KILBUCK ST	TECUMSEH	MI	49286	04/08/09
32	325-0326-00	700 S MAUMEE ST	TECUMSEH PUBLIC SCHOOLS	212 N OTTAWA ST	TECUMSEH	МІ	49286	04/08/09
33	325-0321-00	800 S MAUMEE ST	ROBERTS INVESTMENT COMPANY LLC	P.O. BOX 400	TECUMSEH	МІ	49286	04/08/09
34	325-0312-00	701 MILL HWY	MAYNARD MINI SERVICES, INC	101 CARRIAGE DR	TECUMSEH	МІ	49286	04/08/09
35	325-0261-00	805 S MAUMEE ST	MARTIN TRUST, DONALD J	145 W CHICAGO BLVD	TECUMSEH	MI	49286	04/08/09
36	325-0252-00	209 E RUSSELL RD	UNITED BANK & TRUST	P O BOX 248	TECUMSEH	MI	49286	04/08/09
37	325-0251-00	105 E RUSSELL RD	HERRICK, TODD & LINDA	3970 PENNINSULA DR	PETOSKEY	МІ	49770	04/08/09
38	325-0253-00	101 E RUSSELL RD	CITY OF TECUMSEH	309 E CHICAGO BLVD	TECUMSEH	MI	49286	04/08/09

### Notes:

1) Parcel identification numbers and owner information provided by the City of Tecumseh on March 12, 2009





### MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY DRINKING WATER LABORATORY

USEPA Region V Drinking Water Cert. No. MI00003

P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-8184 FAX: (517) 335-8562

Lab Results 2007

Sample Number LB76877

Official Laboratory Report

Report To:

**TODD AMSTUTZ** 

710 EAST CHICAGO BLVD TECUMSEH MI 49286

System Name/Owner:

CITY OF TECUMSEH

Collection Address:

S WELLFIELD/ PATTERSON ST.TECU

Collected By:

TODD AMSTUTZ

Township/Well#/Section:

/10/

County: Sample Point:

Lenawee **PLANT TAP** 

THE OPEN INVESTIGATION AND THE PROPERTY OF THE PARTY OF T

Water System:

Public System Well

Source:

TYPE I

Site Code:

C002

Collector:

Public Water Supply Operator

DEGLUATION NEODWATION

Date Collected: 09/10/2007 Date Received: 09/11/2007 Purpose:

WSSN/Pool ID: 6560

09:20 10:57

Routine Monitoring

TESTING IN	VEORMATION - 1			REGULA	AUTORYTINEORMAT	ION 1
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS#
Chloride	58	09/11/2007	4	DBC IC PROVE CO	SM 4500-CI E	7647-14-5
Eluoride	0.74	09/11/2007	0.1	4.0	SM 4500 FC	16984-48-8
ardness as CaCO3	354	-09/11/2007	20	18.5.7.18.4	SM 2340 C	HARD-00-C
Iron (automated)	Not detected	09/11/2007	0.1	rialor vilota (a	SM 3500 FeB	7439-89-6
Nitrate as N	0.4	09/11/2007	0,4	10	SM 4500 NO3F	I 14797-55-8
Nitrite as N	Not detected	09/11/2007	0.05	1	SM 4500 NO3H	l 14797-65-0
Sodium (automated)	28	-09/11/2007	5		SM 3500 NaB	7440-23-5
Sulfate	49	09/11/2007	10		SM 4500 SO4E	14808-79-8
Volatile Organic Compounds						
1 Dichloroethane	Not Detected	09/14/200	7. 0.0005	20 M 50 P 4	EPA 524.2	75-34-3
1,1 Dichloroethylene	Not Detected	09/14/200	7 0.0005	0.007	EPA 524.2	75-35-4
I 1 Dichloropropene	Not Detected	09/14/200	7 0.0005		EPA 524.2	563-58-6
1,1,1 Trichloroethane	Not Detected	09/14/200	7 0.0005	0.2	EPA 524.2	71-55-6
I,1,1,2 Tetrachloroethane	Not Detected	09/14/200	7 0.0005		EPA 524.2	630-20-6
1,1,2 Trichloroethane	Not Detected	09/14/200	7 0.0005	0.005	EPA 524.2	79-00-5
1,1,2,2 Tetrachloroethane	Not Detected	. 09/14/200	7 0.0005		EPA 524.2	79-34-5
1,2 Dichlorobenzene	Not Detected	09/14/200	7 0.0005	0.6	EPA 524.2	95-50-1
,2 Dichloroethane	Not Detected	09/14/200	7 0.0005	0.005	EPA 524.2	107-06-2
,2 Dichloropropane	Not Detected	09/14/200	7 0.0005	0.005	EPA 524.2	78-87-5
I,2,3 Trichlorobenzene	Not Detected	09/14/200	7 0.0005		EPA 524.2	87-61-6
1,2,3 Trichloropropane	Not Detected	09/14/200	7 0.0005	sourcessienderskeite vie	EPA 524.2	96-18-4
1,2,4 Trichlorobenzene	Not Detected	09/14/200	7 0.0005	0.07	EPA 524.2	120-82-1
1,2,4 Trimethylbenzene	Not Detected	09/14/200	7 0.0005	ner, vivallerast er syklev	EPA 524.2	95-63-6
3 Dichlorobenzene	Not Detected	09/14/200	7 0,0005	3000000	EPA 524.2	541-73-1

CAS#: Chemical Abstract Service Registry Number

MCL: Maximum Contaminent Level

AL: Action Level RL: Reporting Limit mg/L: milligrams / Liter (ppm)

ppm: parts per million MPN: Most Probable Number CFU: Colony Forming Unit

**Laboratory Contacts** 

Drinking Water Unit Mgr: Julia Pieper Systems Mgmt. Unit Mgr: George Krisztian



# MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY DRINKING WATER LABORATORY

USEPA Region V Drinking Water Cert. No. MI00003 P.O. Box 30270

> Lansing, MI 48909 TEL: (517) 335-8184 FAX: (517) 335-8562

Sample Number LB76877

TESTING INF	ORMATION -			REGUIV	YORYINFORM	MATION 1
	Result	Date	RL	MCL/AL		T
Analyte Name	(mg/L)	Tested	(mg/L)	(mg/L)	Method	CAS#
Volatile Organic Compounds				5		
1,3 Dichloropropane	Not Detected	09/14/2007			EPA 524.2	142-28-9
1,3,5 Trimethylbenzene	Not Detected	09/14/2007			EPA 524.2	108-67-8
1,4 Dichlorobenzene	Not Detected	09/14/2007		0.075	EPA 524.2	106-46-7
2,2 Dichloropropane	Not Detected	09/14/2007			EPA 524.2	594-20-7
Benzene	Not Detected	09/14/2007		0.005	EPA 524.2	71-43-2
Bromobenzene	Not Detected	09/14/2007			EPA 524.2	108-86-1
Bromochloromethane	Not Detected	. 09/14/2007	NAME OF THE PROPERTY OF THE PARTY OF THE PAR	to Herita Co	EPA 524.2	74-97-5
Bromodichloromethane	Not Detected	09/14/2007		0.080	EPA 524.2	75-27-4
Bromoform	Not Detected	09/14/2007		0.080	EPA 524.2	75-25-2
Bromomethane	Not Detected	09/14/2007		V	EPA 524.2	74-83-9
Carbon tetrachloride	Not Detected	09/14/2007	CARREL CONTRACTOR CONTRACTOR	0.005	EPA 524.2	56-23-5
Chlorobenzene	Not Detected	09/14/2007		0.1	EPA 524.2	108-90-7
Chlorodibromomethane	Not Detected	09/14/200		0.080	EPA 524.2	124-48-1
Chloroethane	Not Detected	09/14/2007			EPA 524.2	75-00-3
Chloroform	Not Detected	09/14/2007		0.080	EPA 524.2	67-66-3
<u>Chloromethane</u>	Not Detected	09/14/2007			EPA 524.2	74-87-3
-1,2 Dichloroethylene	Not Detected	09/14/2001	7 0.0005	0.07	EPA 524.2	156-59-2
cis-1,3 Dichloropropene	Not Detected	09/14/2007	7 0.0005	en en en en en en en en en en en en en e	EPA 524.2	10061-01-5
Dibromomethane	Not Detected	09/14/200	7 0.0005	grunder fra	EPA 524.2	74-95-3
Dichlorodifluoromethane	Not Detected	09/14/2007	7 0.001	AALLALI CAMATUREN, MESSER . TE.	EPA 524.2	75-71-8
Dichloromethane	Not Detected	- 09/14/200	7 - 0.0006	0.005	EPA 524.2	75-09-2
Ethylbenzene	Not Detected	09/14/200	7 0.0005	0.7	EPA 524.2	100-41-4
Fluorotrichloromethane	Not Detected	09/14/200	7 0.001		EPA 524.2	75-69-4
Hexachlorobutadiene	Not Detected	09/14/200	7 0.0005	autokusse ole Egyttöri viljeri	EPA 524.2	87-68-3
Isopropylbenzene	Not Detected	09/14/200	7 0.0005		EPA 524.2	98-82-8
m & p-Xylene	Not Detected	09/14/200	7 0.0005	10	EPA 524.2	XYLMP-00-C
Methyl ethyl ketone	Not Detected	09/14/200	7 0.005	ALL BUSKEY K	EPA 524.2	78-93-3
Methyl isobutyl ketone	Not Detected	09/14/200	7 0.005	ment ser jerjand in e	EPA 524.2	108-10-1
Methyl-tert-butyl ether (MTBE)	Not Detected	09/14/200	7 0.001	torani e	EPA 524.2	1634-04-4
Naphthalene	Not Detected	09/14/200	7 0.0005	Parent Breed Build State (ACT WA	EPA 524.2	91-20-3
n-Butylbenzene	Not Detected	09/14/200	7 0.0005		EPA 524.2	104-51-8
Nitrobenzene	Not Detected	09/14/200		idee diseasti dulki 950	EPA 524.2	98-95-3
n-Propylbenzene	Not Detected	09/14/200		eren e a	EPA 524.2	103-65-1
o-Chlorotoluene	Not Detected	09/14/200	A MATERIAL PROPERTY AS AS AS AS	Courte e ver touriée (Q	EPA 524.2	95-49-8
o-Xylene	Not Detected	09/14/200		10	EPA 524.2	95-47-6
p-Chlorotoluene	Not Detected	09/14/200	MARKET PROPERTY OF STREET	uruette, valle	EPA 524.2	106-43-4
p-Isopropyltoluene	Not Detected	09/14/200			EPA 524.2	99-87-6
sec-Butylbenzene	Not Detected	09/14/200		orton (file). Viji	EPA 524.2	135-98-8
/rene	Not Detected	09/14/200		0.1	EPA 524.2	100-42-5

CAS#: Chemical Abstract Service Registry Number

MCL: Maximum Contaminent Level

AL: Action Level RL: Reporting Limit

mg/L : milligrams / Liter (ppm)

ppm: parts per million MPN: Most Probable Number CFU: Colony Forming Unit Laboratory Contacts

Drinking Water Unit Mgr: Julia Pieper Systems Mgmt. Unit Mgr: George Krisztian



# MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY DRINKING WATER LABORATORY

USEPA Region V Drinking Water Cert. No. MI00003 P.O. Box 30270

> Lansing, MI 48909 TEL: (517) 335-8184 FAX: (517) 335-8562

Sample Number LB76877

	VFORMATION :	Doto	DI	MACL /AL		
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS#
Volatile Organic Compounds						
tert-Butylbenzene	Not Detected	09/14/2007	0.0005		EPA 524.2	98-06-6
Tetrachloroethylene	Not Detected	09/14/2007	0.0005	0.005	EPA 524.2	127-18-4
Tetrahydrafüran	Not Detected	09/14/2007	0,005	38 13 A VO	EPA 524.2	109-99-9
Toluene	Not Detected	09/14/2007	0.0005	1	EPA 524.2	108-88-3
Total Trihalomethanes	Not Detected	09/14/2007	\$4602 (FSF1)	0.080	EPA 524.2	TTHM-00-C
Total Xylenes	Not Detected	09/14/2007	energener in va	10	EPA 524.2	1330-20-7
trans-1,2 Dichloroethylene	Not Detected	09/14/2007	0.0005	0.1	EPA 524.2	156-60-5
trans-1,3 Dichloropropene	Not Detected	09/14/2007	0.0005	ca an a campanananan	EPA 524.2	10061-02-6
Trichloroethylene	Not Detected	09/14/2007	0.0005	0.005	EPA 524.2	79-01-6
Vinyl chloride	Not Detected	09/14/2007	0.0004	0.002	EPA 524.2	75-01-4

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have concerns about the health risks related to the test results of your sample, please contact the Environmental Health Section through the address and telephone number listed below:

Lenawee County Health Dept. 1040 S. Winter St #2328 Adrian, MI 49221-3871 517 264-5202

CAS#: Chemical Abstract Service Registry Number

MCL: Maximum Contaminent Level

AL: Action Level RL: Reporting Limit mg/L : milligrams / Liter (ppm)

ppm : parts per million MPN : Most Probable Number CFU : Colony Forming Unit Laboratory Contacts

Drinking Water Unit Mgr: Julia Pieper

Systems Mgmt. Unit Mgr: George Krisztian



## MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY DRINKING WATER LABORATORY

USEPA Region V Drinking Water Cert. No. MI00003 P.O. Box 30270 Lansing, MI 48909

TEL: (517) 335-8184 FAX: (517) 335-8562 **Sample Number** LB76878

### Official Laboratory Report

Report To: **TODD AMSTUTZ** 

> 710 EAST CHICAGO BLVD TECUMSEH MI 49286

System Name/Owner:

CITY OF TECUMSEH/ COMMONWEAL WSSN/Pool ID: 6560

Collection Address:

S WELL FIELD/ 703 E CHICAGO BLV,T

Collected By:

TODD AMSTUTZ

Township/Well#/Section:

County:

Sample Point:

Water System:

Lenawee **KITCHEN** 

Public System Well

TYPE I

Source: Site Code:

D925

Collector: Public Water Supply Operator

08:30

Date Collected: 09/10/2007 Date Received: 09/11/2007

10:57

Purpose:

**Routine Monitoring** 

Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS#
Dalapon and Haloacetic						
າmoacetic acid	Not Detected	09/14/2007	0.004		EPA 552.1	79-08-3
⇒romochloroacetic acid	Not Detected	- 09/14/2007	0.001		EPA 552.1	5589-96-3
Chloroacetic acid	Not Detected	09/14/2007	0.004		EPA 552.1	79-11-8
Dalapoh	Not Detected	09/14/2007		0.2	EPA 552.1	75-99-0
Dibromoacetic acid	Not Detected	09/14/2007			EPA 552.1	631-64-1
Dichloroacetic acid	Not Detected	09/14/2007			EPA 552.1	79-43-6
Total Haloacetic Acids (five)	Not Detected	09/14/2007		0.060	EPA 552.1	THA-00-C
Trichloroacetic acid	Not Detected	09/14/2007	0.002		EPA 552:1	76-03-9
Total Trihalomethanes		4				
Bromodichloromethane	TRACE	09/14/2007	0.0005	0.080	EPA 524.2	75-27-4
:Bromoform	Not Detected	09/14/2007	0.0005	0.080	FPA 524.2	75-25-2
Chlorodibromomethane	TRACE	09/14/2007	0.0005	0.080	EPA 524.2	124-48-1
Chloroform	Not Detected	.09/14/2007	0.0005	0.080	EPA 524.2	67-66-3
Total Trihalomethanes	TRACE	09/14/2007	0.0005	0.080	EPA 524.2	TTHM-00-C

Compounds reported as TRACE were detected at levels above the detection limits, but at levels too low to quantitate.

CAS#: Chemical Abstract Service Registry Number

MCL: Maximum Contaminent Level

AL: Action Level RL: Reporting Limit mg/L: milligrams / Liter (ppm)

ppm: parts per million MPN: Most Probable Number CFU: Colony Forming Unit

**Laboratory Contacts** 

Drinking Water Unit Mgr: Julia Pieper Systems Mgmt, Unit Mgr: George Krisztian

# **US EPA ARCHIVE DOCUMENT**



June 1, 2009

Howard J. Baughey Trust 221 E. Cummins St. Tecumseh, MI 49286

RE: Property at 221 E. Cummins St. (305-2120-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumsch Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ

Mr. Hak Cho, USEPA



Anna M. Camburn 310 E Kilbuck St. Tecumseh, MI 49286

RE: Property at 310 E. Kilbuck St. (305-2020-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Richard L. & Sharon Bilby 206 S. Maumee St. Tecumseh, MI 49286

RE:

Property at 206 S. Maumee St. (000-0302-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Thomas H & Sharon A. Counts 223 E. Cummins St. Tecumseh, MI 49286

RE: Property at 223 E. Cummins St. (305-2131-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Hazel Dawdy 304 E. Kilbuck St. Tecumseh, MI 49286

RE: Property at 304 E. Kilbuck St. (305-1990-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Randy Kopke Facilities Manager

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Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Nickolas B. & Michelle Deavers 308 E. Kilbuck St. Tecumseh, MI 49286

RE:

Property at 308 E. Kilbuck St. (305-2010-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Enclosures: Questions and Answer Document

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cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Harold L. Duncan Trust 311 S. Maumee St. Tecumseh, MI 49286

RE: Property at 311 S. Maumee St. (305-2051-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Teri Gates 2690 Dinius Tecumseh, MI 49286

RE: Property at 302 S. Maumee St. (305-2191-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Jerame L. Guenther 409 E. Kilbuck St. Tecumseh, MI 49286

RE: Property at 409 E. Kilbuck St. (000-0341-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Harrison Properties, LLC 513 N. Occidental Rd. Tecumseh, MI 49286

RE: Property at 220 E. Cummins St. (325-0101-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Salome & Angelina Herrera 219 E Cummins St. Tecumseh, MI 49286

RE: Property at 219 E. Cummins St. (305-2110-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke

Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Herrick Memorial Hospital Inc. 500 E. Pottawatamie St. Tecumseh, MI 49286

RE: Property at 415 E. Kilbuck St. (000-0351-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Lonnie D. Hignite 2223 Surrey Court SE Marietta, GA 30067

RE: Property at 229 E. Cummins St. (305-2151-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



JBM Tecumseh Mfg RE, LLC 707 S. Evans St. Tecumseh, MI 49286

RE:

Property at 705 S. Evans St. (133-4800-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



David A. Kristina D. Keith 315 S. Maumee St. Tecumseh, MI 49286

RE:

Property at 315 S. Maumee St. (305-2180-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumsch Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Carol A Kennedy 233 E. Cummins St. Tecumseh, MI 49286

RE: Property at 233 E. Cummins St. (305-2181-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Charles & Sally L. Laurer 207 S. Wyandotte St. Tecumseh, MI 49286

RE: Property at 207 S. Wyandotte St. (000-0291-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Keney Koob Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Joseph L. Lear 217 E Cummins St. Tecumseh, MI 49286

RE: Property at 217 E Cummins St. (305-2091-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Lower Light Mission 20469 Deerfield Rd. Deerfield, MI 49238

RE: Property at 214 S. Maumee St. (000-0332-00); 307 S. Maumee St. (305-2030-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Kuney Kurbhandy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Masterpeace Management LLC 308 Maumee St. S. Tecumseh, MI 49286

RE: Property at 308 S. Maumee St. (305-2192-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke
Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Arthur & Regina R. Mauricio 406 E Kilbuck St. Tecumseh, MI 49286

RE: Property at 406 E. Kilbuck St. (305-2194-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Kurey Koob Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Larry L. Money 210 E. Cummins St. Tecumseh, MI 49286

RE: Property at 210 E. Cummins St. (325-0110-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke
Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



George F. & Cheryl L. Murphy 13516 Canterbury Ct. Plymouth, MI 48170

RE: Property at 216 E Kilbuck St. (305-1981-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Kuney Koobin

Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Orbin Herrell Trust 215 S. Maumee St. Tecumseh, MI 49286

RE: Property at 211 S. Maumee St. (000-0432-00); 215 S. Maumee St. (000-0431-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Floella Richards 408 S. Ottawa St. Tecumseh, MI 49286

RE: Property at 408 S. Ottawa St. (325-0120-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

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Sincerely,

Kuney Kuph

Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Thomas & Robert Robarge 210 S. Maumee St. Tecumseh, MI 49286

RE: Property at 210 S. Maumee St. (000-0331-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

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Sincerely,

Kuney Koohn Randy Kopke

Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumsch Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Southern Michigan RR Society PO Box K Clinton, MI 49236

RE: Property at Evans St. Between Cummins & Russell Rd. (128-4900-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

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Sincerely,

Karey Koobh Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Jessica A. Swanger 410 S. Ottawa St. Tecumseh, MI 49286

RE: Property at 410 S. Ottawa St. (325-0160-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Kuney Kooh Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Dario R. Torrez 227 E. Cummins St. Tecumseh, MI 49286

RE: Property at 227 E. Cummins St. (305-2140-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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The City's public water supply system does <u>not</u> draw its water from this impacted area of groundwater. The City's water comes from deep wells located to the west of our facility, out of the direction of any migration contamination. The MDEQ annually tests the City's public water supply system for possible contaminants, including the chemicals we have detected at our facility, and this testing confirms that none of these chemicals are in the City's water supply. We have enclosed a copy of the most recent 2007 MDEQ Official Laboratory Report, which indicates "Not Detected" for each of these chemicals.

Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Robert L. Walker 231 E. Cummins St. Tecumseh, MI 49286

RE: Property at 231 E. Cummins St. (305-2170-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Kuney Koobh Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Martin F. & Phyllis Wallich 2800 W. Chicago Blvd. Tecumseh, MI 49286

RE: Property at 400 E. Cummins St. Blk (325-0092-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

As part of this transaction an environmental investigation was conducted at the facility, which detected the existence of chemical concentrations in soil and groundwater at the facility. The chemical concentrations in groundwater have the potential to migrate into the groundwater below adjacent properties and properties "downgradient" in the natural easterly flow of subsurface groundwater. We have not tested the groundwater below your property, but as a precaution we have concluded that it is likely to be within the area of impacted groundwater. Because of this, Michigan Department of Environmental Quality (MDEQ) Rules require that we provide you with the enclosed Notice of Migration of Contamination, which provides more detail on this condition.

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Sincerely,

Randy Kopke
Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Lee E. & Vernese G. Willis 306 E. Kilbuck St. Tecumseh, MI 49286

RE: Property at 306 E. Kilbuck St. (305-2000-00)

Dear Property Owner:

As you are aware, Tecumseh Products Company recently ceased manufacturing operations at 100 East Patterson Street in Tecumseh, Michigan. We are working closely with the City of Tecumseh in an effort to transfer the property to Consolidated Biscuit Company, a major manufacturer of cookies and crackers in North America. Consolidated Biscuit plans to convert the facility into a new manufacturing center and create 500 new jobs here in Tecumseh.

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Sincerely,

Randy Kopke Facilities Manager

Enclosures: Questions and Answer Document

Notice of Migration

City of Tecumseh Water Supply Test Data

cc: Mr. Jason Smith, Corporate Environmental Director, Tecumseh Products Company (731) 707-2889

Mr. Kevin Welch, Tecumseh City Manager

Mr. Peter Quackenbush, MDEQ



Tecumseh Products Company Tecumseh, Michigan Notice of Migration of Contamination Page 1

## Questions and Answers (updated 06/01/09)

## 1. I received a notice of off-site migration. What do I do now?

In most cases you do not need to do anything. Because chemical concentrations were detected in groundwater above the criteria established by the Michigan Department of Environmental Quality near the Tecumseh Products Company site, the Michigan Department of Environmental Quality requires that the Tecumseh Products Company notify property owners whose property might be affected by off-site migration of affected groundwater. If you receive your water from the City's public water supply system, rather than water from an on-site well, you are not likely to come in contact with the groundwater. However, if you have a private well on your property, see the response to Question 4 below.

## 2. What is groundwater, and how far below ground is it?

Groundwater is water located beneath the ground surface in soil pore spaces (i.e., space between grains of sand). The depth at which these soil pore spaces become completely saturated with water is called the groundwater table. The depth at which the soil becomes saturated in the vicinity of the Tecumseh Products Company site is approximately 10 to 25 feet below the ground surface. This groundwater is stored in and moves through layers of soil and sand called aquifers. These materials are permeable because they have connected spaces that allow water to flow through. Data collected at the Tecumseh Products Company site show that groundwater is generally flowing towards the east/northeast.

## 3. Can I drink/use my tap water?

The Tecumseh Products Company is not aware that this condition affects the City's public water supply system. Please contact your water utility if you have specific questions on the condition of your tap water. If you have a private well see the response to Question 4.

Tecumseh Products Company Tecumseh, Michigan Notice of Migration of Contamination Page 2

### Questions and Answers (Continued)

## 4. What if I have a well on my property?

The Tecumseh Products Company is currently unaware of any evidence that chemicals are present in groundwater at typical well depths (greater than 50 feet). However, if you have a well on your property, as a precautionary measure Tecumseh Products Company would like to collect and analyze a water sample from your well. Please notify Randy Kopke at Tecumseh Products Company (734) 585-9439 at your earliest convenience to arrange for this. The sample will be collected by our environmental consultant, RMT Inc., and a chemical analysis will be performed at no cost to you. We will provide you with the results of the laboratory analysis of the sample when we receive it, and we will be available to answer any questions or concerns you may have.

# 5. Do I have to be concerned above migration of chemicals into the air in my basement or house?

The Michigan Department of Environmental Quality has established groundwater criteria to evaluate when there might be a risk that groundwater contaminant vapors might enter buildings. Concentrations detected at the Tecumseh Products Company perimeter and nearby areas are below these criteria.

## 6. Is it safe for my children/pets to play outside in the yard?

Off-site migration is in subsurface groundwater; therefore children and pets playing outside are typically not exposed to chemicals that may be migrating from the Tecumseh Products Corporation site.



## MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY REMEDIATION AND REDEVELOPMENT DIVISION

For DEQ Use Only
ITS#
Site ID #
Category Code:

#### NOTICE OF MIGRATION OF CONTAMINATION

This notice must be sent to the DEQ office that serves the county in which the property is located. A list of DEQ offices is available at <a href="https://www.michigan.gov/bea">www.michigan.gov/bea</a>, or by calling the Remediation and Redevelopment's Lansing office at 517-373-9837. The DEQ will not prepare acknowledgement of receipt of these notices. The sender is responsible for sending the report using a method that provides proof of delivery if such proof is desired. Please label the outside of the envelope "Migration Notice." Additional guidelines for the compliance with the requirements of R 200.51017(1) or R 299.5522 are available at <a href="https://www.michigan.gov/bea">www.michigan.gov/bea</a>.

THIS NOTICE IS PROVIDED PURSUANT TO:	R 299.5522	$\boxtimes$	R 299.51017	$\boxtimes$
(check both, if applicable)				

Please provide the following information as completely as possible.

- Name and location of the property that hazardous substances are emanating from:
- 2. Status relative to the property: (Check one or both, as applicable.)

Owner

Operator

Name: Tecumseh Products Company Address: 100 E. Patterson Street Location: Tecumseh, Michigan City/County: Tecumseh, Lenawee

Property Tax Identification Number, or if applicable, the ward and item number: 325-0241-00 & 325-0250-00

Provide any additional ID numbers associated with the property (e.g., EPA ID No., BEA No., Part 213 facility ID No., etc.):

3. Name, address, and telephone number of the property owner, operator, or other party submitting the notice:

Name: Tecumseh Products Company Address: 1136 Oak Valley Drive City/State: Ann Arbor, Michigan Telephone number: 734-585-9500

4. Name, address and telephone number of a contact person familiar with the content of the notice:

Name: Mr. Randy Kopke-Corporate Facilities and Property Manager

Address: 1136 Oak Valley Drive City/State: Ann Arbor, Michigan Telephone: 734-585-9439

5. If this Notice is provided pursuant to R 299.51017, provide the address and other location information for the adjacent property(s) onto which contamination is migrating, has migrated, or is likely to migrate. If this Notice is provided pursuant to R 299.5522, provide the address and other location information for each property onto which contamination has migrated. Notice should be sent to the property owner of record. If the impacted property is owned by the State of Michigan, notice should be sent to the department managing the property (i.e. a prison, state park, etc.). Notices to the Michigan Department of Transportation (MDOT) for state owned roadways should be sent to Ms. Heather Hicks, MDOT-Bureau of Transportation Planning, 425 W. Ottawa Street, P.O. Box 30050, Lansing, MI 48989. If it isn't readily apparent what state department manages the property, notices should be sent to Mr. Thomas Saxton, Tenant and Land Services, Department of Management and Budget, 1<sup>st</sup> Floor Lewis-Cass Building, P.O. Box 30026, Lansing, MI 48909.

See Attached List of Notified Property Owners for Pertinent Information.

6. Complete the Table on Page 3 of this Form for each hazardous substance which has migrated, or is likely to have migrated, beyond the property boundary at a concentration that exceeds a Generic Residential Cleanup Criterion developed by the DEQ pursuant to MCL 324.20120a(1). Complete and attach additional copies of Page 3, if necessary, to list all hazardous substances that must be reported. Include a scaled map or drawing that shows the location of sampling points identified on the Table on Page 3, the property boundaries, and the adjacent property owners if providing notice pursuant to R 299.1017(1) or all impacted property owners if providing notice pursuant to Rule 299.5522.

#### See Completed Table 3 and Attached Figure

7. Provide a summary of the information which shows that contamination is emanating from, or has emanated from, and is present beyond the boundary of the source property at a concentration which exceeds that allowed by MCL 324.20120a(1)(a). This summary shall identify the environmental media affected, specific hazardous substances, and the concentrations of those hazardous substances in all affected environmental media at the property boundary and in any sample locations beyond the property boundary. The summary shall also describe the basis for the conclusion that the contamination is emanating, has emanated, or is present beyond the boundary of the source property, including whether the conclusion is based on groundwater analytical data or fate and transport modeling, both, or neither.

On February 23, 2009 Tecumseh Products Company (TPC) received a draft of the Phase II Subsurface Investigation conducted on behalf of the potential purchaser of the site, Consolidated Biscuit Company (CBC). Data in the Phase II report indicated that groundwater beneath the TPC manufacturing facility in Tecumseh, Michigan contained concentrations of trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), vinyl chloride, 1,1,1-trichloroethane (1,1,1-TCA), and 1,1-dichloroethene (1,1-DCE) above generic Michigan Department of Environmental Quality (MDEQ) criteria. Two samples collected near the facility property boundary indicated the potential for off-site migration. In March 2009, RMT Inc. (RMT) on behalf of TPC, conducted a perimeter investigation to determine groundwater flow direction and to evaluate the potential for off-site migration.

Data from the March 2009 investigation indicate that groundwater near the site perimeter contains concentrations of volatile organic compounds (VOCs) specifically TCE, cis-1,2-DCE, vinyl chloride, and 1,1,1-TCA above generic MDEQ criteria. The maximum concentrations for TCE, cis-1,2-DCE, vinyl chloride, and 1,1,1-TCA were 5,000  $\mu$ g/L, 2,100  $\mu$ g/L, 460  $\mu$ g/L, and 750  $\mu$ g/L, respectively. The highest concentrations of these constituents were found in the shallow groundwater. Water levels collected from nine shallow monitoring wells installed on-site indicate that groundwater flow is generally to the east toward the River Raisin.

Based on the information available at the time, specifically the concentrations of TCE, cis-1,2-DCE, vinyl chloride, and 1,1,1-TCA near the property boundary and the direction of groundwater flow. TPC conservatively identified 38 properties that could be affected by off-site migration. These properties included all properties between the TPC manufacturing facility and the River Raisin and those properties adjacent to the north or south side of the TPC manufacturing facility. These properties were notified of the potential for off-site migration on April 8, 2009.

In April and May 2009, RMT on behalf of TPC conducted an off-site investigation to determine the actual extent of off-site migration. Off-site, the maximum concentrations for TCE, cis-1,2-DCE, vinyl chloride, and 1,1,1-TCA were 1,700  $\mu$ g/L, 5,500  $\mu$ g/L, 450  $\mu$ g/L, and 740  $\mu$ g/L, respectively. The April-May 2009 investigation has generally defined the extent of off-site migration. Based on this information, TPC has identified 34 additional properties that may be affected by off-site VOC migration.

If the person making this notice has reason to believe that a migrating hazardous substance has affected, or is likely to affect, a private or public water supply, then that water supply must be identified here:

Water quality analysis for the City of Tecumseh municipal well field have not detected any of the hazardous substances identified above. Furthermore, the municipal well field is located west of the TPC facility, and data collected at the TPC site show that groundwater flow is towards the east. Concurrent with submittal of this notice, TPC is working with the City of Tecumseh and the County Health Department to identify if properties downgradient of the site may be using groundwater from an on-site well. As a precautionary measure TPC will sample on-site private wells at not cost to the owner.

		YES	NO
9.	Is this notice being submitted within the timeframes established under R 299.5522 and/or R 299.51017, as applicable?	$\boxtimes$	
10.	Is this notice in addition to a notice submitted prior to <i>December 21, 2002?</i> (R 299.51017(4)(c))		$\boxtimes$
11.	Is this notice related to an oil and gas well permit (R 299.51017(2))? Permit #:		$\boxtimes$
12.	Is this notice related to an easement (R 299.51017(3))? (NOTE: All easement grantors <i>must</i> receive this notice.)		$\boxtimes$
13.	Has surface water been affected (R 299.51017(1) and R 299.5522(2))? (If yes, please identify the affected surface water body.)		$\boxtimes$

#### **CERTIFICATION:**

With my signature below, I certify that I am the owner of the facility or that I am legally authorized to execute this notice on behalf of the owner or operator named on this form, and that to the best of my knowledge and belief the above representations are complete and accurate. I understand that intentionally submitting false information to the DEQ is a felony and may result in fines up to \$25,000 for each violation.

Signature

Date: June 1, 2009

Name (Typed or Printed) Randy Kopke

Title (Typed or Printed)

Corporate Facilities and Property Manager

See Item 6 on Page 2 of this Form for instructions to be used in completing this Table. Attach additional pages if necessary. The information to be included in each column of the Table is:

Column A	Name of hazardous substance.
COMMINIA	Harrie of Hazardous substance.

Column B Chemical Abstract Service (CAS) Number for the hazardous substance.

Column C Maximum hazardous substance concentration measured on the property, expressed in parts per billion (e.g., ug/L or ug/Kg). Report maximum concentration separately for each environmental medium.

Column D Sample location for Column C (relate to label on map).

Column E Environmental medium in which concentration reported in Column C was measured (e.g., soil or groundwater).

Column F Distance from point of maximum measured concentration (Column D) to property boundary, in direction of contaminant migration, if

direction is known or can reasonably be inferred. If direction is unknown, list distance to nearest property boundary.

Column G Direction of contaminant migration, if known.

Column H Concentration closest to property boundary, if known. If a concentration lower than the maximum concentration reported in Column C has

been measured at a point closer to the property boundary in the direction of contaminant migration, use Column I to list the concentration

that was measured closest to the property boundary in the direction of contaminant migration.

Column I Sample location for Column H (relate to label on map).

Column J Environmental medium for measurement reported in Column H, if applicable.

А	В	С	D	Е	F	G	Н	1	J
Hazardous Substance	CAS Number	Maximum Concentration	Sample Location for "C"	Environmental Medium for "C"	Distance to Property Boundary	Direction of Migration	Boundary Concentration	Sample Location for "H"	Environmental Medium for "H"
1,1- Dichloroethene	75354	920	GP-21	Groundwater	~ 500	East	5.9	B-1	Groundwater
cis-1,2- Dichloroethene	156592	5500	B23 (30'-34')	Groundwater	Off-site ~50 ft north	East/Northeast	NA	NA	NA
1,1,1- Trichloroethane	71556	8500	GP-21	Groundwater	~ 500 ft	East	1100	MW-1s	Groundwater
Trichloroethene	79016	5000	MW-4s	Groundwater	~100 ft	East/Northeast	NA	NA	NA
Vinyl Chloride	75014	520	MW-4s	Groundwater	~100 ft	East/Northeast	NA	NA	NA

Total Number Samples Collected: \_\_\_\_\_\_ Total Number of Samples Exceeding Criteria: \_\_\_\_\_\_\_ 102

A scaled map or drawing showing these locations and the property boundaries must be submitted with this Notice

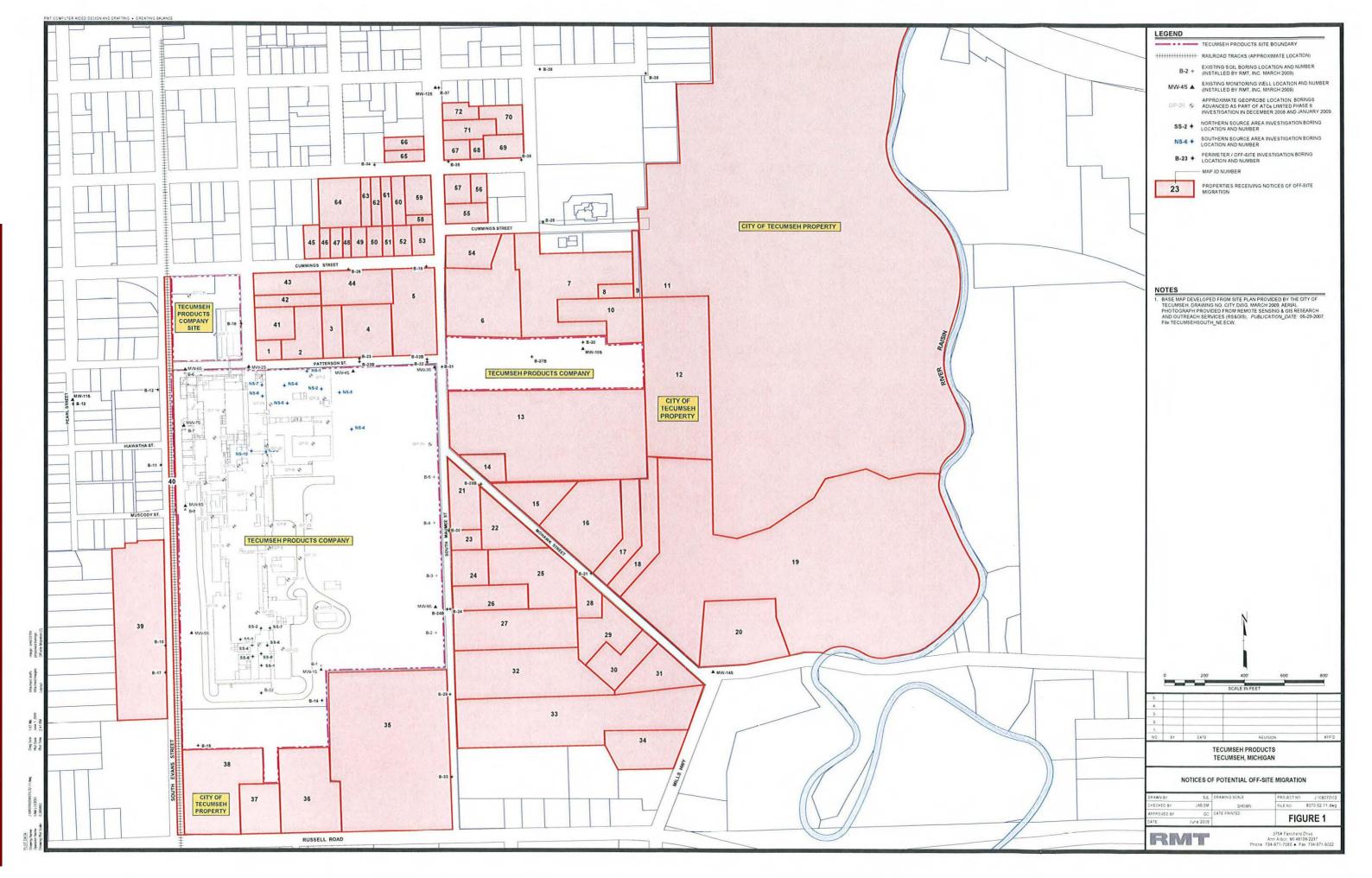
#### **Tecumseh Products Company**

List of Notified Property Owners Tecumseh, Michigan June 1, 2009

Map ID#	Parcel #	Property Address	Owner Name	Owner Address	Owner City	ST	Zip Code	Notification Date
39	133-4800-00	705 S EVANS ST	JBM TECUMSEH MFG RE, LLC	707 S EVANS ST	TECUMSEH	MI	49286	06/01/09
40	128-4900-00	EVANS ST	SOUTHERN MICHIGAN RR SOCIETY	РО ВОХ К	CLINTON	МІ	49236	06/01/09
41	325-0160-00	410 S OTTAWA ST	SWANGER, JESSICA A	410 S OTTAWA ST	TECUMSEH	MI	49286	06/01/09
42	325-0120-00	408 S OTTAWA ST	RICHARDS, FLOELLA	408 S OTTAWA ST	TECUMSEH	MI	49286	06/01/09
43	325-0110-00	210 E CUMMINS ST	MONEY, LARRY L	210 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
44	325-0101-00	220 E CUMMINS ST	HARRISON PROPERTIES, LLC	513 N OCCIDENTAL RD	TECUMSEH	Μl	49286	06/01/09
45	305-2091-00	217 E CUMMINS ST	LEAR, JOSEPH L	217 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
46	305-2110-00	219 E CUMMINS ST	HERRERA, SALOME & ANGELINA	219 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
47	305-2120-00	221 E CUMMINS ST	BAUGHEY TRUST, HOWARD J	221 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
48	305-2131-00	223 E CUMMINS ST	COUNTS, THOMAS H & SHRON A	223 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
49	305-2140-00	227 E CUMMINS ST	TORREZ, DARIO R	227 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
50	305-2151-00	229 E CUMMINS ST	HIGNITE, LONNIE D	2223 SURREY COURT SE	MARIETTA	GΑ	30067	06/01/09
51	305-2170-00	231 E CUMMINS ST	WALKER, ROBERT L	231 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
52	305-2181-00	233 E CUMMINS ST	KENNEDY, CAROL A	233 E CUMMINS ST	TECUMSEH	MI	49286	06/01/09
53	305-2180-00	315 S MAUMEE ST	KEITH, DAVID A & KRISTINA D	315 S MAUMEE ST	TECUMSEH	М	49286	06/01/09
54	325-0092-00	400 E CUMMINS ST BLK	WALLICH, MARTIN F & PHYLLIS	2800 W CHICAGO BLVD	TECUMSEH	MI	49286	06/01/09
55	305-2192-00	308 S MAUMEE ST	MASTERPEACE MANAGEMENT LLC	308 MAUMEE ST S	TECUMSEH	M	49286	06/01/09
56	305-2194-00	406 E KILBUCK ST	MAURICIO, ARTHUR & REGINA R	406 E KILBUCK ST	TECUMSEH	MI	49286	06/01/09
57	305-2191-00	302 S MAUMEE ST	GATES, TERI	2690 DINIUS RD	TECUMSEH	MI	49286	06/01/09
58	305-2051-00	311 S MAUMEE ST	DUNCAN TRUST, HAROLD L	311 S MAUMEE ST	TECUMSEH	MI	49286	06/01/09
59	305-2030-00	307 S MAUMEE ST	LOWER LIGHT MISSION	20469 DEERFIELD RD.	DEERFIELD	МІ	49238	06/01/09
60	305-2020-00	310 E KILBUCK ST	CAMBURN, ANNA M	310 E KILBUCK ST	TECUMSEH	MI	49286	06/01/09
61	305-2010-00	308 E KILBUCK ST	DEAVERS, NICKOLAS B & MICHELLE	308 E KILBUCK ST	TECUMSEH	М	49286	06/01/09
62	305-2000-00	306 E KILBUCK ST	WILLIS, LEE E & VERNESE G	306 E KILBUCK ST	TECUMSEH	М	49286	06/01/09
63	305-1990-00	304 E KILBUCK ST	DAWDY, HAZEL	304 E KILBUCK ST	TECUMSEH	ΜI	49286	06/01/09
64	305-1981-00	216 E KILBUCK ST	MURPHY, GEORGE F & CHERYL L	13516 CANTERBURY CT	PLYMOUTH	MI	48170-2448	06/01/09
65	000-0431-00	215 S MAUMEE ST	HERRELL TRUST, ORBIN	215 S MAUMEE ST	TECUMSEH	Mi	49286	06/01/09
66	000-0432-00	211 S MAUMEE ST	HERRELL TRUST, ORBIN	215 S MAUMEE ST	TECUMSEH	Mi	49286	06/01/09
67	000-0332-00	214 S MAUMEE ST	LOWER LIGHT MISSION	20469 DEERFIELD RD.	DEERFIELD	MI	49238	06/01/09
68	000-0341-00	409 E KILBUCK ST	GUENTHER, JERAME L	409 E KILBUCK ST	TECUMSEH		49286	06/01/09
69	000-0351-00	415 E KILBUCK ST	HERRICK MEM HOSP INC	500 E POTTAWATAMIE ST	TECUMSEH	_	49286	06/01/09
70	000-0291-00	207 S WYANDOTTE ST	LAUER, CHARLES & SALLY L	207 S WYANDOTTE ST	TECUMSER	MI	49286	06/01/09
71	000-0331-00	210 S MAUMEE ST	ROBARGE, THOMAS & ROBERT ROBAR	210 S MAUMEE ST	TECUMSEH	М	49286	06/01/09
72	000-0302-00	206 S MAUMEE ST	BILBY, RICHARD L & SHARON	206 S MAUMEE ST	TECUMSEH	Mi	49286	06/01/09

#### Notes

<sup>1)</sup> Parcel identification numbers and owner information provided by the City of Tecumseh on March 12, 2009 and April 3, 2009.





## MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY DRINKING WATER LABORATORY

USEPA Region V Drinking Water Cert. No. MI00003

P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-8184 FAX: (517) 335-8562

Lab Results 2007

Sample Number LB76877

## Official Laboratory Report

Report To: **TODD AMSTUTZ** 

> 710 EAST CHICAGO BLVD TECUMSEH MI 49286

System Name/Owner:

CITY OF TECUMSEH

WSSN/Pool ID: 6560

Collection Address:

S WELLFIELD/ PATTERSON ST.TECU

TYPE I Source:

Collected By:

**TODD AMSTUTZ** 

Site Code: C002

Township/Well#/Section:

/10/

Collector: Public Water Supply Operator

County: Sample Point: Lenawee PLANT TAP Date Collected: 09/10/2007

Date Received: 09/11/2007 Purpose:

10:57 Routine Monitoring

09:20

Water System: **Public System Well** 

<b></b>						
PARTY CONTROL OF THE STANDARD OF	Mailon			A RECUIE	JEORYAINEORMATI	
Analyte Name	Result	Date	RL	MCL/AL	Method	CAS#
	(mg/L)	Tested	(mg/L)	[ (mg/L)		
Chloride	.58	-09/11/2007	4	相连等于	∷SM 4500-CLE	7647-14-5
Fluoride	0.74	09/11/2007	0.1	4.0	SM 4500 FC	16984-48-8
ardness as CaCO3	354	09/11/2007	. 20 🔻		∴ SM 2340 C	HARD-00-C
Iron (automated)	Not detected	09/11/2007	0.1		SM 3500 FeB	7439-89-6
Nitrate as N	0.4	209/11/2007	0.4	10	SM 4500 NO3H	/14797-55-8
Nitrite as N	Not detected	09/11/2007	0.05	1	SM 4500 NO3H	14797-65-0
Sodium (automated)	28	£09/11/2007	))# <b>5</b> ];///:		SM 3500 NaB	7440-23-5
Sulfate	49	09/11/2007	10	i liki dinampaga libera kari Paga bara dalah sari ara	SM 4500 SO4E	14808-79-8
Volatile Organic Compounds						
1.1 Dichloroethane	Not Detected :	1 09/14/200°	7,2-0,0005	1988年里	EPA 524.2	75-34-3,70-17
1,1 Dichloroethylene	Not Detected	09/14/200	7 0.0005	0.007	EPA 524.2	75-35-4
집중하면 화가 살아왔다면 하는 사람들이 하는 사람들이 되었다. 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그 그	Not Detected	09/14/200	提到2000 1600 1600 1600 1600 1600 1600 1600	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	EPA 524.2	563-58-6
1,1,1 Trichloroethane	Not Detected	09/14/200	7 0.0005	0.2	EPA 524.2	71-55-6

Volatile Organic Compounds				
1.1 Dichloroethane	Not Detected	09/14/2007 0.0005	ry Ni in ERA 524.2	75-34-3
1,1 Dichloroethylene	Not Detected	09/14/2007 0.0005	0.007 EPA 524.2	75-35-4
1,1 Dichloropropene	Not Detected	09/14/2007 0:0005	EPA 524.2	563-58-6
1,1,1 Trichloroethane	Not Detected	09/14/2007 0.0005	0.2 EPA 524.2	71-55-6
1.1.1.2 Tetrachloroethane	Not Detected	09/14/2007 0 0005	EPA 524.2	630-20-6
1,1,2 Trichloroethane	Not Detected	09/14/2007 0.0005	0.005 EPA 524.2	79-00-5
1.1,2,2 Tetrachloroethane	Not Detected	09/14/2007/%0.0005	100 EPA 524.2	79,34-5
1,2 Dichlorobenzene	Not Detected	09/14/2007 0.0005	0.6 EPA 524.2	95-50-1
1,2 Dichloroethane	Not Detected	09/14/2007 40:0005	₽0.005 // EPA 524.2 // //	107-06-2
1,2 Dichloropropane	Not Detected	09/14/2007 0.0005	0.005 EPA 524.2	78-87-5
1,2,3 Trichlorobenzene	Not Detected: 🕠	//09/14/2007 /- 0.0005	EPA 524.2	87-61-6
1,2,3 Trichloropropane	Not Detected	09/14/2007 0.0005	EPA 524.2	96-18-4
1,2,4 Trichlorobenzene	Not Detected	09/14/2007 0.0005	0.07 EPA 524.2	120-82-1.
1,2,4 Trimethylbenzene	Not Detected	09/14/2007 0.0005	EPA 524.2	95-63-6
3 Dichlorobenzène	Not Detected	.09/14/2007\``:0,0005	EPA 524.2	541-73-1
5 memorial transfer (1984) 19	er in the process of the second section of the second seco	Activities and market many from a business of the	18 sado umana entra 144 il Anti traditata di 18 Anti di 19 Biori (1977)	MATERIAL PROPERTY AND AND AND AND AND AND AND AND AND AND

CAS#: Chemical Abstract Service Registry Number

MCL: Maximum Contaminent Level

AL: Action Level RL: Reporting Limit mg/L: milligrams / Liter (ppm)

ppm: parts per million MPN: Most Probable Number CFU: Colony Forming Unit

Laboratory Contacts

Drinking Water Unit Mgr; Julia Pieper Systems Mgmt. Unit Mgr: George Krisztian



## MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY DRINKING WATER LABORATORY

USEPA Region V Drinking Water Cert, No. MI00003 P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-8184 FAX: (517) 335-8562

Sample Number LB76877

NAMES OF THE PROPERTY OF THE P		College of the Control of the Contro			WORYWEORWA	VON FEETS CON
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS#
Volatile Organic Compounds	1 (119/2)	1 03100	(UIGIL)	(mg/L)	<u></u>	
1,3 Dichloropropane	Not Detected	09/14/200	0.0005	THEF	EPA 524.2	142-28-9
1,3,5 Trimethylbenzene	Not Detected	09/14/2007	7 0.0005	realitation (fig.) (1) (1) (1)	EPA 524.2	108-67-8
1 4 Dichlorobenzene	Not Detected	09/14/2007	0.0005	0.075	EPA 524.2	106-46-7
2,2 Dichloropropane	Not Detected	09/14/2007	0.0005	THE PROPERTY NAME OF	EPA 524.2	594-20-7
Benzene	Not Detected	09/14/200	7.20.0005	0.005	EPA 524.2	71-43-2
Bromobenzene	Not Detected	09/14/2007		The season of the contract	EPA 524.2	108-86-1
Bromochloromethane	Not Detected	09/14/200	1. The state of th		EPA 524.2	74-97-5
Bromodichloromethane	Not Detected	09/14/2007		0.080	EPA 524.2	75-27-4
Bromoform	Not Detected 🖟 🦠	09/14/200	211.02.192.192	0.080	EPA 524.2	75-25-2 his
Bromomethane	Not Detected	09/14/2007		sacrana superior de la composition della composi	EPA 524.2	74-83-9
Carbon tetrachloride	Not Detected	.09/14/200	Committee of the Commit	.0.005	EPA 524.2	56-23-5 ()
Chlorobenzene	Not Detected	09/14/200		0.1	EPA 524.2	108-90-7
Chlorodibromomethane	Not Detected	09/14/200	7. 19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.080	EPA 524.2	124-48-10 4 4 4
Chloroethane	Not Detected	09/14/200		a and a second control of the second control	EPA 524.2	75-00-3
Chleroform	Not Detected	09/14/200	2005年1905年1905年1905年1	,0.080	EPA 524.2	67-66-3
-Chloromethane	Not Detected	09/14/200		theran war whi	EPA 524.2	74-87-3
-1,2 Dichloroethylene	Not Detected	_09/14/200	SALE CONCLUDE AS A STORY ST	, 0.07	EPA 524.2	156-59-2
cis-1,3 Dichloropropene	Not Detected	09/14/200		eren valuari e gater	EPA 524.2	10061-01-5
Dibromomethane	Not Detected	09/14/200	the second of th	Times	EPA 524.2	74-95-3
Dichlorodifluoromethane	Not Detected	09/14/200		ano oo e	EPA 524.2	75-71-8
Dichloromethane	Not Detected	09/14/200	<b>建设:是国际的公司的基础的</b>	0:005	EPA 524.2	75-09-2
Ethylbenzene	Not Detected Not Detected	09/14/200		0.7	EPA 524.2 EPA 524.2	100-41-4
Fluorotrichloromethane  Hexachlorobutadiene	Not Detected	.509/14/200 09/14/200	STATES TO SELECT THE PROPERTY OF THE PARTY.		EPA 524.2	75-69-4 87-68-3
Isopropylbenzene	Not Detected	09/14/200		.Wheter-is	EPA 524.2	98-82-8
m & p-Xylene	Not Detected	09/14/200	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10	EPA 524.2	XYLMP-00-C
Methyl ethyl ketone	Not Detected	09/14/200		do establicada	EFA 524.2	78-93-3 N
Methyl isobutyl ketone	Not Detected	09/14/200	1 Page 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		EPA 524.2	108-10-1
Methyl-terf-butyl ether (MTBE)	Not Detected	09/14/200			EPA 524,2	1634-04-4
Naphthalene	Not Detected	09/14/200			EPA 524.2	91-20-3
n-Butylbenzene	Not Detected	≻09/14/200	**	narway weigh	EPA 524.2	104-51-8
Nitrobenzene	Not Detected	09/14/200	11.2 - Chr. 12.3 - C. 2 - 11.		EPA 524.2	98-95-3
n-Propylbenzene	Not Detected	09/14/200		reducing the control of the	EPA 524.2	103-65-1
o-Chlorotoluene	Not Detected	09/14/200	and the first of the second	1.1. (15.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	EPA 524.2	95-49-8
o-Xylene	Not Detected	~09/14/200		10	EPA 524.2	95-47-6
p-Chlorotoluene	Not Detected	09/14/200		.35.ಎಟ್∷ಿನ ಕಾರು	EPA 524.2	106-43-4
p-Isopropyltoluene	Not Detected	09/14/200		da municipalità di Mangalità di Mangalità di Mangal Mangalità di Mangalità di Mangali	EPA 524.2	99-87-6
sec-Butylbenzene	Not Detected	09/14/200	7 0.0005		EPA 524.2	135-98-8
/rene	Not Detected	⊹09/14/200	7: 0.0005	0.1	EPA 524.2	100-42-5

CAS#: Chemical Abstract Service Registry Number

MCL: Maximum Contaminent Level
AL: Action Level
RL: Reporting Limit

mg/L: milligrams / Liter (ppm)

ppm: parts per million MPN: Most Probable Number CFU: Colony Forming Unit

Laboratory Contacts

Drinking Water Unit Mgr: Julia Pieper Systems Mgmt. Unit Mgr: George Krisztian



# MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY DRINKING WATER LABORATORY

USEPA Region V Drinking Water Cert. No. MI00003 P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-8184

FAX: (517) 335-8562

Sample Number LB76877

Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS#
Volatile Organic Compounds						
tert-Butylbenzene	Not Detected	09/14/2007	0.0005		EPA 524.2	98-06-6
Tetrachloroethylene	Not Detected	09/14/2007	0.0005	0.005	EPA 524.2	127-18-4
Tetrahydrafuran	Not Detected	09/14/2007	/# 0.005 £		EPA 524.2	109-99-9
Toluene	Not Detected	09/14/2007	0.0005	1	EPA 524.2	108-88-3
Total Trihalomethanes	Not Detected	# 09/14/2007		<i>;</i> ;0,080	EPA 524.2	TTHM-00-C
Total Xylenes	Not Detected	09/14/2007	ana na mana ana ana ana ana ana ana ana	10	EPA 524.2	1330-20-7
trans-1,2 Dichloroethylene	Not Detected	409/14/2007	0,0005	1/0/1	EPA 524.2	156-60-5
trans-1,3 Dichloropropene	Not Detected	09/14/2007	44 - no mile to de La Contrata de la Contrata de La	(10) 30 91 94 94 19 19 19 19 19 19 19 19 19 19 19 19 19	EPA 524.2	10061-02-6
Trichloroethylene	Not Detected	09/1472007	0.0005	0.005	EPA 524.2	79-01-6
Vinyl chloride	Not Detected	09/14/2007	0.0004	0.002	EPA 524.2	75-01-4

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have concerns about the health risks related to the test results of your sample, please contact the Environmental Health Section through the address and telephone number listed below:

Lenawee County Health Dept. 1040 S. Winter St #2328 Adrian, MI 49221-3871 517 264-5202

CAS#: Chemical Abstract Service Registry Number

MCL: Maximum Contaminent Level

AL: Action Level RL: Reporting Limit mg/L: milligrams / Liter (ppm)

ppm : parts per million MPN : Most Probable Number CFU : Colony Forming Unit Laboratory Contacts

Drinking Water Unit Mgr: Julia Pieper Systems Mgmt. Unit Mgr: George Krisztian



# MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY DRINKING WATER LABORATORY

USEPA Region V Drinking Water Cert. No. MI00003 P.O. Box 30270 Lansing, MI 48909 TEL: (517) 335-8184

FAX: (517) 335-8562

Sample Number LB76878

# Official Laboratory Report

Report To: **TODD AMSTUTZ** 

> 710 EAST CHICAGO BLVD TECUMSEH MI 49286

System Name/Owner:

CITY OF TECUMSEH/ COMMONWEAL WSSN/Pool ID: 6560

Collection Address:

S WELL FIELD/ 703 E CHICAGO BLV,T

Source: TYPE I

Collected By: Township/Well#/Section: TODD AMSTUTZ

Site Code: D925

Collector: Public Water Supply Operator

County:

Lenawee KITCHEN Date Collected: 09/10/2007

08:30 Date Received: 09/11/2007 10:57

Sample Point: Water System:

**Public System Well** 

Purpose:

Routine Monitoring

	Warious	7.54			VÍORYAINEÓENA	10025
Analyte Name	Result	Date	RL	MCL/AL	Method	CAS#
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(mg/L)	Tested	(mg/L)	(mg/L)		
Thelemon and YVal-scat-						
Dalapon and Haloacetic	Not Detected	00/4 4/000			ED 4 550 4	70.00.0
omoacetic acid	Not Detected	09/14/2007	7 0.004		EPA 552.1	79-08-3
promochloroacetic acid	Not Detected in	#09/14/2007	##0 001a	建设安装。	HEPA 552-1	-6589-964347-19
Chloroacetic acid	Not Detected	09/14/2007	7 0.004	:18:7 Uanuzua. (1100-244	EPA 552.1	79-11-8
Palapon III stratus 12.	:Not Detected	109/14/2007	7##0.001#	0.2	SERASS24 BAR	675:0970 and the
Dibromoacetic acid	Not Detected	09/14/2007		Z.C.C.C.C. SZERKZ CZ SKIRSKY M	EPA 552.1	631-64-1
Dichloroacetic acid	Not Detected	09/14/2007	74-0-0025		EPA 552 1735	179436
Total Haloacetic Acids (five)	Not Detected	09/14/2007	7 0.01	0.060	EPA 552.1	THA-00-C
Trichioroacetic acid	-Not Detected	209/14/200	78,0.002		EPA 55211	476-03 <del>1</del> 91-1515
OSMANI HERBI N ZOWINSKO KOM EST Z LOZDZI LINA WERENINSKE WORD TRANZA ZAZDA NIZOLE (	in colora a mora con sensitivi sa desistan	CENTER OF THE PROPERTY OF THE		Constant Sections (Section	er u mikil kisilanga karan kabandan abawa	N. A. DANIEL STORY OF THE PARTY
Total Trihalomethanes						
Bromodichloromethane	TRACE	09/14/2007	7 0.0005	0.080	EPA 524.2	75-27-4
(Biomolojim)	Not Defeated 12	#09/64/2607	7 PO 0005	74.080/08in	DEP#524.2	275925 <sup>1</sup> 24/42166/1
Chlorodibromomethane	TRACE	09/14/2007	7 0.0005	0.080	EPA 524.2	124-48-1
Onloroform (2)	Not Detected	#09/1/4/200°	74 0 0005	100080	HEPA 524 2 1452	(67/66-344)
Total Trihalomethanes	TRACE	09/14/200	7 0.0005	0.080	EPA 524.2	TTHM-00-C

Compounds reported as TRACE were detected at levels above the detection limits, but at levels too low to quantitate.

CAS#: Chemical Abstract Service Registry Number

MCL: Maximum Contaminent Level

AL: Action Level RL: Reporting Limit mg/L: milligrams / Liter (ppm)

ppm: parts per million MPN: Most Probable Number CFU: Colony Forming Unit

**Laboratory Contacts** 

Drinking Water Unit Mgr: Julia Pieper Systems Mgmt. Unit Mgr: George Krisztian

# Appendix G Laboratory Data – Private Wells



April 17, 2009

RMT, Inc. - Ann Arbor Office Attn: John Bacon 3754 Ranchero Drive Ann Arbor, MI 48108-2771

# **Project: Tecumseh Products**

Dear John Bacon,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
0904234	04/14/2009	Laboratory Services

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Jennifer L. Rice Project Chemist

Enclosures(s)



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904234

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:610 MohawkSampled:04/13/09 12:28

Lab Sample ID: 0904234-01 Sampled By: J. Bacon

Matrix: Water Received:  $04/14/09 \ 09:00$  Unit: ug/L Prepared:  $04/14/09 \ By: DCG$  Dilution Factor: 1 Analyzed:  $04/14/09 \ By: DMC$ 

QC Batch: 0904070 Analytical Batch: 9041531

# Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte			Analytical Result	RL	Action Limit
*123-91-1	1,4-Dioxane			<3.0	3.0	
Surrogates:		% Recovery	Control Limits			
Nitrobenzene-d5		69	31-123			
2-Fluorobiphenyl		71	<i>25-113</i>			
o-Terphenyl		74	42-125			

\*See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904234

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:610 MohawkSampled:04/13/09 12:28

Lab Sample ID: 0904234-01 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/14/09 09:00

 Unit:
 mg/L
 Prepared:
 04/14/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/14/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041527

# Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	Action Limit
71-43-2	Benzene	<0.0010	0.0010	0.005
108-86-1	Bromobenzene	<0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	0.08
75-25-2	Bromoform	<0.0010	0.0010	0.08
74-83-9	Bromomethane	<0.0010	0.0010	
56-23-5	Carbon Tetrachloride	<0.0010	0.0010	0.005
108-90-7	Chlorobenzene	< 0.0010	0.0010	0.1
75-00-3	Chloroethane	<0.0010	0.0010	
67-66-3	Chloroform	<0.0010	0.0010	0.08
74-87-3	Chloromethane	<0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	<0.0010	0.0010	
124-48-1	Dibromochloromethane	< 0.0010	0.0010	0.08
74-95-3	Dibromomethane	<0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	0.6
541-73-1	1,3-Dichlorobenzene	<0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	<0.0010	0.0010	0.075
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	0.0050	0.0010	
107-06-2	1,2-Dichloroethane	<0.0010	0.0010	0.005
75-35-4	1,1-Dichloroethene	0.0023	0.0010	0.007
156-59-2	cis-1,2-Dichloroethene	0.015	0.0010	0.07
156-60-5	trans-1,2-Dichloroethene	0.0020	0.0010	0.1
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	0.005
142-28-9	1,3-Dichloropropane	<0.0010	0.0010	
594-20-7	2,2-Dichloropropane	< 0.0010	0.0010	
563-58-6	1,1-Dichloropropene	<0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	<0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904234

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 610 Mohawk Sampled: 04/13/09 12:28

Lab Sample ID: 0904234-01 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/14/09 09:00

 Unit:
 mg/L
 Prepared:
 04/14/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/14/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041527

# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Analyte	Analytical Result	RL	Action Limit
100-41-4	Ethylbenzene	<0.0010	0.0010	0.7
*75-09-2	Methylene Chloride	< 0.0050	0.0050	0.005
100-42-5	Styrene	< 0.0010	0.0010	0.1
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	0.005
108-88-3	Toluene	< 0.0010	0.0010	1
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	0.07
71-55-6	1,1,1-Trichloroethane	0.059	0.0010	0.2
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	0.005
*79-01-6	Trichloroethene	1.7	0.0010	0.005
75-69-4	Trichlorofluoromethane	<0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	0.0090	0.0010	0.002
1330-20-7	Xylene (Total)	< 0.0030	0.0030	10

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	107	82-118
1,2-Dichloroethane-d4	107	<i>75-128</i>
Toluene-d8	99	88-108
4-Bromofluorobenzene	98	82-114

<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904234

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 610 Mohawk Sampled: 04/13/09 12:28

Lab Sample ID: 0904234-01RE1 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/14/09 09:00

 Unit:
 mg/L
 Prepared:
 04/16/09 By: JDM

 Dilution Factor:
 20
 Analyzed:
 04/16/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041718

# Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	Action Limit
71-43-2	Benzene	<0.020	0.020	0.005
108-86-1	Bromobenzene	<0.020	0.020	
75-27-4	Bromodichloromethane	< 0.020	0.020	0.08
75-25-2	Bromoform	<0.020	0.020	0.08
74-83-9	Bromomethane	< 0.020	0.020	
56-23-5	Carbon Tetrachloride	<0.020	0.020	0.005
108-90-7	Chlorobenzene	< 0.020	0.020	0.1
75-00-3	Chloroethane	<0.020	0.020	
67-66-3	Chloroform	< 0.020	0.020	0.08
74-87-3	Chloromethane	< 0.020	0.020	
95-49-8	2-Chlorotoluene	<0.020	0.020	
106-43-4	4-Chlorotoluene	< 0.020	0.020	
124-48-1	Dibromochloromethane	<0.020	0.020	0.08
74-95-3	Dibromomethane	< 0.020	0.020	
95-50-1	1,2-Dichlorobenzene	<0.020	0.020	0.6
541-73-1	1,3-Dichlorobenzene	<0.020	0.020	
106-46-7	1,4-Dichlorobenzene	<0.020	0.020	0.075
75-71-8	Dichlorodifluoromethane	<0.020	0.020	
75-34-3	1,1-Dichloroethane	<0.020	0.020	
107-06-2	1,2-Dichloroethane	<0.020	0.020	0.005
75-35-4	1,1-Dichloroethene	<0.020	0.020	0.007
156-59-2	cis-1,2-Dichloroethene	0.020	0.020	0.07
156-60-5	trans-1,2-Dichloroethene	<0.020	0.020	0.1
78-87-5	1,2-Dichloropropane	<0.020	0.020	0.005
142-28-9	1,3-Dichloropropane	<0.020	0.020	
594-20-7	2,2-Dichloropropane	<0.020	0.020	
563-58-6	1,1-Dichloropropene	<0.020	0.020	
10061-01-5	cis-1,3-Dichloropropene	<0.020	0.020	
10061-02-6	trans-1,3-Dichloropropene	<0.020	0.020	
100-41-4	Ethylbenzene	< 0.020	0.020	0.7
75-09-2	Methylene Chloride	<0.10	0.10	0.005



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904234

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:610 MohawkSampled:04/13/09 12:28

Lab Sample ID: 0904234-01RE1 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/14/09 09:00

 Unit:
 mg/L
 Prepared:
 04/16/09 By: JDM

 Dilution Factor:
 20
 Analyzed:
 04/16/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041718

# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Analyte	Analytical Result	RL	Action Limit
100-42-5	Styrene	<0.020	0.020	0.1
630-20-6	1,1,1,2-Tetrachloroethane	< 0.020	0.020	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.020	0.020	
127-18-4	Tetrachloroethene	< 0.020	0.020	0.005
108-88-3	Toluene	< 0.020	0.020	1
120-82-1	1,2,4-Trichlorobenzene	< 0.020	0.020	0.07
71-55-6	1,1,1-Trichloroethane	0.050	0.020	0.2
79-00-5	1,1,2-Trichloroethane	< 0.020	0.020	0.005
79-01-6	Trichloroethene	1.2	0.020	0.005
75-69-4	Trichlorofluoromethane	< 0.020	0.020	
96-18-4	1,2,3-Trichloropropane	< 0.020	0.020	
75-01-4	Vinyl Chloride	< 0.020	0.020	0.002
1330-20-7	Xylene (Total)	< 0.060	0.060	10

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	98	82-118
1,2-Dichloroethane-d4	99	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	100	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904234

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:615 MohawkSampled:04/13/09 11:55

Lab Sample ID: 0904234-02 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/14/09 09:00

 Unit:
 ug/L
 Prepared:
 04/14/09 By: DCG

 Dilution Factor:
 1
 Analyzed:
 04/14/09 By: DMC

QC Batch: 0904070 Analytical Batch: 9041531

# Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte			Analytical Result	RL	Action Limit
*123-91-1	1,4-Dioxane			<3.0	3.0	
Surrogates:		% Recovery	Control Limits			
Nitrobenzene-d5		72	31-123			
2-Fluorobiphenyl		71	25-113			
o-Terphenyl		74	42-125			

<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904234

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 615 Mohawk Sampled: 04/13/09 11:55

Lab Sample ID: 0904234-02 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/14/09 09:00

 Unit:
 mg/L
 Prepared:
 04/14/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/14/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041527

# Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	Action Limit
71-43-2	Benzene	<0.0010	0.0010	0.005
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	0.08
75-25-2	Bromoform	<0.0010	0.0010	0.08
74-83-9	Bromomethane	<0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	0.005
108-90-7	Chlorobenzene	<0.0010	0.0010	0.1
75-00-3	Chloroethane	<0.0010	0.0010	
67-66-3	Chloroform	<0.0010	0.0010	0.08
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	<0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	0.08
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	0.6
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	0.075
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	0.005
75-35-4	1,1-Dichloroethene	<0.0010	0.0010	0.007
156-59-2	cis-1,2-Dichloroethene	<0.0010	0.0010	0.07
156-60-5	trans-1,2-Dichloroethene	<0.0010	0.0010	0.1
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	0.005
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	<0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	<0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904234

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 615 Mohawk Sampled: 04/13/09 11:55

Lab Sample ID: 0904234-02 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/14/09 09:00

 Unit:
 mg/L
 Prepared:
 04/14/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/14/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041527

# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Analyte	Analytical Result	RL	Action Limit
100-41-4	Ethylbenzene	<0.0010	0.0010	0.7
*75-09-2	Methylene Chloride	< 0.0050	0.0050	0.005
100-42-5	Styrene	< 0.0010	0.0010	0.1
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	0.005
108-88-3	Toluene	< 0.0010	0.0010	1
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	0.07
71-55-6	1,1,1-Trichloroethane	<0.0010	0.0010	0.2
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	0.005
79-01-6	Trichloroethene	< 0.0010	0.0010	0.005
75-69-4	Trichlorofluoromethane	<0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	<0.0010	0.0010	
75-01-4	Vinyl Chloride	< 0.0010	0.0010	0.002
1330-20-7	Xylene (Total)	< 0.0030	0.0030	10

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	102	82-118
1,2-Dichloroethane-d4	109	<i>75-128</i>
Toluene-d8	103	88-108
4-Bromofluorobenzene	97	82-114

<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904234

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:611 MohawkSampled:04/13/09 11:37

Lab Sample ID: 0904234-03 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/14/09 09:00

 Unit:
 ug/L
 Prepared:
 04/14/09 By: DCG

 Dilution Factor:
 1
 Analyzed:
 04/14/09 By: DMC

QC Batch: 0904070 Analytical Batch: 9041531

# Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte			Analytical Result	RL	Action Limit
*123-91-1	1,4-Dioxane			<3.0	3.0	
Surrogates:		% Recovery	Control Limits			
Nitrobenzene-d5		69	31-123			
2-Fluorobiphenyl		68	<i>25-113</i>			
o-Terphenyl		71	<i>42-125</i>			

\*See Statement of Data Qualifications

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Client: RMT, Inc. - Ann Arbor Office Work Order: 0904234

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 611 Mohawk Sampled: 04/13/09 11:37

Lab Sample ID: 0904234-03 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/14/09 09:00

 Unit:
 mg/L
 Prepared:
 04/14/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/14/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041527

# Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	Action Limit
71-43-2	Benzene	<0.0010	0.0010	0.005
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	0.08
75-25-2	Bromoform	< 0.0010	0.0010	0.08
74-83-9	Bromomethane	<0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	0.005
108-90-7	Chlorobenzene	<0.0010	0.0010	0.1
75-00-3	Chloroethane	<0.0010	0.0010	
67-66-3	Chloroform	<0.0010	0.0010	0.08
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	<0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	0.08
74-95-3	Dibromomethane	<0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	0.6
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	0.075
75-71-8	Dichlorodifluoromethane	<0.0010	0.0010	
75-34-3	1,1-Dichloroethane	< 0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	0.005
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	0.007
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	0.07
156-60-5	trans-1,2-Dichloroethene	<0.0010	0.0010	0.1
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	0.005
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	<0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	<0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904234

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 611 Mohawk Sampled: 04/13/09 11:37

Lab Sample ID: 0904234-03 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/14/09 09:00

 Unit:
 mg/L
 Prepared:
 04/14/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/14/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041527

# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Analyte	Analytical Result	RL	Action Limit
100-41-4	Ethylbenzene	<0.0010	0.0010	0.7
*75-09-2	Methylene Chloride	< 0.0050	0.0050	0.005
100-42-5	Styrene	< 0.0010	0.0010	0.1
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	0.005
108-88-3	Toluene	< 0.0010	0.0010	1
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	0.07
71-55-6	1,1,1-Trichloroethane	<0.0010	0.0010	0.2
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	0.005
79-01-6	Trichloroethene	< 0.0010	0.0010	0.005
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	<0.0010	0.0010	0.002
1330-20-7	Xylene (Total)	< 0.0030	0.0030	10

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	103	82-118
1,2-Dichloroethane-d4	109	<i>75-128</i>
Toluene-d8	104	88-108
4-Bromofluorobenzene	98	82-114

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<sup>\*</sup>See Statement of Data Qualifications



# Semivolatile Organic Compounds by EPA Method 8270C

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
<b>QC Batch: 0904070</b> 3510C Liquid-	Liquid Extrac	tion/USEPA	-8270C					
Method Blank					Analy	/zed:	04/14/2009	By: DMC
Unit: ug/L					Analy	tical Batch:	9041531	
1,4-Dioxane			<3.0					3.0
Surrogates:								
Nitrobenzene-d5				76	31-123			
2-Fluorobiphenyl				<i>78</i>	<i>25-113</i>			
o-Terphenyl				80	<i>42-125</i>			
Laboratory Control Sample					Analyzed:		04/14/2009	By: DMC
Unit: ug/L					Analy	tical Batch:	9041531	
1,4-Dioxane		10.0	3.46	35	21-100			3.0
Surrogates:								
Nitrobenzene-d5				<i>75</i>	31-123			
2-Fluorobiphenyl				71	25-113			
o-Terphenyl				76	<i>42-125</i>			
Laboratory Control Sample Dupl	icate				Analy	/zed:	04/14/2009	By: DMC
Unit: ug/L					Analy	tical Batch:	9041531	
1,4-Dioxane		10.0	4.40	44	21-100	24	20	3.0
Surrogates:								
Nitrobenzene-d5				71	31-123			
2-Fluorobiphenyl				73	25-113			
o-Terphenyl				73	42-125			



# Volatile Organic Compounds in Drinking Water by EPA Method 524.2

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0904129 5030B Aqueous Purge & Trap/USEPA-524.2

Method Blank		Analyzed: 04/14/2009 By:	JDM
Unit: mg/L		Analytical Batch: 9041527	
Benzene	<0.0010	0.0010	
Bromobenzene	< 0.0010	0.0010	
Bromodichloromethane	< 0.0010	0.0010	
Bromoform	< 0.0010	0.0010	
Bromomethane	< 0.0010	0.0010	
Carbon Tetrachloride	< 0.0010	0.0010	
Chlorobenzene	< 0.0010	0.0010	
Chloroethane	< 0.0010	0.0010	
Chloroform	< 0.0010	0.0010	
Chloromethane	< 0.0010	0.0010	
2-Chlorotoluene	< 0.0010	0.0010	
4-Chlorotoluene	< 0.0010	0.0010	
Dibromochloromethane	< 0.0010	0.0010	
Dibromomethane	< 0.0010	0.0010	
1,2-Dichlorobenzene	< 0.0010	0.0010	
1,3-Dichlorobenzene	< 0.0010	0.0010	
1,4-Dichlorobenzene	< 0.0010	0.0010	
Dichlorodifluoromethane	< 0.0010	0.0010	
1,1-Dichloroethane	< 0.0010	0.0010	
1,2-Dichloroethane	< 0.0010	0.0010	
1,1-Dichloroethene	< 0.0010	0.0010	
cis-1,2-Dichloroethene	< 0.0010	0.0010	
trans-1,2-Dichloroethene	< 0.0010	0.0010	
1,2-Dichloropropane	< 0.0010	0.0010	
1,3-Dichloropropane	< 0.0010	0.0010	
2,2-Dichloropropane	< 0.0010	0.0010	
1,1-Dichloropropene	<0.0010	0.0010	
cis-1,3-Dichloropropene	<0.0010	0.0010	
trans-1,3-Dichloropropene	<0.0010	0.0010	
Ethylbenzene	<0.0010	0.0010	
Methylene Chloride	< 0.0050	0.0050	
Styrene	<0.0010	0.0010	
1,1,1,2-Tetrachloroethane	<0.0010	0.0010	
1,1,2,2-Tetrachloroethane	<0.0010	0.0010	
Tetrachloroethene	<0.0010	0.0010	
Toluene	< 0.0010	0.0010	

Chloroethane



#### **QUALITY CONTROL REPORT**

# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD		
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL	

QC Batch: 0904129 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Method Blank (Continued)			Analyzed:	04/14/2009	By: JDN
Unit: mg/L			Analytical Batch:	9041527	
1,2,4-Trichlorobenzene	<0.0010			0.00	10
1,1,1-Trichloroethane	< 0.0010		0.00	10	
1,1,2-Trichloroethane	< 0.0010			0.00	10
Trichloroethene	< 0.0010			0.00	10
Trichlorofluoromethane	< 0.0010			0.00	10
1,2,3-Trichloropropane	< 0.0010			0.00	10
Vinyl Chloride	< 0.0010			0.00	10
Xylene (Total)	<0.0030			0.00	30
Method Blank			Analyzed:	04/14/2009	By: JDN
Unit: ug/L			Analytical Batch:	9041527	
Surrogates:					
Dibromofluoromethane		102	82-118		
1,2-Dichloroethane-d4		108	<i>75-128</i>		
Toluene-d8		104	88-108		
4-Bromofluorobenzene		98	82-114		
Method Blank			Analyzed:	04/16/2009	By: JDN
Unit: mg/L			Analytical Batch:	9041718	
Benzene	<0.0010			0.00	10
Bromobenzene	< 0.0010			0.00	10
Bromodichloromethane	< 0.0010			0.00	10
Bromoform	< 0.0010			0.00	10
Bromomethane	< 0.0010			0.00	10
Carbon Tetrachloride	< 0.0010			0.00	10
Chlorobenzene	< 0.0010			0.00	10

Chloroform < 0.0010 0.0010 Chloromethane < 0.0010 0.0010 2-Chlorotoluene < 0.0010 0.0010 4-Chlorotoluene < 0.0010 0.0010 Dibromochloromethane < 0.0010 0.0010 Dibromomethane < 0.0010 0.0010 1,2-Dichlorobenzene < 0.0010 0.0010 1,3-Dichlorobenzene < 0.0010 0.0010 1,4-Dichlorobenzene < 0.0010 0.0010 Dichlorodifluoromethane < 0.0010 0.0010

< 0.0010

0.0010

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# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD		
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL	

QC Batch: 0904129 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Method Blank (Continued)				Analyzed:	04/16/2009	By: JDM
Unit: mg/L				Analytical Batch:	9041718	
1,1-Dichloroethane		< 0.0010			0.00	10
1,2-Dichloroethane		< 0.0010			0.00	10
1,1-Dichloroethene		< 0.0010			0.00	10
cis-1,2-Dichloroethene		< 0.0010			0.00	10
trans-1,2-Dichloroethene		< 0.0010			0.00	10
1,2-Dichloropropane		< 0.0010			0.00	10
1,3-Dichloropropane		< 0.0010			0.00	10
2,2-Dichloropropane		< 0.0010			0.00	10
1,1-Dichloropropene		< 0.0010			0.00	10
cis-1,3-Dichloropropene		< 0.0010			0.00	10
trans-1,3-Dichloropropene		< 0.0010			0.00	10
Ethylbenzene		< 0.0010			0.00	10
Methylene Chloride		< 0.0050			0.00	50
Styrene		< 0.0010			0.00	10
1,1,1,2-Tetrachloroethane		< 0.0010			0.00	10
1,1,2,2-Tetrachloroethane		< 0.0010			0.00	10
Tetrachloroethene		< 0.0010			0.00	10
Toluene		< 0.0010			0.00	10
1,2,4-Trichlorobenzene		< 0.0010			0.00	10
1,1,1-Trichloroethane		< 0.0010			0.00	10
1,1,2-Trichloroethane		< 0.0010			0.00	10
Trichloroethene		< 0.0010			0.00	10
Trichlorofluoromethane		< 0.0010			0.00	10
1,2,3-Trichloropropane		< 0.0010			0.00	10
Vinyl Chloride		< 0.0010			0.00	10
Xylene (Total)		< 0.0030			0.00	30
Method Blank				Analyzed:	04/16/2009	By: JDM
Unit: ug/L				Analytical Batch:	9041718	
Surrogates:						
Dibromofluoromethane			98	82-118		
1,2-Dichloroethane-d4			99	<i>75-128</i>		
Toluene-d8			100	88-108		
4-Bromofluorobenzene			100	82-114		
Laboratory Control Sample				Analyzed:	04/14/2009	By: JDN
Unit: mg/L				Analytical Batch:	9041527	
Benzene	0.0100	0.00938	94	70-130	0.00	10

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# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0904129 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Laboratory Control Sample (Continued) Unit: mg/L				Analyzed: Analytical Batch:	04/14/2009 By: JDM 9041527
Bromobenzene	0.0100	0.00855	86	70-130	0.0010
Bromodichloromethane	0.0100	0.0101	101	70-130	0.0010
Bromoform	0.0100	0.00952	95	70-130	0.0010
Bromomethane	0.0100	0.0100	100	70-130	0.0010
Carbon Tetrachloride	0.0100	0.00994	99	70-130	0.0010
Chlorobenzene	0.0100	0.00931	93	70-130	0.0010
Chloroethane	0.0100	0.0124	124	70-130	0.0010
Chloroform	0.0100	0.00993	99	70-130	0.0010
Chloromethane	0.0100	0.0115	115	70-130	0.0010
2-Chlorotoluene	0.0100	0.00842	84	70-130	0.0010
4-Chlorotoluene	0.0100	0.00868	87	70-130	0.0010
Dibromochloromethane	0.0100	0.00953	95	70-130	0.0010
Dibromomethane	0.0100	0.00991	99	70-130	0.0010
1,2-Dichlorobenzene	0.0100	0.00816	82	70-130	0.0010
1,3-Dichlorobenzene	0.0100	0.00830	83	70-130	0.0010
1,4-Dichlorobenzene	0.0100	0.00836	84	70-130	0.0010
Dichlorodifluoromethane	0.0100	0.0103	103	70-130	0.0010
1,1-Dichloroethane	0.0100	0.00983	98	70-130	0.0010
1,2-Dichloroethane	0.0100	0.0106	106	70-130	0.0010
1,1-Dichloroethene	0.0100	0.0116	116	70-130	0.0010
cis-1,2-Dichloroethene	0.0100	0.00864	86	70-130	0.0010
trans-1,2-Dichloroethene	0.0100	0.0116	116	70-130	0.0010
1,2-Dichloropropane	0.0100	0.00922	92	70-130	0.0010
1,3-Dichloropropane	0.0100	0.00936	94	70-130	0.0010
2,2-Dichloropropane	0.0100	0.00877	88	70-130	0.0010
1,1-Dichloropropene	0.0100	0.00899	90	70-130	0.0010
cis-1,3-Dichloropropene	0.0100	0.00795	80	70-130	0.0010
trans-1,3-Dichloropropene	0.0100	0.00835	84	70-130	0.0010
Ethylbenzene	0.0100	0.00928	93	70-130	0.0010
Methylene Chloride	0.0100	0.0133	133	70-130	0.0050
Styrene	0.0100	0.00962	96	70-130	0.0010
1,1,1,2-Tetrachloroethane	0.0100	0.00951	95	70-130	0.0010
1,1,2,2-Tetrachloroethane	0.0100	0.00974	97	70-130	0.0010
Tetrachloroethene	0.0100	0.00859	86	70-130	0.0010
Toluene	0.0100	0.00922	92	70-130	0.0010
1,2,4-Trichlorobenzene	0.0100	0.00726	73	70-130	0.0010



# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD		
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL	

QC Batch: 0904129 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Laboratory Control Sample (Continued) Unit: mg/L				Analyzed: Analytical Batch:	04/14/2009 9041527	By: JDM
1,1,1-Trichloroethane	0.0100	0.00957	96	70-130	0.00	10
1,1,2-Trichloroethane	0.0100	0.00957	96	70-130	0.00	
Trichloroethene	0.0100	0.00892	89	70-130	0.00	
Trichlorofluoromethane	0.0100	0.0126	126	70-130	0.00	
1,2,3-Trichloropropane	0.0100	0.00888	89	70-130	0.00	10
Vinyl Chloride	0.0100	0.0118	118	70-130	0.00	10
Xylene (Total)	0.0300	0.0270	90	70-130	0.00	30
Laboratory Control Sample Unit: ug/L				Analyzed: Analytical Batch:	04/14/2009 9041527	By: JDM
Surrogates:						
Dibromofluoromethane			102	82-118		
1,2-Dichloroethane-d4			105	75-128		
Toluene-d8			102	88-108		
4-Bromofluorobenzene			105	82-114		
Laboratory Control Sample				Analyzed:	04/16/2009	By: JDM
Unit: mg/L				Analytical Batch:	9041718	
Benzene	0.0100	0.00999	100	70-130	0.00	10
Bromobenzene	0.0100	0.0102	102	70-130	0.00	10
Bromodichloromethane	0.0100	0.0102	102	70-130	0.00	10
Bromoform	0.0100	0.00984	98	70-130	0.00	10
Bromomethane	0.0100	0.00867	87	70-130	0.00	10
Carbon Tetrachloride	0.0100	0.00987	99	70-130	0.00	10
Chlorobenzene	0.0100	0.00994	99	70-130	0.00	10
Chloroethane	0.0100	0.00948	95	70-130	0.00	10
Chloroform	0.0100	0.00999	100	70-130	0.00	10
Chloromethane	0.0100	0.0101	101	70-130	0.00	10
2-Chlorotoluene	0.0100	0.0102	102	70-130	0.00	10
4-Chlorotoluene	0.0100	0.0104	104	70-130	0.00	10
Dibromochloromethane	0.0100	0.00960	96	70-130	0.00	10
Dibromomethane	0.0100	0.0102	102	70-130	0.00	10
1,2-Dichlorobenzene	0.0100	0.0104	104	70-130	0.00	10
1,3-Dichlorobenzene	0.0100	0.0104	104	70-130	0.00	10
1,4-Dichlorobenzene	0.0100	0.0101	101	70-130	0.00	10
Dichlorodifluoromethane	0.0100	0.00970	97	70-130	0.00	10
				70-130		

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# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0904129 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Laboratory Control Sample (Conti	nued)				Analyzed:	04/16/2009	By: JDN
Unit: mg/L					Analytical Batch:	9041718	
1,2-Dichloroethane	0.	.0100	0.0102	102	70-130	0.00	10
1,1-Dichloroethene	0.	.0100	0.00984	98	70-130	0.00	10
cis-1,2-Dichloroethene	0.	.0100	0.00993	99	70-130	0.00	10
trans-1,2-Dichloroethene	0.	.0100	0.00967	97	70-130	0.00	10
1,2-Dichloropropane	0.	.0100	0.0103	103	70-130	0.00	10
1,3-Dichloropropane	0.	.0100	0.0103	103	70-130	0.00	10
2,2-Dichloropropane	0.	.0100	0.00939	94	70-130	0.00	10
1,1-Dichloropropene	0.	.0100	0.00996	100	70-130	0.00	10
cis-1,3-Dichloropropene	0.	.0100	0.0103	103	70-130	0.00	10
trans-1,3-Dichloropropene	0.	.0100	0.0101	101	70-130	0.00	10
Ethylbenzene	0.	.0100	0.0101	101	70-130	0.00	10
Methylene Chloride	0.	.0100	0.00952	95	70-130	0.00	50
Styrene	0.	.0100	0.0106	106	70-130	0.00	10
1,1,1,2-Tetrachloroethane	0.	.0100	0.0103	103	70-130	0.00	10
1,1,2,2-Tetrachloroethane	0.	.0100	0.0105	105	70-130	0.00	10
Tetrachloroethene	0.	.0100	0.0100	100	70-130	0.00	10
Toluene	0.	.0100	0.00994	99	70-130	0.00	10
1,2,4-Trichlorobenzene	0.	.0100	0.0105	105	70-130	0.00	10
1,1,1-Trichloroethane	0.	.0100	0.00965	97	70-130	0.00	10
1,1,2-Trichloroethane	0.	.0100	0.0103	103	70-130	0.00	10
Trichloroethene	0.	.0100	0.00995	100	70-130	0.00	10
Trichlorofluoromethane	0.	.0100	0.00996	100	70-130	0.00	10
1,2,3-Trichloropropane	0.	.0100	0.0108	108	70-130	0.00	10
Vinyl Chloride	0.	.0100	0.0100	100	70-130	0.00	10
Xylene (Total)	0.	.0300	0.0306	102	70-130	0.00	30
Laboratory Control Sample					Analyzed:	04/16/2009	By: JDN
Unit: ug/L					Analytical Batch:	9041718	
Surrogates:							
Dibromofluoromethane				101	82-118		
1,2-Dichloroethane-d4				101	<i>75-128</i>		
Toluene-d8				101	88-108		
4-Bromofluorobenzene				99	82-114		
<b>Duplicate 0904234-01</b> 610 Mohawl	<				Analyzed:	04/14/2009	By: JDN
Unit: mg/L					Analytical Batch:	9041527	
Benzene	<0.0010		< 0.0010			20 0.00	10

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# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0904129 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Duplicate (Continued) 0904	1234-01 610 Mohawk		Analyzed:	04/14	/2009 By: JDM
Unit: mg/L			Analytical Batch:	90415	27
Bromobenzene	< 0.0010	<0.0010		20	0.0010
Bromodichloromethane	< 0.0010	< 0.0010		20	0.0010
Bromoform	< 0.0010	< 0.0010		20	0.0010
Bromomethane	< 0.0010	< 0.0010		20	0.0010
Carbon Tetrachloride	< 0.0010	< 0.0010		20	0.0010
Chlorobenzene	< 0.0010	< 0.0010		20	0.0010
Chloroethane	< 0.0010	< 0.0010		20	0.0010
Chloroform	0.000960	0.000920	4	20	0.0010
Chloromethane	< 0.0010	< 0.0010		20	0.0010
2-Chlorotoluene	< 0.0010	< 0.0010		20	0.0010
4-Chlorotoluene	< 0.0010	< 0.0010		20	0.0010
Dibromochloromethane	< 0.0010	< 0.0010		20	0.0010
Dibromomethane	< 0.0010	< 0.0010		20	0.0010
1,2-Dichlorobenzene	< 0.0010	< 0.0010		20	0.0010
1,3-Dichlorobenzene	< 0.0010	< 0.0010		20	0.0010
1,4-Dichlorobenzene	< 0.0010	< 0.0010		20	0.0010
Dichlorodifluoromethane	< 0.0010	< 0.0010		20	0.0010
1,1-Dichloroethane	0.00502	0.00661	27	20	0.0010
1,2-Dichloroethane	< 0.0010	< 0.0010		20	0.0010
1,1-Dichloroethene	0.00233	0.00238	2	20	0.0010
cis-1,2-Dichloroethene	0.0146	0.0154	6	20	0.0010
rans-1,2-Dichloroethene	0.00202	0.00213	5	20	0.0010
1,2-Dichloropropane	< 0.0010	< 0.0010		20	0.0010
1,3-Dichloropropane	< 0.0010	< 0.0010		20	0.0010
2,2-Dichloropropane	< 0.0010	< 0.0010		20	0.0010
1,1-Dichloropropene	< 0.0010	< 0.0010		20	0.0010
cis-1,3-Dichloropropene	< 0.0010	< 0.0010		20	0.0010
trans-1,3-Dichloropropene	< 0.0010	< 0.0010		20	0.0010
Ethylbenzene	< 0.0010	< 0.0010		20	0.0010
Methylene Chloride	< 0.0050	< 0.0050		20	0.0050
Styrene	< 0.0010	< 0.0010		20	0.0010
1,1,1,2-Tetrachloroethane	< 0.0010	< 0.0010		20	0.0010
1,1,2,2-Tetrachloroethane	< 0.0010	< 0.0010		20	0.0010
Tetrachloroethene	< 0.0010	< 0.0010		20	0.0010
Toluene	< 0.0010	< 0.0010		20	0.0010
1,2,4-Trichlorobenzene	< 0.0010	< 0.0010		20	0.0010

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# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0904129 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

<b>Duplicate (Continued) 090</b> Unit: mg/L	Analyzed: Analytical Batch:	04/14 90415	/2009 By: JDM 527		
1,1,1-Trichloroethane	0.0587	0.0557	5	20	0.0010
1,1,2-Trichloroethane	< 0.0010	< 0.0010		20	0.0010
*Trichloroethene	1.69	1.67	1	20	0.0010
Trichlorofluoromethane	0.000630	0.000580	8	20	0.0010
1,2,3-Trichloropropane	< 0.0010	< 0.0010		20	0.0010
Vinyl Chloride	0.00902	0.00871	3	20	0.0010
Xylene (Total)	< 0.0030	< 0.0030		20	0.0030
<b>Duplicate 0904234-01</b> 610	) Mohawk		Analyzed:	04/14	/2009 By: JDM

Unit: ug/L Analytical Batch: 9041527

Surrogates.
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Dibromofluoromethane	109	<i>82-118</i>
1,2-Dichloroethane-d4	109	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	99	82-114

<sup>\*</sup>See Statement of Data Qualifications Page 21 of 23



#### STATEMENT OF DATA QUALIFICATIONS

#### Semivolatile Organic Compounds by EPA Method 8270C

Qualification: The LCS/LCSD RPD exceeded the control limit. A positive result for this analyte in any sample from

the associated QC batch is considered estimated. Non-detectable results are not qualified.

Analysis: USEPA-8270C

Sample/Analyte: 0904234-01 610 Mohawk 1,4-Dioxane

 0904234-02
 615 Mohawk
 1,4-Dioxane

 0904234-03
 611 Mohawk
 1,4-Dioxane



#### STATEMENT OF DATA QUALIFICATIONS

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

Qualification: The LCS and/or LCSD recovery exceeded the upper control limit. A positive result for this analyte in

any sample from the associated QC batch is considered estimated. Non-detectable results are not

qualified.

Analysis: USEPA-524.2

Sample/Analyte: 0904234-01 610 Mohawk Methylene Chloride

0904234-02615 MohawkMethylene Chloride0904234-03611 MohawkMethylene Chloride

Qualification: The analyte concentration in the sample exceeded the calibrated range of the instrument. The

sample result is considered estimated.

Analysis: USEPA-524.2

Sample/Analyte: 0904129-DUP1 Trichloroethene
Sample/Analyte: 0904234-01 610 Mohawk Trichloroethene

Cart	For L	ab Use Only										A	nalyses R	equested		Page of
Recei	Rack/Tra pt Log N	044 67	Addr	RMT, Inc 3754 Ranchero nn Arbor M1 48109 6734 971 7080 x 715	D 0	TR - TE ent Project No.		2		)	lac.	4 DIOXANE				A NONE pH-7 B HNO, pH-2 C H,SO, pH-2 D 1+1 HC1 pH-2 E NsOH pH-12 F ZEAUNSOH pH-12
Labor	atory Pr	004234	Phon Fax	734 971 7080 X 715	4 0	ntac:/Report	BACON	1			0	ontainer Type (co	rresponds to Co	ntainer Packing List)	1	G MeOH  H Other (note below
Test Group	Matrix Code	Laboratory Sample Number		Sample ID	Cooler II	Manual I	Sample Time	C O M	GRAB	Matrix	1	2 Number	of Containers S	abmitted	Total	Sample Comments
24		10	j	GIO Mohawk	TM 146	2 4/13/07	12:281	t		W	3	2				3 40ml Var
1		02	2	615 Mohawk	-15	41	11.55A			W	3	2				it
1		03	3	611 Wohawk	44	(1	11:37			W	3	2				**
			4													
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20						
Sampled By (print) TOTA BACON	How Shipped? Hand Carrier	UPS	Comments			
Sampler's Righture	Tracking No.					
RMT, Inc	4/2/0	1:40 pm	2. Relinquished By	Date Time	3. Relinquished By	Date Time
K. I. IIIC	1. Received By Date	Time	2. Received By	Date Time	3. Received For Lab By	Date to Time

# **US EPA ARCHIVE DOCUMENT**



April 17, 2009

RMT, Inc. - Ann Arbor Office Attn: John Bacon 3754 Ranchero Drive Ann Arbor, MI 48108-2771

#### **Project: Tecumseh Products**

Dear John Bacon,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
0904303	04/16/2009	Laboratory Services

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Jennifer L. Rice Project Chemist

Enclosures(s)



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904303

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 607 Mohawk Sampled: 04/15/09 08:58

Lab Sample ID: 0904303-01 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/16/09 09:30

 Unit:
 ug/L
 Prepared:
 04/16/09 By: BJH

 Dilution Factor:
 1
 Analyzed:
 04/16/09 By: DMC

QC Batch: 0904070 Analytical Batch: 9041735

# Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte			Analytical Result	RL	Action Limit
123-91-1	1,4-Dioxane			<3.0	3.0	
Surrogates:		% Recovery	Control Limits			
Nitrobenzene-d5		71	31-123			
2-Fluorobiphenyl		83	25-113			
o-Terphenyl		90	42-125			



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904303

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:607 MohawkSampled:04/15/09 08:58

Lab Sample ID: 0904303-01 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/16/09 09:30

 Unit:
 mg/L
 Prepared:
 04/16/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/16/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041718

# Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	Action Limit
71-43-2	Benzene	<0.0010	0.0010	0.005
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	0.08
75-25-2	Bromoform	<0.0010	0.0010	0.08
74-83-9	Bromomethane	<0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	0.005
108-90-7	Chlorobenzene	<0.0010	0.0010	0.1
75-00-3	Chloroethane	<0.0010	0.0010	
67-66-3	Chloroform	<0.0010	0.0010	0.08
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	<0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	0.08
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	0.6
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	0.075
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	0.005
75-35-4	1,1-Dichloroethene	<0.0010	0.0010	0.007
156-59-2	cis-1,2-Dichloroethene	<0.0010	0.0010	0.07
156-60-5	trans-1,2-Dichloroethene	<0.0010	0.0010	0.1
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	0.005
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	<0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	<0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904303

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:607 MohawkSampled:04/15/09 08:58

Lab Sample ID: 0904303-01 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/16/09 09:30

 Unit:
 mg/L
 Prepared:
 04/16/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/16/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041718

# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Analyte	Analytical Result	RL	Action Limit
100-41-4	Ethylbenzene	<0.0010	0.0010	0.7
75-09-2	Methylene Chloride	< 0.0050	0.0050	0.005
100-42-5	Styrene	< 0.0010	0.0010	0.1
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	0.005
108-88-3	Toluene	< 0.0010	0.0010	1
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	0.07
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	0.2
79-00-5	1,1,2-Trichloroethane	<0.0010	0.0010	0.005
79-01-6	Trichloroethene	< 0.0010	0.0010	0.005
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	<0.0010	0.0010	
75-01-4	Vinyl Chloride	< 0.0010	0.0010	0.002
1330-20-7	Xylene (Total)	< 0.0030	0.0030	10

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	98	82-118
1,2-Dichloroethane-d4	100	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	100	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904303

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 3719 Mill Hwy Sampled: 04/15/09 14:11

Lab Sample ID: 0904303-02 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/16/09 09:30

 Unit:
 ug/L
 Prepared:
 04/16/09 By: BJH

 Dilution Factor:
 1
 Analyzed:
 04/16/09 By: DMC

QC Batch: 0904070 Analytical Batch: 9041735

# Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte			Analytical Result	RL	Action Limit
123-91-1	1,4-Dioxane			<3.0	3.0	
Surrogates:		% Recovery	Control Limits			
Nitrobenzene-d5		76	31-123			
2-Fluorobiphenyl		87	25-113			
o-Terphenyl		89	42-125			



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904303

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 3719 Mill Hwy Sampled: 04/15/09 14:11

Lab Sample ID: 0904303-02 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/16/09 09:30

 Unit:
 mg/L
 Prepared:
 04/16/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/16/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041718

# Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	Action Limit
71-43-2	Benzene	<0.0010	0.0010	0.005
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	0.08
75-25-2	Bromoform	<0.0010	0.0010	0.08
74-83-9	Bromomethane	<0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	0.005
108-90-7	Chlorobenzene	<0.0010	0.0010	0.1
75-00-3	Chloroethane	<0.0010	0.0010	
67-66-3	Chloroform	<0.0010	0.0010	0.08
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	<0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	0.08
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	0.6
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	0.075
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	0.005
75-35-4	1,1-Dichloroethene	<0.0010	0.0010	0.007
156-59-2	cis-1,2-Dichloroethene	<0.0010	0.0010	0.07
156-60-5	trans-1,2-Dichloroethene	<0.0010	0.0010	0.1
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	0.005
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	<0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	<0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904303

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:3719 Mill HwySampled:04/15/09 14:11Lab Sample ID:0904303-02Sampled By:J. Bacon

 Matrix:
 Water
 Received:
 04/16/09 09:30

 Unit:
 mg/L
 Prepared:
 04/16/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/16/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041718

# **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Analyte	Analytical Result	RL	Action Limit
100-41-4	Ethylbenzene	<0.0010	0.0010	0.7
75-09-2	Methylene Chloride	< 0.0050	0.0050	0.005
100-42-5	Styrene	< 0.0010	0.0010	0.1
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	0.005
108-88-3	Toluene	< 0.0010	0.0010	1
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	0.07
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	0.2
79-00-5	1,1,2-Trichloroethane	<0.0010	0.0010	0.005
79-01-6	Trichloroethene	< 0.0010	0.0010	0.005
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	<0.0010	0.0010	
75-01-4	Vinyl Chloride	< 0.0010	0.0010	0.002
1330-20-7	Xylene (Total)	< 0.0030	0.0030	10

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	98	<i>82-118</i>
1,2-Dichloroethane-d4	101	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	99	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904303

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:Trip BlankSampled:04/15/09 00:00

Lab Sample ID: 0904303-03 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/16/09 09:30

 Unit:
 mg/L
 Prepared:
 04/16/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/16/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041718

# Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	Action Limit
71-43-2	Benzene	<0.0010	0.0010	0.005
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	0.08
75-25-2	Bromoform	< 0.0010	0.0010	0.08
74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	0.005
108-90-7	Chlorobenzene	< 0.0010	0.0010	0.1
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	0.08
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	< 0.0010	0.0010	0.08
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	0.6
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	0.075
75-71-8	Dichlorodifluoromethane	<0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	<0.0010	0.0010	0.005
75-35-4	1,1-Dichloroethene	<0.0010	0.0010	0.007
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	0.07
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	0.1
78-87-5	1,2-Dichloropropane	<0.0010	0.0010	0.005
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	0.7
75-09-2	Methylene Chloride	< 0.0050	0.0050	0.005



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904303

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:Trip BlankSampled:04/15/09 00:00

Lab Sample ID: 0904303-03 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/16/09 09:30

 Unit:
 mg/L
 Prepared:
 04/16/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/16/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9041718

### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Analyte	Analytical Result	RL	Action Limit
100-42-5	Styrene	<0.0010	0.0010	0.1
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	0.005
108-88-3	Toluene	< 0.0010	0.0010	1
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	0.07
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	0.2
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	0.005
79-01-6	Trichloroethene	< 0.0010	0.0010	0.005
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	<0.0010	0.0010	0.002
1330-20-7	Xylene (Total)	< 0.0030	0.0030	10

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	98	82-118
1,2-Dichloroethane-d4	101	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	100	82-114



### Semivolatile Organic Compounds by EPA Method 8270C

-			-						_
	Sample	Spike		Spike	Control		RPD		
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL	

OC Batch: 0904070	3510C Liquid-Liquid Extraction/USEPA-82	70C

Method Blank				Analyzed:	04/16/2009 By: DMC
Unit: ug/L				Analytical Batch:	9041735
1,4-Dioxane		<3.0			3.0
Surrogates:					
Nitrobenzene-d5			71	31-123	
2-Fluorobiphenyl			79	25-113	
o-Terphenyl			79	42-125	
Laboratory Control Sample				Analyzed:	04/16/2009 By: DMC
Unit: ug/L				Analytical Batch:	9041735
1,4-Dioxane	10.0	4.03	40	21-100	3.0
Surrogates:					
Nitrobenzene-d5			71	31-123	
2-Fluorobiphenyl			86	25-113	
o-Terphenyl			84	42-125	



### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

	Sample	Spike		Spike	Control		RPD		
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL	

QC Batch: 0904129 5030B Aqueous Purge & Trap/USEPA-524.2

Method Blank		Analyzed: 04/	16/2009 By: JDM
Unit: mg/L		Analytical Batch: 904	1718
Benzene	<0.0010		0.0010
Bromobenzene	< 0.0010		0.0010
Bromodichloromethane	< 0.0010		0.0010
Bromoform	< 0.0010		0.0010
Bromomethane	< 0.0010		0.0010
Carbon Tetrachloride	< 0.0010		0.0010
Chlorobenzene	< 0.0010		0.0010
Chloroethane	< 0.0010		0.0010
Chloroform	< 0.0010		0.0010
Chloromethane	<0.0010		0.0010
2-Chlorotoluene	<0.0010		0.0010
4-Chlorotoluene	<0.0010		0.0010
Dibromochloromethane	< 0.0010		0.0010
Dibromomethane	< 0.0010		0.0010
1,2-Dichlorobenzene	< 0.0010		0.0010
1,3-Dichlorobenzene	< 0.0010		0.0010
1,4-Dichlorobenzene	< 0.0010		0.0010
Dichlorodifluoromethane	< 0.0010		0.0010
1,1-Dichloroethane	< 0.0010		0.0010
1,2-Dichloroethane	< 0.0010		0.0010
1,1-Dichloroethene	< 0.0010		0.0010
cis-1,2-Dichloroethene	< 0.0010		0.0010
trans-1,2-Dichloroethene	< 0.0010		0.0010
1,2-Dichloropropane	< 0.0010		0.0010
1,3-Dichloropropane	< 0.0010		0.0010
2,2-Dichloropropane	< 0.0010		0.0010
1,1-Dichloropropene	< 0.0010		0.0010
cis-1,3-Dichloropropene	< 0.0010		0.0010
trans-1,3-Dichloropropene	< 0.0010		0.0010
Ethylbenzene	< 0.0010		0.0010
Methylene Chloride	< 0.0050		0.0050
Styrene	< 0.0010		0.0010
1,1,1,2-Tetrachloroethane	< 0.0010		0.0010
1,1,2,2-Tetrachloroethane	< 0.0010		0.0010
Tetrachloroethene	< 0.0010		0.0010
Toluene	< 0.0010		0.0010

Continued on next page



### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD		
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL	

QC Batch: 0904129 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Method Blank (Continued) Unit: mg/L				Analyzed: Analytical Batch:	04/16/2009 9041718	By: JDM
				Tillarytical Batch.		
1,2,4-Trichlorobenzene		<0.0010			0.00	
1,1,1-Trichloroethane	<0.0010				0.00	
1,1,2-Trichloroethane		<0.0010			0.00	
Trichloroethene		<0.0010			0.00	
Trichlorofluoromethane		<0.0010			0.00	
1,2,3-Trichloropropane		<0.0010			0.00	
Vinyl Chloride		< 0.0010			0.00	
Xylene (Total)		< 0.0030			0.00	30
Method Blank				Analyzed:	04/16/2009	By: JDM
Unit: ug/L				Analytical Batch:	9041718	
Surrogates:						
Dibromofluoromethane			98	82-118		
1,2-Dichloroethane-d4			99	<i>75-128</i>		
Toluene-d8			100	88-108		
4-Bromofluorobenzene			100	82-114		
Laboratory Control Sample				Analyzed:	04/16/2009	By: JDN
Unit: mg/L				Analytical Batch:	9041718	
Benzene	0.0100	0.00999	100	70-130	0.00	10
Bromobenzene	0.0100	0.0102	102	70-130	0.00	10
Bromodichloromethane	0.0100	0.0102	102	70-130	0.00	10
Bromoform	0.0100	0.00984	98	70-130	0.00	10
Bromomethane	0.0100	0.00867	87	70-130	0.00	10
Carbon Tetrachloride	0.0100	0.00987	99	70-130	0.00	10
Chlorobenzene	0.0100	0.00994	99	70-130	0.00	10
Chloroethane	0.0100	0.00948	95	70-130	0.00	10
Chloroform	0.0100	0.00999	100	70-130	0.00	10
Chloromethane	0.0100	0.0101	101	70-130	0.00	10
2-Chlorotoluene	0.0100	0.0102	102	70-130	0.00	10
4-Chlorotoluene	0.0100	0.0104	104	70-130	0.00	10
Dibromochloromethane	0.0100	0.00960	96	70-130	0.00	10
Dibromomethane	0.0100	0.0102	102	70-130	0.00	10
1,2-Dichlorobenzene	0.0100	0.0104	104	70-130	0.00	10
1,3-Dichlorobenzene	0.0100	0.0104	104	70-130	0.00	10
1,4-Dichlorobenzene	0.0100	0.0101	101	70-130	0.00	10
	0.0100 <b>0.0101</b> 101 70-130 0.0100 <b>0.00970</b> 97 70-130					

Continued on next page

Page 12 of 14



### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0904129 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Laboratory Control Sample (Continued)				Analyzed:	04/16/2009 By: JDM
Unit: mg/L				Analytical Batch:	9041718
1,1-Dichloroethane	0.0100	0.00965	97	70-130	0.0010
1,2-Dichloroethane	0.0100	0.0102	102	70-130	0.0010
1,1-Dichloroethene	0.0100	0.00984	98	70-130	0.0010
cis-1,2-Dichloroethene	0.0100	0.00993	99	70-130	0.0010
trans-1,2-Dichloroethene	0.0100	0.00967	97	70-130	0.0010
1,2-Dichloropropane	0.0100	0.0103	103	70-130	0.0010
1,3-Dichloropropane	0.0100	0.0103	103	70-130	0.0010
2,2-Dichloropropane	0.0100	0.00939	94	70-130	0.0010
1,1-Dichloropropene	0.0100	0.00996	100	70-130	0.0010
cis-1,3-Dichloropropene	0.0100	0.0103	103	70-130	0.0010
trans-1,3-Dichloropropene	0.0100	0.0101	101	70-130	0.0010
Ethylbenzene	0.0100	0.0101	101	70-130	0.0010
Methylene Chloride	0.0100	0.00952	95	70-130	0.0050
Styrene	0.0100	0.0106	106	70-130	0.0010
1,1,1,2-Tetrachloroethane	0.0100	0.0103	103	70-130	0.0010
1,1,2,2-Tetrachloroethane	0.0100	0.0105	105	70-130	0.0010
Tetrachloroethene	0.0100	0.0100	100	70-130	0.0010
Toluene	0.0100	0.00994	99	70-130	0.0010
1,2,4-Trichlorobenzene	0.0100	0.0105	105	70-130	0.0010
1,1,1-Trichloroethane	0.0100	0.00965	97	70-130	0.0010
1,1,2-Trichloroethane	0.0100	0.0103	103	70-130	0.0010
Trichloroethene	0.0100	0.00995	100	70-130	0.0010
Trichlorofluoromethane	0.0100	0.00996	100	70-130	0.0010
1,2,3-Trichloropropane	0.0100	0.0108	108	70-130	0.0010
Vinyl Chloride	0.0100	0.0100	100	70-130	0.0010
Xylene (Total)	0.0300	0.0306	102	70-130	0.0030
Laboratory Control Sample				Analyzed:	04/16/2009 By: JDN
Unit: ug/L				Analytical Batch:	9041718
Surrogates:					
Dibromofluoromethane			101	82-118	
1,2-Dichloroethane-d4			101	<i>75-128</i>	
Toluene-d8			101	88-108	
4-Bromofluorobenzene			99	82-114	



### STATEMENT OF DATA QUALIFICATIONS

All analyses have been validated and comply with our Quality Control Program. No Qualifications required.



### TRIMATRIX CABORATORIES Bureau Veritas North America, Inc.

### REQUEST FOR LABORATORY ANALYTICAL SERVICES

IMPORTANT	Page of
Date Results Requested: 4/17/09 Rush Charges Authorized? X Yes No	For Bureau Veritas Use Only Bureau Veritas Lab Project No
Fax or E-mail Results E-mail address: phn. been a mine.com	

2 Name JOHN BALOW	Cli	ent Job N	0. 80	20.05		Purc	chase C	order N	Q.			_			_		
Company RMT INC Mailing Address 3754 Rancher City, State, Zip Ann Arbor, I	De	pt.	-		ш	Nan	ne		-				>	_		_	
Mailing Address 3754 Rancher	o Dr.				SEND	Con	npany		_						70	ept. Loss	Ctrl.
City, State, Zip Ann Arbor, I	M: 48	801			S ≥ F	Add	ress										
Telephone No. +34 971 7080	FAX No.	734 6	74190	22	=	City	State,	Zip	_							-	
Special instructions and/or specific regulatory r	equirements:	Soils:	Wate	rs:	10		(Entre	on tVt is	- Du				UESTE			on metalant th	
(method, limit of detection, etc.)	rturn	Which	Non.	rinking Water	i i		(Enter	7	1.7	7	to indic	ate requ	ust. Ente	raPar	reservat	ive added.")	-
As specified in quote-241 Also, please send more Costadres (We are out) Th	Chair-of x John	state are the from?	se G	roundwater astewater	iber of Conta		100	500	Totard	/	/	/	/	//	//	//	
CLIENT SAMPLE IDENTIFICATION		TIME	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number	13	/	y	/	/	/	/	/	/	//		LAB
607 MOHANIC	4/15/09	8:58A	M	0	5	1	/										
6719 MILL HWY.	4/15/09	2:11		0	5	/	V										
TRIP BLANK			W	-0	1										-		_
										7,		m					
								_(	/	1	1						
Collected by: JUHN	ACON 9	R		(print)	100000000	32013-450	gnature	× /	100	W	0	1					
CHAIN Relinquished by:	100	1	Date/Time	4/15/09 16:	Receiv	ed by:	6	2						Date	e/Time		
OF CUSTODY Relinquished by:			Date/Time		Receiv		( Sur	ton	ugh	15				Date	e/Time <sub>5</sub>	1/14/09	0930
Method of Shipment:					Receiv	ed at L	ab by:	Production	7					Date	e/Time	LIMIT OF	
Authorized by: (Client Signature MUST Accompany Request)		Date			Sample	e Cond	lition U	pon Re	ceipt:		Accept	able	0	ther (exp	olain)		
Please return completed form and samples to	one of the Bu	ureau Ve	ritas Nort	th America: In	c. labs	listed	helow	P 6.	1120	1100	A 1.	10 10	· Promote				

Please return completed form and samples to one of the Bureau Veritas North America, Inc. labs listed below: 21-7 485 white

22345 Roethel Drive Novi, MI 48375 (800) 806-5887 (248) 344-1770 FAX (248) 344-2655 Atlanta Lab 3380 Chastain Meadows Parkway, Suite 300 Kennesaw, GA 30144 (800) 252-9919 (770) 499-7500

FAX (770) 499-7511

0904303

COC-04582 TM1379

DISTRIBUTION

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Pink = Client Copy

# **US EPA ARCHIVE DOCUMENT**



April 21, 2009

RMT, Inc. - Ann Arbor Office Attn: John Bacon 3754 Ranchero Drive Ann Arbor, MI 48108-2771

### **Project: Tecumseh Products**

Dear John Bacon,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
0904369	04/20/2009	Laboratory Services

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Jennifer L. Rice Project Chemist

Enclosures(s)



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904369

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:610 Mohawk St.Sampled:04/17/09 07:49

Lab Sample ID: 0904369-01 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/20/09 09:00

 Unit:
 mg/L
 Prepared:
 04/20/09 By: JDM

 Dilution Factor:
 20
 Analyzed:
 04/20/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9042042

### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	Action Limit
71-43-2	Benzene	< 0.020	0.020	0.005
108-86-1	Bromobenzene	<0.020	0.020	
75-27-4	Bromodichloromethane	< 0.020	0.020	0.08
75-25-2	Bromoform	< 0.020	0.020	0.08
74-83-9	Bromomethane	<0.020	0.020	
56-23-5	Carbon Tetrachloride	< 0.020	0.020	0.005
108-90-7	Chlorobenzene	< 0.020	0.020	0.1
75-00-3	Chloroethane	< 0.020	0.020	
67-66-3	Chloroform	<0.020	0.020	0.08
74-87-3	Chloromethane	< 0.020	0.020	
95-49-8	2-Chlorotoluene	< 0.020	0.020	
106-43-4	4-Chlorotoluene	< 0.020	0.020	
124-48-1	Dibromochloromethane	< 0.020	0.020	0.08
74-95-3	Dibromomethane	< 0.020	0.020	
95-50-1	1,2-Dichlorobenzene	<0.020	0.020	0.6
541-73-1	1,3-Dichlorobenzene	<0.020	0.020	
106-46-7	1,4-Dichlorobenzene	<0.020	0.020	0.075
*75-71-8	Dichlorodifluoromethane	< 0.020	0.020	
75-34-3	1,1-Dichloroethane	<0.020	0.020	
107-06-2	1,2-Dichloroethane	< 0.020	0.020	0.005
75-35-4	1,1-Dichloroethene	<0.020	0.020	0.007
156-59-2	cis-1,2-Dichloroethene	<0.020	0.020	0.07
156-60-5	trans-1,2-Dichloroethene	<0.020	0.020	0.1
78-87-5	1,2-Dichloropropane	<0.020	0.020	0.005
142-28-9	1,3-Dichloropropane	<0.020	0.020	
594-20-7	2,2-Dichloropropane	< 0.020	0.020	
563-58-6	1,1-Dichloropropene	<0.020	0.020	
10061-01-5	cis-1,3-Dichloropropene	<0.020	0.020	
10061-02-6	trans-1,3-Dichloropropene	< 0.020	0.020	
100-41-4	Ethylbenzene	< 0.020	0.020	0.7
75-09-2	Methylene Chloride	<0.10	0.10	0.005

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904369

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 610 Mohawk St. Sampled: 04/17/09 07:49

Lab Sample ID: 0904369-01 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/20/09 09:00

 Unit:
 mg/L
 Prepared:
 04/20/09 By: JDM

 Dilution Factor:
 20
 Analyzed:
 04/20/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9042042

### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Analyte	Analytical Result	RL	Action Limit
100-42-5	Styrene	<0.020	0.020	0.1
630-20-6	1,1,1,2-Tetrachloroethane	< 0.020	0.020	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.020	0.020	
127-18-4	Tetrachloroethene	< 0.020	0.020	0.005
108-88-3	Toluene	< 0.020	0.020	1
120-82-1	1,2,4-Trichlorobenzene	< 0.020	0.020	0.07
71-55-6	1,1,1-Trichloroethane	0.060	0.020	0.2
79-00-5	1,1,2-Trichloroethane	< 0.020	0.020	0.005
79-01-6	Trichloroethene	1.3	0.020	0.005
75-69-4	Trichlorofluoromethane	< 0.020	0.020	
96-18-4	1,2,3-Trichloropropane	< 0.020	0.020	
75-01-4	Vinyl Chloride	< 0.020	0.020	0.002
1330-20-7	Xylene (Total)	< 0.060	0.060	10

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	103	82-118
1,2-Dichloroethane-d4	109	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	100	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904369

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:610 Mohawk St.Sampled:04/17/09 07:49

Lab Sample ID: 0904369-01RE1 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/20/09 09:00

 Unit:
 mg/L
 Prepared:
 04/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/20/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9042042

### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	Action Limit
71-43-2	Benzene	<0.0010	0.0010	0.005
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	0.08
75-25-2	Bromoform	< 0.0010	0.0010	0.08
74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	0.005
108-90-7	Chlorobenzene	< 0.0010	0.0010	0.1
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	0.0014	0.0010	0.08
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	< 0.0010	0.0010	0.08
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	0.6
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	0.075
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	0.0062	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	0.005
75-35-4	1,1-Dichloroethene	0.0023	0.0010	0.007
156-59-2	cis-1,2-Dichloroethene	0.015	0.0010	0.07
156-60-5	trans-1,2-Dichloroethene	0.0020	0.0010	0.1
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	0.005
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	< 0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	<0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	< 0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	0.7
75-09-2	Methylene Chloride	< 0.0050	0.0050	0.005

Continued on next page



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904369

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 610 Mohawk St. Sampled: 04/17/09 07:49

Lab Sample ID: 0904369-01RE1 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/20/09 09:00

 Unit:
 mg/L
 Prepared:
 04/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 04/20/09 By: JDM

QC Batch: 0904129 Analytical Batch: 9042042

### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

OAC Name by an	Book day	Analytical	ъ.	Action
CAS Number	Analyte	Result	RL	Limit
100-42-5	Styrene	< 0.0010	0.0010	0.1
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	0.005
108-88-3	Toluene	< 0.0010	0.0010	1
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	0.07
71-55-6	1,1,1-Trichloroethane	0.066	0.0010	0.2
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	0.005
*79-01-6	Trichloroethene	1.3	0.0010	0.005
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	0.0095	0.0010	0.002
1330-20-7	Xylene (Total)	< 0.0030	0.0030	10

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	108	82-118
1,2-Dichloroethane-d4	114	<i>75-128</i>
Toluene-d8	97	88-108
4-Bromofluorobenzene	103	82-114

<sup>\*</sup>See Statement of Data Qualifications



### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0904129 5030B Aqueous Purge & Trap/USEPA-524.2

Method Blank		Analyzed: 04/20/2009 By: .	JDM
Unit: mg/L		Analytical Batch: 9042042	
Benzene	< 0.0010	0.0010	
Bromobenzene	< 0.0010	0.0010	
Bromodichloromethane	< 0.0010	0.0010	
Bromoform	< 0.0010	0.0010	
Bromomethane	< 0.0010	0.0010	
Carbon Tetrachloride	< 0.0010	0.0010	
Chlorobenzene	< 0.0010	0.0010	
Chloroethane	< 0.0010	0.0010	
Chloroform	< 0.0010	0.0010	
Chloromethane	< 0.0010	0.0010	
2-Chlorotoluene	< 0.0010	0.0010	
4-Chlorotoluene	< 0.0010	0.0010	
Dibromochloromethane	< 0.0010	0.0010	
Dibromomethane	< 0.0010	0.0010	
1,2-Dichlorobenzene	< 0.0010	0.0010	
1,3-Dichlorobenzene	< 0.0010	0.0010	
1,4-Dichlorobenzene	< 0.0010	0.0010	
Dichlorodifluoromethane	< 0.0010	0.0010	
1,1-Dichloroethane	< 0.0010	0.0010	
1,2-Dichloroethane	< 0.0010	0.0010	
1,1-Dichloroethene	< 0.0010	0.0010	
cis-1,2-Dichloroethene	< 0.0010	0.0010	
trans-1,2-Dichloroethene	< 0.0010	0.0010	
1,2-Dichloropropane	< 0.0010	0.0010	
1,3-Dichloropropane	< 0.0010	0.0010	
2,2-Dichloropropane	< 0.0010	0.0010	
1,1-Dichloropropene	< 0.0010	0.0010	
cis-1,3-Dichloropropene	< 0.0010	0.0010	
trans-1,3-Dichloropropene	< 0.0010	0.0010	
Ethylbenzene	< 0.0010	0.0010	
Methylene Chloride	< 0.0050	0.0050	
Styrene	<0.0010	0.0010	
1,1,1,2-Tetrachloroethane	<0.0010	0.0010	
1,1,2,2-Tetrachloroethane	<0.0010	0.0010	
Tetrachloroethene	< 0.0010	0.0010	
Toluene	<0.0010	0.0010	

Continued on next page



### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0904129 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Method Blank (Continued) Unit: mg/L				Analyzed: Analytical Batch:	04/20/2009 9042042	By: JDM
1,2,4-Trichlorobenzene		<0.0010		,	0.00	10
1,1,1-Trichloroethane		< 0.0010			0.00	
1,1,2-Trichloroethane		<0.0010			0.00	
Trichloroethene		< 0.0010			0.00	
Trichlorofluoromethane		<0.0010			0.00	
1,2,3-Trichloropropane		<0.0010			0.00	
Vinyl Chloride		< 0.0010			0.00	
Xylene (Total)		< 0.0030			0.00	
		\0.0000				
Method Blank				Analyzed:	04/20/2009	By: JDM
Unit: ug/L				Analytical Batch:	9042042	
Surrogates:						
Dibromofluoromethane			102	82-118		
1,2-Dichloroethane-d4			108	<i>75-128</i>		
Toluene-d8			99	88-108		
4-Bromofluorobenzene			100	82-114		
Laboratory Control Sample				Analyzed:	04/20/2009	By: JDM
Unit: mg/L				Analytical Batch:	9042042	
Benzene	0.0100	0.0104	104	70-130	0.00	10
Bromobenzene	0.0100	0.0108	108	70-130	0.00	10
Bromodichloromethane	0.0100	0.0118	118	70-130	0.00	10
Bromoform	0.0100	0.0102	102	70-130	0.00	10
Bromomethane	0.0100	0.0126	126	70-130	0.00	10
Carbon Tetrachloride	0.0100	0.0116	116	70-130	0.00	10
Chlorobenzene	0.0100	0.0103	103	70-130	0.00	10
Chloroethane	0.0100	0.0106	106	70-130	0.00	10
Chloroform	0.0100	0.0112	112	70-130	0.00	10
Chloromethane	0.0100	0.00845	84	70-130	0.00	10
2-Chlorotoluene	0.0100	0.0102	102	70-130	0.00	10
4-Chlorotoluene	0.0100	0.0108	108	70-130	0.00	10
Dibromochloromethane	0.0100	0.0108	108	70-130	0.00	10
Dibromomethane	0.0100	0.0109	109	70-130	0.00	10
1,2-Dichlorobenzene	0.0100	0.00998	100	70-130	0.00	10
1,3-Dichlorobenzene	0.0100	0.0100	100	70-130	0.00	10
1,4-Dichlorobenzene	0.0100	0.0101	101	70-130	0.00	10
.,						

Continued on next page

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### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD		
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL	

QC Batch: 0904129 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Laboratory Control Sample (Continued)				Analyzed:	04/20/2009 By: JDM		
Unit: mg/L				Analytical Batch:	9042042		
1,1-Dichloroethane	0.0100	0.0115	115	70-130	0.0010		
1,2-Dichloroethane	0.0100	0.0119	119	70-130	0.0010		
1,1-Dichloroethene	0.0100	0.0101	101	70-130	0.0010		
cis-1,2-Dichloroethene	0.0100	0.00998	100	70-130	0.0010		
trans-1,2-Dichloroethene	0.0100	0.0106	106	70-130	0.0010		
1,2-Dichloropropane	0.0100	0.0108	108	70-130	0.0010		
1,3-Dichloropropane	0.0100	0.0106	106	70-130	0.0010		
2,2-Dichloropropane	0.0100	0.0106	106	70-130	0.0010		
1,1-Dichloropropene	0.0100	0.0106	106	70-130	0.0010		
cis-1,3-Dichloropropene	0.0100	0.0105	105	70-130	0.0010		
trans-1,3-Dichloropropene	0.0100	0.00998	100	70-130	0.0010		
Ethylbenzene	0.0100	0.0104	104	70-130	0.0010		
Methylene Chloride	0.0100	0.0124	124	70-130	0.0050		
Styrene	0.0100	0.0105	105	70-130	0.0010		
1,1,1,2-Tetrachloroethane	0.0100	0.0110	110	70-130	0.0010		
1,1,2,2-Tetrachloroethane	0.0100	0.0107	107	70-130	0.0010		
Tetrachloroethene	0.0100	0.0101	101	70-130	0.0010		
Toluene	0.0100	0.0103	103	70-130	0.0010		
1,2,4-Trichlorobenzene	0.0100	0.00758	76	70-130	0.0010		
1,1,1-Trichloroethane	0.0100	0.0106	106	70-130	0.0010		
1,1,2-Trichloroethane	0.0100	0.0108	108	70-130	0.0010		
Trichloroethene	0.0100	0.00987	99	70-130	0.0010		
Trichlorofluoromethane	0.0100	0.0114	114	70-130	0.0010		
1,2,3-Trichloropropane	0.0100	0.0109	109	70-130	0.0010		
Vinyl Chloride	0.0100	0.00933	93	70-130	0.0010		
Xylene (Total)	0.0300	0.0309	103	70-130	0.0030		
Laboratory Control Sample				Analyzed:	04/20/2009 By: JDN		
Unit: ug/L				Analytical Batch:	9042042		
Surrogates:							
Dibromofluoromethane			105	82-118			
1,2-Dichloroethane-d4			108	<i>75-128</i>			
Toluene-d8			101	88-108			
4-Bromofluorobenzene			103	82-114			



### STATEMENT OF DATA QUALIFICATIONS

### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

Qualification: The LCS and/or LCSD recovery exceeded the upper control limit. A positive result for this analyte in

any sample from the associated QC batch is considered estimated. Non-detectable results are not

qualified.

Analysis: USEPA-524.2

Sample/Analyte: 0904369-01 610 Mohawk St. Dichlorodifluoromethane

Qualification: The analyte concentration in the sample exceeded the calibrated range of the instrument. The

sample result is considered estimated.

Analysis: USEPA-524.2

Sample/Analyte: 0904369-01RE1 610 Mohawk St. Trichloroethene

E.0904369

VOC RACK #104/06 000# 04/005



Bureau Veritas North America, Inc.

REQUEST FOR LABORATORY **ANALYTICAL SERVICES** 

IMPORTANT	Page of
Pate Results Requested: 4/20/09 Rush Charges Authorized? Yes No Fax or E-mail Results I-mail address: John & a com@cmfine.	For Bureau Veritas Use Only Bureau Veritas Lab Project No.

Name AMT, Inc. T. Bar Company RMT Inc. Mailing Address 3754 Range City, State, Zip Ann Arbo	com	Client Job N	0. 80	70.02		Purc	hase C	rder N	lo.								
CO Company RMT Inc		Dept. —				Nam	ne:										
Mailing Address 3754 Rave	bero.				SEND	Com	pany									Dept. Loss	Ctrl.
City, State, Zip Ann Ar be	or Wi	4810	3		BS ≥	Add	ress										
Telephone No. 734 971 708	SO FAX N	o. 734	971 9	1022	=	City,	State,	Zip									
Special instructions and/or specific regulator	ry requirement	s: Soils:	Wate	ers:	90		(Enter	on 'V'	in the VA	) A	NALYS	IS RE	QUEST	ED D	if Dronn	P bobba autor	
(method, limit of detection, etc.)		Which	120	rinking Water	100		(Enter	all A	1.00	A DOLOM	to indic	ate req	Dest. Ell	ior a P	it Presen	vative added.")	7
24 hour turn for [	drinking	state are the	10,77	roundwater	Contai			16	19	/	1	/	/	/	/	//	/
24 hour turn for I Waster (524.5)		from?		/astewater	8		1	24.6	/	/	/	/	/	/	/ /	//	/
Waster (324.3)		ii diiii		rastewater	ar of		/1	54/	/	1	/	/	/	/	/	//	
* Explanation of Preservative HC1					Number	1	Jan	1	/	/	/	/	/	/	/	/	- 1
CLIENT SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MEDIA	AIR VOLUME (specify units)	2	1	Char	/	1	/	1	/	/	/	1	FOR	LAB
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		MAT A	W			X											
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CUSTODY Relinquished by:			Date/Time		180 AVP	ved by:					1	10		- 1	Date/Tin	-	-
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4/1/1			4/17	109	Sampl	e Cond	ition Up	oon Re	ceipt:		Accept	able		Other (e	explain)	1	
Authorized by: Note that Must Accompany Reg	uesti .	Date	4/14/	-													
	77																

Please return completed form and samples to one of the Bureau Veritas North America, Inc. labs listed below:

**Detroit Lab** 22345 Roethel Drive Novi, MI 48375 (800) 806-5887 (248) 344-1770 FAX (248) 344-2655

Atlanta Lab 3380 Chastain Meadows Parkway, Suite 300 Kennesaw, GA 30144 (800) 252-9919 (770) 499-7500 FAX (770) 499-7511

DISTRIBUTION:

White = Bureau Veritas Laboratory Yellow = Buranu Veritas Accounting

Pink = Client Copy

# **US EPA ARCHIVE DOCUMENT**



May 01, 2009

RMT, Inc. - Ann Arbor Office Attn: John Bacon 3754 Ranchero Drive Ann Arbor, MI 48108-2771

### **Project: Tecumseh Products**

Dear John Bacon,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
0904590	04/30/2009	Laboratory Services

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Jennifer L. Rice Project Chemist

Enclosures(s)



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904590

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 307 Kilbuck St. Sampled: 04/29/09 10:30

Lab Sample ID: 0904590-01 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/30/09 07:40

 Unit:
 mg/L
 Prepared:
 04/30/09 By: DLV

 Dilution Factor:
 1
 Analyzed:
 04/30/09 By: DLV

QC Batch: 0904609 Analytical Batch: 9043027

### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	Action Limit
71-43-2	Benzene	<0.0010	0.0010	0.005
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	0.08
75-25-2	Bromoform	< 0.0010	0.0010	0.08
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	0.005
108-90-7	Chlorobenzene	< 0.0010	0.0010	0.1
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	0.08
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	< 0.0010	0.0010	0.08
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	0.6
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	0.075
75-71-8	Dichlorodifluoromethane	<0.0010	0.0010	
75-34-3	1,1-Dichloroethane	< 0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	0.005
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	0.007
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	0.07
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	0.1
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	0.005
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	< 0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	< 0.0010	0.0010	
100-41-4	Ethylbenzene	< 0.0010	0.0010	0.7
75-09-2	Methylene Chloride	< 0.0050	0.0050	0.005

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904590

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: 307 Kilbuck St. Sampled: 04/29/09 10:30

Lab Sample ID: 0904590-01 Sampled By: J. Bacon

 Matrix:
 Water
 Received:
 04/30/09 07:40

 Unit:
 mg/L
 Prepared:
 04/30/09 By: DLV

 Dilution Factor:
 1
 Analyzed:
 04/30/09 By: DLV

QC Batch: 0904609 Analytical Batch: 9043027

### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Analyte	Analytical Result	RL	Action Limit
	riidiyto		ILL .	
100-42-5	Styrene	< 0.0010	0.0010	0.1
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	0.005
108-88-3	Toluene	< 0.0010	0.0010	1
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	0.07
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	0.2
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	0.005
79-01-6	Trichloroethene	< 0.0010	0.0010	0.005
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	<0.0010	0.0010	0.002
1330-20-7	Xylene (Total)	< 0.0030	0.0030	10

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	94	82-118
1,2-Dichloroethane-d4	98	<i>75-128</i>
Toluene-d8	93	88-108
4-Bromofluorobenzene	96	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904590

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: **Trip Blank** Sampled: 04/29/09 00:00

Lab Sample ID: 0904590-02 Sampled By: TML

 Matrix:
 Water
 Received:
 04/30/09 07:40

 Unit:
 mg/L
 Prepared:
 04/30/09 By: DLV

 Dilution Factor:
 1
 Analyzed:
 04/30/09 By: DLV

QC Batch: 0904609 Analytical Batch: 9043027

### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	Action Limit
71-43-2	Benzene	<0.0010	0.0010	0.005
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	0.08
75-25-2	Bromoform	< 0.0010	0.0010	0.08
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	<0.0010	0.0010	0.005
108-90-7	Chlorobenzene	< 0.0010	0.0010	0.1
75-00-3	Chloroethane	<0.0010	0.0010	
67-66-3	Chloroform	<0.0010	0.0010	0.08
74-87-3	Chloromethane	<0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	< 0.0010	0.0010	0.08
74-95-3	Dibromomethane	<0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	<0.0010	0.0010	0.6
541-73-1	1,3-Dichlorobenzene	<0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	0.075
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	< 0.0010	0.0010	
107-06-2	1,2-Dichloroethane	<0.0010	0.0010	0.005
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	0.007
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	0.07
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	0.1
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	0.005
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	< 0.0010	0.0010	
563-58-6	1,1-Dichloropropene	<0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	<0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	0.7
75-09-2	Methylene Chloride	< 0.0050	0.0050	0.005

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0904590

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: **Trip Blank** Sampled: 04/29/09 00:00

Lab Sample ID: 0904590-02 Sampled By: TML

 Matrix:
 Water
 Received:
 04/30/09 07:40

 Unit:
 mg/L
 Prepared:
 04/30/09 By: DLV

 Dilution Factor:
 1
 Analyzed:
 04/30/09 By: DLV

QC Batch: 0904609 Analytical Batch: 9043027

### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Analyte	Analytical Result	RL	Action Limit
100-42-5	Styrene	<0.0010	0.0010	0.1
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	0.005
108-88-3	Toluene	< 0.0010	0.0010	1
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	0.07
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	0.2
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	0.005
79-01-6	Trichloroethene	< 0.0010	0.0010	0.005
75-69-4	Trichlorofluoromethane	<0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	<0.0010	0.0010	0.002
1330-20-7	Xylene (Total)	< 0.0030	0.0030	10

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	95	82-118
1,2-Dichloroethane-d4	98	<i>75-128</i>
Toluene-d8	93	88-108
4-Bromofluorobenzene	97	82-114



### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

	Sample	Spike		Spike	Control		RPD		
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL	

QC Batch: 0904609 524.2 Purge & Trap/USEPA-524.2

Method Blank		Analyzed: 04/30/2009 By: DI
Unit: mg/L		Analytical Batch: 9043027
Benzene	<0.0010	0.0010
Bromobenzene	< 0.0010	0.0010
Bromodichloromethane	< 0.0010	0.0010
Bromoform	< 0.0010	0.0010
Bromomethane	< 0.0010	0.0010
Carbon Tetrachloride	< 0.0010	0.0010
Chlorobenzene	< 0.0010	0.0010
Chloroethane	< 0.0010	0.0010
Chloroform	< 0.0010	0.0010
Chloromethane	< 0.0010	0.0010
2-Chlorotoluene	< 0.0010	0.0010
4-Chlorotoluene	< 0.0010	0.0010
Dibromochloromethane	< 0.0010	0.0010
Dibromomethane	< 0.0010	0.0010
1,2-Dichlorobenzene	< 0.0010	0.0010
1,3-Dichlorobenzene	< 0.0010	0.0010
1,4-Dichlorobenzene	< 0.0010	0.0010
Dichlorodifluoromethane	< 0.0010	0.0010
1,1-Dichloroethane	< 0.0010	0.0010
1,2-Dichloroethane	< 0.0010	0.0010
1,1-Dichloroethene	< 0.0010	0.0010
cis-1,2-Dichloroethene	< 0.0010	0.0010
trans-1,2-Dichloroethene	< 0.0010	0.0010
1,2-Dichloropropane	< 0.0010	0.0010
1,3-Dichloropropane	< 0.0010	0.0010
2,2-Dichloropropane	< 0.0010	0.0010
1,1-Dichloropropene	< 0.0010	0.0010
cis-1,3-Dichloropropene	< 0.0010	0.0010
trans-1,3-Dichloropropene	< 0.0010	0.0010
Ethylbenzene	< 0.0010	0.0010
Methylene Chloride	< 0.0050	0.0050
Styrene	< 0.0010	0.0010
1,1,1,2-Tetrachloroethane	< 0.0010	0.0010
1,1,2,2-Tetrachloroethane	< 0.0010	0.0010
Tetrachloroethene	< 0.0010	0.0010
Toluene	< 0.0010	0.0010

Continued on next page



### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0904609 (Continued) 524.2 Purge & Trap/USEPA-524.2

Method Blank (Continued)				Analyzed: Analytical Batch:	04/30/2009 9043027	By: DLV
Unit: mg/L				Alialytical batch.	9043027	
1,2,4-Trichlorobenzene		< 0.0010			0.00	10
1,1,1-Trichloroethane		< 0.0010			0.00	10
1,1,2-Trichloroethane		< 0.0010			0.00	10
Trichloroethene		< 0.0010			0.00	10
Trichlorofluoromethane		< 0.0010			0.00	10
1,2,3-Trichloropropane		< 0.0010			0.00	
Vinyl Chloride		< 0.0010			0.00	10
Xylene (Total)		< 0.0030			0.003	30
Method Blank				Analyzed:	04/30/2009	By: DLV
Unit: ug/L				Analytical Batch:	9043027	
Surrogates:						
Dibromofluoromethane			95	82-118		
1,2-Dichloroethane-d4			99	<i>75-128</i>		
Toluene-d8			94	88-108		
4-Bromofluorobenzene			99	82-114		
Laboratory Control Sample				Analyzed:	04/30/2009	By: DL\
Unit: mg/L				Analytical Batch:	9043027	
Benzene	0.0100	0.00857	86	70-130	0.00	10
Bromobenzene	0.0100	0.00999	100	70-130	0.00	10
Bromodichloromethane	0.0100	0.00835	84	70-130	0.00	10
Bromoform	0.0100	0.0102	102	70-130	0.00	10
Bromomethane	0.0100	0.00599	60	70-130	0.00	10
Carbon Tetrachloride	0.0100	0.00758	76	70-130	0.00	10
Chlorobenzene	0.0100	0.00993	99	70-130	0.00	10
Chloroethane	0.0100	0.00779	78	70-130	0.00	10
Chloroform	0.0100	0.00868	87	70-130	0.00	10
Chloromethane	0.0100	0.00868	87	70-130	0.00	10
2-Chlorotoluene	0.0100	0.0104	104	70-130	0.00	10
4-Chlorotoluene	0.0100	0.0108	108	70-130	0.00	10
Dibromochloromethane	0.0100	0.00974	97	70-130	0.00	10
Dibromomethane	0.0100	0.00947	95	70-130	0.0010	
1,2-Dichlorobenzene	0.0100	0.0108	108	70-130	0.0010	
1,3-Dichlorobenzene	0.0100	0.0109	109	70-130	0.00	10
1,4-Dichlorobenzene	0.0100	0.0106	106	70-130	0.00	10

Continued on next page

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### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0904609 (Continued) 524.2 Purge & Trap/USEPA-524.2

Laboratory Control Sample (Continued)				Analyzed:	04/30/2009 By: DLV	
Unit: mg/L				Analytical Batch:	9043027	
1,1-Dichloroethane	0.0100	0.00873	87	70-130	0.0010	
1,2-Dichloroethane	0.0100	0.00919	92	70-130	0.0010	
1,1-Dichloroethene	0.0100	0.00862	86	70-130	0.0010	
cis-1,2-Dichloroethene	0.0100	0.00891	89	70-130	0.0010	
trans-1,2-Dichloroethene	0.0100	0.00895	90	70-130	0.0010	
1,2-Dichloropropane	0.0100	0.00877	88	70-130	0.0010	
1,3-Dichloropropane	0.0100	0.0109	109	70-130	0.0010	
2,2-Dichloropropane	0.0100	0.00811	81	70-130	0.0010	
1,1-Dichloropropene	0.0100	0.00834	83	70-130	0.0010	
cis-1,3-Dichloropropene	0.0100	0.00820	82	70-130	0.0010	
trans-1,3-Dichloropropene	0.0100	0.00816	82	70-130	0.0010	
Ethylbenzene	0.0100	0.0101	101	70-130	0.0010	
Methylene Chloride	0.0100	0.00871	87	70-130	0.0050	
Styrene	0.0100	0.00992	99	70-130	0.0010	
1,1,1,2-Tetrachloroethane	0.0100	0.00976	98	70-130	0.0010	
1,1,2,2-Tetrachloroethane	0.0100	0.0117	117	70-130	0.0010	
Tetrachloroethene	0.0100	0.00907	91	70-130	0.0010	
Toluene	0.0100	0.00868	87	70-130	0.0010	
1,2,4-Trichlorobenzene	0.0100	0.0115	115	70-130	0.0010	
1,1,1-Trichloroethane	0.0100	0.00813	81	70-130	0.0010	
1,1,2-Trichloroethane	0.0100	0.00972	97	70-130	0.0010	
Trichloroethene	0.0100	0.00862	86	70-130	0.0010	
Trichlorofluoromethane	0.0100	0.00913	91	70-130	0.0010	
1,2,3-Trichloropropane	0.0100	0.0116	116	70-130	0.0010	
Vinyl Chloride	0.0100	0.00869	87	70-130	0.0010	
Xylene (Total)	0.0300	0.0304	101	70-130	0.0030	
Laboratory Control Sample				Analyzed:	04/30/2009 By: DL\	
Unit: ug/L				Analytical Batch:	9043027	
Surrogates:						
Dibromofluoromethane			98	82-118		
1,2-Dichloroethane-d4			106	<i>75-128</i>		
Toluene-d8			95	88-108		
4-Bromofluorobenzene			107	82-114		



### STATEMENT OF DATA QUALIFICATIONS

### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

Qualification: The LCS recovery was less than the lower control limit but greater than or equal to 10%. A positive

result for this analyte in the associated QC batch is considered estimated; a non-detect result for the

same analyte is considered as approximate.

Analysis: USEPA-524.2

Sample/Analyte: 0904590-01 307 Kilbuck St.

0904590-02 Trip Blank

Bromomethane Bromomethane

Page 9 of 9

1	Tri	M	latr	ix
<b>A</b>	Labo	rat	ories,	Inc.

5560 Corporate Exchange Court SE Grand Rapids, MI 49512 Phone (616) 975-4500 Fax (616) 942-7463

### Chain of Custody Record COCNo. 128848

For L	ab Use Only	Analyses Requ	nested Page of
VOA Rack/fr 6961 Receipt Log N 45- Project Chem	R-6469 2	Client Name RMT, Inc  Address 3754 Ranchero Driva 8070.02  Ann Arbor M: 48108  Project Name TPC Tecomsch 8070.02  Invoice No. 9Client Other (comments)  Phone 734 971 7080  Contact/Report To Fax 734 971 9022  Analyses Required TPC Tecomsch SO W.  Client Project Name TPC Tecomsch SO W.  Client Project Name TPC Tecomsch SO W.  Client Project Name TPC Tecomsch SO W.  Client Project Name TPC Tecomsch SO W.  Client Project Name TPC Tecomsch SO W.  Client Project Name TPC Tecomsch SO W.  Client Project Name TPC Tecomsch SO W.  Client Project No./PO. No. SO W.  Client Project No./PO. No. SO W.  Client Project No./PO. No. SO W.  Client Project No./PO. No. SO W.	D PRESERVATIVES  A NONE pH~7  B HNO, pH<2  C H <sub>2</sub> SO <sub>4</sub> pH<2  D 1+1 HC1 pH<2  E NaOH pH>12  F ZnAc/NaOH pH>6  G MeOH  H Other (note below)
Test Matrix Group Code	Laboratory Sample Number	Sample ID Cooler ID Sample Date Time M A Matrix Number of Containers Submitte	Total Sample Comments
06	01	1 307 Kilbuck St. TM1182 4/29/09/10:30A W / (3-40 mL VOA;)	24-hour Turnavound
	1	2 DRUM SAMPLE 1 11 10:444 X S / 1-1002 + 1 ML VOA; MA	of Pres.) Standard
		3 DRUM SAMPLEZ " 101534X SV 1-502 + IML VOA, ME	of Pres) Turnaround
		1 DRUM SAMPLE 3 11 11:01A W ~ (3-40-11 VOA'S)	
	1	5 DRUM SAMPLE 4 11 11:07A W - (3-40ML VOA'S)	1
05	02	" TRIP BLANK " 4/27/09 15:37 W WWW (1-40 ml VOA)	24 hour Tirn
		8	
		9	
Sampled By		Comments It possible, could me please	e have the results
Sampler's Sign	BACON	How Shipped? Hand Carrier From Sample 1 (307 Kilbude) Friday	Morning? Thanks
Compley RMT	lne	Relinquished By Date Time 3. Relinquished By	dy Date Time
1/11/11	11.9	1. Received By Date Time 2. Received By Date Time 3. Received By	

# **US EPA ARCHIVE DOCUMENT**



August 18, 2009

RMT, Inc. - Ann Arbor Office Attn: John Bacon 3754 Ranchero Drive Ann Arbor, MI 48108-2771

### **Project: Tecumseh Products**

Dear John Bacon,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
0908198	08/12/2009	Laboratory Services

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Jennifer L. Rice Project Chemist

Enclosures(s)



Client: RMT, Inc. - Ann Arbor Office Work Order: 0908198

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: 509 S. Maumee Sampled: 08/11/09 11:33 Lab Sample ID: 0908198-01 Sampled By: John Bacon Matrix: Received: 08/12/09 09:00 Water Unit: Prepared: mg/L 08/14/09 By: DLV Dilution Factor: 1 Analyzed: By: DLV 08/14/09

QC Batch: 0909334 Analytical Batch: 9H17028

### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL
71-43-2	Benzene	<0.0010	0.0010
108-86-1	Bromobenzene	< 0.0010	0.0010
75-27-4	Bromodichloromethane	< 0.0010	0.0010
75-25-2	Bromoform	< 0.0010	0.0010
74-83-9	Bromomethane	< 0.0010	0.0010
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010
108-90-7	Chlorobenzene	< 0.0010	0.0010
75-00-3	Chloroethane	< 0.0010	0.0010
67-66-3	Chloroform	0.0029	0.0010
74-87-3	Chloromethane	< 0.0010	0.0010
95-49-8	2-Chlorotoluene	< 0.0010	0.0010
106-43-4	4-Chlorotoluene	< 0.0010	0.0010
124-48-1	Dibromochloromethane	< 0.0010	0.0010
74-95-3	Dibromomethane	< 0.0010	0.0010
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010
75-34-3	1,1-Dichloroethane	0.011	0.0010
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010
75-35-4	1,1-Dichloroethene	0.0023	0.0010
156-59-2	cis-1,2-Dichloroethene	0.020	0.0010
156-60-5	trans-1,2-Dichloroethene	0.0028	0.0010
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010
594-20-7	2,2-Dichloropropane	< 0.0010	0.0010
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010
100-41-4	Ethylbenzene	< 0.0010	0.0010
75-09-2	Methylene Chloride	< 0.0050	0.0050

Continued on next page



Client: RMT, Inc. - Ann Arbor Office Work Order: 0908198

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: 509 S. Maumee Sampled: 08/11/09 11:33 Lab Sample ID: 0908198-01 Sampled By: John Bacon Matrix: Water Received: 08/12/09 09:00 Unit: Prepared: mg/L 08/14/09 By: DLV Dilution Factor: 1 Analyzed: 08/14/09 By: DLV

QC Batch: 0909334 Analytical Batch: 9H17028

### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Amolysto	Analytical Result	DI
CAS Number	Analyte	Result	RL
100-42-5	Styrene	<0.0010	0.0010
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010
127-18-4	Tetrachloroethene	< 0.0010	0.0010
108-88-3	Toluene	< 0.0010	0.0010
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010
*71-55-6	1,1,1-Trichloroethane	0.27	0.0010
79-00-5	1,1,2-Trichloroethane	0.0011	0.0010
*79-01-6	Trichloroethene	1.4	0.0010
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010
75-01-4	Vinyl Chloride	0.025	0.0010
1330-20-7	Xylene (Total)	< 0.0030	0.0030

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	104	82-118
1,2-Dichloroethane-d4	103	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	101	82-114

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0908198

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: 509 S. Maumee Sampled: 08/11/09 11:33 Lab Sample ID: 0908198-01RE1 Sampled By: John Bacon Matrix: Water Received: 08/12/09 09:00 Unit: Prepared: mg/L 08/17/09 By: DLV Dilution Factor: 25 Analyzed: 08/17/09 By: DLV

QC Batch: 0909334 Analytical Batch: 9H17034

### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	< 0.025	0.025	
108-86-1	Bromobenzene	< 0.025	0.025	
75-27-4	Bromodichloromethane	< 0.025	0.025	
75-25-2	Bromoform	< 0.025	0.025	
74-83-9	Bromomethane	< 0.025	0.025	
56-23-5	Carbon Tetrachloride	<0.025	0.025	
108-90-7	Chlorobenzene	< 0.025	0.025	
75-00-3	Chloroethane	<0.025	0.025	
67-66-3	Chloroform	<0.025	0.025	
74-87-3	Chloromethane	<0.025	0.025	
95-49-8	2-Chlorotoluene	<0.025	0.025	
106-43-4	4-Chlorotoluene	<0.025	0.025	
124-48-1	Dibromochloromethane	<0.025	0.025	
74-95-3	Dibromomethane	<0.025	0.025	
95-50-1	1,2-Dichlorobenzene	<0.025	0.025	
541-73-1	1,3-Dichlorobenzene	<0.025	0.025	
106-46-7	1,4-Dichlorobenzene	<0.025	0.025	
75-71-8	Dichlorodifluoromethane	<0.025	0.025	
75-34-3	1,1-Dichloroethane	<0.025	0.025	
107-06-2	1,2-Dichloroethane	<0.025	0.025	
75-35-4	1,1-Dichloroethene	<0.025	0.025	
156-59-2	cis-1,2-Dichloroethene	<0.025	0.025	
156-60-5	trans-1,2-Dichloroethene	<0.025	0.025	
78-87-5	1,2-Dichloropropane	<0.025	0.025	
142-28-9	1,3-Dichloropropane	<0.025	0.025	
594-20-7	2,2-Dichloropropane	<0.025	0.025	
563-58-6	1,1-Dichloropropene	< 0.025	0.025	
10061-01-5	cis-1,3-Dichloropropene	< 0.025	0.025	
10061-02-6	trans-1,3-Dichloropropene	< 0.025	0.025	
100-41-4	Ethylbenzene	< 0.025	0.025	
75-09-2	Methylene Chloride	<0.12	0.12	

Continued on next page



Client: RMT, Inc. - Ann Arbor Office Work Order: 0908198

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: 509 S. Maumee Sampled: 08/11/09 11:33 Lab Sample ID: 0908198-01RE1 Sampled By: John Bacon Matrix: Water Received: 08/12/09 09:00 Unit: Prepared: mg/L 08/17/09 By: DLV Dilution Factor: 25 Analyzed: 08/17/09 By: DLV

QC Batch: 0909334 Analytical Batch: 9H17034

### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Analyte	Analytical Result	RL
CAS Number	Analyte	Result	KL
100-42-5	Styrene	< 0.025	0.025
630-20-6	1,1,1,2-Tetrachloroethane	< 0.025	0.025
79-34-5	1,1,2,2-Tetrachloroethane	< 0.025	0.025
127-18-4	Tetrachloroethene	< 0.025	0.025
108-88-3	Toluene	< 0.025	0.025
120-82-1	1,2,4-Trichlorobenzene	< 0.025	0.025
71-55-6	1,1,1-Trichloroethane	0.21	0.025
79-00-5	1,1,2-Trichloroethane	< 0.025	0.025
*79-01-6	Trichloroethene	1.0	0.025
75-69-4	Trichlorofluoromethane	< 0.025	0.025
96-18-4	1,2,3-Trichloropropane	< 0.025	0.025
75-01-4	Vinyl Chloride	< 0.025	0.025
1330-20-7	Xylene (Total)	< 0.075	0.075
	-		

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	104	82-118
1,2-Dichloroethane-d4	105	<i>75-128</i>
Toluene-d8	103	88-108
4-Bromofluorobenzene	101	82-114

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<sup>\*</sup>See Statement of Data Qualifications



### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

	Sample	Spike		Spike	Control		RPD
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits RL

QC Batch: 0909334 5030B Aqueous Purge & Trap/USEPA-524.2

Method Blank		Analyzed: 08/1	4/2009 By: DLV
Unit: mg/L		Analytical Batch: 9H1	7028
Benzene	< 0.0010		0.0010
Bromobenzene	< 0.0010		0.0010
Bromodichloromethane	< 0.0010		0.0010
Bromoform	< 0.0010		0.0010
Bromomethane	< 0.0010		0.0010
Carbon Tetrachloride	< 0.0010		0.0010
Chlorobenzene	< 0.0010		0.0010
Chloroethane	< 0.0010		0.0010
Chloroform	< 0.0010		0.0010
Chloromethane	< 0.0010		0.0010
2-Chlorotoluene	< 0.0010		0.0010
4-Chlorotoluene	< 0.0010		0.0010
Dibromochloromethane	< 0.0010		0.0010
Dibromomethane	< 0.0010		0.0010
1,2-Dichlorobenzene	< 0.0010		0.0010
1,3-Dichlorobenzene	< 0.0010		0.0010
1,4-Dichlorobenzene	< 0.0010		0.0010
Dichlorodifluoromethane	< 0.0010		0.0010
1,1-Dichloroethane	< 0.0010		0.0010
1,2-Dichloroethane	< 0.0010		0.0010
1,1-Dichloroethene	< 0.0010		0.0010
cis-1,2-Dichloroethene	< 0.0010		0.0010
trans-1,2-Dichloroethene	< 0.0010		0.0010
1,2-Dichloropropane	<0.0010		0.0010
1,3-Dichloropropane	<0.0010		0.0010
2,2-Dichloropropane	<0.0010		0.0010
1,1-Dichloropropene	<0.0010		0.0010
cis-1,3-Dichloropropene	<0.0010		0.0010
trans-1,3-Dichloropropene	<0.0010		0.0010
Ethylbenzene	<0.0010		0.0010
Methylene Chloride	<0.0050		0.0050
Styrene	<0.0010		0.0010
1,1,1,2-Tetrachloroethane	<0.0010		0.0010
1,1,2,2-Tetrachloroethane	<0.0010		0.0010
Tetrachloroethene	<0.0010		0.0010
Toluene	< 0.0010		0.0010

Continued on next page



### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0909334 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Method Blank (Continued)			Analyzed:	08/14/2009	By: DLV
Unit: mg/L			Analytical Batch:	9H17028	
1,2,4-Trichlorobenzene	< 0.0010			0.0010	
1,1,1-Trichloroethane	< 0.0010			0.0010	
1,1,2-Trichloroethane	< 0.0010			0.0010	
Trichloroethene	< 0.0010			0.0010	
Trichlorofluoromethane	< 0.0010			0.0010	
1,2,3-Trichloropropane	< 0.0010			0.0010	
Vinyl Chloride	< 0.0010			0.0010	
Xylene (Total)	< 0.0030			0.0030	
Method Blank			Analyzed:	08/14/2009	By: DLV
Unit: ug/L			Analytical Batch:	9H17028	
Surrogates:					
Dibromofluoromethane		99	82-118		
1,2-Dichloroethane-d4		103	<i>75-128</i>		
Toluene-d8		101	88-108		
4-Bromofluorobenzene		102	82-114		
Method Blank			Analyzed:	08/17/2009	By: DL\
Unit: mg/L			Analytical Batch:	9H17034	
Benzene	<0.0010			0.0010	
Bromobenzene	< 0.0010			0.0010	
Bromodichloromethane	< 0.0010			0.0010	
Bromoform	< 0.0010			0.0010	
Bromomethane	< 0.0010			0.0010	
Carbon Tetrachloride	< 0.0010			0.0010	
Chlorobenzene	< 0.0010			0.0010	
Chloroethane	< 0.0010			0.0010	
Chloroform	< 0.0010			0.0010	
Chloromethane	< 0.0010			0.0010	
2-Chlorotoluene	< 0.0010			0.0010	
4-Chlorotoluene	< 0.0010			0.0010	
Dibromochloromethane	< 0.0010			0.0010	
Dibromocniorometnane	<0.0010			0.0010	

< 0.0010

< 0.0010

< 0.0010

<0.0010

0.0010 0.0010

0.0010

0.0010

Continued on next page

1,2-Dichlorobenzene

1,3-Dichlorobenzene

1,4-Dichlorobenzene

Dichlorodifluoromethane



### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0909334 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Method Blank (Continued)				Analyzed:	08/17/2009	By: DLV
Unit: mg/L				Analytical Batch:	9H17034	
1,1-Dichloroethane		<0.0010			0.0010	
1,2-Dichloroethane		< 0.0010			0.0010	
1,1-Dichloroethene		< 0.0010			0.0010	
cis-1,2-Dichloroethene		< 0.0010			0.0010	
trans-1,2-Dichloroethene		< 0.0010			0.0010	
1,2-Dichloropropane		< 0.0010			0.0010	
1,3-Dichloropropane		< 0.0010			0.0010	
2,2-Dichloropropane		< 0.0010			0.0010	
1,1-Dichloropropene		< 0.0010			0.0010	
cis-1,3-Dichloropropene		< 0.0010			0.0010	
trans-1,3-Dichloropropene		< 0.0010			0.0010	
Ethylbenzene		< 0.0010			0.0010	
Methylene Chloride		< 0.0050			0.0050	
Styrene		< 0.0010			0.0010	
1,1,1,2-Tetrachloroethane		< 0.0010			0.0010	
1,1,2,2-Tetrachloroethane		< 0.0010			0.0010	
Tetrachloroethene		< 0.0010			0.0010	
Toluene		< 0.0010			0.0010	
1,2,4-Trichlorobenzene		< 0.0010			0.0010	
1,1,1-Trichloroethane		< 0.0010			0.0010	
1,1,2-Trichloroethane		< 0.0010			0.0010	
Trichloroethene		< 0.0010			0.0010	
Trichlorofluoromethane		< 0.0010			0.0010	
1,2,3-Trichloropropane		< 0.0010			0.0010	
Vinyl Chloride		< 0.0010			0.0010	
Xylene (Total)		< 0.0030			0.0030	
Method Blank				Analyzed:	08/17/2009	By: DL\
Unit: ug/L				Analytical Batch:	9H17034	
Surrogates:						
Dibromofluoromethane			104	82-118		
1,2-Dichloroethane-d4			105	<i>75-128</i>		
Toluene-d8			104	88-108		
4-Bromofluorobenzene			100	82-114		
Laboratory Control Sample				Analyzed:	08/14/2009	By: DL\
Unit: mg/L				Analytical Batch:	9H17028	
Benzene	0.0100	0.0118	118	70-130	0.0010	

Continued on next page

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### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0909334 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Laboratory Control Sample (Continued)				Analyzed:	08/14/2009	By: DLV
Unit: mg/L				Analytical Batch:	9H17028	
Bromobenzene	0.0100	0.0121	121	70-130	0.0010	
Bromodichloromethane	0.0100	0.0114	114	70-130	0.0010	
Bromoform	0.0100	0.0105	105	70-130	0.0010	
Bromomethane	0.0100	0.0112	112	70-130	0.0010	
Carbon Tetrachloride	0.0100	0.0111	111	70-130	0.0010	
Chlorobenzene	0.0100	0.0112	112	70-130	0.0010	
Chloroethane	0.0100	0.00916	92	70-130	0.0010	
Chloroform	0.0100	0.0110	110	70-130	0.0010	
Chloromethane	0.0100	0.00958	96	70-130	0.0010	
2-Chlorotoluene	0.0100	0.0115	115	70-130	0.0010	
4-Chlorotoluene	0.0100	0.0122	122	70-130	0.0010	
Dibromochloromethane	0.0100	0.0116	116	70-130	0.0010	
Dibromomethane	0.0100	0.0108	108	70-130	0.0010	
1,2-Dichlorobenzene	0.0100	0.0112	112	70-130	0.0010	
1,3-Dichlorobenzene	0.0100	0.0108	108	70-130	0.0010	
1,4-Dichlorobenzene	0.0100	0.0107	107	70-130	0.0010	
Dichlorodifluoromethane	0.0100	0.00918	92	70-130	0.0010	
1,1-Dichloroethane	0.0100	0.0118	118	70-130	0.0010	
1,2-Dichloroethane	0.0100	0.0111	111	70-130	0.0010	
1,1-Dichloroethene	0.0100	0.00949	95	70-130	0.0010	
cis-1,2-Dichloroethene	0.0100	0.0105	105	70-130	0.0010	
trans-1,2-Dichloroethene	0.0100	0.0109	109	70-130	0.0010	
1,2-Dichloropropane	0.0100	0.0122	122	70-130	0.0010	
1,3-Dichloropropane	0.0100	0.0125	125	70-130	0.0010	
2,2-Dichloropropane	0.0100	0.00986	99	70-130	0.0010	
1,1-Dichloropropene	0.0100	0.0119	119	70-130	0.0010	
cis-1,3-Dichloropropene	0.0100	0.0111	111	70-130	0.0010	
trans-1,3-Dichloropropene	0.0100	0.0110	110	70-130	0.0010	
Ethylbenzene	0.0100	0.0118	118	70-130	0.0010	
Methylene Chloride	0.0100	0.0113	113	70-130	0.0050	
Styrene	0.0100	0.0109	109	70-130	0.0010	
1,1,1,2-Tetrachloroethane	0.0100	0.0115	115	70-130	0.0010	
1,1,2,2-Tetrachloroethane	0.0100	0.0130	130	70-130	0.0010	
Tetrachloroethene	0.0100	0.0107	107	70-130	0.0010	
Toluene	0.0100	0.0113	113	70-130	0.0010	
1,2,4-Trichlorobenzene	0.0100	0.0104	104	70-130	0.0010	



### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty. Re	esult	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0909334 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Laboratory Control Sample (Continued)				Analyzed:	08/14/2009	By: DLV
Unit: mg/L				Analytical Batch:	9H17028	
1,1,1-Trichloroethane	0.0100	0.0113	113	70-130	0.0010	
1,1,2-Trichloroethane	0.0100	0.0118	118	70-130	0.0010	
Trichloroethene	0.0100	0.0109	109	70-130	0.0010	
Trichlorofluoromethane	0.0100	0.00979	98	70-130	0.0010	
1,2,3-Trichloropropane	0.0100	0.0125	125	70-130	0.0010	
Vinyl Chloride	0.0100	0.0102	102	70-130	0.0010	
Xylene (Total)	0.0300	0.0347	116	70-130	0.0030	
Laboratory Control Sample				Analyzed:	08/14/2009	By: DLV
Unit: ug/L				Analytical Batch:	9H17028	
Surrogates:						
Dibromofluoromethane			98	82-118		
1,2-Dichloroethane-d4			98	<i>75-128</i>		
Toluene-d8			101	88-108		
4-Bromofluorobenzene			108	82-114		
Laboratory Control Sample				Analyzed:	08/17/2009	By: DL\
Unit: mg/L				Analytical Batch:	9H17034	
Benzene	0.0100	0.0112	112	70-130	0.0010	
Bromobenzene	0.0100	0.0113	113	70-130	0.0010	
Bromodichloromethane	0.0100	0.0116	116	70-130	0.0010	
Bromoform	0.0100	0.0111	111	70-130	0.0010	
Bromomethane	0.0100	0.0105	105	70-130	0.0010	
Carbon Tetrachloride	0.0100	0.0115	115	70-130	0.0010	
Chlorobenzene	0.0100	0.0105	105	70-130	0.0010	
Chloroethane	0.0100	0.00889	89	70-130	0.0010	
Chloroform	0.0100	0.0109	109	70-130	0.0010	
Chloromethane	0.0100	0.00961	96	70-130	0.0010	
2-Chlorotoluene	0.0100	0.0107	107	70-130	0.0010	
4-Chlorotoluene	0.0100	0.0114	114	70-130	0.0010	
Dibromochloromethane	0.0100	0.0114	114	70-130	0.0010	
Dibromomethane	0.0100	0.0106	106	70-130	0.0010	
1,2-Dichlorobenzene	0.0100	0.0103	103	70-130	0.0010	
1,3-Dichlorobenzene	0.0100	0.0103	103	70-130	0.0010	
1,4-Dichlorobenzene	0.0100	0.0101	101	70-130	0.0010	
Dichlorodifluoromethane	0.0100	0.00961	96	70-130	0.0010	
	0.0100	0.0114	114	70-130	0.0010	

Continued on next page

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### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0909334 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Laboratory Control Sample (	Continued)				Analyzed:	08/17/2009	By: DLV
Unit: mg/L					Analytical Batch:	9H17034	
1,2-Dichloroethane		0.0100	0.0107	107	70-130	0.0010	
1,1-Dichloroethene		0.0100	0.00895	90	70-130	0.0010	
cis-1,2-Dichloroethene		0.0100	0.0102	102	70-130	0.0010	
trans-1,2-Dichloroethene		0.0100	0.0105	105	70-130	0.0010	
1,2-Dichloropropane		0.0100	0.0119	119	70-130	0.0010	
1,3-Dichloropropane		0.0100	0.0113	113	70-130	0.0010	
2,2-Dichloropropane		0.0100	0.0129	129	70-130	0.0010	
1,1-Dichloropropene		0.0100	0.0109	109	70-130	0.0010	
cis-1,3-Dichloropropene		0.0100	0.0115	115	70-130	0.0010	
trans-1,3-Dichloropropene		0.0100	0.0116	116	70-130	0.0010	
Ethylbenzene		0.0100	0.0109	109	70-130	0.0010	
Methylene Chloride		0.0100	0.0109	109	70-130	0.0050	
Styrene		0.0100	0.0101	101	70-130	0.0010	
1,1,1,2-Tetrachloroethane		0.0100	0.0111	111	70-130	0.0010	
1,1,2,2-Tetrachloroethane		0.0100	0.0121	121	70-130	0.0010	
Tetrachloroethene		0.0100	0.00990	99	70-130	0.0010	
Toluene		0.0100	0.0108	108	70-130	0.0010	
1,2,4-Trichlorobenzene		0.0100	0.0100	100	70-130	0.0010	
1,1,1-Trichloroethane		0.0100	0.0112	112	70-130	0.0010	
1,1,2-Trichloroethane		0.0100	0.0110	110	70-130	0.0010	
Trichloroethene		0.0100	0.0104	104	70-130	0.0010	
Trichlorofluoromethane		0.0100	0.00981	98	70-130	0.0010	
1,2,3-Trichloropropane		0.0100	0.0123	123	70-130	0.0010	
Vinyl Chloride		0.0100	0.0101	101	70-130	0.0010	
Xylene (Total)		0.0300	0.0318	106	70-130	0.0030	
Laboratory Control Sample					Analyzed:	08/17/2009	By: DL\
Unit: ug/L					Analytical Batch:	9H17034	
Surrogates:							
Dibromofluoromethane				100	82-118		
1,2-Dichloroethane-d4				101	<i>75-128</i>		
Toluene-d8				101	88-108		
4-Bromofluorobenzene				107	82-114		
Matrix Spike 0908198-01RE1	1 509 S. Maur	nee			Analyzed:	08/17/2009	By: DL\
Unit: mg/L					Analytical Batch:	9H17034	
Benzene	< 0.025	0.250	0.275	110	70-130	0.025	

Continued on next page

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### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0909334 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Matrix Spike (Continued)	0908198-01RI	<b>E1</b> 509 S. Ma	aumee		Analyzed:	08/17/2009 By:	DLV
Unit: mg/L					Analytical Batch:	9H17034	
Bromobenzene	0.00450	0.250 <b>C</b>	0.270	106	70-130	0.025	
Bromodichloromethane	< 0.025	0.250 <b>C</b>	).271	108	70-130	0.025	
Bromoform	< 0.025	0.250 <b>C</b>	).251	100	70-130	0.025	
Bromomethane	< 0.025	0.250 <b>C</b>	0.236	94	70-130	0.025	
Carbon Tetrachloride	< 0.025	0.250 <b>C</b>	0.264	106	70-130	0.025	
Chlorobenzene	< 0.025	0.250 <b>C</b>	0.253	101	70-130	0.025	
Chloroethane	< 0.025	0.250 <b>C</b>	).216	87	70-130	0.025	
Chloroform	< 0.025	0.250 <b>C</b>	0.260	104	70-130	0.025	
Chloromethane	< 0.025	0.250 <b>C</b>	).226	90	70-130	0.025	
2-Chlorotoluene	< 0.025	0.250 <b>C</b>	0.253	101	70-130	0.025	
4-Chlorotoluene	< 0.025	0.250 <b>C</b>	).270	108	70-130	0.025	
Dibromochloromethane	< 0.025	0.250 <b>C</b>	0.264	105	70-130	0.025	
Dibromomethane	< 0.025	0.250 <b>C</b>	).254	102	70-130	0.025	
1,2-Dichlorobenzene	< 0.025	0.250 <b>C</b>	).244	98	70-130	0.025	
1,3-Dichlorobenzene	< 0.025	0.250 <b>C</b>	).242	97	70-130	0.025	
1,4-Dichlorobenzene	< 0.025	0.250 <b>C</b>	).238	95	70-130	0.025	
Dichlorodifluoromethane	< 0.025	0.250 <b>C</b>	).228	91	70-130	0.025	
1,1-Dichloroethane	0.0115	0.250 <b>C</b>	).278	107	70-130	0.025	
1,2-Dichloroethane	< 0.025	0.250 <b>C</b>	).256	102	70-130	0.025	
1,1-Dichloroethene	< 0.025	0.250 <b>C</b>	0.213	85	70-130	0.025	
cis-1,2-Dichloroethene	0.0205	0.250 <b>C</b>	0.260	96	70-130	0.025	
trans-1,2-Dichloroethene	0.00425	0.250 <b>C</b>	0.250	98	70-130	0.025	
1,2-Dichloropropane	< 0.025	0.250 <b>C</b>	).282	113	70-130	0.025	
1,3-Dichloropropane	< 0.025	0.250 <b>C</b>	).275	110	70-130	0.025	
2,2-Dichloropropane	< 0.025	0.250 <b>C</b>	).274	110	70-130	0.025	
1,1-Dichloropropene	< 0.025	0.250 <b>C</b>	).265	106	70-130	0.025	
cis-1,3-Dichloropropene	< 0.025	0.250 <b>C</b>	).267	107	70-130	0.025	
rans-1,3-Dichloropropene	< 0.025	0.250 <b>C</b>	0.266	107	70-130	0.025	
Ethylbenzene	< 0.025	0.250 <b>C</b>	0.263	105	70-130	0.025	
Methylene Chloride	< 0.12	0.250 <b>C</b>	0.266	107	70-130	0.12	
Styrene	< 0.025	0.250 <b>C</b>	0.244	98	70-130	0.025	
1,1,1,2-Tetrachloroethane	< 0.025	0.250 <b>C</b>	0.263	105	70-130	0.025	
1,1,2,2-Tetrachloroethane	< 0.025	0.250 <b>C</b>	).288	115	70-130	0.025	
Tetrachloroethene	< 0.025	0.250 <b>C</b>	0.234	94	70-130	0.025	
Toluene	< 0.025		0.260	104	70-130	0.025	
1,2,4-Trichlorobenzene	< 0.025	0.250 <b>C</b>	).228	91	70-130	0.025	



### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0909334 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

< 0.025

< 0.025

< 0.025

< 0.025

< 0.025

< 0.025

< 0.025

0.0115

0.250

0.250

0.250

0.250

0.250

0.250

0.250

0.250

0.268

0.258

0.256

0.244

0.245

0.236

0.230

0.278

107

103

102

97

98

94

92

106

70-130

70-130

70-130

70-130

70-130

70-130

70-130

70-130

0.5

2

0.4

0.2

1

0.6

0.7

0.2

Matrix Spike (Continued)	0908198-01R	<b>E1</b> 509 S.	Maumee		Analy			/17/2009	By: DLV
Unit: mg/L					Analy	tical Batch:	9F	117034	
1,1,1-Trichloroethane	0.208	0.250	0.446	95	70-130			0.025	
1,1,2-Trichloroethane	< 0.025	0.250	0.278	111	70-130			0.025	
Trichloroethene	1.01	0.250	1.17	61	70-130			0.025	
Trichlorofluoromethane	< 0.025	0.250	0.232	93	70-130			0.025	
1,2,3-Trichloropropane	< 0.025	0.250	0.282	113	70-130			0.025	
Vinyl Chloride	< 0.025	0.250	0.257	103	70-130			0.025	
Xylene (Total)	< 0.075	0.750	0.766	102	70-130			0.075	
Matrix Spike 0908198-01	<b>RE1</b> 509 S. Mau	mee			Analy	/zed:	08	/17/2009	By: DLV
Unit: ug/L					Analy	ytical Batch:	9F	117034	
Surrogates:									
Dibromofluoromethane				98	82-118				
1,2-Dichloroethane-d4				100	<i>75-128</i>				
Toluene-d8				101	88-108				
4-Bromofluorobenzene				108	82-114				
Matrix Spike Duplicate 09	908198-01RE1	509 S. Ma	umee		Analy	/zed:	08	/17/2009	By: DLV
Unit: mg/L					Analy	ytical Batch:	9F	117034	
Benzene	<0.025	0.250	0.273	109	70-130	0.8	20	0.025	
Bromobenzene	0.00450	0.250	0.273	108	70-130	1	20	0.025	
Bromodichloromethane	< 0.025	0.250	0.271	108	70-130	0.09	20	0.025	
Bromoform	< 0.025	0.250	0.255	102	70-130	1	20	0.025	
	< 0.025	0.250	0.243	97	70-130	3	20	0.025	
Bromomethane			0.266	107	70-130	0.9	20	0.025	
	< 0.025	0.250	0.200	107	70 100		20	0.020	
Carbon Tetrachloride	<0.025 <0.025	0.250 0.250	0.251	100	70-130	0.9	20	0.025	
Carbon Tetrachloride Chlorobenzene									
Carbon Tetrachloride Chlorobenzene Chloroethane	< 0.025	0.250	0.251	100	70-130	0.9	20	0.025	
Bromomethane Carbon Tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane	<0.025 <0.025	0.250 0.250	0.251 0.213	100 85	70-130 70-130	0.9 2	20 20	0.025 0.025	

Continued on next page

4-Chlorotoluene

Dibromomethane

1,2-Dichlorobenzene

1,3-Dichlorobenzene

1,4-Dichlorobenzene

1,1-Dichloroethane

Dichlorodifluoromethane

Dibromochloromethane

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0.025

0.025

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20

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### **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike	Spike Contro	ol RPD
Analyte	Conc.	Qty. Result	% Rec. Limits	

QC Batch: 0909334 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Matrix Spike Duplicate (C	rix Spike Duplicate (Continued) 0908198-01RE1 509 S. Maumee							3/17/2009	By: DLV
Unit: mg/L					Analytical Batch:		9F	117034	
1,2-Dichloroethane	< 0.025	0.250	0.260	104	70-130	2	20	0.025	
1,1-Dichloroethene	< 0.025	0.250	0.216	86	70-130	1	20	0.025	
cis-1,2-Dichloroethene	0.0205	0.250	0.260	96	70-130	0.3	20	0.025	
trans-1,2-Dichloroethene	0.00425	0.250	0.248	97	70-130	8.0	20	0.025	
1,2-Dichloropropane	< 0.025	0.250	0.286	114	70-130	1	20	0.025	
1,3-Dichloropropane	< 0.025	0.250	0.275	110	70-130	0.2	20	0.025	
2,2-Dichloropropane	< 0.025	0.250	0.286	114	70-130	4	20	0.025	
1,1-Dichloropropene	< 0.025	0.250	0.262	105	70-130	1	20	0.025	
cis-1,3-Dichloropropene	< 0.025	0.250	0.262	105	70-130	2	20	0.025	
trans-1,3-Dichloropropene	< 0.025	0.250	0.267	107	70-130	0.3	20	0.025	
Ethylbenzene	< 0.025	0.250	0.259	104	70-130	2	20	0.025	
Methylene Chloride	< 0.12	0.250	0.262	105	70-130	2	20	0.12	
Styrene	< 0.025	0.250	0.240	96	70-130	2	20	0.025	
1,1,1,2-Tetrachloroethane	< 0.025	0.250	0.252	101	70-130	4	20	0.025	
1,1,2,2-Tetrachloroethane	< 0.025	0.250	0.294	117	70-130	2	20	0.025	
Tetrachloroethene	< 0.025	0.250	0.231	92	70-130	1	20	0.025	
Toluene	< 0.025	0.250	0.254	101	70-130	3	20	0.025	
1,2,4-Trichlorobenzene	< 0.025	0.250	0.236	94	70-130	3	20	0.025	
1,1,1-Trichloroethane	0.208	0.250	0.449	97	70-130	0.7	20	0.025	
1,1,2-Trichloroethane	< 0.025	0.250	0.272	109	70-130	2	20	0.025	
Trichloroethene	1.01	0.250	1.15	55	70-130	1	20	0.025	
Trichlorofluoromethane	< 0.025	0.250	0.228	91	70-130	2	20	0.025	
1,2,3-Trichloropropane	< 0.025	0.250	0.283	113	70-130	0.4	20	0.025	
Vinyl Chloride	< 0.025	0.250	0.256	102	70-130	0.5	20	0.025	
Xylene (Total)	< 0.075	0.750	0.749	100	70-130	2	20	0.075	
Matrix Spike Duplicate 09	08198-01RE1	509 S. Ma	iumee		Analy	/zed:	30	3/17/2009	By: DL\
nit: ug/L				Analy	tical Batch:	9F	117034		

Dibromofluoromethane	102	82-118
1,2-Dichloroethane-d4	100	<i>75-128</i>
Toluene-d8	102	88-108
4-Bromofluorobenzene	108	82-114



### STATEMENT OF DATA QUALIFICATIONS

### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

Qualification: The result for this analyte was above the linear range of the initial calibration curve and must be

considered as estimated.

Analysis: USEPA-524.2

Sample/Analyte: 0908198-01 509 S. Maumee 1,1,1-Trichloroethane

0908198-01 509 S. Maumee Trichloroethene

Qualification: The MS and/or MSD recovery was outside the control limit. The non-spiked sample result is

considered estimated.

Analysis: USEPA-524.2

Sample/Analyte: 0908198-01RE1 509 S. Maumee Trichloroethene

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Sampled By Sampler's Sampler's Sampler's Sampler's Sampler's Sampler's Sampler's Sampler Sampl	1/A) BAKON			_	ow Shipp acking 1		<u> </u>		_	Comments	  -	W	eek		TAT	Pl	leas	e.	-	The	Jes,	J	hn	8
Company	MT, Inc			1,3	Linguis	1000 8/m	2	Tim /3:	2.0	2. Relinquished	Ву			Da	te	Time	6	3.1	Relinquis	hed By			Date.	Time

2. Received By:

Time

Species to may 8/13/09 0900

Date

# **JS EPA ARCHIVE DOCUMENT**

TriMatrix  Laboratories, Inc.	
Laboratories, Inc.	

## SAMPLE RECEIVING / LOG-IN CHECKLIST

Laboratories, Inc.	Receipt Record Properlies No. 23-7	new / add to C	908198
Coolers Received	23-7		
Recorded by (initials/date) La 8/12/09	Cooler Qty Receiv	Thermometer Used Digital Thermom	eter (#54) See Additional Cooler Information Form
Cooler No. Time	Cooler No. Time	Cooler No. Time	Cooler No. Time
Jastody Seals  prosent / intact present / not intact Coolant Location: Dispersed Top / Middle / Bottom Coolant Temperature Taken Via: loose ice / avg 2-3 containers blue ice / avg 2-3 containers blue ice / avg 2-3 containers louise ice / avg 2-3 containers containers  loose ice / avg 2-3 containers louise ice / avg 2-3 containers containers  Alternate Temperature Taken Via: temperature blank (tb) 1 container  Recorded C Correction Factor C Actual C  Actual C  Actual C  Average C J   blue ice / avg 2-3 containers none / avg 2-3 containers Alternate Temperature Taken Via. temperature blank (tb) 1 container	blue ice / avg 2-3 containers none / avg 2-3 containers Alternate Temperature Taken Via: temperature blank (tb) l container	Custody Seals  none present / intact present / not intact Coolant Location: Dispersed / Top / Middle / Bottom Coolant / Temperature Taken Via: loose ice / avg 2-3 containers bagged ice / avg 2-3 containers blue ice / avg 2-3 containers loone / avg 2-3 containers Alternate Temperature Taken Via: temperature blank (tb) l container  Recorded C Correction Factor C Actual C	
Cooler ID on COC? VOC trip blank received?  If any	Cooler ID on COC?  VOC trip blank received?  shaded areas checked, complete	Cooler ID on COC? VOC trip blank received?  Sample Receiving Non-Conformance	Cooler ID on COC? VOC trip blank received?
D If N Rec'd for	Custody Record(s)?  o. COC initiated by  Lab signed/date/time?  Document?	Completed Samp Samples preserv If "No", added o	
Ø TriMatrix /30062  □ Other (name or ID#)  Check COC for Accuracy  Yes No  Ø Sample 11	No analysis requested  O matches COC?	Check for Short Hold-Time Prep/  Bacteriological  Air Bags  EnCores / Methanol Pre-Preserved  Formaldehyde/Aldehyde  Green-tagged Containers  Yellow/White-tagged IL Ambers (SV	AFTER HOURS ONLY: COPIES OF COC TO LAB AREA(S) NONE RECEIVED RECEIVED. COCs TO LAB(S)
Sample d Container All contai Sample Condition Summary  N/A Yes No Missing of Illegible in Low vote Inapprop	ate and time matches COC?  If type completed on COC?  Intertypes indicated are received?  Non-TriMatrix containers, see Notes  containers/lids?  Information on labels?  Information on labels?  Intertypes indicated are received?  Intertypes indica	Notes  Trip blank received  Trip l No COC received. Proj. Chemist rev	plank not listed on COC ewed (init./date)

# Appendix H Laboratory Data – RMT Subsurface Investigation



March 11, 2009

RMT, Inc. - Ann Arbor Office Attn: John Bacon 3754 Ranchero Drive Ann Arbor, MI 48108-2771

### **Project: Tecumseh Products**

Dear John Bacon,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
0903132	03/10/2009	Laboratory Services

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Jennifer L. Rice Project Chemist

Enclosures(s)



Dilution Factor:

1

### ANALYTICAL REPORT

Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-1 (46'-50') Sampled: 03/09/09 11:07 Lab Sample ID: 0903132-01 Sampled By: S. Middlebrook Matrix: Received: 03/10/09 09:30 Water Unit: Prepared: ug/L 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B**

Analyzed:

By: JDM

03/10/09

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<20	20	
107-13-1	Acrylonitrile	<2.0	2.0	
71-43-2	Benzene	<1.0	1.0	
108-86-1	Bromobenzene	<1.0	1.0	
74-97-5	Bromochloromethane	<1.0	1.0	
75-27-4	Bromodichloromethane	<1.0	1.0	
75-25-2	Bromoform	<1.0	1.0	
74-83-9	Bromomethane	<5.0	5.0	
104-51-8	n-Butylbenzene	<1.0	1.0	
135-98-8	sec-Butylbenzene	<1.0	1.0	
98-06-6	tert-Butylbenzene	<1.0	1.0	
75-15-0	Carbon Disulfide	<1.0	1.0	
56-23-5	Carbon Tetrachloride	<1.0	1.0	
108-90-7	Chlorobenzene	<1.0	1.0	
75-00-3	Chloroethane	< 5.0	5.0	
67-66-3	Chloroform	<1.0	1.0	
74-87-3	Chloromethane	< 5.0	5.0	
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0	
124-48-1	Dibromochloromethane	<1.0	1.0	
106-93-4	1,2-Dibromoethane	<1.0	1.0	
74-95-3	Dibromomethane	<1.0	1.0	
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0	
95-50-1	1,2-Dichlorobenzene	<1.0	1.0	
541-73-1	1,3-Dichlorobenzene	<1.0	1.0	
106-46-7	1,4-Dichlorobenzene	<1.0	1.0	
75-71-8	Dichlorodifluoromethane	<5.0	5.0	
75-34-3	1,1-Dichloroethane	<1.0	1.0	
107-06-2	1,2-Dichloroethane	<1.0	1.0	
75-35-4	1,1-Dichloroethene	<1.0	1.0	
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0	
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-1 (46'-50') Sampled: 03/09/09 11:07 Lab Sample ID: 0903132-01 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM Dilution Factor: 1 Analyzed: 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	< 5.0	5.0	
591-78-6	2-Hexanone	< 5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	< 5.0	5.0	
75-09-2	Methylene Chloride	<5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	<5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	<5.0	5.0	
108-88-3	Toluene	4.2	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	6.8	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-1 (46'-50') Sampled: 03/09/09 11:07 Lab Sample ID: 0903132-01 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM Dilution Factor: 1 Analyzed: 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte			Analytical Result	RL	
75-01-4	Vinyl Chloride			5.0	1.0	
136777-61-2	Xylene, Meta + Par	ra e		< 2.0	2.0	
95-47-6	Xylene, Ortho			<1.0	1.0	
Surrogates:		% Recovery	Control Limits			
Dibromofluorome	ethane	104	88-115			
1,2-Dichloroethai	ne-d4	101	81-116			
Toluene-d8		102	87-113			
4-Bromofluorobe	nzene	101	<i>78-116</i>			



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-1 (26'-30') Sampled: 03/09/09 11:57 Lab Sample ID: 0903132-02 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM Dilution Factor: 1 Analyzed: 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	26	1.0
107-06-2	1,2-Dichloroethane	1.0	1.0
75-35-4	1,1-Dichloroethene	5.9	1.0
156-59-2	cis-1,2-Dichloroethene	120	1.0
156-60-5	trans-1,2-Dichloroethene	12	1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-1 (26'-30') Sampled: 03/09/09 11:57 Lab Sample ID: 0903132-02 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM Dilution Factor: 1 Analyzed: 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	<5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	5.3	1.0	
87-61-6	1,2,3-Trichlorobenzene	< 5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	200	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-1 (26'-30') Sampled: 03/09/09 11:57 Lab Sample ID: 0903132-02 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM Dilution Factor: 1 Analyzed: 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B (Continued)**

Analyte			Analytical Result	RL	
Vinyl Chloride			<1.0	1.0	
Xylene, Meta + Para	ì		<2.0	2.0	
Xylene, Ortho			<1.0	1.0	
	% Recovery	Control Limits			
ethane	105	88-115			
ne-d4	102	81-116			
	102	87-113			
nzene	100	<i>78-116</i>			
	Vinyl Chloride Xylene, Meta + Para Xylene, Ortho ethane ne-d4	Vinyl Chloride Xylene, Meta + Para Xylene, Ortho  **Recovery**  **thane** 105 **ne-d4** 102 102	Vinyl Chloride	Analyte         Result           Vinyl Chloride         <1.0	Analyte         Result         RL           Vinyl Chloride         <1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-3 (38'-42') Sampled: 03/09/09 15:57 Lab Sample ID: 0903132-03 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM Dilution Factor: 1 Analyzed: 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<20	20	
107-13-1	Acrylonitrile	<2.0	2.0	
71-43-2	Benzene	<1.0	1.0	
108-86-1	Bromobenzene	<1.0	1.0	
74-97-5	Bromochloromethane	<1.0	1.0	
75-27-4	Bromodichloromethane	<1.0	1.0	
75-25-2	Bromoform	<1.0	1.0	
74-83-9	Bromomethane	<5.0	5.0	
104-51-8	n-Butylbenzene	<1.0	1.0	
135-98-8	sec-Butylbenzene	<1.0	1.0	
98-06-6	tert-Butylbenzene	<1.0	1.0	
75-15-0	Carbon Disulfide	<1.0	1.0	
56-23-5	Carbon Tetrachloride	<1.0	1.0	
108-90-7	Chlorobenzene	<1.0	1.0	
75-00-3	Chloroethane	<5.0	5.0	
67-66-3	Chloroform	<1.0	1.0	
74-87-3	Chloromethane	<5.0	5.0	
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0	
124-48-1	Dibromochloromethane	<1.0	1.0	
106-93-4	1,2-Dibromoethane	<1.0	1.0	
74-95-3	Dibromomethane	<1.0	1.0	
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0	
95-50-1	1,2-Dichlorobenzene	<1.0	1.0	
541-73-1	1,3-Dichlorobenzene	<1.0	1.0	
106-46-7	1,4-Dichlorobenzene	<1.0	1.0	
75-71-8	Dichlorodifluoromethane	<5.0	5.0	
75-34-3	1,1-Dichloroethane	<1.0	1.0	
107-06-2	1,2-Dichloroethane	<1.0	1.0	
75-35-4	1,1-Dichloroethene	<1.0	1.0	
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0	
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-3 (38'-42') Sampled: 03/09/09 15:57 Lab Sample ID: 0903132-03 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM Dilution Factor: 1 Analyzed: 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	< 5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	< 5.0	5.0	
75-09-2	Methylene Chloride	<5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	<5.0	5.0	
108-88-3	Toluene	2.2	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-3 (38'-42') Sampled: 03/09/09 15:57 Lab Sample ID: 0903132-03 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM Dilution Factor: 1 Analyzed: 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			<1.0	1.0
136777-61-2	Xylene, Meta + Par	a		< 2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:		% Recovery	Control Limits		
Dibromofluorome	thane	103	88-115		
1,2-Dichloroethar	ne-d4	102	81-116		
Toluene-d8		101	87-113		
4-Bromofluorober	nzene	101	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-3 (26'-30') Sampled: 03/09/09 15:03 Lab Sample ID: 0903132-04 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM Dilution Factor: 1 Analyzed: 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0

Continued on next page

Page 11 of 20



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-3 (26'-30') Sampled: 03/09/09 15:03 Lab Sample ID: 0903132-04 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM Dilution Factor: 1 Analyzed: 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	2.6	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-3 (26'-30') Sampled: 03/09/09 15:03 Lab Sample ID: 0903132-04 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM Dilution Factor: 1 Analyzed: 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			1.4	1.0
136777-61-2	Xylene, Meta + Para	1		<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:		% Recovery	Control Limits		
Dibromofluoromet	thane	103	88-115		
1,2-Dichloroethan	e-d4	101	81-116		
Toluene-d8		101	87-113		
4-Bromofluoroben	zene	101	<i>78-116</i>		



Dilution Factor:

1

### **ANALYTICAL REPORT**

Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: Trip Blank Sampled: 03/04/09 20:29 Lab Sample ID: 0903132-05 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B**

Analyzed:

03/10/09

By: JDM

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: Trip Blank Sampled: 03/04/09 20:29 Lab Sample ID: 0903132-05 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM

Dilution Factor: 1 Analyzed: 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	<5.0	5.0	
91-57-6	2-Methylnaphthalene	<5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	<5.0	5.0	
91-20-3	Naphthalene	<5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	<5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	< 5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	

Continued on next page

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Dilution Factor:

1

### **ANALYTICAL REPORT**

Client: RMT, Inc. - Ann Arbor Office Work Order: 0903132

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: Trip Blank Sampled: 03/04/09 20:29 Lab Sample ID: 0903132-05 Sampled By: S. Middlebrook Matrix: Water Received: 03/10/09 09:30 Unit: Prepared: ug/L 03/10/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031047

### **Volatile Organic Compounds by EPA Method 8260B (Continued)**

Analyzed:

03/10/09

By: JDM

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			<1.0	1.0
136777-61-2	Xylene, Meta + Para	ì		<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:		% Recovery	Control Limits		
Dibromofluorome	thane	103	88-115		
1,2-Dichloroethan	ne-d4	102	81-116		
Toluene-d8		103	87-113		
4-Bromofluorober	nzene	101	<i>78-116</i>		



### Volatile Organic Compounds by EPA Method 8260B

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	₹L

QC Batch: 0902882 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank		Analyzed: 03/10/2009 By: JDM
Unit: ug/L		Analytical Batch: 9031047
Acetone	<20	20
Acrylonitrile	<2.0	2.0
Benzene	<1.0	1.0
Bromobenzene	<1.0	1.0
Bromochloromethane	<1.0	1.0
Bromodichloromethane	<1.0	1.0
Bromoform	<1.0	1.0
Bromomethane	< 5.0	5.0
n-Butylbenzene	<1.0	1.0
sec-Butylbenzene	<1.0	1.0
tert-Butylbenzene	<1.0	1.0
Carbon Disulfide	<1.0	1.0
Carbon Tetrachloride	<1.0	1.0
Chlorobenzene	<1.0	1.0
Chloroethane	< 5.0	5.0
Chloroform	<1.0	1.0
Chloromethane	< 5.0	5.0
1,2-Dibromo-3-chloropropane	<5.0	5.0
Dibromochloromethane	<1.0	1.0
1,2-Dibromoethane	<1.0	1.0
Dibromomethane	<1.0	1.0
trans-1,4-Dichloro-2-butene	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
1,3-Dichlorobenzene	<1.0	1.0
1,4-Dichlorobenzene	<1.0	1.0
Dichlorodifluoromethane	<5.0	5.0
1,1-Dichloroethane	<1.0	1.0
1,2-Dichloroethane	<1.0	1.0
1,1-Dichloroethene	<1.0	1.0
cis-1,2-Dichloroethene	<1.0	1.0
trans-1,2-Dichloroethene	<1.0	1.0
1,2-Dichloropropane	<1.0	1.0
cis-1,3-Dichloropropene	<1.0	1.0
trans-1,3-Dichloropropene	<1.0	1.0
Ethylbenzene	<1.0	1.0
Ethyl Ether	< 5.0	5.0



### Volatile Organic Compounds by EPA Method 8260B (Continued)

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits RL	•

QC Batch: 0902882 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank (Continued)				Analyzed:	03/10/2009	By: JDN
Unit: ug/L				Analytical Batch:	9031047	
2-Hexanone		< 5.0			5.0	
Iodomethane		<1.0			1.0	
Isopropylbenzene		<1.0			1.0	
4-Isopropyltoluene		< 5.0			5.0	
Methyl tert-Butyl Ether		< 5.0			5.0	
Methylene Chloride		< 5.0			5.0	
2-Butanone (MEK)		< 5.0			5.0	
2-Methylnaphthalene		< 5.0			5.0	
4-Methyl-2-pentanone (MIBK)		< 5.0			5.0	
Naphthalene		< 5.0			5.0	
n-Propylbenzene		<1.0			1.0	
Styrene		<1.0			1.0	
1,1,1,2-Tetrachloroethane		<1.0			1.0	
1,1,2,2-Tetrachloroethane		<1.0			1.0	
Tetrachloroethene		<1.0			1.0	
Tetrahydrofuran		< 5.0			5.0	
Toluene		<1.0			1.0	
1,2,3-Trichlorobenzene		< 5.0			5.0	
1,2,4-Trichlorobenzene		< 5.0			5.0	
1,1,1-Trichloroethane		<1.0			1.0	
1,1,2-Trichloroethane		<1.0			1.0	
Trichloroethene		<1.0			1.0	
Trichlorofluoromethane		<1.0			1.0	
1,2,3-Trichloropropane		<1.0			1.0	
1,2,4-Trimethylbenzene		<1.0			1.0	
1,3,5-Trimethylbenzene		<1.0			1.0	
Vinyl Chloride		<1.0			1.0	
Xylene, Meta + Para		<2.0			2.0	
Xylene, Ortho		<1.0			1.0	
Surrogates:						
Dibromofluoromethane			104	88-115		
1,2-Dichloroethane-d4			101	81-116		
Toluene-d8			102	87-113		
4-Bromofluorobenzene			101	78-116		
Laboratory Control Sample				Analyzed:	03/10/2009	By: JDM
Unit: ug/L				Analytical Batch:	9031047	
Benzene	40.0	41.4	104	86-122	1.0	

Continued on next page

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### **Volatile Organic Compounds by EPA Method 8260B (Continued)**

	Sample	Spike		Spike	Control		RPD
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits F

QC Batch: 0902882 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

<b>Laboratory Control Sample (Continued)</b> Unit: ug/L		)				yzed: ytical Batch:		/10/2009 31047	By: JDM
Chlorobenzene		40.0	40.0	100	88-114			1.0	
1,1-Dichloroethene		40.0	42.7	107	81-125			1.0	
Toluene		40.0	41.1	103	87-123			1.0	
Trichloroethene		40.0	41.5	104	80-122			1.0	
Surrogates:									
Dibromofluoromethane				105	88-115				
1,2-Dichloroethane-d4				98	81-116				
Toluene-d8				102	87-113				
4-Bromofluorobenzene				103	<i>78-116</i>				
<b>Matrix Spike 0903132-04</b> B-3 (26'-30') Unit: ug/L					yzed: ytical Batch:		/10/2009 31047	By: JDM	
Benzene	<1.0	40.0	41.6	104	84-127			1.0	
Chlorobenzene	<1.0	40.0	38.0	95	89-115			1.0	
1,1-Dichloroethene	<1.0	40.0	42.7	107	85-130			1.0	
Toluene	2.60	40.0	43.0	101	88-125			1.0	
Trichloroethene	<1.0	40.0	40.5	101	81-124			1.0	
Surrogates:									
Dibromofluoromethane				104	88-115				
1,2-Dichloroethane-d4				99	81-116				
Toluene-d8				101	87-113				
4-Bromofluorobenzene				104	<i>78-116</i>				
<b>Matrix Spike Duplicate 090</b> Unit: ug/L	<b>03132-04</b> B-3	3 (26'-30')				yzed: ytical Batch:		/10/2009 31047	By: JDM
Benzene	<1.0	40.0	41.6	104	84-127	0.02	8	1.0	
Chlorobenzene	<1.0	40.0	37.8	94	89-115	0.5	8	1.0	
1,1-Dichloroethene	<1.0	40.0	44.3	111	85-130	4	10	1.0	
Toluene	2.60	40.0	43.0	101	88-125	0.07	8	1.0	
Trichloroethene	<1.0	40.0	40.7	102	81-124	0.6	8	1.0	
Surrogates:									
Dibromofluoromethane				104	88-115				
1,2-Dichloroethane-d4				98	81-116				
Toluene-d8				102	87-113				
4-Bromofluorobenzene				104	<i>78-116</i>				



### STATEMENT OF DATA QUALIFICATIONS

All analyses have been validated and comply with our Quality Control Program.

No Qualifications required.

	Tri	Ma	ıtr	ix
0.0	Labo	ratori	es,	Inc.

5560 Corporate Exchange Court SE Grand Rapids, MI 49512 Phone (616) 975-4500 Fax (616) 942-7463

## Chain of Custody Record COC No. 128048

For Lab Use Only										Anal	yses Re	quested		Page of
VOA Rack/Tray 3971  Receipt Log No. 7-10	Client Na RM Address	T, Inc Ranchero Dr	Ta	ect Name PC UMS Int Project No.			ucts	1 /	5					D 1+1 HC1 pH<
Project Chemist Laboratory Project No. 0903132	Phone Fax	nn Arbor, MI 734-971-7080 734-971-9022	Cont	act/Report T	Client Other	commo	ents)	1	ontainer Ty	pe (corresp	onds to Centa	iner Packing	List)	E NaOH pH>12 F ZnAc/NaOH pH: G MeOH H Other more below
Test Matrix Laboratory Sum Group Code Number		Sample ID	Cooler ID	Sample Date	Sample Time		R A B	n IP			ontainers Sub			Sample Comments
51 0	1 B-	1 (46-50')	TM 1792	3-9-09	1107		x 60	<i>a</i>						
1 0	2 3 B-	1 (26'-30')	TM 1792	3-9-09	1157		x 6	02						
		3 <del>(46'5-50')</del> (38'-48					× 60	J 2						
< 0	4 B-	3 (26'-30') 3 (26'-30') MS/MS	TM 1792	3-9-09	1503		x 60	200						
	5 B-	3 (26'-30') MS/MS	ם דמוחים	3-9-09	1503	H	X 60	- 1						
03	6 TR	5-01	TM1792	3-4-09	2029			al						
	8													
	10													
Sampled By (print) Scot Middleb Sampler's Signature Lift Library Company	rosk	How Shipped? Hand Car Tracking No.	mer UPS		Comments	24	hr.	turn	al o u	nd or	samp	les,		
RMT, Inc		Se SM. ///	Date Tin	1445	2. Relinquishe	d By		Dat		time	3. Relinquisi	hod By	Dat	e Tone

# **US EPA ARCHIVE DOCUMENT**



March 12, 2009

RMT, Inc. - Ann Arbor Office Attn: John Bacon 3754 Ranchero Drive Ann Arbor, MI 48108-2771

### **Project: Tecumseh Products**

Dear John Bacon,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
0903159	03/11/2009	<b>Laboratory Services</b>

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Jennifer L. Rice Project Chemist

Enclosures(s)



Dilution Factor:

### ANALYTICAL REPORT

RMT, Inc. - Ann Arbor Office Client: Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-2 (33'-37') Sampled: 03/10/09 09:00 Lab Sample ID: 0903159-01 Sampled By: John Bacon Matrix: Received: 03/11/09 09:15 Water Unit: Prepared: ug/L 03/11/09 By: JDM 1 Analyzed: By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

### **Volatile Organic Compounds by EPA Method 8260B**

03/11/09

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<20	20	
107-13-1	Acrylonitrile	<2.0	2.0	
71-43-2	Benzene	<1.0	1.0	
108-86-1	Bromobenzene	<1.0	1.0	
74-97-5	Bromochloromethane	<1.0	1.0	
75-27-4	Bromodichloromethane	<1.0	1.0	
75-25-2	Bromoform	<1.0	1.0	
74-83-9	Bromomethane	<5.0	5.0	
104-51-8	n-Butylbenzene	<1.0	1.0	
135-98-8	sec-Butylbenzene	<1.0	1.0	
98-06-6	tert-Butylbenzene	<1.0	1.0	
75-15-0	Carbon Disulfide	<1.0	1.0	
56-23-5	Carbon Tetrachloride	<1.0	1.0	
108-90-7	Chlorobenzene	<1.0	1.0	
75-00-3	Chloroethane	< 5.0	5.0	
67-66-3	Chloroform	<1.0	1.0	
74-87-3	Chloromethane	< 5.0	5.0	
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0	
124-48-1	Dibromochloromethane	<1.0	1.0	
106-93-4	1,2-Dibromoethane	<1.0	1.0	
74-95-3	Dibromomethane	<1.0	1.0	
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0	
95-50-1	1,2-Dichlorobenzene	<1.0	1.0	
541-73-1	1,3-Dichlorobenzene	<1.0	1.0	
106-46-7	1,4-Dichlorobenzene	<1.0	1.0	
75-71-8	Dichlorodifluoromethane	<5.0	5.0	
75-34-3	1,1-Dichloroethane	<1.0	1.0	
107-06-2	1,2-Dichloroethane	<1.0	1.0	
75-35-4	1,1-Dichloroethene	<1.0	1.0	
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0	
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-2 (33'-37') Sampled: 03/10/09 09:00 Lab Sample ID: 0903159-01 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	< 5.0	5.0	
591-78-6	2-Hexanone	< 5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	< 5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	< 5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	4.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	

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Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-2 (33'-37') Sampled: 03/10/09 09:00 Lab Sample ID: 0903159-01 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			16	1.0
136777-61-2	Xylene, Meta + Para			<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:		% Recovery	Control Limits		
Dibromofluorome	thane	103	88-115		
1,2-Dichloroethar	ne-d4	100	81-116		
Toluene-d8		102	87-113		
4-Bromofluorobei	nzene	101	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-2 (22'-26') Sampled: 03/10/09 09:30 Lab Sample ID: 0903159-02 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-2 (22'-26') Sampled: 03/10/09 09:30 Lab Sample ID: 0903159-02 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	< 5.0	5.0	
591-78-6	2-Hexanone	< 5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	< 5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	< 5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	1.8	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-2 (22'-26') Sampled: 03/10/09 09:30 Lab Sample ID: 0903159-02 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			27	1.0
136777-61-2	Xylene, Meta + Para	ì		<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:		% Recovery	Control Limits		
Dibromofluoromet	hane	103	88-115		
1,2-Dichloroethan	e-d4	99	81-116		
Toluene-d8		101	87-113		
4-Bromofluoroben	zene	101	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-4 (29'-33') Sampled: 03/10/09 10:35 Lab Sample ID: 0903159-03 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-4 (29'-33') Sampled: 03/10/09 10:35 Lab Sample ID: 0903159-03 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-4 (29'-33') Sampled: 03/10/09 10:35 Lab Sample ID: 0903159-03 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			<1.0	1.0
136777-61-2	Xylene, Meta + Para			<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:		% Recovery	Control Limits		
Dibromofluoromet	thane	103	88-115		
1,2-Dichloroethan	e-d4	101	81-116		
Toluene-d8		102	87-113		
4-Bromofluoroben	zene	101	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-4 (19'-23') Sampled: 03/10/09 11:12 Lab Sample ID: 0903159-04 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-4 (19'-23') Sampled: 03/10/09 11:12 Lab Sample ID: 0903159-04 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-4 (19'-23') Sampled: 03/10/09 11:12 Lab Sample ID: 0903159-04 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			12	1.0
136777-61-2	Xylene, Meta + Para			<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:		% Recovery	Control Limits		
Dibromofluorome	thane	104	88-115		
1,2-Dichloroethan	e-d4	98	81-116		
Toluene-d8		102	87-113		
4-Bromofluorober	nzene	102	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-5 (22'-26') Sampled: 03/10/09 12:16 Lab Sample ID: 0903159-05 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-5 (22'-26') Sampled: 03/10/09 12:16 Lab Sample ID: 0903159-05 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-5 (22'-26') Sampled: 03/10/09 12:16 Lab Sample ID: 0903159-05 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			3.7	1.0
136777-61-2	Xylene, Meta + Para			<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:		% Recovery	Control Limits		
Dibromofluorome	thane	103	88-115		
1,2-Dichloroethar	ne-d4	100	81-116		
Toluene-d8		101	87-113		
4-Bromofluorobei	nzene	103	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-5 (14'-18) Sampled: 03/10/09 12:48 Lab Sample ID: 0903159-06 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<20	20	
107-13-1	Acrylonitrile	<2.0	2.0	
71-43-2	Benzene	<1.0	1.0	
108-86-1	Bromobenzene	<1.0	1.0	
74-97-5	Bromochloromethane	<1.0	1.0	
75-27-4	Bromodichloromethane	<1.0	1.0	
75-25-2	Bromoform	<1.0	1.0	
74-83-9	Bromomethane	<5.0	5.0	
104-51-8	n-Butylbenzene	<1.0	1.0	
135-98-8	sec-Butylbenzene	<1.0	1.0	
98-06-6	tert-Butylbenzene	<1.0	1.0	
75-15-0	Carbon Disulfide	<1.0	1.0	
56-23-5	Carbon Tetrachloride	<1.0	1.0	
108-90-7	Chlorobenzene	<1.0	1.0	
75-00-3	Chloroethane	<5.0	5.0	
67-66-3	Chloroform	<1.0	1.0	
74-87-3	Chloromethane	<5.0	5.0	
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0	
124-48-1	Dibromochloromethane	<1.0	1.0	
106-93-4	1,2-Dibromoethane	<1.0	1.0	
74-95-3	Dibromomethane	<1.0	1.0	
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0	
95-50-1	1,2-Dichlorobenzene	<1.0	1.0	
541-73-1	1,3-Dichlorobenzene	<1.0	1.0	
106-46-7	1,4-Dichlorobenzene	<1.0	1.0	
75-71-8	Dichlorodifluoromethane	<5.0	5.0	
75-34-3	1,1-Dichloroethane	<1.0	1.0	
107-06-2	1,2-Dichloroethane	<1.0	1.0	
75-35-4	1,1-Dichloroethene	<1.0	1.0	
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0	
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-5 (14'-18) Sampled: 03/10/09 12:48 Lab Sample ID: 0903159-06 Sampled By: John Bacon Matrix: Water Received: 03/11/09 09:15 Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	<5.0	5.0	
91-57-6	2-Methylnaphthalene	<5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	<5.0	5.0	
91-20-3	Naphthalene	<5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	<5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	< 5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	

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Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-5 (14'-18) Sampled: 03/10/09 12:48 Lab Sample ID: 0903159-06 Sampled By: John Bacon Matrix: Received: 03/11/09 09:15 Water Unit: Prepared: ug/L 03/11/09 By: JDM Dilution Factor: 1 Analyzed: 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

CAS Number	Analyte			Analytical Result	RL	
75-01-4	Vinyl Chloride			11	1.0	
136777-61-2	Xylene, Meta + Par	a		<2.0	2.0	
95-47-6	Xylene, Ortho			<1.0	1.0	
Surrogates:		% Recovery	Control Limits			
Dibromofluorome	ethane	103	88-115			
1,2-Dichloroetha	ne-d4	101	81-116			
Toluene-d8		102	87-113			
4-Bromofluorobe	nzene	102	<i>78-116</i>			



Client: RMT, Inc. - Ann Arbor Office Work

Project: Tecumseh Products

Client Sample ID: **Dup-01**Lab Sample ID: **0903159-07** 

Matrix: Water
Unit: ug/L
Dilution Factor: 1

QC Batch: 0902882

Work Order: **0903159** 

Description: Laboratory Services
Sampled: 03/10/09 00:00
Sampled By: John Bacon
Received: 03/11/09 09:15

Prepared: 03/11/09 By: JDM Analyzed: 03/11/09 By: JDM

Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0

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Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:Dup-01Sampled:03/10/09 00:00Lab Sample ID:0903159-07Sampled By:John Bacon

 Matrix:
 Water
 Received:
 03/11/09 09:15

 Unit:
 ug/L
 Prepared:
 03/11/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	< 5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:Dup-01Sampled:03/10/09 00:00Lab Sample ID:0903159-07Sampled By:John BaconMatrix:WaterReceived:03/11/09 09:15

 Matrix:
 Water
 Received:
 03/11/09 09:15

 Unit:
 ug/L
 Prepared:
 03/11/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

CAS Number	Analyte			Analytical Result	RL	
75-01-4	Vinyl Chloride			12	1.0	
136777-61-2	Xylene, Meta + Para			<2.0	2.0	
95-47-6	Xylene, Ortho			<1.0	1.0	
Surrogates:		% Recovery	Control Limits			
Dibromofluorom	ethane	104	88-115			
1,2-Dichloroetha	ne-d4	101	81-116			
Toluene-d8		103	87-113			
4-Bromofluorobe	enzene	102	<i>78-116</i>			



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:TB-02Sampled:03/04/09 20:29Lab Sample ID:0903159-08Sampled By:John Bacon

 Matrix:
 Water
 Received:
 03/11/09 09:15

 Unit:
 ug/L
 Prepared:
 03/11/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<20	20	
107-13-1	Acrylonitrile	<2.0	2.0	
71-43-2	Benzene	<1.0	1.0	
108-86-1	Bromobenzene	<1.0	1.0	
74-97-5	Bromochloromethane	<1.0	1.0	
75-27-4	Bromodichloromethane	<1.0	1.0	
75-25-2	Bromoform	<1.0	1.0	
74-83-9	Bromomethane	<5.0	5.0	
104-51-8	n-Butylbenzene	<1.0	1.0	
135-98-8	sec-Butylbenzene	<1.0	1.0	
98-06-6	tert-Butylbenzene	<1.0	1.0	
75-15-0	Carbon Disulfide	<1.0	1.0	
56-23-5	Carbon Tetrachloride	<1.0	1.0	
108-90-7	Chlorobenzene	<1.0	1.0	
75-00-3	Chloroethane	<5.0	5.0	
67-66-3	Chloroform	<1.0	1.0	
74-87-3	Chloromethane	<5.0	5.0	
96-12-8	1,2-Dibromo-3-chloropropane	<5.0	5.0	
124-48-1	Dibromochloromethane	<1.0	1.0	
106-93-4	1,2-Dibromoethane	<1.0	1.0	
74-95-3	Dibromomethane	<1.0	1.0	
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0	
95-50-1	1,2-Dichlorobenzene	<1.0	1.0	
541-73-1	1,3-Dichlorobenzene	<1.0	1.0	
106-46-7	1,4-Dichlorobenzene	<1.0	1.0	
75-71-8	Dichlorodifluoromethane	<5.0	5.0	
75-34-3	1,1-Dichloroethane	<1.0	1.0	
107-06-2	1,2-Dichloroethane	<1.0	1.0	
75-35-4	1,1-Dichloroethene	<1.0	1.0	
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0	
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:TB-02Sampled:03/04/09 20:29Lab Sample ID:0903159-08Sampled By:John Bacon

 Matrix:
 Water
 Received:
 03/11/09 09:15

 Unit:
 ug/L
 Prepared:
 03/11/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903159

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:TB-02Sampled:03/04/09 20:29Lab Sample ID:0903159-08Sampled By:John Bacon

 Matrix:
 Water
 Received:
 03/11/09 09:15

 Unit:
 ug/L
 Prepared:
 03/11/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 03/11/09 By: JDM

QC Batch: 0902882 Analytical Batch: 9031172

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			<1.0	1.0
136777-61-2	Xylene, Meta + Para			<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:	,	% Recovery	Control Limits		
Dibromofluorom	ethane	102	88-115		
1,2-Dichloroetha	ane-d4	99	81-116		
Toluene-d8		101	87-113		
4-Bromofluorobe	enzene	100	<i>78-116</i>		



#### QUALITY CONTROL REPORT

# Volatile Organic Compounds by EPA Method 8260B

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	₹L

QC Batch: 0902882 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank		Analyzed: 03/11/2009 By: JDM
Unit: ug/L		Analytical Batch: 9031172
Acetone	<20	20
Acrylonitrile	<2.0	2.0
Benzene	<1.0	1.0
Bromobenzene	<1.0	1.0
Bromochloromethane	<1.0	1.0
Bromodichloromethane	<1.0	1.0
Bromoform	<1.0	1.0
Bromomethane	< 5.0	5.0
n-Butylbenzene	<1.0	1.0
sec-Butylbenzene	<1.0	1.0
tert-Butylbenzene	<1.0	1.0
Carbon Disulfide	<1.0	1.0
Carbon Tetrachloride	<1.0	1.0
Chlorobenzene	<1.0	1.0
Chloroethane	< 5.0	5.0
Chloroform	<1.0	1.0
Chloromethane	<5.0	5.0
1,2-Dibromo-3-chloropropane	<5.0	5.0
Dibromochloromethane	<1.0	1.0
1,2-Dibromoethane	<1.0	1.0
Dibromomethane	<1.0	1.0
trans-1,4-Dichloro-2-butene	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
1,3-Dichlorobenzene	<1.0	1.0
1,4-Dichlorobenzene	<1.0	1.0
Dichlorodifluoromethane	<5.0	5.0
1,1-Dichloroethane	<1.0	1.0
1,2-Dichloroethane	<1.0	1.0
1,1-Dichloroethene	<1.0	1.0
cis-1,2-Dichloroethene	<1.0	1.0
trans-1,2-Dichloroethene	<1.0	1.0
1,2-Dichloropropane	<1.0	1.0
cis-1,3-Dichloropropene	<1.0	1.0
trans-1,3-Dichloropropene	<1.0	1.0
Ethylbenzene	<1.0	1.0
Ethyl Ether	<5.0	5.0



# **QUALITY CONTROL REPORT**

# Volatile Organic Compounds by EPA Method 8260B (Continued)

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0902882 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Unit: ug/L						
				Analytical Batch:	9031172	
2-Hexanone		<5.0			5.0	
Iodomethane		<1.0			1.0	
Isopropylbenzene		<1.0			1.0	
4-Isopropyltoluene		< 5.0			5.0	
Methyl tert-Butyl Ether		< 5.0			5.0	
Methylene Chloride		< 5.0			5.0	
2-Butanone (MEK)		< 5.0			5.0	
2-Methylnaphthalene		< 5.0			5.0	
4-Methyl-2-pentanone (MIBK)		< 5.0			5.0	
Naphthalene		< 5.0			5.0	
n-Propylbenzene		<1.0			1.0	
Styrene		<1.0			1.0	
1,1,1,2-Tetrachloroethane		<1.0			1.0	
1,1,2,2-Tetrachloroethane		<1.0			1.0	
Tetrachloroethene		<1.0			1.0	
Tetrahydrofuran		< 5.0			5.0	
Toluene		<1.0			1.0	
1,2,3-Trichlorobenzene		< 5.0			5.0	
1,2,4-Trichlorobenzene		< 5.0			5.0	
1,1,1-Trichloroethane		<1.0			1.0	
1,1,2-Trichloroethane		<1.0			1.0	
Trichloroethene		<1.0			1.0	
Trichlorofluoromethane		<1.0			1.0	
1,2,3-Trichloropropane		<1.0			1.0	
1,2,4-Trimethylbenzene		<1.0			1.0	
1,3,5-Trimethylbenzene		<1.0			1.0	
Vinyl Chloride		<1.0			1.0	
Xylene, Meta + Para		<2.0			2.0	
Xylene, Ortho		<1.0			1.0	
Surrogates:						
- Dibromofluoromethane			102	88-115		
1,2-Dichloroethane-d4			101	81-116		
Toluene-d8			102	87-113		
4-Bromofluorobenzene			101	78-116		
Laboratory Control Sample				Analyzed:	03/11/2009	By: JDM
Unit: ug/L				Analytical Batch:	9031172	
Benzene	40.0	40.9	102	86-122	1.0	

Continued on next page

Page 27 of 29



# **QUALITY CONTROL REPORT**

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits F	RL

QC Batch: 0902882 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Laboratory Control Sample (Continued)				Analyzed:	03/11/2009	By: JDM
Unit: ug/L				Analytical Batch:	9031172	
Chlorobenzene	40.0	39.1	98	88-114	1.0	
1,1-Dichloroethene	40.0	42.4	106	81-125	1.0	
Toluene	40.0	40.7	102	87-123	1.0	
Trichloroethene	40.0	40.9	102	80-122	1.0	
Surrogates:						
Dibromofluoromethane			104	88-115		
1,2-Dichloroethane-d4			98	81-116		
Toluene-d8			102	87-113		
4-Bromofluorobenzene			103	<i>78-116</i>		



# STATEMENT OF DATA QUALIFICATIONS

All analyses have been validated and comply with our Quality Control Program.

No Qualifications required.



5560 Corporate Exchange Court SE Grand Rapids, MI 49512 Phone (616) 975-4500 Fax (616) 942-7463 www.trimatrixlabs.com

# Chain of Custody Record COCNO. 128049

Cart	For L	ab Use Only									Analyses Requested		Page of
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		03	3 B-4	(29-33')		3-10-09	1035		× 60	2		2	
		04	" B-4	(219'- 23')		3-10-09	1112		x 60	J 2		2	
		05	B-5	(22'-26')		3-10-09	1216		x 6	42		a	
		06	6-5	(14'-18')		3-10-09	1248	1	x 60	12		2	
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# **US EPA ARCHIVE DOCUMENT**



March 17, 2009

RMT, Inc. - Ann Arbor Office Attn: John Bacon 3754 Ranchero Drive Ann Arbor, MI 48108-2771

# **Project: Tecumseh Products**

Dear John Bacon,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
0903247	03/13/2009	Laboratory Services

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Jennifer L. Rice Project Chemist

Enclosures(s)



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:Dup-02Sampled:03/13/09 00:00Lab Sample ID:0903247-01Sampled By:S. MiddlebrookMatrix:WaterReceived:03/13/09 20:50

Unit: ug/L Prepared: 03/16/09 By: JDM Dilution Factor: 20 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<400	400	
107-13-1	Acrylonitrile	<40	40	
71-43-2	Benzene	<20	20	
108-86-1	Bromobenzene	<20	20	
74-97-5	Bromochloromethane	<20	20	
75-27-4	Bromodichloromethane	<20	20	
75-25-2	Bromoform	<20	20	
74-83-9	Bromomethane	<100	100	
104-51-8	n-Butylbenzene	<20	20	
135-98-8	sec-Butylbenzene	<20	20	
98-06-6	tert-Butylbenzene	<20	20	
75-15-0	Carbon Disulfide	<20	20	
56-23-5	Carbon Tetrachloride	<20	20	
108-90-7	Chlorobenzene	<20	20	
75-00-3	Chloroethane	<100	100	
67-66-3	Chloroform	<20	20	
74-87-3	Chloromethane	<100	100	
96-12-8	1,2-Dibromo-3-chloropropane	<100	100	
124-48-1	Dibromochloromethane	<20	20	
106-93-4	1,2-Dibromoethane	<20	20	
74-95-3	Dibromomethane	<20	20	
110-57-6	trans-1,4-Dichloro-2-butene	<20	20	
95-50-1	1,2-Dichlorobenzene	<20	20	
541-73-1	1,3-Dichlorobenzene	<20	20	
106-46-7	1,4-Dichlorobenzene	<20	20	
75-71-8	Dichlorodifluoromethane	<100	100	
75-34-3	1,1-Dichloroethane	<20	20	
107-06-2	1,2-Dichloroethane	<20	20	
75-35-4	1,1-Dichloroethene	<20	20	
156-59-2	cis-1,2-Dichloroethene	<20	20	
156-60-5	trans-1,2-Dichloroethene	<20	20	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:Dup-02Sampled:03/13/09 00:00Lab Sample ID:0903247-01Sampled By:S. MiddlebrookMatrix:WaterReceived:03/13/09 20:50

Unit: ug/L Prepared: 03/16/09 By: JDM Dilution Factor: 20 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<20	20	
10061-01-5	cis-1,3-Dichloropropene	<20	20	
10061-02-6	trans-1,3-Dichloropropene	<20	20	
100-41-4	Ethylbenzene	<20	20	
60-29-7	Ethyl Ether	<100	100	
591-78-6	2-Hexanone	<100	100	
74-88-4	Iodomethane	<20	20	
98-82-8	Isopropylbenzene	<20	20	
99-87-6	4-Isopropyltoluene	<100	100	
1634-04-4	Methyl tert-Butyl Ether	<100	100	
75-09-2	Methylene Chloride	<100	100	
78-93-3	2-Butanone (MEK)	<100	100	
91-57-6	2-Methylnaphthalene	<100	100	
108-10-1	4-Methyl-2-pentanone (MIBK)	<100	100	
91-20-3	Naphthalene	<100	100	
103-65-1	n-Propylbenzene	<20	20	
100-42-5	Styrene	<20	20	
630-20-6	1,1,1,2-Tetrachloroethane	<20	20	
79-34-5	1,1,2,2-Tetrachloroethane	<20	20	
127-18-4	Tetrachloroethene	<20	20	
109-99-9	Tetrahydrofuran	<100	100	
108-88-3	Toluene	<20	20	
87-61-6	1,2,3-Trichlorobenzene	<100	100	
120-82-1	1,2,4-Trichlorobenzene	<100	100	
71-55-6	1,1,1-Trichloroethane	720	20	
79-00-5	1,1,2-Trichloroethane	<20	20	
79-01-6	Trichloroethene	2700	20	
75-69-4	Trichlorofluoromethane	<20	20	
96-18-4	1,2,3-Trichloropropane	<20	20	
95-63-6	1,2,4-Trimethylbenzene	<20	20	
108-67-8	1,3,5-Trimethylbenzene	<20	20	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:Dup-02Sampled:03/13/09 00:00Lab Sample ID:0903247-01Sampled By:S. MiddlebrookMatrix:WaterReceived:03/13/09 20:50

Unit: ug/L Prepared: 03/16/09 By: JDM
Dilution Factor: 20 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			<20	20
136777-61-2	Xylene, Meta + Para			<40	40
95-47-6	Xylene, Ortho			<20	20
Surrogates:		% Recovery	Control Limits		
Dibromofluorom	ethane	104	88-115		
1,2-Dichloroetha	ane-d4	103	81-116		
Toluene-d8		99	87-113		
4-Bromofluorobe	enzene	99	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-4sSampled:03/13/09 07:04Lab Sample ID:0903247-02Sampled By:S. MiddlebrookMatrix:WaterReceived:03/13/09 20:50

Unit: ug/L Prepared: 03/16/09 By: JDM Dilution Factor: 25 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# \*Volatile Organic Compounds by EPA Method 8260B

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<500	500	
107-13-1	Acrylonitrile	<50	50	
71-43-2	Benzene	<25	25	
108-86-1	Bromobenzene	<25	25	
74-97-5	Bromochloromethane	<25	25	
75-27-4	Bromodichloromethane	<25	25	
75-25-2	Bromoform	<25	25	
74-83-9	Bromomethane	<120	120	
104-51-8	n-Butylbenzene	<25	25	
135-98-8	sec-Butylbenzene	<25	25	
98-06-6	tert-Butylbenzene	<25	25	
75-15-0	Carbon Disulfide	<25	25	
56-23-5	Carbon Tetrachloride	<25	25	
108-90-7	Chlorobenzene	<25	25	
75-00-3	Chloroethane	<120	120	
67-66-3	Chloroform	<25	25	
74-87-3	Chloromethane	<120	120	
96-12-8	1,2-Dibromo-3-chloropropane	<120	120	
124-48-1	Dibromochloromethane	<25	25	
106-93-4	1,2-Dibromoethane	<25	25	
74-95-3	Dibromomethane	<25	25	
110-57-6	trans-1,4-Dichloro-2-butene	<25	25	
95-50-1	1,2-Dichlorobenzene	<25	25	
541-73-1	1,3-Dichlorobenzene	<25	25	
106-46-7	1,4-Dichlorobenzene	<25	25	
75-71-8	Dichlorodifluoromethane	<120	120	
75-34-3	1,1-Dichloroethane	<25	25	
107-06-2	1,2-Dichloroethane	<25	25	
75-35-4	1,1-Dichloroethene	<25	25	
156-59-2	cis-1,2-Dichloroethene	2100	25	
156-60-5	trans-1,2-Dichloroethene	70	25	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work C

Project: Tecumseh Products

Client Sample ID: **MW-4s**Lab Sample ID: **0903247-02** 

Matrix: Water
Unit: ug/L
Dilution Factor: 25

QC Batch: 0903090

Work Order: 0903247

Description: Laboratory Services
Sampled: 03/13/09 07:04
Sampled By: S. Middlebrook
Received: 03/13/09 20:50

Prepared: 03/16/09 By: JDM Analyzed: 03/16/09 By: JDM

Analytical Batch: 9031647

# \*Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
78-87-5	1,2-Dichloropropane	<25	25
10061-01-5	cis-1,3-Dichloropropene	<25	25
10061-02-6	trans-1,3-Dichloropropene	<25	25
100-41-4	Ethylbenzene	<25	25
60-29-7	Ethyl Ether	<120	120
591-78-6	2-Hexanone	<120	120
74-88-4	Iodomethane	<25	25
98-82-8	Isopropylbenzene	<25	25
99-87-6	4-Isopropyltoluene	<120	120
1634-04-4	Methyl tert-Butyl Ether	<120	120
75-09-2	Methylene Chloride	<120	120
78-93-3	2-Butanone (MEK)	<120	120
91-57-6	2-Methylnaphthalene	<120	120
108-10-1	4-Methyl-2-pentanone (MIBK)	<120	120
91-20-3	Naphthalene	<120	120
103-65-1	n-Propylbenzene	<25	25
100-42-5	Styrene	<25	25
630-20-6	1,1,1,2-Tetrachloroethane	<25	25
79-34-5	1,1,2,2-Tetrachloroethane	<25	25
127-18-4	Tetrachloroethene	<25	25
109-99-9	Tetrahydrofuran	<120	120
108-88-3	Toluene	<25	25
87-61-6	1,2,3-Trichlorobenzene	<120	120
120-82-1	1,2,4-Trichlorobenzene	<120	120
71-55-6	1,1,1-Trichloroethane	<25	25
79-00-5	1,1,2-Trichloroethane	<25	25
79-01-6	Trichloroethene	5000	25
75-69-4	Trichlorofluoromethane	<25	25
96-18-4	1,2,3-Trichloropropane	<25	25
95-63-6	1,2,4-Trimethylbenzene	<25	25
108-67-8	1,3,5-Trimethylbenzene	<25	25

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-4sSampled:03/13/09 07:04Lab Sample ID:0903247-02Sampled By:S. MiddlebrookMatrix:WaterReceived:03/13/09 20:50

Unit: ug/L Prepared: 03/16/09 By: JDM Dilution Factor: 25 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

CAS Number	Analyte			Analytical Result	RL	
75-01-4	Vinyl Chloride			460	25	
136777-61-2	Xylene, Meta + Para			<50	50	
95-47-6	Xylene, Ortho			<25	25	
Surrogates:		% Recovery	Control Limits			
Dibromofluoromethane		103	88-115			
1,2-Dichloroethane-d4		104	81-116			
Toluene-d8		99	87-113			
4-Bromofluorobenzene		99	<i>78-116</i>			

<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: MW-3s Sampled: 03/13/09 08:00

 Client Sample ID:
 MW-3s
 Sampled:
 03/13/09 08:00

 Lab Sample ID:
 0903247-03
 Sampled By:
 S. Middlebrook

 Matrix:
 Water
 Received:
 03/13/09 20:50

 Unit:
 ug/L
 Prepared:
 03/16/09 By: JDM

Dilution Factor: 2 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<40	40	
107-13-1	Acrylonitrile	< 4.0	4.0	
71-43-2	Benzene	<2.0	2.0	
108-86-1	Bromobenzene	<2.0	2.0	
74-97-5	Bromochloromethane	<2.0	2.0	
75-27-4	Bromodichloromethane	<2.0	2.0	
75-25-2	Bromoform	<2.0	2.0	
74-83-9	Bromomethane	<10	10	
104-51-8	n-Butylbenzene	<2.0	2.0	
135-98-8	sec-Butylbenzene	<2.0	2.0	
98-06-6	tert-Butylbenzene	<2.0	2.0	
75-15-0	Carbon Disulfide	<2.0	2.0	
56-23-5	Carbon Tetrachloride	<2.0	2.0	
108-90-7	Chlorobenzene	<2.0	2.0	
75-00-3	Chloroethane	<10	10	
67-66-3	Chloroform	<2.0	2.0	
74-87-3	Chloromethane	<10	10	
96-12-8	1,2-Dibromo-3-chloropropane	<10	10	
124-48-1	Dibromochloromethane	<2.0	2.0	
106-93-4	1,2-Dibromoethane	<2.0	2.0	
74-95-3	Dibromomethane	<2.0	2.0	
110-57-6	trans-1,4-Dichloro-2-butene	<2.0	2.0	
95-50-1	1,2-Dichlorobenzene	<2.0	2.0	
541-73-1	1,3-Dichlorobenzene	<2.0	2.0	
106-46-7	1,4-Dichlorobenzene	<2.0	2.0	
75-71-8	Dichlorodifluoromethane	<10	10	
75-34-3	1,1-Dichloroethane	9.1	2.0	
107-06-2	1,2-Dichloroethane	<2.0	2.0	
75-35-4	1,1-Dichloroethene	<2.0	2.0	
156-59-2	cis-1,2-Dichloroethene	240	2.0	
156-60-5	trans-1,2-Dichloroethene	9.1	2.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-3sSampled:03/13/09 08:00

Lab Sample ID: 0903247-03 Sampled By: S. Middlebrook Matrix: Water Received: 03/13/09 20:50 Unit: Prepared: ug/L 03/16/09 By: JDM **Dilution Factor:** 2 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<2.0	2.0	
10061-01-5	cis-1,3-Dichloropropene	<2.0	2.0	
10061-02-6	trans-1,3-Dichloropropene	<2.0	2.0	
100-41-4	Ethylbenzene	<2.0	2.0	
60-29-7	Ethyl Ether	<10	10	
591-78-6	2-Hexanone	<10	10	
74-88-4	Iodomethane	<2.0	2.0	
98-82-8	Isopropylbenzene	<2.0	2.0	
99-87-6	4-Isopropyltoluene	<10	10	
1634-04-4	Methyl tert-Butyl Ether	<10	10	
75-09-2	Methylene Chloride	<10	10	
78-93-3	2-Butanone (MEK)	<10	10	
91-57-6	2-Methylnaphthalene	<10	10	
108-10-1	4-Methyl-2-pentanone (MIBK)	<10	10	
91-20-3	Naphthalene	<10	10	
103-65-1	n-Propylbenzene	<2.0	2.0	
100-42-5	Styrene	<2.0	2.0	
630-20-6	1,1,1,2-Tetrachloroethane	<2.0	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	<2.0	2.0	
127-18-4	Tetrachloroethene	<2.0	2.0	
109-99-9	Tetrahydrofuran	<10	10	
108-88-3	Toluene	<2.0	2.0	
87-61-6	1,2,3-Trichlorobenzene	<10	10	
120-82-1	1,2,4-Trichlorobenzene	<10	10	
71-55-6	1,1,1-Trichloroethane	<2.0	2.0	
79-00-5	1,1,2-Trichloroethane	<2.0	2.0	
79-01-6	Trichloroethene	<2.0	2.0	
75-69-4	Trichlorofluoromethane	<2.0	2.0	
96-18-4	1,2,3-Trichloropropane	<2.0	2.0	
95-63-6	1,2,4-Trimethylbenzene	<2.0	2.0	
108-67-8	1,3,5-Trimethylbenzene	<2.0	2.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: MW-3s Sampled: 03/13/09 08:00
Lab Sample ID: 0903247-03 Sampled By: S. Middlebrook
Matrix: Water Received: 03/13/09 20:50

Unit: ug/L Prepared: 03/16/09 By: JDM Dilution Factor: 2 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			140	2.0
136777-61-2	Xylene, Meta + Para			<4.0	4.0
95-47-6	Xylene, Ortho			<2.0	2.0
Surrogates:		% Recovery	Control Limits		
Dibromofluorom	<i>ethane</i>	102	88-115		
1,2-Dichloroetha	ane-d4	104	81-116		
Toluene-d8		99	87-113		
4-Bromofluorobe	enzene	99	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-6 (44'-48') Sampled: 03/13/09 10:50 Lab Sample ID: 0903247-04 Sampled By: S. Middlebrook Matrix: Water Received: 03/13/09 20:50 Unit: Prepared: ug/L 03/16/09 By: JDM Dilution Factor: 1 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-6 (44'-48') Sampled: 03/13/09 10:50 Lab Sample ID: 0903247-04 Sampled By: S. Middlebrook Matrix: Water Received: 03/13/09 20:50 Unit: Prepared: ug/L 03/16/09 By: JDM Dilution Factor: 1 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL
78-87-5	1,2-Dichloropropane	<1.0	1.0
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0
100-41-4	Ethylbenzene	<1.0	1.0
60-29-7	Ethyl Ether	< 5.0	5.0
591-78-6	2-Hexanone	<5.0	5.0
74-88-4	Iodomethane	<1.0	1.0
98-82-8	Isopropylbenzene	<1.0	1.0
99-87-6	4-Isopropyltoluene	<5.0	5.0
1634-04-4	Methyl tert-Butyl Ether	< 5.0	5.0
75-09-2	Methylene Chloride	<5.0	5.0
78-93-3	2-Butanone (MEK)	< 5.0	5.0
91-57-6	2-Methylnaphthalene	< 5.0	5.0
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0
91-20-3	Naphthalene	< 5.0	5.0
103-65-1	n-Propylbenzene	<1.0	1.0
100-42-5	Styrene	<1.0	1.0
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0
127-18-4	Tetrachloroethene	<1.0	1.0
109-99-9	Tetrahydrofuran	<5.0	5.0
108-88-3	Toluene	3.5	1.0
87-61-6	1,2,3-Trichlorobenzene	< 5.0	5.0
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0
71-55-6	1,1,1-Trichloroethane	<1.0	1.0
79-00-5	1,1,2-Trichloroethane	<1.0	1.0
79-01-6	Trichloroethene	<1.0	1.0
75-69-4	Trichlorofluoromethane	<1.0	1.0
96-18-4	1,2,3-Trichloropropane	<1.0	1.0
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-6 (44'-48') Sampled: 03/13/09 10:50 Lab Sample ID: 0903247-04 Sampled By: S. Middlebrook Matrix: Water Received: 03/13/09 20:50 Unit: Prepared: ug/L 03/16/09 By: JDM Dilution Factor: 1 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			<1.0	1.0
136777-61-2	Xylene, Meta + Para	a		<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:		% Recovery	Control Limits		
Dibromofluoromet	hane	103	88-115		
1,2-Dichloroethane	e- <b>d4</b>	104	81-116		
Toluene-d8		99	87-113		
4-Bromofluoroben.	zene	99	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-5sSampled:03/13/09 13:22Lab Sample ID:0903247-05Sampled By:S. MiddlebrookMatrix:WaterReceived:03/13/09 20:50

Unit: ug/L Prepared: 03/14/09 By: JDM
Dilution Factor: 1 Analyzed: 03/14/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031646

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-5sSampled:03/13/09 13:22Lab Sample ID:0903247-05Sampled By:S. MiddlebrookMatrix:WaterReceived:03/13/09 20:50

Matrix:WaterReceived:03/13/09 20:50Unit:ug/LPrepared:03/14/09 By: JDMDilution Factor:1Analyzed:03/14/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031646

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	< 5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	< 5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	<5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	<5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	<5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	3.5	1.0	
109-99-9	Tetrahydrofuran	<5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	120	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	

Continued on next page

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Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: MW-5s Sampled: 03/13/09 13:22 Lab Sample ID: 0903247-05 Sampled By: S. Middlebrook Matrix: Water Received: 03/13/09 20:50 Unit: Prepared: ug/L 03/14/09 By: JDM

Dilution Factor: 1 Analyzed: 03/14/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031646

CAS Number	Analyte			Analytical Result	RL	
75-01-4	Vinyl Chloride			<1.0	1.0	
136777-61-2	Xylene, Meta + Para			<2.0	2.0	
95-47-6	Xylene, Ortho			<1.0	1.0	
Surrogates:		% Recovery	Control Limits			
Dibromofluorom	nethane	100	88-115			
1,2-Dichloroetha	ane-d4	102	81-116			
Toluene-d8		99	87-113			
4-Bromofluorobe	enzene	97	<i>78-116</i>			



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: Trip Blank-03 Sampled: 03/13/09 00:00 0903247-06 Lab Sample ID: Sampled By: S. Middlebrook Matrix: Water Received: 03/13/09 20:50 Unit: Prepared: ug/L 03/14/09 By: JDM Dilution Factor: 1 Analyzed: 03/14/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031646

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: Trip Blank-03 Sampled: 03/13/09 00:00 0903247-06 Lab Sample ID: Sampled By: S. Middlebrook Matrix: Water Received: 03/13/09 20:50 Unit: Prepared: ug/L 03/14/09 By: JDM Dilution Factor: 1 Analyzed: 03/14/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031646

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	< 5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: Trip Blank-03 Sampled: 03/13/09 00:00 Lab Sample ID: 0903247-06 Sampled By: S. Middlebrook Matrix: Water Received: 03/13/09 20:50 Unit: Prepared: ug/L 03/14/09 By: JDM Dilution Factor: 1 Analyzed: 03/14/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031646

Analyte			Analytical Result	RL	
Vinyl Chloride			<1.0	1.0	
Xylene, Meta + Para	a		<2.0	2.0	
Xylene, Ortho			<1.0	1.0	
	% Recovery	Control Limits			
ethane	100	88-115			
ne-d4	102	81-116			
	99	87-113			
nzene	98	<i>78-116</i>			
	Vinyl Chloride Xylene, Meta + Para Xylene, Ortho ethane ne-d4	Vinyl Chloride Xylene, Meta + Para Xylene, Ortho  **Recovery**  **thane** 100 102 99	Vinyl Chloride	Analyte         Result           Vinyl Chloride         <1.0	Analyte         Result         RL           Vinyl Chloride         <1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: MW-1s Sampled: 03/13/09 14:58
Lab Sample ID: 0903247-07 Sampled By: S. Middlebrook
Matrix: Water Received: 03/13/09 20:50

Unit: ug/L Prepared: 03/16/09 By: JDM Dilution Factor: 20 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<400	400	
107-13-1	Acrylonitrile	<40	40	
71-43-2	Benzene	<20	20	
108-86-1	Bromobenzene	<20	20	
74-97-5	Bromochloromethane	<20	20	
75-27-4	Bromodichloromethane	<20	20	
75-25-2	Bromoform	<20	20	
74-83-9	Bromomethane	<100	100	
104-51-8	n-Butylbenzene	<20	20	
135-98-8	sec-Butylbenzene	<20	20	
98-06-6	tert-Butylbenzene	<20	20	
75-15-0	Carbon Disulfide	<20	20	
56-23-5	Carbon Tetrachloride	<20	20	
108-90-7	Chlorobenzene	<20	20	
75-00-3	Chloroethane	<100	100	
67-66-3	Chloroform	<20	20	
74-87-3	Chloromethane	<100	100	
96-12-8	1,2-Dibromo-3-chloropropane	<100	100	
124-48-1	Dibromochloromethane	<20	20	
106-93-4	1,2-Dibromoethane	<20	20	
74-95-3	Dibromomethane	<20	20	
110-57-6	trans-1,4-Dichloro-2-butene	<20	20	
95-50-1	1,2-Dichlorobenzene	<20	20	
541-73-1	1,3-Dichlorobenzene	<20	20	
106-46-7	1,4-Dichlorobenzene	<20	20	
75-71-8	Dichlorodifluoromethane	<100	100	
75-34-3	1,1-Dichloroethane	<20	20	
107-06-2	1,2-Dichloroethane	<20	20	
75-35-4	1,1-Dichloroethene	<20	20	
156-59-2	cis-1,2-Dichloroethene	<20	20	
156-60-5	trans-1,2-Dichloroethene	<20	20	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-1sSampled:03/13/09 14:58Lab Sample ID:0903247-07Sampled By:S. MiddlebrookMatrix:WaterReceived:03/13/09 20:50

 Matrix:
 Water
 Received:
 03/13/09 20:50

 Unit:
 ug/L
 Prepared:
 03/16/09 By: JDM

 Dilution Factor:
 20
 Analyzed:
 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL
78-87-5	1,2-Dichloropropane	<20	20
10061-01-5	cis-1,3-Dichloropropene	<20	20
10061-02-6	trans-1,3-Dichloropropene	<20	20
100-41-4	Ethylbenzene	<20	20
60-29-7	Ethyl Ether	<100	100
591-78-6	2-Hexanone	<100	100
74-88-4	Iodomethane	<20	20
98-82-8	Isopropylbenzene	<20	20
99-87-6	4-Isopropyltoluene	<100	100
1634-04-4	Methyl tert-Butyl Ether	<100	100
75-09-2	Methylene Chloride	<100	100
78-93-3	2-Butanone (MEK)	<100	100
91-57-6	2-Methylnaphthalene	<100	100
108-10-1	4-Methyl-2-pentanone (MIBK)	<100	100
91-20-3	Naphthalene	<100	100
103-65-1	n-Propylbenzene	<20	20
100-42-5	Styrene	<20	20
630-20-6	1,1,1,2-Tetrachloroethane	<20	20
79-34-5	1,1,2,2-Tetrachloroethane	<20	20
127-18-4	Tetrachloroethene	<20	20
109-99-9	Tetrahydrofuran	<100	100
108-88-3	Toluene	<20	20
87-61-6	1,2,3-Trichlorobenzene	<100	100
120-82-1	1,2,4-Trichlorobenzene	<100	100
71-55-6	1,1,1-Trichloroethane	750	20
79-00-5	1,1,2-Trichloroethane	<20	20
79-01-6	Trichloroethene	2700	20
75-69-4	Trichlorofluoromethane	<20	20
96-18-4	1,2,3-Trichloropropane	<20	20
95-63-6	1,2,4-Trimethylbenzene	<20	20
108-67-8	1,3,5-Trimethylbenzene	<20	20



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-1sSampled:03/13/09 14:58Lab Sample ID:0903247-07Sampled By:S. MiddlebrookMatrix:WaterReceived:03/13/09 20:50

Unit: ug/L Prepared: 03/16/09 By: JDM Dilution Factor: 20 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			<20	20
136777-61-2	Xylene, Meta + Para			<40	40
95-47-6	Xylene, Ortho			<20	20
Surrogates:	%	6 Recovery	Control Limits		
Dibromofluorom	nethane	104	88-115		
1,2-Dichloroetha	ane-d4	103	81-116		
Toluene-d8		99	87-113		
4-Bromofluorobe	enzene	100	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-8 (44'-48') Sampled: 03/13/09 16:16 Lab Sample ID: 0903247-08 Sampled By: S. Middlebrook Matrix: Water Received: 03/13/09 20:50 Unit: Prepared: ug/L 03/16/09 By: JDM Dilution Factor: 1 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-8 (44'-48') Sampled: 03/13/09 16:16 Lab Sample ID: 0903247-08 Sampled By: S. Middlebrook Matrix: Water Received: 03/13/09 20:50 Unit: Prepared: ug/L 03/16/09 By: JDM Dilution Factor: 1 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	< 5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-8 (44'-48') Sampled: 03/13/09 16:16 Lab Sample ID: 0903247-08 Sampled By: S. Middlebrook Matrix: Water Received: 03/13/09 20:50 Unit: Prepared: ug/L 03/16/09 By: JDM Dilution Factor: 1 Analyzed: 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

CAS Number	Analyte			Analytical Result	RL	
75-01-4	Vinyl Chloride			<1.0	1.0	
136777-61-2	Xylene, Meta + Par	a		<2.0	2.0	
95-47-6	Xylene, Ortho			<1.0	1.0	
Surrogates:		% Recovery	Control Limits			
Dibromofluorome	ethane	102	88-115			
1,2-Dichloroetha	ne-d4	105	81-116			
Toluene-d8		99	87-113			
4-Bromofluorobe	enzene	99	<i>78-116</i>			



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-2sSampled:03/13/09 17:16Lab Sample ID:0903247-09Sampled By:S. MiddlebrookMatrix:WaterReceived:03/13/09 20:50

 Matrix:
 Water
 Received:
 03/13/09 20:50

 Unit:
 ug/L
 Prepared:
 03/16/09 By: JDM

 Dilution Factor:
 2
 Analyzed:
 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<40	40
107-13-1	Acrylonitrile	<4.0	4.0
71-43-2	Benzene	<2.0	2.0
108-86-1	Bromobenzene	<2.0	2.0
74-97-5	Bromochloromethane	<2.0	2.0
75-27-4	Bromodichloromethane	<2.0	2.0
75-25-2	Bromoform	<2.0	2.0
74-83-9	Bromomethane	<10	10
104-51-8	n-Butylbenzene	<2.0	2.0
135-98-8	sec-Butylbenzene	<2.0	2.0
98-06-6	tert-Butylbenzene	<2.0	2.0
75-15-0	Carbon Disulfide	<2.0	2.0
56-23-5	Carbon Tetrachloride	<2.0	2.0
108-90-7	Chlorobenzene	<2.0	2.0
75-00-3	Chloroethane	<10	10
67-66-3	Chloroform	<2.0	2.0
74-87-3	Chloromethane	<10	10
96-12-8	1,2-Dibromo-3-chloropropane	<10	10
124-48-1	Dibromochloromethane	<2.0	2.0
106-93-4	1,2-Dibromoethane	<2.0	2.0
74-95-3	Dibromomethane	<2.0	2.0
110-57-6	trans-1,4-Dichloro-2-butene	<2.0	2.0
95-50-1	1,2-Dichlorobenzene	<2.0	2.0
541-73-1	1,3-Dichlorobenzene	<2.0	2.0
106-46-7	1,4-Dichlorobenzene	<2.0	2.0
75-71-8	Dichlorodifluoromethane	<10	10
75-34-3	1,1-Dichloroethane	<2.0	2.0
107-06-2	1,2-Dichloroethane	<2.0	2.0
75-35-4	1,1-Dichloroethene	<2.0	2.0
156-59-2	cis-1,2-Dichloroethene	2.4	2.0
156-60-5	trans-1,2-Dichloroethene	<2.0	2.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-2sSampled:03/13/09 17:16Lab Sample ID:0903247-09Sampled By:S. Middlebrook

 Matrix:
 Water
 Received:
 03/13/09 20:50

 Unit:
 ug/L
 Prepared:
 03/16/09 By: JDM

 Dilution Factor:
 2
 Analyzed:
 03/16/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031647

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<2.0	2.0	
10061-01-5	cis-1,3-Dichloropropene	<2.0	2.0	
10061-02-6	trans-1,3-Dichloropropene	<2.0	2.0	
100-41-4	Ethylbenzene	<2.0	2.0	
60-29-7	Ethyl Ether	<10	10	
591-78-6	2-Hexanone	<10	10	
74-88-4	Iodomethane	<2.0	2.0	
98-82-8	Isopropylbenzene	<2.0	2.0	
99-87-6	4-Isopropyltoluene	<10	10	
1634-04-4	Methyl tert-Butyl Ether	<10	10	
75-09-2	Methylene Chloride	<10	10	
78-93-3	2-Butanone (MEK)	<10	10	
91-57-6	2-Methylnaphthalene	<10	10	
108-10-1	4-Methyl-2-pentanone (MIBK)	<10	10	
91-20-3	Naphthalene	<10	10	
103-65-1	n-Propylbenzene	<2.0	2.0	
100-42-5	Styrene	<2.0	2.0	
630-20-6	1,1,1,2-Tetrachloroethane	<2.0	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	<2.0	2.0	
127-18-4	Tetrachloroethene	2.2	2.0	
109-99-9	Tetrahydrofuran	<10	10	
108-88-3	Toluene	<2.0	2.0	
87-61-6	1,2,3-Trichlorobenzene	<10	10	
120-82-1	1,2,4-Trichlorobenzene	<10	10	
71-55-6	1,1,1-Trichloroethane	2.5	2.0	
79-00-5	1,1,2-Trichloroethane	<2.0	2.0	
79-01-6	Trichloroethene	280	2.0	
75-69-4	Trichlorofluoromethane	<2.0	2.0	
96-18-4	1,2,3-Trichloropropane	<2.0	2.0	
95-63-6	1,2,4-Trimethylbenzene	<2.0	2.0	
108-67-8	1,3,5-Trimethylbenzene	<2.0	2.0	



QC Batch:

# **ANALYTICAL REPORT**

Client: RMT, Inc. - Ann Arbor Office Work Order: 0903247

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: MW-2s Sampled: 03/13/09 17:16 Lab Sample ID: 0903247-09 Sampled By: S. Middlebrook Matrix: Water Received: 03/13/09 20:50 Unit: Prepared: ug/L 03/16/09 By: JDM

Dilution Factor: 2 Analyzed: 03/16/09 By: JDM

0903090 Analytical Batch: 9031647

CAS Number	Analyte			Analytical Result	RL	
75-01-4	Vinyl Chloride			<2.0	2.0	
136777-61-2	Xylene, Meta + Par	a		< 4.0	4.0	
95-47-6	Xylene, Ortho			<2.0	2.0	
Surrogates:		% Recovery	Control Limits			
Dibromofluorom	ethane	103	88-115			
1,2-Dichloroetha	ne-d4	103	81-116			
Toluene-d8		100	87-113			
4-Bromofluorobe	enzene	100	78-116			



# Volatile Organic Compounds by EPA Method 8260B

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	₹L

QC Batch: 0903090 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank		Analyzed: 03/14/2009 By: JDM
Unit: ug/L		Analytical Batch: 9031646
Acetone	<20	20
Acrylonitrile	<2.0	2.0
Benzene	<1.0	1.0
Bromobenzene	<1.0	1.0
Bromochloromethane	<1.0	1.0
Bromodichloromethane	<1.0	1.0
Bromoform	<1.0	1.0
Bromomethane	<5.0	5.0
n-Butylbenzene	<1.0	1.0
sec-Butylbenzene	<1.0	1.0
tert-Butylbenzene	<1.0	1.0
Carbon Disulfide	<1.0	1.0
Carbon Tetrachloride	<1.0	1.0
Chlorobenzene	<1.0	1.0
Chloroethane	< 5.0	5.0
Chloroform	<1.0	1.0
Chloromethane	<5.0	5.0
1,2-Dibromo-3-chloropropane	<5.0	5.0
Dibromochloromethane	<1.0	1.0
1,2-Dibromoethane	<1.0	1.0
Dibromomethane	<1.0	1.0
trans-1,4-Dichloro-2-butene	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
1,3-Dichlorobenzene	<1.0	1.0
1,4-Dichlorobenzene	<1.0	1.0
Dichlorodifluoromethane	<5.0	5.0
1,1-Dichloroethane	<1.0	1.0
1,2-Dichloroethane	<1.0	1.0
1,1-Dichloroethene	<1.0	1.0
cis-1,2-Dichloroethene	<1.0	1.0
trans-1,2-Dichloroethene	<1.0	1.0
1,2-Dichloropropane	<1.0	1.0
cis-1,3-Dichloropropene	<1.0	1.0
trans-1,3-Dichloropropene	<1.0	1.0
Ethylbenzene	<1.0	1.0
Ethyl Ether	<5.0	5.0



# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0903090 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank (Continued)			Analyzed:	03/14/2009	By: JDM
Unit: ug/L			Analytical Batch:	9031646	
2-Hexanone	<5.0			5.0	
Iodomethane	<1.0			1.0	
Isopropylbenzene	<1.0			1.0	
4-Isopropyltoluene	< 5.0			5.0	
Methyl tert-Butyl Ether	< 5.0			5.0	
Methylene Chloride	< 5.0			5.0	
2-Butanone (MEK)	< 5.0			5.0	
2-Methylnaphthalene	< 5.0			5.0	
4-Methyl-2-pentanone (MIBK)	< 5.0			5.0	
Naphthalene	< 5.0			5.0	
n-Propylbenzene	<1.0			1.0	
Styrene	<1.0			1.0	
1,1,1,2-Tetrachloroethane	<1.0			1.0	
1,1,2,2-Tetrachloroethane	<1.0			1.0	
Tetrachloroethene	<1.0			1.0	
Tetrahydrofuran	< 5.0			5.0	
Toluene	<1.0			1.0	
1,2,3-Trichlorobenzene	< 5.0			5.0	
1,2,4-Trichlorobenzene	< 5.0			5.0	
1,1,1-Trichloroethane	<1.0			1.0	
1,1,2-Trichloroethane	<1.0			1.0	
Trichloroethene	<1.0			1.0	
Trichlorofluoromethane	<1.0			1.0	
1,2,3-Trichloropropane	<1.0			1.0	
1,2,4-Trimethylbenzene	<1.0			1.0	
1,3,5-Trimethylbenzene	<1.0			1.0	
Vinyl Chloride	<1.0			1.0	
Xylene, Meta + Para	<2.0			2.0	
Xylene, Ortho	<1.0			1.0	
Surrogates:					
Dibromofluoromethane		100	88-115		
1,2-Dichloroethane-d4		101	81-116		
Toluene-d8		99	87-113		
4-Bromofluorobenzene		99	78-116		
Method Blank			Analyzed:	03/16/2009	By: JDN
Unit: ug/L			Analytical Batch:	9031647	
Acetone	<20			20	

Continued on next page

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# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits F	RL

QC Batch: 0903090 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank (Continued)		Analyzed: 03/16/2009 By: JDM
Unit: ug/L		Analytical Batch: 9031647
Acrylonitrile	<2.0	2.0
Benzene	<1.0	1.0
Bromobenzene	<1.0	1.0
Bromochloromethane	<1.0	1.0
Bromodichloromethane	<1.0	1.0
Bromoform	<1.0	1.0
Bromomethane	< 5.0	5.0
n-Butylbenzene	<1.0	1.0
sec-Butylbenzene	<1.0	1.0
tert-Butylbenzene	<1.0	1.0
Carbon Disulfide	<1.0	1.0
Carbon Tetrachloride	<1.0	1.0
Chlorobenzene	<1.0	1.0
Chloroethane	< 5.0	5.0
Chloroform	<1.0	1.0
Chloromethane	< 5.0	5.0
1,2-Dibromo-3-chloropropane	< 5.0	5.0
Dibromochloromethane	<1.0	1.0
1,2-Dibromoethane	<1.0	1.0
Dibromomethane	<1.0	1.0
trans-1,4-Dichloro-2-butene	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
1,3-Dichlorobenzene	<1.0	1.0
1,4-Dichlorobenzene	<1.0	1.0
Dichlorodifluoromethane	< 5.0	5.0
1,1-Dichloroethane	<1.0	1.0
1,2-Dichloroethane	<1.0	1.0
1,1-Dichloroethene	<1.0	1.0
cis-1,2-Dichloroethene	<1.0	1.0
trans-1,2-Dichloroethene	<1.0	1.0
1,2-Dichloropropane	<1.0	1.0
cis-1,3-Dichloropropene	<1.0	1.0
trans-1,3-Dichloropropene	<1.0	1.0
Ethylbenzene	<1.0	1.0
Ethyl Ether	< 5.0	5.0
2-Hexanone	< 5.0	5.0



# Volatile Organic Compounds by EPA Method 8260B (Continued)

	Sample	Spike		Spike	Control		RPD
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits R

QC Batch: 0903090 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank (Continued)				Analyzed:	03/16/2009	By: JDM
Unit: ug/L				Analytical Batch:	9031647	
Iodomethane		<1.0			1.0	
Isopropylbenzene		<1.0			1.0	
4-Isopropyltoluene		< 5.0			5.0	
Methyl tert-Butyl Ether		< 5.0			5.0	
Methylene Chloride		< 5.0			5.0	
2-Butanone (MEK)		< 5.0			5.0	
2-Methylnaphthalene		< 5.0			5.0	
4-Methyl-2-pentanone (MIBK)		< 5.0			5.0	
Naphthalene		< 5.0			5.0	
n-Propylbenzene		<1.0			1.0	
Styrene		<1.0			1.0	
1,1,1,2-Tetrachloroethane		<1.0			1.0	
1,1,2,2-Tetrachloroethane		<1.0			1.0	
Tetrachloroethene		<1.0			1.0	
Tetrahydrofuran		< 5.0			5.0	
Toluene		<1.0			1.0	
1,2,3-Trichlorobenzene		< 5.0			5.0	
1,2,4-Trichlorobenzene		< 5.0			5.0	
1,1,1-Trichloroethane		<1.0			1.0	
1,1,2-Trichloroethane		<1.0			1.0	
Trichloroethene		<1.0			1.0	
Trichlorofluoromethane		<1.0			1.0	
1,2,3-Trichloropropane		<1.0			1.0	
1,2,4-Trimethylbenzene		<1.0			1.0	
1,3,5-Trimethylbenzene		<1.0			1.0	
Vinyl Chloride		<1.0			1.0	
Xylene, Meta + Para		< 2.0			2.0	
Xylene, Ortho		<1.0			1.0	
Surrogates:						
Dibromofluoromethane			101	88-115		
1,2-Dichloroethane-d4			102	81-116		
Toluene-d8			99	87-113		
4-Bromofluorobenzene			99	78-116		
Laboratory Control Sample				Analyzed:	03/14/2009	By: JDN
Unit: ug/L				Analytical Batch:	9031646	
Benzene	40.0	37.2	93	86-122	1.0	

Continued on next page

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# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits F	RL

QC Batch: 0903090 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Laboratory Control Sample (Continued)				Analy			3/14/2009	By: JDM
Unit: ug/L				Analytical Batch:		9031646		
Chlorobenzene	40.0	37.6	94	88-114			1.0	
1,1-Dichloroethene	40.0	39.3	98	81-125			1.0	
Toluene	40.0	36.8	92	87-123			1.0	
Trichloroethene	40.0	37.3	93	80-122			1.0	
Surrogates:								
Dibromofluoromethane			102	88-115				
1,2-Dichloroethane-d4			100	81-116				
Toluene-d8			99	87-113				
4-Bromofluorobenzene			100	<i>78-116</i>				
Laboratory Control Sample				Analy	/zed:	03	/16/2009	By: JDN
Unit: ug/L				=	tical Batch:	90	31647	
Benzene	40.0	38.8	97	86-122			1.0	
Chlorobenzene	40.0	39.2	98	88-114			1.0	
1,1-Dichloroethene	40.0	40.8	102	81-125			1.0	
Toluene	40.0	38.6	97	87-123			1.0	
Trichloroethene	40.0	38.8	97	80-122			1.0	
Surrogates:								
Dibromofluoromethane			104	88-115				
1,2-Dichloroethane-d4			102	81-116				
Toluene-d8			101	87-113				
4-Bromofluorobenzene			101	<i>78-116</i>				
Laboratory Control Sample Duplicate				Analy	/zed:	03	/14/2009	By: JDN
Unit: ug/L				Analy	tical Batch:	90	31646	
Benzene	40.0	37.6	94	86-122	1	20	1.0	
Chlorobenzene	40.0	37.2	93	88-114	1	20	1.0	
1,1-Dichloroethene	40.0	40.0	100	81-125	2	20	1.0	
Toluene	40.0	37.0	93	87-123	0.7	20	1.0	
Trichloroethene	40.0	37.4	94	80-122	0.3	20	1.0	
Surrogates:								
Dibromofluoromethane			102	88-115				
1,2-Dichloroethane-d4			100	81-116				
Toluene-d8			99	87-113				
4-Bromofluorobenzene			100	78-116				



# STATEMENT OF DATA QUALIFICATIONS

# Volatile Organic Compounds by EPA Method 8260B

Qualification: Sample integrity for the parameter was suspect upon receipt; container had headspace. All

reported values, including non-detectable results, are considered estimated.

Analysis: USEPA-8260B

Sample/Analyte: 0903247-02 MW-4s

TriMatri Laboratories, I	X
Laboratories, I	nc.

5560 Corporate Exchange Court SE Grand Rapids, M 49512 Phone (616) 975-4500 Fax (616) 942-7463 www.trimatrixlabs.com

# Chain of Custody Record COCNO. 128050

For Lab Use Only						A	nalyses Requested		Pageof
VOA Rack/Tray  Le 72 W  Receipt Log No.  14-27  Client Name  RMT, Inc  Address  Ranchero Dr		Client Project N	Tecumseh Products						♦ PRESERVATIVES A NONE pH-7 B HNO <sub>1</sub> pH<2 C H <sub>2</sub> SO <sub>2</sub> pH<2 D 1+1 HC1 pH<2
Project Chemist  LUR  Laboratory Project No.  R0903247	Ann Arbor, MT Phone 734-971-7080 Pax 734 971-9022	Invoice No. Contact'Report	Client Other (co	niments			rresponds to Container Packing List)		E NaOH pH>12 F ZnAc/NaOH pH>0 G MeOH H Other (note below)
Test Matrix Laboratory Sample Group Code Number	Sample ID	Cooler ID Sample Date	Sample Time	C G D H M A P H	Matrix	Number	of Containers Submitted	Total	Sample Comments
-0	Dup-02	3-15-0	, —	×	6W	2		2	
- D:	mw-45	3-13-0	0704	X.	ćω	2		2	
-0:	3 mw-3s	3-13-0	0800	×	6ω	2		2	
-0	B-6 (44'-48')	3-/3-0	1050	×	60	2		2	
-0.	5 MW-55	3-13-0	1322	X	6W	2		2	
-0	"TB-03	no date	no tink			1		t	
-0	7 MW-15	The state of the s	1458	×	6W	2		2	
	B-8 (44-48')	3-13-64	1616	x	6W	2		2	
-0	7 " MW-45 25 00	3-13-09	1716	K	6W	а		2	
Sampled By (print) Scot Middleb Sample's Signature	How Shipped? Carrier,		Comments VOC	-		260B			
RMT, Inc	Sembled By This 3-13-11. Received By Day	09 2050	Relinquished I     Received By	_		Date Time	3. Received For Lab By	Date	Time (1905)

# **US EPA ARCHIVE DOCUMENT**



March 18, 2009

RMT, Inc. - Ann Arbor Office Attn: John Bacon 3754 Ranchero Drive Ann Arbor, MI 48108-2771

# **Project: Tecumseh Products**

Dear John Bacon,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
0903257	03/17/2009	Laboratory Services

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Jennifer L. Rice Project Chemist

Enclosures(s)



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-7 (44'-48') Sampled: 03/16/09 11:02 Lab Sample ID: 0903257-01 Sampled By: S. Middlebrook Matrix: Received: 03/17/09 08:39 Water Unit: Prepared: ug/L 03/17/09 By: JDM 1 Analyzed: By: JDM Dilution Factor: 03/17/09

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<20	20	
107-13-1	Acrylonitrile	<2.0	2.0	
71-43-2	Benzene	<1.0	1.0	
108-86-1	Bromobenzene	<1.0	1.0	
74-97-5	Bromochloromethane	<1.0	1.0	
75-27-4	Bromodichloromethane	<1.0	1.0	
75-25-2	Bromoform	<1.0	1.0	
74-83-9	Bromomethane	<5.0	5.0	
104-51-8	n-Butylbenzene	<1.0	1.0	
135-98-8	sec-Butylbenzene	<1.0	1.0	
98-06-6	tert-Butylbenzene	<1.0	1.0	
75-15-0	Carbon Disulfide	3.5	1.0	
56-23-5	Carbon Tetrachloride	<1.0	1.0	
108-90-7	Chlorobenzene	<1.0	1.0	
75-00-3	Chloroethane	<5.0	5.0	
67-66-3	Chloroform	<1.0	1.0	
74-87-3	Chloromethane	<5.0	5.0	
96-12-8	1,2-Dibromo-3-chloropropane	<5.0	5.0	
124-48-1	Dibromochloromethane	<1.0	1.0	
106-93-4	1,2-Dibromoethane	<1.0	1.0	
74-95-3	Dibromomethane	<1.0	1.0	
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0	
95-50-1	1,2-Dichlorobenzene	<1.0	1.0	
541-73-1	1,3-Dichlorobenzene	<1.0	1.0	
106-46-7	1,4-Dichlorobenzene	<1.0	1.0	
75-71-8	Dichlorodifluoromethane	<5.0	5.0	
75-34-3	1,1-Dichloroethane	<1.0	1.0	
107-06-2	1,2-Dichloroethane	<1.0	1.0	
75-35-4	1,1-Dichloroethene	<1.0	1.0	
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0	
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-7 (44'-48') Sampled: 03/16/09 11:02 Lab Sample ID: 0903257-01 Sampled By: S. Middlebrook Matrix: Water Received: 03/17/09 08:39 Unit: Prepared: ug/L 03/17/09 By: JDM Dilution Factor: 1 Analyzed: 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	<5.0	5.0	
91-57-6	2-Methylnaphthalene	<5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	<5.0	5.0	
91-20-3	Naphthalene	<5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	<5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	< 5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-7 (44'-48') Sampled: 03/16/09 11:02 Lab Sample ID: 0903257-01 Sampled By: S. Middlebrook Matrix: Water Received: 03/17/09 08:39 Unit: Prepared: ug/L 03/17/09 By: JDM Dilution Factor: 1 Analyzed: 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			<1.0	1.0
136777-61-2	Xylene, Meta + Para			<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:		% Recovery	Control Limits		
Dibromofluoromet	hane	105	88-115		
1,2-Dichloroethane	e-d4	109	81-116		
Toluene-d8		101	87-113		
4-Bromofluoroben.	zene	101	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project: Tecumseh Products

Client Sample ID: MW-7s

Lab Sample ID: O903257-02

Matrix: Water

Description: Laboratory Services

03/16/09 17:58

Sampled: 03/16/09 17:58

Sampled By: S. Middlebrook

Received: 03/17/09 08:39

Unit: ug/L Prepared: 03/17/09 By: JDM Dilution Factor: 1 Analyzed: 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<20	20	
107-13-1	Acrylonitrile	<2.0	2.0	
71-43-2	Benzene	<1.0	1.0	
108-86-1	Bromobenzene	<1.0	1.0	
74-97-5	Bromochloromethane	<1.0	1.0	
75-27-4	Bromodichloromethane	<1.0	1.0	
75-25-2	Bromoform	<1.0	1.0	
74-83-9	Bromomethane	<5.0	5.0	
104-51-8	n-Butylbenzene	<1.0	1.0	
135-98-8	sec-Butylbenzene	<1.0	1.0	
98-06-6	tert-Butylbenzene	<1.0	1.0	
75-15-0	Carbon Disulfide	<1.0	1.0	
56-23-5	Carbon Tetrachloride	<1.0	1.0	
108-90-7	Chlorobenzene	<1.0	1.0	
75-00-3	Chloroethane	<5.0	5.0	
67-66-3	Chloroform	<1.0	1.0	
74-87-3	Chloromethane	< 5.0	5.0	
96-12-8	1,2-Dibromo-3-chloropropane	<5.0	5.0	
124-48-1	Dibromochloromethane	<1.0	1.0	
106-93-4	1,2-Dibromoethane	<1.0	1.0	
74-95-3	Dibromomethane	<1.0	1.0	
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0	
95-50-1	1,2-Dichlorobenzene	<1.0	1.0	
541-73-1	1,3-Dichlorobenzene	<1.0	1.0	
106-46-7	1,4-Dichlorobenzene	<1.0	1.0	
75-71-8	Dichlorodifluoromethane	<5.0	5.0	
75-34-3	1,1-Dichloroethane	<1.0	1.0	
107-06-2	1,2-Dichloroethane	<1.0	1.0	
75-35-4	1,1-Dichloroethene	<1.0	1.0	
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0	
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-7sSampled:03/16/09 17:58Lab Sample ID:0903257-02Sampled By:S. MiddlebrookMatrix:WaterReceived:03/17/09 08:39

 Matrix:
 Water
 Received:
 03/17/09 08:39

 Unit:
 ug/L
 Prepared:
 03/17/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	< 5.0	5.0	
591-78-6	2-Hexanone	< 5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	< 5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	< 5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0	
71-55-6	1,1,1-Trichloroethane	2.1	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	10	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Dilution Factor:

1

# **ANALYTICAL REPORT**

Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: MW-7s Sampled: 03/16/09 17:58 Lab Sample ID: 0903257-02 Sampled By: S. Middlebrook Matrix: Water Received: 03/17/09 08:39 Unit: Prepared: ug/L 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

Analyzed:

03/17/09

By: JDM

CAS Number	Analyte			Analytical Result	RL	
75-01-4	Vinyl Chloride			<1.0	1.0	
136777-61-2	Xylene, Meta + Para	a		<2.0	2.0	
95-47-6	Xylene, Ortho			<1.0	1.0	
Surrogates:		% Recovery	Control Limits			
Dibromofluorom	ethane	104	88-115			
1,2-Dichloroetha	ne-d4	109	81-116			
Toluene-d8		102	87-113			
4-Bromofluorobe	enzene	102	<i>78-116</i>			



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: MW-8s Sampled: 03/16/09 18:24 Lab Sample ID: 0903257-03 Sampled By: S. Middlebrook Matrix: Water Received: 03/17/09 08:39 Unit:

Unit: ug/L Prepared: 03/17/09 By: JDM
Dilution Factor: 1 Analyzed: 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<20	20	
107-13-1	Acrylonitrile	<2.0	2.0	
71-43-2	Benzene	<1.0	1.0	
108-86-1	Bromobenzene	<1.0	1.0	
74-97-5	Bromochloromethane	<1.0	1.0	
75-27-4	Bromodichloromethane	<1.0	1.0	
75-25-2	Bromoform	<1.0	1.0	
74-83-9	Bromomethane	<5.0	5.0	
104-51-8	n-Butylbenzene	<1.0	1.0	
135-98-8	sec-Butylbenzene	<1.0	1.0	
98-06-6	tert-Butylbenzene	<1.0	1.0	
75-15-0	Carbon Disulfide	<1.0	1.0	
56-23-5	Carbon Tetrachloride	<1.0	1.0	
108-90-7	Chlorobenzene	<1.0	1.0	
75-00-3	Chloroethane	<5.0	5.0	
67-66-3	Chloroform	<1.0	1.0	
74-87-3	Chloromethane	< 5.0	5.0	
96-12-8	1,2-Dibromo-3-chloropropane	<5.0	5.0	
124-48-1	Dibromochloromethane	<1.0	1.0	
106-93-4	1,2-Dibromoethane	<1.0	1.0	
74-95-3	Dibromomethane	<1.0	1.0	
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0	
95-50-1	1,2-Dichlorobenzene	<1.0	1.0	
541-73-1	1,3-Dichlorobenzene	<1.0	1.0	
106-46-7	1,4-Dichlorobenzene	<1.0	1.0	
75-71-8	Dichlorodifluoromethane	<5.0	5.0	
75-34-3	1,1-Dichloroethane	<1.0	1.0	
107-06-2	1,2-Dichloroethane	<1.0	1.0	
75-35-4	1,1-Dichloroethene	<1.0	1.0	
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0	
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-8sSampled:03/16/09 18:24Lab Sample ID:0903257-03Sampled By:S. MiddlebrookMatrix:WaterReceived:03/17/09 08:39

 Matrix:
 Water
 Received:
 03/17/09 08:39

 Unit:
 ug/L
 Prepared:
 03/17/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	< 5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	< 5.0	5.0	
75-09-2	Methylene Chloride	<5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	<5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	11	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Dilution Factor:

1

#### **ANALYTICAL REPORT**

Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: MW-8s Sampled: 03/16/09 18:24 Lab Sample ID: 0903257-03 Sampled By: S. Middlebrook Matrix: Water Received: 03/17/09 08:39 Unit: Prepared: ug/L 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

Analyzed:

03/17/09

By: JDM

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			<1.0	1.0
136777-61-2	Xylene, Meta + Para	a		<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:		% Recovery	Control Limits		
Dibromofluoromet	hane	104	88-115		
1,2-Dichloroethan	e-d4	106	81-116		
Toluene-d8		101	87-113		
4-Bromofluoroben	zene	102	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: MW-9s Sampled: 03/16/09 19:14 Lab Sample ID: 0903257-04 Sampled By: S. Middlebrook Matrix: Water Received: 03/17/09 08:39 Unit: Prepared: ug/L 03/17/09 By: JDM

Dilution Factor: 20 Analyzed: 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<400	400	
107-13-1	Acrylonitrile	<40	40	
71-43-2	Benzene	<20	20	
108-86-1	Bromobenzene	<20	20	
74-97-5	Bromochloromethane	<20	20	
75-27-4	Bromodichloromethane	<20	20	
75-25-2	Bromoform	<20	20	
74-83-9	Bromomethane	<100	100	
104-51-8	n-Butylbenzene	<20	20	
135-98-8	sec-Butylbenzene	<20	20	
98-06-6	tert-Butylbenzene	<20	20	
75-15-0	Carbon Disulfide	<20	20	
56-23-5	Carbon Tetrachloride	<20	20	
108-90-7	Chlorobenzene	<20	20	
75-00-3	Chloroethane	<100	100	
67-66-3	Chloroform	<20	20	
74-87-3	Chloromethane	<100	100	
96-12-8	1,2-Dibromo-3-chloropropane	<100	100	
124-48-1	Dibromochloromethane	<20	20	
106-93-4	1,2-Dibromoethane	<20	20	
74-95-3	Dibromomethane	<20	20	
110-57-6	trans-1,4-Dichloro-2-butene	<20	20	
95-50-1	1,2-Dichlorobenzene	<20	20	
541-73-1	1,3-Dichlorobenzene	<20	20	
106-46-7	1,4-Dichlorobenzene	<20	20	
75-71-8	Dichlorodifluoromethane	<100	100	
75-34-3	1,1-Dichloroethane	<20	20	
107-06-2	1,2-Dichloroethane	<20	20	
75-35-4	1,1-Dichloroethene	<20	20	
156-59-2	cis-1,2-Dichloroethene	<20	20	
156-60-5	trans-1,2-Dichloroethene	<20	20	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-9sSampled:03/16/09 19:14Lab Sample ID:0903257-04Sampled By:S. MiddlebrookMatrix:WaterReceived:03/17/09 08:39

 Matrix:
 Water
 Received:
 03/17/09 08:39

 Unit:
 ug/L
 Prepared:
 03/17/09 By: JDM

 Dilution Factor:
 20
 Analyzed:
 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL
78-87-5	1,2-Dichloropropane	<20	20
10061-01-5	cis-1,3-Dichloropropene	<20	20
10061-02-6	trans-1,3-Dichloropropene	<20	20
100-41-4	Ethylbenzene	<20	20
60-29-7	Ethyl Ether	<100	100
591-78-6	2-Hexanone	<100	100
74-88-4	Iodomethane	<20	20
98-82-8	Isopropylbenzene	<20	20
99-87-6	4-Isopropyltoluene	<100	100
1634-04-4	Methyl tert-Butyl Ether	<100	100
75-09-2	Methylene Chloride	<100	100
78-93-3	2-Butanone (MEK)	<100	100
91-57-6	2-Methylnaphthalene	<100	100
108-10-1	4-Methyl-2-pentanone (MIBK)	<100	100
91-20-3	Naphthalene	<100	100
103-65-1	n-Propylbenzene	<20	20
100-42-5	Styrene	<20	20
630-20-6	1,1,1,2-Tetrachloroethane	<20	20
79-34-5	1,1,2,2-Tetrachloroethane	<20	20
127-18-4	Tetrachloroethene	<20	20
109-99-9	Tetrahydrofuran	<100	100
108-88-3	Toluene	<20	20
87-61-6	1,2,3-Trichlorobenzene	<100	100
120-82-1	1,2,4-Trichlorobenzene	<100	100
71-55-6	1,1,1-Trichloroethane	160	20
79-00-5	1,1,2-Trichloroethane	<20	20
79-01-6	Trichloroethene	1700	20
75-69-4	Trichlorofluoromethane	<20	20
96-18-4	1,2,3-Trichloropropane	<20	20
95-63-6	1,2,4-Trimethylbenzene	<20	20
108-67-8	1,3,5-Trimethylbenzene	<20	20



Dilution Factor:

20

#### **ANALYTICAL REPORT**

Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: MW-9s Sampled: 03/16/09 19:14 Lab Sample ID: 0903257-04 Sampled By: S. Middlebrook Matrix: Water Received: 03/17/09 08:39 Unit: Prepared: ug/L 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

Analyzed:

03/17/09

By: JDM

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			<20	20
136777-61-2	Xylene, Meta + Para	1		<40	40
95-47-6	Xylene, Ortho			<20	20
Surrogates:		% Recovery	Control Limits		
Dibromofluoromet	hane	105	88-115		
1,2-Dichloroethane	e- <b>d4</b>	107	81-116		
Toluene-d8		101	87-113		
4-Bromofluoroben.	zene	103	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: MW-6s Sampled: 03/16/09 19:43 Lab Sample ID: 0903257-05 Sampled By: S. Middlebrook Matrix: Water Received: 03/17/09 08:39 Unit: Prepared: ug/L 03/17/09 By: JDM

Dilution Factor: 1 Analyzed: 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<20	20	
107-13-1	Acrylonitrile	<2.0	2.0	
71-43-2	Benzene	<1.0	1.0	
108-86-1	Bromobenzene	<1.0	1.0	
74-97-5	Bromochloromethane	<1.0	1.0	
75-27-4	Bromodichloromethane	<1.0	1.0	
75-25-2	Bromoform	<1.0	1.0	
74-83-9	Bromomethane	<5.0	5.0	
104-51-8	n-Butylbenzene	<1.0	1.0	
135-98-8	sec-Butylbenzene	<1.0	1.0	
98-06-6	tert-Butylbenzene	<1.0	1.0	
75-15-0	Carbon Disulfide	<1.0	1.0	
56-23-5	Carbon Tetrachloride	<1.0	1.0	
108-90-7	Chlorobenzene	<1.0	1.0	
75-00-3	Chloroethane	<5.0	5.0	
67-66-3	Chloroform	<1.0	1.0	
74-87-3	Chloromethane	< 5.0	5.0	
96-12-8	1,2-Dibromo-3-chloropropane	<5.0	5.0	
124-48-1	Dibromochloromethane	<1.0	1.0	
106-93-4	1,2-Dibromoethane	<1.0	1.0	
74-95-3	Dibromomethane	<1.0	1.0	
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0	
95-50-1	1,2-Dichlorobenzene	<1.0	1.0	
541-73-1	1,3-Dichlorobenzene	<1.0	1.0	
106-46-7	1,4-Dichlorobenzene	<1.0	1.0	
75-71-8	Dichlorodifluoromethane	<5.0	5.0	
75-34-3	1,1-Dichloroethane	<1.0	1.0	
107-06-2	1,2-Dichloroethane	<1.0	1.0	
75-35-4	1,1-Dichloroethene	<1.0	1.0	
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0	
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-6sSampled:03/16/09 19:43Lab Sample ID:0903257-05Sampled By:S. MiddlebrookMatrix:WaterReceived:03/17/09 08:39

 Matrix:
 Water
 Received:
 03/17/09 08:39

 Unit:
 ug/L
 Prepared:
 03/17/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	<5.0	5.0	
78-93-3	2-Butanone (MEK)	<5.0	5.0	
91-57-6	2-Methylnaphthalene	<5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	<5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	<5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	< 5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	21	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	



Dilution Factor:

1

#### **ANALYTICAL REPORT**

Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: MW-6s Sampled: 03/16/09 19:43 Lab Sample ID: 0903257-05 Sampled By: S. Middlebrook Matrix: Water Received: 03/17/09 08:39 Unit: Prepared: ug/L 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

Analyzed:

03/17/09

By: JDM

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			<1.0	1.0
136777-61-2	Xylene, Meta + Para	1		<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:		% Recovery	Control Limits		
Dibromofluorometi	hane	103	88-115		
1,2-Dichloroethane	e-d4	107	81-116		
Toluene-d8		101	87-113		
4-Bromofluorobenz	zene	101	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:TB-04Sampled:03/16/09 09:25Lab Sample ID:0903257-06Sampled By:S. Middlebrook

 Matrix:
 Water
 Received:
 03/17/09 08:39

 Unit:
 ug/L
 Prepared:
 03/17/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	< 5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0



Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: TB-04 Sampled: 03/16/09 09:25
Lab Sample ID: 0903257-06 Sampled By: S. Middlebrook

 Matrix:
 Water
 Received:
 03/17/09 08:39

 Unit:
 ug/L
 Prepared:
 03/17/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 03/17/09 By: JDM

QC Batch: 0903090 Analytical Batch: 9031730

# **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	<5.0	5.0	
91-57-6	2-Methylnaphthalene	<5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	<5.0	5.0	
91-20-3	Naphthalene	<5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	<5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	< 5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	

Continued on next page

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QC Batch:

0903090

#### **ANALYTICAL REPORT**

Client: RMT, Inc. - Ann Arbor Office Work Order: 0903257

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:TB-04Sampled:03/16/09 09:25Lab Sample ID:0903257-06Sampled By:S. MiddlebrookMatrix:WaterReceived:03/17/09 08:39

Unit: ug/L Prepared: 03/17/09 By: JDM Dilution Factor: 1 Analyzed: 03/17/09 By: JDM

# Volatile Organic Compounds by EPA Method 8260B (Continued)

Analytical Batch: 9031730

CAS Number	Analyte			Analytical Result	RL	
75-01-4	Vinyl Chloride			<1.0	1.0	
136777-61-2	Xylene, Meta + Para			<2.0	2.0	
95-47-6	Xylene, Ortho			<1.0	1.0	
Surrogates:	%	Recovery	Control Limits			
Dibromofluoromet	thane	104	88-115			
1,2-Dichloroethan	e-d4	110	81-116			
Toluene-d8		101	87-113			
4-Bromofluoroben	zene	103	<i>78-116</i>			



#### QUALITY CONTROL REPORT

# Volatile Organic Compounds by EPA Method 8260B

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	₹L

QC Batch: 0903090 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank		Analyzed: 03/17/2009 By: JDM
Unit: ug/L		Analytical Batch: 9031730
Acetone	<20	20
Acrylonitrile	<2.0	2.0
Benzene	<1.0	1.0
Bromobenzene	<1.0	1.0
Bromochloromethane	<1.0	1.0
Bromodichloromethane	<1.0	1.0
Bromoform	<1.0	1.0
Bromomethane	<5.0	5.0
n-Butylbenzene	<1.0	1.0
sec-Butylbenzene	<1.0	1.0
tert-Butylbenzene	<1.0	1.0
Carbon Disulfide	<1.0	1.0
Carbon Tetrachloride	<1.0	1.0
Chlorobenzene	<1.0	1.0
Chloroethane	< 5.0	5.0
Chloroform	<1.0	1.0
Chloromethane	<5.0	5.0
1,2-Dibromo-3-chloropropane	<5.0	5.0
Dibromochloromethane	<1.0	1.0
1,2-Dibromoethane	<1.0	1.0
Dibromomethane	<1.0	1.0
trans-1,4-Dichloro-2-butene	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
1,3-Dichlorobenzene	<1.0	1.0
1,4-Dichlorobenzene	<1.0	1.0
Dichlorodifluoromethane	<5.0	5.0
1,1-Dichloroethane	<1.0	1.0
1,2-Dichloroethane	<1.0	1.0
1,1-Dichloroethene	<1.0	1.0
cis-1,2-Dichloroethene	<1.0	1.0
trans-1,2-Dichloroethene	<1.0	1.0
1,2-Dichloropropane	<1.0	1.0
cis-1,3-Dichloropropene	<1.0	1.0
trans-1,3-Dichloropropene	<1.0	1.0
Ethylbenzene	<1.0	1.0
Ethyl Ether	<5.0	5.0



# **QUALITY CONTROL REPORT**

# Volatile Organic Compounds by EPA Method 8260B (Continued)

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0903090 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank (Continued)				Analyzed:	03/17/2009	By: JDM
Unit: ug/L				Analytical Batch:	9031730	
2-Hexanone		<5.0			5.0	
Iodomethane		<1.0			1.0	
Isopropylbenzene		<1.0			1.0	
4-Isopropyltoluene		< 5.0			5.0	
Methyl tert-Butyl Ether		< 5.0			5.0	
Methylene Chloride		< 5.0			5.0	
2-Butanone (MEK)		< 5.0			5.0	
2-Methylnaphthalene		< 5.0			5.0	
4-Methyl-2-pentanone (MIBK)		< 5.0			5.0	
Naphthalene		< 5.0			5.0	
n-Propylbenzene		<1.0			1.0	
Styrene		<1.0			1.0	
1,1,1,2-Tetrachloroethane		<1.0			1.0	
1,1,2,2-Tetrachloroethane		<1.0			1.0	
Tetrachloroethene		<1.0			1.0	
Tetrahydrofuran		< 5.0			5.0	
Toluene		<1.0			1.0	
1,2,3-Trichlorobenzene		< 5.0			5.0	
1,2,4-Trichlorobenzene		< 5.0			5.0	
1,1,1-Trichloroethane		<1.0			1.0	
1,1,2-Trichloroethane		<1.0			1.0	
Trichloroethene		<1.0			1.0	
Trichlorofluoromethane		<1.0			1.0	
1,2,3-Trichloropropane		<1.0			1.0	
1,2,4-Trimethylbenzene		<1.0			1.0	
1,3,5-Trimethylbenzene		<1.0			1.0	
Vinyl Chloride		<1.0			1.0	
Xylene (Total)		< 3.0			3.0	
Surrogates:						
Dibromofluoromethane			102	88-115		
1,2-Dichloroethane-d4			103	81-116		
Toluene-d8			99	87-113		
4-Bromofluorobenzene			99	78-116		
Laboratory Control Sample				Analyzed:	03/17/2009	By: JDN
Unit: ug/L				Analytical Batch:	9031730	
Benzene	40.0	37.7	94	86-122	1.0	

Continued on next page

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# **QUALITY CONTROL REPORT**

# Volatile Organic Compounds by EPA Method 8260B (Continued)

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits F	RL

QC Batch: 0903090 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Laboratory Control Sample (Continu	ued)	•	Analyzed:	03/17/2009	By: JDM	
Unit: ug/L				Analytical Batch:		
Chlorobenzene	40.0	37.9	95	88-114	1.0	
1,1-Dichloroethene	40.0	38.4	96	81-125	1.0	
Toluene	40.0	37.7	94	87-123	1.0	
Trichloroethene	40.0	37.3	93	80-122	1.0	
Surrogates:						
Dibromofluoromethane			103	88-115		
1,2-Dichloroethane-d4			102	81-116		
Toluene-d8			100	87-113		
4-Bromofluorobenzene			101	78-116		



# STATEMENT OF DATA QUALIFICATIONS

All analyses have been validated and comply with our Quality Control Program.

No Qualifications required.

	TriMatrix Laboratories, Inc.	
4	Laboratories, Inc.	

5560 Corporate Exchange Court SE Grand Rapids, MI 49512 Phone (616) 975-4500 Fax (616) 942-7463

# Chain of Custody Record COC No. 128128

Cart	For L	ab Use Only											Ana	ilyses Requ	ested		Pageof
VOA Rack/Tray  405 Red  Receipt Log No.  Project Chemist  Laboratory Project No.  0903257		Address Ranchero Dr Rozo Rozo Rozo Rozo Rozo Rozo Rozo Roz					No./PO. No.  D. O 2  Client  Other (comments)			1	D S Ontainer Type (corres				PRESERVATIVES  A NONE pH~7  B HNO, pH<2  C H,SO <sub>4</sub> pH<2  D 1+1 HC1 pH<2  E NaOH pH>12  F ZnAc/NaOH pH>6  G MeOH  H Other (note below		
	Matrix	Laboratory Sample Number			Sample ID	Cooler		Sample Time		G R A B	Matrix			Containers Submitt		Total	Sample Comments
01		01	1	8-7	(44'-48')	153	39 3-16-0	1102		×	6W	2				2	
		02	2	mw.	-73	153	3-16-0	91758		×	60	2				2	
		03	3	mw-	· 8s	153	9 3-16-09	1824		X	6W	2				2	
		04	4	mw.	-95	153	9 3-16-09	1914		X	6W	2				2	
1		05	5	mw.	- 65	153	9 3-16-09	1943		X	6W	2				2	
03		06	7	TB-	04	153	9 3-12-01	09 25				1				1	
			8														
			10														
Sample Sample Sample Compa	d By (p	rint) Piddlebrook ature Public The	c		How Shipped? (Hand) C Tracking No.  1. Relinquished By	Date		Comments  2. Relinquished	63			,	y 82608		ly	Date	Time
B	mT	tnc			1. Received By	3-17-09 Date	0839 Time	2. Received By				Date	e Time	3. Received For L		3.1	7.09 0839

# **US EPA ARCHIVE DOCUMENT**



# **ECCS Onsite Laboratory Case Narrative**

Report Date	May 4, 2009
Client	RMT – Ann Arbor Office
Site/ Project Name	Tecumseh Products Company
Location	Tecumseh, MI
Dates of Service	April 13 through April 21, 2009
<b>Test Method Reference</b>	EPA SW846 8260
ECCS Project Number	2477
Client Project or PO Number	8070.02

#### 1. Introduction

ECCS was on-site at the referenced site to provide analytical chemistry support during site investigation activities. The target analytes for the project included the attached list, with all but 1,4 dioxane analyzed for all samples. The laboratory analyzed 29 soil samples and 95 water samples while on site. Of these, 17 soils and 44 water samples were analyzed for 1,4-dioxane. Since all samples were prepared / analyzed upon receipt by the laboratory, all method holding times were met. The ECCS Lead Chemist was Eric Moen and the ECCS project manager was Nick Nigro.

# 2. ECCS Method Summary

- ECCS used its Standard Operating Procedures (SOP) ECCS LAM-004 8260PT for the volatile organic compounds (VOCs) and LAM-010 8260 DI SIM for 1,4-dioxane.
- Soil samples were each collected by RMT using Lock-N-Load syringes and a specimen cup (total solids analysis). Water samples were collected by RMT in unpreserved 40milliliter (mL) VOC vials.
- ECCS received all soil samples in the field lab and prepared/analyzed them within 48 hours of receipt.
- Soil samples were extruded from the Lock-n-Load syringe into tarred scintillation vials and the soil sample weights recorded. Ten milliliters of methanol was added to the soil sample. The soil sample was then vortexed to break up any clumps and sonicated for 20 minutes. After time for settling, 1 milliliter of soil extract was transferred to a GC vial for the purpose of screening for high levels of volatiles and quantitatively determining 1,4-dioxane, if requested. Water samples were also screened and analyzed for 1,4-dioxane if requested. Screening of waters and soil extracts were carried out using a HP 5890/5972 GC/MS system equipped with a CTC autosampler.

Environmental Chemistry Consulting Services, Inc.



- Quantitative analysis of water and soil was accomplished with a HP 5890/5971 GC/MS system coupled to two Tekmar LSC-2000 purge and trap concentrators. Water samples were prepared for purge and trap GC/MS analysis by measuring a portion of the sample into a 10 mL syringe, spiking with an internal surrogate standard solution, and loading it onto the Tekmar purge and trap for analysis. Soils were analyzed by diluting a portion of the soil extract with lab pure water in the 10 mL syringe.
- Soil samples are reported to 25 μg/kg (on a wet weight basis) for most of the constituents of concern. Note that sample weight, dilution, and percent moisture effect reporting limits when reported on a dry weight basis. Water samples are reported to 1 μg/L for most analytes of concern. For both matrices, elevated report limits are used for chloroethane and naphthalene because of poor instrument response. Note that individual sample report limits also may vary due to dilutions required to bring analytes within the calibration range of the system.
- Standard QC samples were analyzed in accordance with the referenced SOP and as described in Section 4 of this narrative."

# 3. Quality Control Summary

<b>Instrument Tuning</b>	Instrument tuning was verified every twelve hours using 4-bromofluoro benzene. All acceptance criteria were met.
Initial Calibration	An initial calibration using 7 points was performed on 04/09/09 for the VOCs and 7 points for 1,4-dioxane. The calibration was verified using a single point second source standard. All method calibration criteria were acceptable.
Continuing Calibration	The instrument calibration was verified every 12 hours using a single point calibration standard. The method criteria was acceptable for all of the constituents of concern at the site, except for vinyl chloride, which were noted (and flagged)
Method Blanks	The method blanks that were analyzed each day were free of contamination.
Blank Spikes	The recoveries for the constituents of concern were acceptable.
MS/MSD	The recoveries for the constituents of concern were acceptable.

Environmental Chemistry Consulting Services, Inc.



# 4. Analytical Reports

Several sample results are reported from a dilution, and are subsequently flagged as such in the attached reports. A small number of samples exhibited QC performance issues and are also subsequently flagged with the appropriate qualifiers.

The analytical results are presented in summary format in the attachments that follow:

- Attachment A STW Sample Report
- Attachment B MW Sample Report
- Attachment C NS/SS Sample Report
- Attachment D B Sample Report

Attachment E contains Chain of Custody Documentation.

# 5. Signature Approval

This document has been prepar	ed by the under-signed:
// M/10	
- 1/1/0/11	
me / our	5-04-2009
(Name)	Date
Lead Chemist	

This document has been reviewed by the under-signed:

Name) Date
Project Manager



Attachment A STW Sample Report

Environmental Chemistry Consulting Services, Inc.





3754 Ranchero Drive

RMT, Inc

# **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 1 of 4

Project: Tecumseh Products Company

Project Number: [none]

Project Manager: Stacy Metz

**REPORTED:** 05/01/2009 10:50

Ann Arbor, MI 48108

**SAMPLED:** 04/13/2009 **RECEIVED:** 04/13/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091601-04 Water STW #1	T091601-05 Water STW #2	T091601-06 Water STW #3	T091601-07 Water STW #4	T091601-08 Water STW #5	T091601-09 Water STW #6
Volatile Organic Compounds	by EPA Method 8260	)B (Water)					
Benzene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butyl Benzene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroform	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	1.6	<1.0
1,1-Dichloroethene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
n-Propyl Benzene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	1.0 ug/L	<1.0 [1]	23 [1]	<1.0	<1.0	<1.0	<1.0
m,p-Xylene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromofluoromethane	140 [surr]	109%	99.9%	112%	107%	113%	102%
Toluene-d8	140 [surr]	102%	94.4%	104%	95.3%	101%	94.6%

# **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





# **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 2 of 4

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/13/2009 **REPORTED:** 05/01/2009 10:50

**RECEIVED:** 04/13/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091601-04 Water STW #1	T091601-05 Water STW #2	T091601-06 Water STW #3	T091601-07 Water STW #4	T091601-08 Water STW #5	T091601-09 Water STW #6
Volatile Organic Compounds by EPA 4-Bromofluorobenzene	, ,	103%	92.5%	101%	93.9%	102%	91.8%

**ECCS** 

...

#### **Nick Nigro For Eric Moen**

Chemist





RMT, Inc

# **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 3 of 4

Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/13/2009 REPORTED: 05/01/2009 10:50

**RECEIVED:** 04/13/2009

LAB #		T091601-10	T091601-13	-	-	-	-
MATRIX	Minimum	Water	Water	-	-	-	-
SAMPLE ID	Reporting Limit	STW #7	STW 8	-	-	-	-
Volatile Organic Compound	ds by EPA Method 8260	OB (Water)					
1,4-Dioxane	25 ug/L	<25 [2]	<25 [2]	-	-	-	-
Benzene	1.0 ug/L	<1.0	<1.0	-	-	-	-
n-Butyl Benzene	1.0 ug/L	<1.0	<1.0	-	-	-	-
Chloroethane	5.0 ug/L	<5.0	<5.0	-	-	-	-
Chloroform	1.0 ug/L	<1.0	<1.0	-	-	-	-
1,1-Dichloroethane	1.0 ug/L	<1.0	<1.0	-	-	-	-
1,2-Dichloroethane	1.0 ug/L	<1.0	<1.0	-	-	-	-
trans-1,2-Dichloroethene	1.0 ug/L	<1.0	<1.0	-	-	-	-
cis-1,2-Dichloroethene	1.0 ug/L	<1.0	<1.0	-	-	-	-
1,1-Dichloroethene	1.0 ug/L	<1.0	<1.0	-	-	-	-
Ethylbenzene	1.0 ug/L	<1.0	<1.0	-	-	-	-
Naphthalene	5.0 ug/L	<5.0	<5.0	-	-	-	-
n-Propyl Benzene	1.0 ug/L	<1.0	<1.0	-	-	-	-
Tetrachloroethene	1.0 ug/L	<1.0	<1.0	-	-	-	-
Toluene	1.0 ug/L	<1.0	<1.0	-	-	-	-
1,1,1-Trichloroethane	1.0 ug/L	<1.0	<1.0	-	-	-	-
1,1,2-Trichloroethane	1.0 ug/L	<1.0	<1.0	-	-	-	-
Trichloroethene	1.0 ug/L	2.7	<1.0	-	-	-	-
1,3,5-Trimethylbenzene	1.0 ug/L	<1.0	<1.0	-	-	-	-
1,2,4-Trimethylbenzene	1.0 ug/L	<1.0	<1.0	-	-	-	-
Vinyl chloride	1.0 ug/L	<1.0	<1.0	-	-	-	-
m,p-Xylene	1.0 ug/L	<1.0	<1.0	-	-	-	-
o-Xylene	1.0 ug/L	<1.0	<1.0	-	-	-	-
Dibromofluoromethane	140 [surr]	114%	102%	-	-	-	-

# **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





# **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 4 of 4

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/13/2009 **REPORTED:** 05/01/2009 10:50

**RECEIVED:** 04/13/2009

LAB#		T091601-10	T091601-13	-	-	-	-
MATRIX	Minimum	Water	Water	-	-	-	-
SAMPLE ID	Reporting Limit	STW #7	STW 8	-	-	-	-
Volatile Organic Compounds by EPA Toluene-d8 4-Bromofluorobenzene	Method 8260B (continued 140 [surr] 140 [surr]	102% 103%	92.4% 93.0%	- -	-	-	- -

#### **Special Notes**

- 1 = Results may be biased high because of high continuing calibration verification (CCV).
- 2 = Analyte included in the analysis, but not detected

# **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist



Attachment B MW Sample Report

Environmental Chemistry Consulting Services, Inc.





# **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 1 of 4

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/20/2009 REPORTED: 04/30/2009 23:39

**RECEIVED:** 04/20/2009

LAB # MATRIX	Minimum	T091701-09 Water MW-1S	T091701-10 Water MW-3S	T091701-11 Water MW-4S	T091701-12 Water MW-5S	T091701-13 Water MW-8S	T091701-14 Water MW-9S
SAMPLE ID	Reporting Limit		11W 55	THW TS			11111-93
Volatile Organic Compound	ds by EPA Method 8260	OB (Water)					
1,4-Dioxane	25 ug/L	<25 [2]	-	-	<25 [2]	-	<25 [2]
Benzene	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
n-Butyl Benzene	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
Chloroethane	5.0 ug/L	<500	<50	<500	<25	<5.0	<500
Chloroform	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
1,1-Dichloroethane	1.0 ug/L	<100	18 [1]	<100	<5.0	<1.0	<100
1,2-Dichloroethane	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
trans-1,2-Dichloroethene	1.0 ug/L	<100	18 [1]	<100	<5.0	<1.0	<100
cis-1,2-Dichloroethene	1.0 ug/L	<100	490 [1]	1700 [1]	<5.0	<1.0	<100
1,1-Dichloroethene	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
Ethylbenzene	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
Naphthalene	5.0 ug/L	<500	<50	<500	<25	<5.0	<500
n-Propyl Benzene	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
Tetrachloroethene	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
Toluene	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
1,1,1-Trichloroethane	1.0 ug/L	1100 [1]	<10	<100	<5.0	<1.0	220 [1]
1,1,2-Trichloroethane	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
Trichloroethene	1.0 ug/L	2200 [1]	<10	4000 [1]	140 [1]	10	2100 [1]
1,3,5-Trimethylbenzene	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
1,2,4-Trimethylbenzene	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
Vinyl chloride	1.0 ug/L	<100	210 [1]	520 [1]	<5.0	<1.0	<100
m,p-Xylene	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
o-Xylene	1.0 ug/L	<100	<10	<100	<5.0	<1.0	<100
Dibromofluoromethane	140 [surr]	120%	123%	119%	117%	126%	125%

# **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





3754 Ranchero Drive

Ann Arbor, MI 48108

RMT, Inc

# **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 2 of 4

Project: Tecumseh Products Company

Project Number: [none]

Project Manager: Stacy Metz

**REPORTED:** 04/30/2009 23:39

**SAMPLED:** 04/20/2009

**RECEIVED:** 04/20/2009

LAB#		T091701-09	T091701-10	T091701-11	T091701-12	T091701-13	T091701-14
MATRIX	Minimum	Water	Water	Water	Water	Water	Water
SAMPLE ID	Reporting Limit	MW-1S	MW-3S	MW-4S	MW-5S	MW-8S	MW-9S
Volatile Organic Compounds by EPA Toluene-d8	A Method 8260B (continued 140 [surr]	<b>d)</b> 90.0%	98.6%	91.1%	90.0%	100%	98.7%
4-Bromofluorobenzene	140 [surr]	88.2%	97.0%	88.5%	89.1%	97.9%	96.9%

**ECCS** 

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#### **Nick Nigro For Eric Moen**

Chemist





# **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 3 of 4

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/20/2009 **REPORTED:** 04/30/2009 23:39 **RECEIVED:** 04/20/2009

LAB#		T091701-15	T091701-21	T091701-22	T091701-23	-	-
MATRIX	Minimum	Water	Water	Water	Water	-	-
SAMPLE ID	Reporting Limit	Dup-08	MW-02S	MW-06S	MW-07S	-	-
Volatile Organic Compound	ds by EPA Method 8260	OB (Water)					
Benzene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
n-Butyl Benzene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
Chloroethane	5.0 ug/L	<5.0	<50	<5.0	<5.0	-	-
Chloroform	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
1,1-Dichloroethane	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
1,2-Dichloroethane	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
trans-1,2-Dichloroethene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
cis-1,2-Dichloroethene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
1,1-Dichloroethene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
Ethylbenzene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
Naphthalene	5.0 ug/L	<5.0	<50	<5.0	<5.0	-	-
n-Propyl Benzene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
Tetrachloroethene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
Toluene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
1,1,1-Trichloroethane	1.0 ug/L	<1.0	<10	<1.0	1.6	-	-
1,1,2-Trichloroethane	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
Trichloroethene	1.0 ug/L	10	130 [1]	23	11	-	-
1,3,5-Trimethylbenzene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
1,2,4-Trimethylbenzene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
Vinyl chloride	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
m,p-Xylene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
o-Xylene	1.0 ug/L	<1.0	<10	<1.0	<1.0	-	-
Dibromofluoromethane	140 [surr]	115%	117%	107%	116%	-	-
Toluene-d8	140 [surr]	91.7%	101%	94.6%	104%	-	-

# **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





# **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 4 of 4

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/20/2009 **REPORTED:** 04/30/2009 23:39

**RECEIVED:** 04/20/2009

LAB #		T091701-15	T091701-21	T091701-22	T091701-23	-	-
MATRIX	Minimum	Water	Water	Water	Water	-	-
SAMPLE ID	Reporting Limit	Dup-08	MW-02S	MW-06S	MW-07S	-	-
Volatile Organic Compounds by EPA Me 4-Bromofluorobenzene	ethod 8260B (continued 140 [surr]	91.1%	98.2%	90.6%	97.7%	-	-

#### **Special Notes**

- 1 = Data reported from a dilution
- 2 = Analyte included in the analysis, but not detected

# **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist



Attachment C NS/SS Sample Report

Environmental Chemistry Consulting Services, Inc.





RMT, Inc

# **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 1 of 26

Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB #		T091603-13	T091603-14	T091603-15	T091603-16	T091603-17	T091604-01
MATRIX	Minimum	Water	Water	Water	Soil	Water	Soil
SAMPLE ID	Reporting Limit	NS-3 (37-41')	SS-1 (45-49')	SS-1 (24-28')	SS-1	NS-3 (16-20')	NS-4 (8-12')
Volatile Organic Compoun	ds by EPA Method 8260	B (Soil)					
1,4-Dioxane	250 ug/kg dry	-	-	-	<320 [5]	-	-
Benzene	25 ug/kg dry	-	-	-	<32	-	<29
n-Butyl Benzene	25 ug/kg dry	-	-	-	<32	-	<29
Chloroethane	500 ug/kg dry	-	-	-	<640 [3] [6]	-	<570
Chloroform	25 ug/kg dry	-	-	-	<32	-	<29
1,1-Dichloroethane	25 ug/kg dry	-	-	-	<32	-	<29
1,2-Dichloroethane	25 ug/kg dry	-	-	-	<32	-	<29
trans-1,2-Dichloroethene	25 ug/kg dry	-	-	-	<32	-	<29
cis-1,2-Dichloroethene	25 ug/kg dry	-	-	-	<32	-	<29
1,1-Dichloroethene	25 ug/kg dry	-	-	-	<32	-	<29
Ethylbenzene	25 ug/kg dry	-	-	-	<32	-	<29
Naphthalene	250 ug/kg dry	-	-	-	<320	-	<290
n-Propyl Benzene	25 ug/kg dry	-	-	-	<32	-	<29
Tetrachloroethene	25 ug/kg dry	-	-	-	<32	-	<29
Toluene	25 ug/kg dry	-	-	-	<32	-	<29
1,1,1-Trichloroethane	25 ug/kg dry	-	-	-	840	-	<29
1,1,2-Trichloroethane	25 ug/kg dry	-	-	-	<32	-	<29
Trichloroethene	25 ug/kg dry	-	-	-	1900	-	<29
1,3,5-Trimethylbenzene	25 ug/kg dry	-	-	-	<32	-	<29
1,2,4-Trimethylbenzene	25 ug/kg dry	-	-	-	<32	-	<29
Vinyl chloride	25 ug/kg dry	-	-	-	<32	-	<29
m,p-Xylene	50 ug/kg dry	-	-	-	<64	-	<57
o-Xylene	25 ug/kg dry	-	-	-	<32	-	<29
Dibromofluoromethane	140 [surr]	-	-	-	113%	-	114%

# **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





3754 Ranchero Drive

Ann Arbor, MI 48108

RMT, Inc

# **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 2 of 26

Project: Tecumseh Products Company

Project Number: [none]

Project Manager: Stacy Metz

**REPORTED:** 04/30/2009 23:51

**SAMPLED:** 04/15/2009 to 04/21/2009 **RECEIVED:** 04/15/2009 to 04/21/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091603-13 Water NS-3 (37-41')	T091603-14 Water SS-1 (45-49')	T091603-15 Water SS-1 (24-28')	T091603-16 Soil SS-1	T091603-17 Water NS-3 (16-20')	T091604-01 Soil NS-4 (8-12')
Volatile Organic Compounds by E	PA Method 8260B (continue	ed)					
Toluene-d8	140 [surr]	-	-	-	103%	-	103%
4-Bromofluorobenzene	140 [surr]	-	-	-	99.5%	-	103%
Volatile Organic Compound	is by EPA Method 826	0B (Water)					
1,4-Dioxane	25 ug/L	-	<25 [5]	<25 [5]	-	-	-
Benzene	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
n-Butyl Benzene	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
Chloroethane	5.0 ug/L	<5.0	<5.0	<1000	-	<20	-
Chloroform	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
1,1-Dichloroethane	1.0 ug/L	<1.0	2.5	<200	-	<4.0	-
1,2-Dichloroethane	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
trans-1,2-Dichloroethene	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
cis-1,2-Dichloroethene	1.0 ug/L	9.8	9.9	<200	-	23 [1]	-
1,1-Dichloroethene	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
Ethylbenzene	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
Naphthalene	5.0 ug/L	<5.0	<5.0	<1000	-	<20	-
n-Propyl Benzene	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
Tetrachloroethene	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
Toluene	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
1,1,1-Trichloroethane	1.0 ug/L	<1.0	2.7	1500 [1]	-	<4.0	-
1,1,2-Trichloroethane	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
Trichloroethene	1.0 ug/L	19	5.8	1500 [1]	-	45 [1]	-
1,3,5-Trimethylbenzene	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
1,2,4-Trimethylbenzene	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
Vinyl chloride	1.0 ug/L	480 [1] [2]	<1.0	<200	-	41 [1] [2]	-

# **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





# **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 3 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091603-13 Water NS-3 (37-41')	T091603-14 Water SS-1 (45-49')	T091603-15 Water SS-1 (24-28')	T091603-16 Soil SS-1	T091603-17 Water NS-3 (16-20')	T091604-01 Soil NS-4 (8-12')
Volatile Organic Compounds by EF	PA Method 8260B (continued)	)					
m,p-Xylene	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
o-Xylene	1.0 ug/L	<1.0	<1.0	<200	-	<4.0	-
Dibromofluoromethane	140 [surr]	113%	106%	111%	-	101%	-
Toluene-d8	140 [surr]	103%	93.8%	101%	-	94.6%	-
4-Bromofluorobenzene	140 [surr]	98.8%	92.0%	100%	-	90.5%	-
Classical Chemistry Parame	eters (Soil)						
% Solids	0.00 % by Weight	-	-	-	95.5	-	93.5

**ECCS** 

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#### **Nick Nigro For Eric Moen**

Chemist





# **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 4 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091604-02 Water NS-4 (32-36')	T091604-03 Water NS-4 (14-18')	T091604-09 Soil SS-2 (8-12')	T091604-10 Soil SS-2 (16-20')	T091604-11 Soil Dup-01	T091604-12 Water SS-2 (42-46')
Volatile Organic Compound	ds by EPA Method 8260	OB (Soil)					
1,4-Dioxane	250 ug/kg dry	-	-	<290 [5]	<290 [5]	<320 [5]	-
Benzene	25 ug/kg dry	-	-	<29	<29	<32	-
n-Butyl Benzene	25 ug/kg dry	-	-	<29	<29	<32	-
Chloroethane	500 ug/kg dry	-	-	<580	<590	<640	-
Chloroform	25 ug/kg dry	-	-	<29	<29	<32	-
1,1-Dichloroethane	25 ug/kg dry	-	-	<29	<29	<32	-
1,2-Dichloroethane	25 ug/kg dry	-	-	<29	<29	<32	-
trans-1,2-Dichloroethene	25 ug/kg dry	-	-	<29	<29	<32	-
cis-1,2-Dichloroethene	25 ug/kg dry	-	-	<29	<29	<32	-
1,1-Dichloroethene	25 ug/kg dry	-	-	<29	<29	<32	-
Ethylbenzene	25 ug/kg dry	-	-	<29	<29	<32	-
Naphthalene	250 ug/kg dry	-	-	<290	<290	<320	-
n-Propyl Benzene	25 ug/kg dry	-	-	<29	<29	<32	-
Tetrachloroethene	25 ug/kg dry	-	-	69	110	160	-
Toluene	25 ug/kg dry	-	-	<29	<29	<32	-
1,1,1-Trichloroethane	25 ug/kg dry	-	-	810	1300	1900	-
1,1,2-Trichloroethane	25 ug/kg dry	-	-	<29	<29	<32	-
Trichloroethene	25 ug/kg dry	-	-	970	1500	2300	-
1,3,5-Trimethylbenzene	25 ug/kg dry	-	-	<29	<29	<32	-
1,2,4-Trimethylbenzene	25 ug/kg dry	-	-	<29	<29	<32	-
Vinyl chloride	25 ug/kg dry	-	-	<29	<29	<32	-
m,p-Xylene	50 ug/kg dry	-	-	<58	<59	<64	-
o-Xylene	25 ug/kg dry	-	-	<29	<29	<32	-
Dibromofluoromethane	140 [surr]	-	-	105%	114%	103%	-

# **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





3754 Ranchero Drive

Ann Arbor, MI 48108

RMT, Inc

#### **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 5 of 26

Project: Tecumseh Products Company

Project Number: [none]

Project Manager: Stacy Metz

**REPORTED:** 04/30/2009 23:51

**SAMPLED:** 04/15/2009 to 04/21/2009

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB#		T091604-02	T091604-03	T091604-09	T091604-10	T091604-11	T091604-12
MATRIX	Minimum	Water	Water	Soil	Soil	Soil	Water
SAMPLE ID	Reporting Limit	NS-4 (32-36')	NS-4 (14-18')	SS-2 (8-12')	SS-2 (16-20')	Dup-01	SS-2 (42-46')
Volatile Organic Compounds by E	PA Method 8260B (continue	d)					
Toluene-d8	140 [surr]	-	-	95.5%	103%	93.6%	-
4-Bromofluorobenzene	140 [surr]	-	-	90.8%	100%	89.4%	-
Volatile Organic Compoun	ds by EPA Method 826	0B (Water)					
1,4-Dioxane	25 ug/L	-	-	-	-	-	<25 [5]
Benzene	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
n-Butyl Benzene	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
Chloroethane	5.0 ug/L	<5.0	<5.0	-	-	-	<5.0
Chloroform	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
1,1-Dichloroethane	1.0 ug/L	<1.0	1.4	-	-	-	<1.0
1,2-Dichloroethane	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
trans-1,2-Dichloroethene	1.0 ug/L	<1.0	1.0	-	-	-	<1.0
cis-1,2-Dichloroethene	1.0 ug/L	5.9	11	-	-	-	<1.0
1,1-Dichloroethene	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
Ethylbenzene	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
Naphthalene	5.0 ug/L	<5.0	<5.0	-	-	-	<5.0
n-Propyl Benzene	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
Tetrachloroethene	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
Toluene	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
1,1,1-Trichloroethane	1.0 ug/L	<1.0	<1.0	-	-	-	4.5
1,1,2-Trichloroethane	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
Trichloroethene	1.0 ug/L	<1.0	<1.0	-	-	-	5.3
1,3,5-Trimethylbenzene	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
1,2,4-Trimethylbenzene	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
Vinyl chloride	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 6 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091604-02 Water NS-4 (32-36')	T091604-03 Water NS-4 (14-18')	T091604-09 Soil SS-2 (8-12')	T091604-10 Soil SS-2 (16-20')	T091604-11 Soil Dup-01	T091604-12 Water SS-2 (42-46')
Volatile Organic Compounds by EPA	Method 8260B (continue	d)					
m,p-Xylene	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
o-Xylene	1.0 ug/L	<1.0	<1.0	-	-	-	<1.0
Dibromofluoromethane	140 [surr]	105%	115%	-	-	-	105%
Toluene-d8	140 [surr]	98.5%	104%	-	-	-	94.7%
4-Bromofluorobenzene	140 [surr]	92.7%	102%	-	-	-	91.4%
Classical Chemistry Paramete	ers (Soil)						
% Solids	0.00 % by Weight	t -	-	98.6	98.1	98.3	-

**ECCS** 

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 7 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB #		T091604-13	T091604-16	T091604-17	T091604-18	T091604-20	T091604-21
MATRIX	Minimum	Water	Soil	Soil	Water	Soil	Soil
SAMPLE ID	Reporting Limit	SS-2 (20-24')	SS-3 (8-12')	SS-3 (16-20')	SS-3 (20-24')	NS-2 (0-4')	NS-2 (8-12')
Volatile Organic Compound	ds by EPA Method 8260	OB (Soil)					
1,4-Dioxane	250 ug/kg dry	-	<300 [5]	<350 [5]	-	-	-
Benzene	25 ug/kg dry	-	<30	<35	-	<27	<27
n-Butyl Benzene	25 ug/kg dry	-	<30	<35	-	<27	<27
Chloroethane	500 ug/kg dry	-	<610	<700	-	<530	<540
Chloroform	25 ug/kg dry	-	<30	<35	-	<27	<27
1,1-Dichloroethane	25 ug/kg dry	-	<30	<35	-	<27	<27
1,2-Dichloroethane	25 ug/kg dry	-	<30	<35	-	<27	<27
trans-1,2-Dichloroethene	25 ug/kg dry	-	<30	<35	-	<27	<27
cis-1,2-Dichloroethene	25 ug/kg dry	-	<30	<35	-	<27	<27
1,1-Dichloroethene	25 ug/kg dry	-	<30	<35	-	<27	<27
Ethylbenzene	25 ug/kg dry	-	<30	<35	-	<27	<27
Naphthalene	250 ug/kg dry	-	<300	<350	-	<270	<270
n-Propyl Benzene	25 ug/kg dry	-	<30	<35	-	<27	<27
Tetrachloroethene	25 ug/kg dry	-	1100	3900 [1]	-	<27	<27
Toluene	25 ug/kg dry	-	<30	<35	-	<27	<27
1,1,1-Trichloroethane	25 ug/kg dry	-	1200	3500 [1]	-	<27	<27
1,1,2-Trichloroethane	25 ug/kg dry	-	<30	<35	-	<27	<27
Trichloroethene	25 ug/kg dry	-	900	2800	-	350	750
1,3,5-Trimethylbenzene	25 ug/kg dry	-	<30	<35	-	<27	<27
1,2,4-Trimethylbenzene	25 ug/kg dry	-	<30	<35	-	<27	<27
Vinyl chloride	25 ug/kg dry	-	<30	<35	-	<27	<27
m,p-Xylene	50 ug/kg dry	-	<61	<70	-	<53	<54
o-Xylene	25 ug/kg dry	-	<30	<35	-	<27	<27
Dibromofluoromethane	140 [surr]	-	107%	116%	-	112%	106%

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 8 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB #		T091604-13	T091604-16	T091604-17	T091604-18	T091604-20	T091604-21
MATRIX	Minimum	Water	Soil	Soil	Water	Soil	Soil
SAMPLE ID	Reporting Limit	SS-2 (20-24')	SS-3 (8-12')	SS-3 (16-20')	SS-3 (20-24')	NS-2 (0-4')	NS-2 (8-12')
Volatile Organic Compounds by E	PA Method 8260B (continue	ed)					
Toluene-d8	140 [surr]	-	94.0%	104%	-	105%	96.2%
4-Bromofluorobenzene	140 [surr]	-	88.6%	101%	-	101%	93.1%
Volatile Organic Compound	ds by EPA Method 826	0B (Water)					
1,4-Dioxane	25 ug/L	<25 [5]	-	-	<25 [5]	-	-
Benzene	1.0 ug/L	<100	-	-	<50	-	-
n-Butyl Benzene	1.0 ug/L	<100	-	-	<50	-	-
Chloroethane	5.0 ug/L	<500	-	-	<250	-	-
Chloroform	1.0 ug/L	<100	-	-	<50	-	-
1,1-Dichloroethane	1.0 ug/L	<100	-	-	<50	-	-
1,2-Dichloroethane	1.0 ug/L	<100	-	-	<50	-	-
trans-1,2-Dichloroethene	1.0 ug/L	<100	-	-	<50	-	-
cis-1,2-Dichloroethene	1.0 ug/L	<100	-	-	<50	-	-
1,1-Dichloroethene	1.0 ug/L	<100	-	-	<50	-	-
Ethylbenzene	1.0 ug/L	<100	-	-	<50	-	-
Naphthalene	5.0 ug/L	<500	-	-	<250	-	-
n-Propyl Benzene	1.0 ug/L	<100	-	-	<50	-	-
Tetrachloroethene	1.0 ug/L	<100	-	-	120 [1]	-	-
Toluene	1.0 ug/L	<100	-	-	<50	-	-
1,1,1-Trichloroethane	1.0 ug/L	2200 [1]	-	-	600 [1]	-	-
1,1,2-Trichloroethane	1.0 ug/L	<100	-	-	<50	-	-
Trichloroethene	1.0 ug/L	1000 [1]	-	-	430 [1]	-	-
1,3,5-Trimethylbenzene	1.0 ug/L	<100	-	-	<50	-	-
1,2,4-Trimethylbenzene	1.0 ug/L	<100	-	-	<50	-	-
Vinyl chloride	1.0 ug/L	<100	-	-	<50	-	-

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 9 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

Minimum Reporting Limit	T091604-13 Water SS-2 (20-24')	T091604-16 Soil SS-3 (8-12')	T091604-17 Soil SS-3 (16-20')	T091604-18 Water SS-3 (20-24')	T091604-20 Soil NS-2 (0-4')	T091604-21 Soil NS-2 (8-12')
ethod 8260B (continued)	)					
1.0 ug/L	<100	-	-	<50	-	-
1.0 ug/L	<100	-	-	<50	-	-
140 [surr]	106%	-	-	117%	-	-
140 [surr]	94.8%	-	-	102%	-	-
140 [surr]	89.7%	-	-	98.3%	-	-
rs (Soil)	_	97 4	97.6	_	97 7	96.9
	Reporting Limit  ethod 8260B (continued)  1.0 ug/L  1.0 ug/L  140 [surr]  140 [surr]	Minimum         Water           Reporting Limit         SS-2 (20-24')           ethod 8260B (continued)           1.0 ug/L         <100           1.0 ug/L         <100           140 [surr]         106%           140 [surr]         94.8%           140 [surr]         89.7%	Minimum         Water         Soil           Reporting Limit         SS-2 (20-24')         SS-3 (8-12')           ethod 8260B (continued)           1.0 ug/L         <100         -           1.0 ug/L         <100         -           140 [surr]         106%         -           140 [surr]         94.8%         -           140 [surr]         89.7%         -	Minimum         Water         Soil         Soil           Reporting Limit         SS-2 (20-24')         SS-3 (8-12')         SS-3 (16-20')    ethod 8260B (continued)  1.0 ug/L <100 1.0 ug/L <100 140 [surr] 106% 140 [surr] 94.8% 140 [surr] 94.8% 140 [surr] 89.7% SS (Soil)	Minimum         Water         Soil         Soil         Water           Reporting Limit         SS-2 (20-24')         SS-3 (8-12')         SS-3 (16-20')         SS-3 (20-24')           ethod 8260B (continued)           1.0 ug/L         <100         -         -         <50           1.0 ug/L         <100         -         -         <50           140 [surr]         106%         -         -         117%           140 [surr]         94.8%         -         -         102%           140 [surr]         89.7%         -         -         98.3%	Minimum         Water         Soil         Soil         Water         Soil           Reporting Limit         SS-2 (20-24')         SS-3 (8-12')         SS-3 (16-20')         SS-3 (20-24')         NS-2 (0-4')           ethod 8260B (continued)           1.0 ug/L         <100         -         -         <50         -           1.0 ug/L         <100         -         -         <50         -           140 [surr]         106%         -         -         117%         -           140 [surr]         94.8%         -         -         98.3%         -           140 [surr]         89.7%         -         -         98.3%         -

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 10 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091605-01 Water NS-2 (20-24')	T091605-03 Water NS-1 (20-24')	T091605-04 Soil NS-1 (0-4')	T091605-05 Soil NS-1 (16-20')	T091605-09 Water SS-4 (22-24')	T091605-10 Soil SS-4 (12-16')
Volatile Organic Compoun	ds by EPA Method 826	OB (Soil)					
1,4-Dioxane	250 ug/kg dry	-	-	<390 [5]	<250 [5]	-	<300 [5]
Benzene	25 ug/kg dry	-	-	<39	<25	-	<30
n-Butyl Benzene	25 ug/kg dry	-	-	<39	<25	-	<30
Chloroethane	500 ug/kg dry	-	-	<780	<500	-	<600
Chloroform	25 ug/kg dry	-	-	<39	<25	-	<30
1,1-Dichloroethane	25 ug/kg dry	-	-	<39	<25	-	<30
1,2-Dichloroethane	25 ug/kg dry	-	-	<39	<25	-	<30
trans-1,2-Dichloroethene	25 ug/kg dry	-	-	<39	<25	-	<30
cis-1,2-Dichloroethene	25 ug/kg dry	-	-	<39	<25	-	<30
1,1-Dichloroethene	25 ug/kg dry	-	-	<39	<25	-	<30
Ethylbenzene	25 ug/kg dry	-	-	<39	<25	-	<30
Naphthalene	250 ug/kg dry	-	-	480	<250	-	<300
n-Propyl Benzene	25 ug/kg dry	-	-	<39	<25	-	<30
Tetrachloroethene	25 ug/kg dry	-	-	<39	<25	-	230
Toluene	25 ug/kg dry	-	-	<39	<25	-	<30
1,1,1-Trichloroethane	25 ug/kg dry	-	-	<39	<25	-	3500 [1]
1,1,2-Trichloroethane	25 ug/kg dry	-	-	<39	<25	-	<30
Trichloroethene	25 ug/kg dry	-	-	1900	510	-	1800
1,3,5-Trimethylbenzene	25 ug/kg dry	-	-	<39	<25	-	<30
1,2,4-Trimethylbenzene	25 ug/kg dry	-	-	<39	<25	-	<30
Vinyl chloride	25 ug/kg dry	-	-	<39	<25	-	<30
m,p-Xylene	50 ug/kg dry	-	-	<78	<50	-	<60
o-Xylene	25 ug/kg dry	-	-	<39	<25	-	<30
Dibromofluoromethane	140 [surr]	-	-	112%	105%	-	105%

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





RMT, Inc

#### **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 11 of 26

Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB #		T091605-01	T091605-03	T091605-04	T091605-05	T091605-09	T091605-10
MATRIX	Minimum	Water	Water	Soil	Soil	Water	Soil
SAMPLE ID	Reporting Limit	NS-2 (20-24')	NS-1 (20-24')	NS-1 (0-4')	NS-1 (16-20')	SS-4 (22-24')	SS-4 (12-16')
Volatile Organic Compounds by EF	PA Method 8260B (continue	ed)					
Toluene-d8	140 [surr]	-	-	104%	96.4%	-	97.0%
4-Bromofluorobenzene	140 [surr]	-	-	100%	94.0%	-	91.8%
Volatile Organic Compound	ls by EPA Method 826	OB (Water)					
1,4-Dioxane	25 ug/L	-	-	-	-	<25 [5]	-
Benzene	1.0 ug/L	<50	<20	-	-	<100	-
n-Butyl Benzene	1.0 ug/L	<50	<20	-	-	<100	-
Chloroethane	5.0 ug/L	<250	<100	-	-	<500	-
Chloroform	1.0 ug/L	<50	<20	-	-	<100	-
1,1-Dichloroethane	1.0 ug/L	<50	<20	-	-	<100	-
1,2-Dichloroethane	1.0 ug/L	<50	<20	-	-	<100	-
trans-1,2-Dichloroethene	1.0 ug/L	<50	<20	-	-	<100	-
cis-1,2-Dichloroethene	1.0 ug/L	590 [1]	260 [1]	-	-	<100	-
1,1-Dichloroethene	1.0 ug/L	<50	<20	-	-	<100	-
Ethylbenzene	1.0 ug/L	<50	<20	-	-	<100	-
Naphthalene	5.0 ug/L	<250	<100	-	-	<500	-
n-Propyl Benzene	1.0 ug/L	<50	<20	-	-	<100	-
Tetrachloroethene	1.0 ug/L	<50	<20	-	-	<100	-
Toluene	1.0 ug/L	<50	<20	-	-	<100	-
1,1,1-Trichloroethane	1.0 ug/L	<50	<20	-	-	2500 [1]	-
1,1,2-Trichloroethane	1.0 ug/L	<50	<20	-	-	<100	-
Trichloroethene	1.0 ug/L	1700 [1]	830 [1]	-	-	1100 [1]	-
1,3,5-Trimethylbenzene	1.0 ug/L	<50	<20	-	-	<100	-
1,2,4-Trimethylbenzene	1.0 ug/L	<50	<20	-	-	<100	-
Vinyl chloride	1.0 ug/L	430 [1] [2]	<20	-	-	<100	-

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 12 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091605-01 Water NS-2 (20-24')	T091605-03 Water NS-1 (20-24')	T091605-04 Soil NS-1 (0-4')	T091605-05 Soil NS-1 (16-20')	T091605-09 Water SS-4 (22-24')	T091605-10 Soil SS-4 (12-16')
Volatile Organic Compounds by EPA	Method 8260B (continued	i)					
m,p-Xylene	1.0 ug/L	<50	<20	-	-	<100	-
o-Xylene	1.0 ug/L	<50	<20	-	-	<100	-
Dibromofluoromethane	140 [surr]	113%	107%	-	-	117%	-
Toluene-d8	140 [surr]	93.5%	96.3%	-	-	94.1%	-
4-Bromofluorobenzene	140 [surr]	92.8%	92.4%	-	-	88.3%	-
Classical Chemistry Paramet	ters (Soil)						
% Solids	0.00 % by Weight	: -	-	87.5	95.2	-	97.6

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 13 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

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LAB # MATRIX	Minimum	T091605-11 Soil	T091605-12 Soil	T091605-13 Soil	T091605-14 Soil	T091605-15 Soil	T091605-16 Water
SAMPLE ID	Reporting Limit	SS-4 (8-12')	SS-5 (3-4')	SS-5 (12-13')	SS-6 (5-7')	Dup-02	SS-6 (23-27')
Volatile Organic Compoun	ds by EPA Method 8260	B (Soil)					
Benzene	25 ug/kg dry	<120	<130	<30	<34	<40	-
n-Butyl Benzene	25 ug/kg dry	<120	<130	<30	<34	<40	-
Chloroethane	500 ug/kg dry	<2300	<2600	<610	<670	<800	-
Chloroform	25 ug/kg dry	<120	<130	<30	<34	<40	-
1,1-Dichloroethane	25 ug/kg dry	<120	<130	<30	<34	<40	-
1,2-Dichloroethane	25 ug/kg dry	<120	<130	<30	<34	<40	-
trans-1,2-Dichloroethene	25 ug/kg dry	<120	<130	<30	<34	<40	-
cis-1,2-Dichloroethene	25 ug/kg dry	<120	<130	<30	<34	<40	-
1,1-Dichloroethene	25 ug/kg dry	<120	<130	<30	<34	<40	-
Ethylbenzene	25 ug/kg dry	<120	<130	<30	<34	<40	-
Naphthalene	250 ug/kg dry	<1200	<1300	<300	<340	<400	-
n-Propyl Benzene	25 ug/kg dry	<120	<130	<30	<34	<40	-
Tetrachloroethene	25 ug/kg dry	490 [1]	240 [1]	130	<34	<40	-
Toluene	25 ug/kg dry	<120	<130	<30	<34	<40	-
1,1,1-Trichloroethane	25 ug/kg dry	8200 [1]	13000 [1]	4400 [1]	230	320	-
1,1,2-Trichloroethane	25 ug/kg dry	<120	<130	<30	<34	<40	-
Trichloroethene	25 ug/kg dry	4400 [1]	11000 [1]	3300 [1]	120	160	-
1,3,5-Trimethylbenzene	25 ug/kg dry	<120	<130	<30	<34	<40	-
1,2,4-Trimethylbenzene	25 ug/kg dry	<120	<130	<30	<34	<40	-
Vinyl chloride	25 ug/kg dry	<120	<130	<30	<34	<40	-
m,p-Xylene	50 ug/kg dry	<230	<260	<61	<67	<80	-
o-Xylene	25 ug/kg dry	<120	<130	<30	<34	<40	-
1,4-Dioxane	250 ug/kg dry	<290 [5]	<260 [5]	<300 [5]	<340 [5]	<400 [5]	-
Dibromofluoromethane	140 [surr]	117%	118%	108%	113%	118%	-

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 14 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091605-11 Soil SS-4 (8-12')	T091605-12 Soil SS-5 (3-4')	T091605-13 Soil SS-5 (12-13')	T091605-14 Soil SS-6 (5-7')	T091605-15 Soil Dup-02	T091605-16 Water SS-6 (23-27')
Volatile Organic Compounds by E	PA Method 8260B (continue	d)					
Toluene-d8	140 [surr]	92.8%	91.1%	96.2%	104%	101%	-
4-Bromofluorobenzene	140 [surr]	89.9%	89.6%	90.8%	100%	97.6%	-
Volatile Organic Compound	ds by EPA Method 826	OB (Water)					
1,4-Dioxane	25 ug/L	-	-	-	-	-	160
Benzene	1.0 ug/L	-	-	-	-	-	<200
n-Butyl Benzene	1.0 ug/L	-	-	-	-	-	<200
Chloroethane	5.0 ug/L	-	-	-	-	-	<1000
Chloroform	1.0 ug/L	-	-	-	-	-	<200
1,1-Dichloroethane	1.0 ug/L	-	-	-	-	-	<200
1,2-Dichloroethane	1.0 ug/L	-	-	-	-	-	<200
trans-1,2-Dichloroethene	1.0 ug/L	-	-	-	-	-	<200
cis-1,2-Dichloroethene	1.0 ug/L	-	-	-	-	-	<200
1,1-Dichloroethene	1.0 ug/L	-	-	-	-	-	<200
Ethylbenzene	1.0 ug/L	-	-	-	-	-	<200
Naphthalene	5.0 ug/L	-	-	-	-	-	<1000
n-Propyl Benzene	1.0 ug/L	-	-	-	-	-	<200
Tetrachloroethene	1.0 ug/L	-	-	-	-	-	<200
Toluene	1.0 ug/L	-	-	-	-	-	<200
1,1,1-Trichloroethane	1.0 ug/L	-	-	-	-	-	2600 [1]
1,1,2-Trichloroethane	1.0 ug/L	-	-	-	-	-	<200
Trichloroethene	1.0 ug/L	-	-	-	-	-	1100 [1]
1,3,5-Trimethylbenzene	1.0 ug/L	-	-	-	-	-	<200
1,2,4-Trimethylbenzene	1.0 ug/L	-	-	-	-	-	<200
Vinyl chloride	1.0 ug/L	-	-	-	-	-	<200

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 15 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091605-11 Soil SS-4 (8-12')	T091605-12 Soil SS-5 (3-4')	T091605-13 Soil SS-5 (12-13')	T091605-14 Soil SS-6 (5-7')	T091605-15 Soil Dup-02	T091605-16 Water SS-6 (23-27')
Volatile Organic Compounds by EPA	Method 8260B (continued	)					
m,p-Xylene	1.0 ug/L	-	-	-	-	-	<200
o-Xylene	1.0 ug/L	-	-	-	-	-	<200
Dibromofluoromethane	140 [surr]	-	-	-	-	-	114%
Toluene-d8	140 [surr]	-	-	-	-	-	93.1%
4-Bromofluorobenzene	140 [surr]	-	-	-	-	-	89.6%
Classical Chemistry Paramet	ers (Soil)						
% Solids	0.00 % by Weight	97.1	88.0	97.3	88.2	86.8	-

**ECCS** 

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 16 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091605-17 Soil SS-5 (20-21')	T091605-18 Water SS-5 (22-26')	T091701-01 Soil SS-7 (21-22')	T091701-02 Water SS-7 (22-26')	T091701-16 Water NS-05 (20-24')	T091701-17 Soil NS-05 (12-14')
Volatile Organic Compoun	ds by EPA Method 8260	OB (Soil)					
Benzene	25 ug/kg dry	<26	-	<35	-	-	<33
n-Butyl Benzene	25 ug/kg dry	<26	-	<35	-	-	<33
Chloroethane	500 ug/kg dry	<520	-	<710	-	-	<660
Chloroform	25 ug/kg dry	<26	-	<35	-	-	<33
1,1-Dichloroethane	25 ug/kg dry	<26	-	<35	-	-	<33
1,2-Dichloroethane	25 ug/kg dry	<26	-	<35	-	-	<33
trans-1,2-Dichloroethene	25 ug/kg dry	<26	-	<35	-	-	<33
cis-1,2-Dichloroethene	25 ug/kg dry	<26	-	<35	-	-	58
1,1-Dichloroethene	25 ug/kg dry	<26	-	<35	-	-	<33
Ethylbenzene	25 ug/kg dry	<26	-	<35	-	-	<33
Naphthalene	250 ug/kg dry	<260	-	<350	-	-	<330
n-Propyl Benzene	25 ug/kg dry	<26	-	<35	-	-	<33
Tetrachloroethene	25 ug/kg dry	180	-	<35	-	-	40
Toluene	25 ug/kg dry	<26	-	<35	-	-	<33
1,1,1-Trichloroethane	25 ug/kg dry	7700 [1]	-	1600	-	-	33
1,1,2-Trichloroethane	25 ug/kg dry	<26	-	<35	-	-	<33
Trichloroethene	25 ug/kg dry	5500 [1]	-	5000 [1]	-	-	4500 [1]
1,3,5-Trimethylbenzene	25 ug/kg dry	<26	-	<35	-	-	<33
1,2,4-Trimethylbenzene	25 ug/kg dry	<26	-	<35	-	-	<33
Vinyl chloride	25 ug/kg dry	<26	-	<35	-	-	<33
m,p-Xylene	50 ug/kg dry	<52	-	<71	-	-	<66
o-Xylene	25 ug/kg dry	<26	-	<35	-	-	<33
1,4-Dioxane	250 ug/kg dry	<260 [4] [5]	-	<350 [5]	-	-	-
Dibromofluoromethane	140 [surr]	113%	-	121%	-	-	120%

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 17 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB #		T091605-17	T091605-18	T091701-01	T091701-02	T091701-16	T091701-17
MATRIX	Minimum	Soil	Water	Soil	Water	Water	Soil
SAMPLE ID	Reporting Limit	SS-5 (20-21')	SS-5 (22-26')	SS-7 (21-22')	SS-7 (22-26')	NS-05 (20-24')	NS-05 (12-14')
Volatile Organic Compounds by EF	PA Method 8260B (continue	ed)					
Toluene-d8	140 [surr]	103%	-	99.5%	-	-	100%
4-Bromofluorobenzene	140 [surr]	99.7%	-	98.7%	-	-	97.4%
Volatile Organic Compound	ls by EPA Method 826	0B (Water)					
1,4-Dioxane	25 ug/L	-	<25 [5]	-	<25 [5]	-	-
Benzene	1.0 ug/L	-	<100	-	<100	<200	-
n-Butyl Benzene	1.0 ug/L	-	<100	-	<100	<200	-
Chloroethane	5.0 ug/L	-	<500	-	<500	<1000	-
Chloroform	1.0 ug/L	-	<100	-	<100	<200	-
1,1-Dichloroethane	1.0 ug/L	-	<100	-	<100	<200	-
1,2-Dichloroethane	1.0 ug/L	-	<100	-	<100	<200	-
trans-1,2-Dichloroethene	1.0 ug/L	-	<100	-	<100	<200	-
cis-1,2-Dichloroethene	1.0 ug/L	-	<100	-	<100	<200	-
1,1-Dichloroethene	1.0 ug/L	-	<100	-	<100	<200	-
Ethylbenzene	1.0 ug/L	-	<100	-	<100	<200	-
Naphthalene	5.0 ug/L	-	<500	-	<500	<1000	-
n-Propyl Benzene	1.0 ug/L	-	<100	-	<100	<200	-
Tetrachloroethene	1.0 ug/L	-	<100	-	<100	<200	-
Toluene	1.0 ug/L	-	<100	-	<100	<200	-
1,1,1-Trichloroethane	1.0 ug/L	-	2200 [1]	-	1300 [1]	<200	-
1,1,2-Trichloroethane	1.0 ug/L	-	<100	-	<100	<200	-
Trichloroethene	1.0 ug/L	-	1300 [1]	-	1400 [1]	2900 [1]	-
1,3,5-Trimethylbenzene	1.0 ug/L	-	<100	-	<100	<200	-
1,2,4-Trimethylbenzene	1.0 ug/L	-	<100	-	<100	<200	-
Vinyl chloride	1.0 ug/L	-	<100	-	<100	<200	-

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 18 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091605-17 Soil SS-5 (20-21')	T091605-18 Water SS-5 (22-26')	T091701-01 Soil SS-7 (21-22')	T091701-02 Water SS-7 (22-26')	T091701-16 Water NS-05 (20-24')	T091701-17 Soil NS-05 (12-14')
Volatile Organic Compounds by EPA	Method 8260B (continued	)					
m,p-Xylene	1.0 ug/L	-	<100	-	<100	<200	-
o-Xylene	1.0 ug/L	-	<100	-	<100	<200	-
Dibromofluoromethane	140 [surr]	-	106%	-	123%	114%	-
Toluene-d8	140 [surr]	-	96.0%	-	97.6%	92.2%	-
4-Bromofluorobenzene	140 [surr]	-	90.3%	-	95.6%	89.6%	-
Classical Chemistry Paramete	ers (Soil)						
% Solids	0.00 % by Weight	97.2	-	97.0	-	-	97.8

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 19 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB #		T091701-18	T091701-19	T091701-20	T091702-01	T091702-02	T091702-03
MATRIX	Minimum	Water	Soil	Soil	Water	Soil	Soil
SAMPLE ID	Reporting Limit	NS-06 (22-24')	NS-06 (2-3')	NS-06 (23-24')	SS-8 (23-27')	SS-8 (19-20')	NS-07 (10-11
Volatile Organic Compound	ds by EPA Method 826	OB (Soil)					
Benzene	25 ug/kg dry	-	<26	<30	-	<130	<29
n-Butyl Benzene	25 ug/kg dry	-	<26	<30	-	<130	<29
Chloroethane	500 ug/kg dry	-	<520	<600	-	<2600	<580
Chloroform	25 ug/kg dry	-	<26	<30	-	<130	<29
1,1-Dichloroethane	25 ug/kg dry	-	<26	<30	-	<130	<29
1,2-Dichloroethane	25 ug/kg dry	-	<26	<30	-	<130	<29
trans-1,2-Dichloroethene	25 ug/kg dry	-	230	<30	-	<130	<29
cis-1,2-Dichloroethene	25 ug/kg dry	-	9600 [1]	<30	-	<130	<29
1,1-Dichloroethene	25 ug/kg dry	-	<26	<30	-	<130	<29
Ethylbenzene	25 ug/kg dry	-	140	<30	-	<130	<29
Naphthalene	250 ug/kg dry	-	310	<300	-	<1300	<290
n-Propyl Benzene	25 ug/kg dry	-	430	<30	-	<130	<29
Tetrachloroethene	25 ug/kg dry	-	510	<30	-	250 [1]	340
Toluene	25 ug/kg dry	-	82	<30	-	<130	<29
1,1,1-Trichloroethane	25 ug/kg dry	-	<26	<30	-	7300 [1]	<29
1,1,2-Trichloroethane	25 ug/kg dry	-	<26	<30	-	<130	<29
Trichloroethene	25 ug/kg dry	-	5200 [1]	520	-	8600 [1]	1500
1,3,5-Trimethylbenzene	25 ug/kg dry	-	1400	<30	-	<130	<29
1,2,4-Trimethylbenzene	25 ug/kg dry	-	4000 [1]	<30	-	<130	<29
Vinyl chloride	25 ug/kg dry	-	140	<30	-	<130	<29
m,p-Xylene	50 ug/kg dry	-	510	<60	-	<260	<58
o-Xylene	25 ug/kg dry	-	560	<30	-	<130	<29
1,4-Dioxane	250 ug/kg dry	-	-	-	-	<330 [5]	-
Dibromofluoromethane	140 [surr]	-	115%	111%	-	114%	118%
Toluene-d8	140 [surr]	-	100%	95.6%	-	95.1%	104%
4-Bromofluorobenzene	140 [surr]	-	136%	90.0%	-	91.3%	98.1%
/olatile Organic Compound	ds by EPA Method 826	0B (Water)					
1,4-Dioxane	25 ug/L	-	-	-	38	-	-
Benzene	1.0 ug/L	<100	-	-	<100	-	-
n-Butyl Benzene	1.0 ug/L	<100	-	-	<100	-	-

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 20 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB #		T091701-18	T091701-19	T091701-20	T091702-01	T091702-02	T091702-03
MATRIX	Minimum	Water	Soil	Soil	Water	Soil	Soil
SAMPLE ID	Reporting Limit	NS-06 (22-24')	NS-06 (2-3')	NS-06 (23-24')	SS-8 (23-27')	SS-8 (19-20')	NS-07 (10-11')
Volatile Organic Compounds by E	PA Method 8260B (continue	ed)					
Chloroethane	5.0 ug/L	<500	-	-	<500	-	-
Chloroform	1.0 ug/L	<100	-	-	<100	-	-
1,1-Dichloroethane	1.0 ug/L	<100	-	-	<100	-	-
1,2-Dichloroethane	1.0 ug/L	<100	-	-	<100	-	-
trans-1,2-Dichloroethene	1.0 ug/L	<100	-	-	<100	-	-
cis-1,2-Dichloroethene	1.0 ug/L	220 [1]	-	-	<100	-	-
1,1-Dichloroethene	1.0 ug/L	<100	-	-	<100	-	-
Ethylbenzene	1.0 ug/L	<100	-	-	<100	-	-
Naphthalene	5.0 ug/L	<500	-	-	<500	-	-
n-Propyl Benzene	1.0 ug/L	<100	-	-	<100	-	-
Tetrachloroethene	1.0 ug/L	<100	-	-	<100	-	-
Toluene	1.0 ug/L	<100	-	-	<100	-	-
1,1,1-Trichloroethane	1.0 ug/L	100 [1]	-	-	4100 [1]	-	-
1,1,2-Trichloroethane	1.0 ug/L	<100	-	-	<100	-	-
Trichloroethene	1.0 ug/L	4500 [1]	-	-	2300 [1]	-	-
1,3,5-Trimethylbenzene	1.0 ug/L	<100	-	-	<100	-	-
1,2,4-Trimethylbenzene	1.0 ug/L	<100	-	-	<100	-	-
Vinyl chloride	1.0 ug/L	<100	-	-	<100	-	-
m,p-Xylene	1.0 ug/L	<100	-	-	<100	-	-
o-Xylene	1.0 ug/L	<100	-	-	<100	-	-
Dibromofluoromethane	140 [surr]	125%	-	-	112%	-	-
Toluene-d8	140 [surr]	98.1%	-	-	92.2%	-	-
4-Bromofluorobenzene	140 [surr]	98.1%	-	-	90.4%	-	-
Classical Chemistry Param	eters (Soil)						
% Solids	0.00 % by Weigh	nt -	93.9	89.5	-	97.7	96.0

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 21 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

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LAB #		T091702-04	T091702-05	T091702-06	T091702-07	T091702-08	T091702-09
MATRIX	Minimum	Soil	Soil	Water	Water	Water	Water
SAMPLE ID	Reporting Limit	NS-08 (15-16')	Dup-03	NS-07 (20-24')	NS-08 (20-24')	Dup-09	NS-09 (20-24')
Volatile Organic Compoun	ds by EPA Method 826	OB (Soil)					
Benzene	25 ug/kg dry	<63	<24	-	-	-	-
n-Butyl Benzene	25 ug/kg dry	<63	<24	-	-	-	-
Chloroethane	500 ug/kg dry	<1300	<480	-	-	-	-
Chloroform	25 ug/kg dry	<63	<24	-	-	-	-
1,1-Dichloroethane	25 ug/kg dry	<63	<24	-	-	-	-
1,2-Dichloroethane	25 ug/kg dry	<63	<24	-	-	-	-
trans-1,2-Dichloroethene	25 ug/kg dry	<63	<24	-	-	-	-
cis-1,2-Dichloroethene	25 ug/kg dry	<63	<24	-	-	-	-
1,1-Dichloroethene	25 ug/kg dry	<63	<24	-	-	-	-
Ethylbenzene	25 ug/kg dry	<63	<24	-	-	-	-
Naphthalene	250 ug/kg dry	<630	<240	-	-	-	-
n-Propyl Benzene	25 ug/kg dry	<63	<24	-	-	-	-
Tetrachloroethene	25 ug/kg dry	830 [1]	320	-	-	-	-
Toluene	25 ug/kg dry	<63	<24	-	-	-	-
1,1,1-Trichloroethane	25 ug/kg dry	<63	<24	-	-	-	-
1,1,2-Trichloroethane	25 ug/kg dry	<63	<24	-	-	-	-
Trichloroethene	25 ug/kg dry	4300 [1]	1400	-	-	-	-
1,3,5-Trimethylbenzene	25 ug/kg dry	<63	<24	-	-	-	-
1,2,4-Trimethylbenzene	25 ug/kg dry	<63	<24	-	-	-	-
Vinyl chloride	25 ug/kg dry	<63	<24	-	-	-	-
m,p-Xylene	50 ug/kg dry	<130	<48	-	-	-	-
o-Xylene	25 ug/kg dry	<63	<24	-	-	-	-
Dibromofluoromethane	140 [surr]	113%	119%	-	-	-	-
Toluene-d8	140 [surr]	93.5%	103%	-	-	-	-

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 22 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

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LAB #		T091702-04	T091702-05	T091702-06	T091702-07	T091702-08	T091702-09
MATRIX	Minimum	Soil	Soil	Water	Water	Water	Water
SAMPLE ID	Reporting Limit	NS-08 (15-16')	Dup-03	NS-07 (20-24')	NS-08 (20-24')	Dup-09	NS-09 (20-24')
Volatile Organic Compounds by E	PA Method 8260B (continue	ed)					
4-Bromofluorobenzene	140 [surr]	89.2%	99.2%	-	-	-	-
Volatile Organic Compound	ds by EPA Method 826	OB (Water)					
Benzene	1.0 ug/L	-	-	<20	<20	<20	<1.0
n-Butyl Benzene	1.0 ug/L	-	-	<20	<20	<20	<1.0
Chloroethane	5.0 ug/L	-	-	<100	<100	<100	5.8
Chloroform	1.0 ug/L	-	-	<20	<20	<20	1.1
1,1-Dichloroethane	1.0 ug/L	-	-	<20	21 [1]	22 [1]	46
1,2-Dichloroethane	1.0 ug/L	-	-	<20	<20	<20	<1.0
trans-1,2-Dichloroethene	1.0 ug/L	-	-	<20	<20	<20	5.0
cis-1,2-Dichloroethene	1.0 ug/L	-	-	34 [1]	100 [1]	100 [1]	110 [1]
1,1-Dichloroethene	1.0 ug/L	-	-	<20	<20	<20	<1.0
Ethylbenzene	1.0 ug/L	-	-	<20	<20	<20	<1.0
Naphthalene	5.0 ug/L	-	-	<100	<100	<100	<5.0
n-Propyl Benzene	1.0 ug/L	-	-	<20	<20	<20	<1.0
Tetrachloroethene	1.0 ug/L	-	-	30 [1]	28 [1]	29 [1]	<1.0
Toluene	1.0 ug/L	-	-	<20	<20	<20	<1.0
1,1,1-Trichloroethane	1.0 ug/L	-	-	<20	<20	<20	<1.0
1,1,2-Trichloroethane	1.0 ug/L	-	-	<20	<20	<20	<1.0
Trichloroethene	1.0 ug/L	-	-	710 [1]	960 [1]	950 [1]	16
1,3,5-Trimethylbenzene	1.0 ug/L	-	-	<20	<20	<20	<1.0
1,2,4-Trimethylbenzene	1.0 ug/L	-	-	<20	<20	<20	1.3
Vinyl chloride	1.0 ug/L	-	-	<20	27 [1]	30 [1] [2]	140 [1] [2]
m,p-Xylene	1.0 ug/L	-	-	<20	<20	<20	<1.0
o-Xylene	1.0 ug/L	-	-	<20	<20	<20	<1.0

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 23 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091702-04 Soil NS-08 (15-16')	T091702-05 Soil Dup-03	T091702-06 Water NS-07 (20-24')	T091702-07 Water NS-08 (20-24')	T091702-08 Water Dup-09	T091702-09 Water NS-09 (20-24')
Volatile Organic Compounds by E	PA Method 8260B (continue	d)					
Dibromofluoromethane	140 [surr]	-	-	116%	127%	117%	107%
Toluene-d8	140 [surr]	-	-	93.3%	101%	91.4%	102%
4-Bromofluorobenzene	140 [surr]	-	-	91.3%	100%	91.6%	96.2%
Classical Chemistry Param	eters (Soil)						
% Solids	0.00 % by Weigh	96.2	96.9	-	-	-	-

**ECCS** 

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 24 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB #		T091702-10	T091702-11	T091702-12	T091702-13	-	-
MATRIX	Minimum	Soil	Soil	Soil	Water	-	-
SAMPLE ID	Reporting Limit	NS-09 (2-3')	NS-10 (8-9')	NS-10 (10-11')	NS-10 (21-25')	-	-
Volatile Organic Compound	ds by EPA Method 8260	B (Soil)					
Benzene	25 ug/kg dry	<30	<430	<27	-	-	-
n-Butyl Benzene	25 ug/kg dry	1200	9100 [1]	910	-	-	-
Chloroethane	500 ug/kg dry	<600	<8500	<540	-	-	-
Chloroform	25 ug/kg dry	<30	<430	<27	-	-	-
1,1-Dichloroethane	25 ug/kg dry	<30	<430	<27	-	-	-
1,2-Dichloroethane	25 ug/kg dry	<30	<430	<27	-	-	-
trans-1,2-Dichloroethene	25 ug/kg dry	77	<430	<27	-	-	-
cis-1,2-Dichloroethene	25 ug/kg dry	4900 [1]	880 [1]	340	-	-	-
1,1-Dichloroethene	25 ug/kg dry	<30	<430	<27	-	-	-
Ethylbenzene	25 ug/kg dry	88	1200 [1]	110	-	-	-
Naphthalene	250 ug/kg dry	1200	14000 [1]	1500	-	-	-
n-Propyl Benzene	25 ug/kg dry	370	4000 [1]	360	-	-	-
Tetrachloroethene	25 ug/kg dry	<30	450 [1]	28	-	-	-
Toluene	25 ug/kg dry	86	920 [1]	90	-	-	-
1,1,1-Trichloroethane	25 ug/kg dry	<30	<430	<27	-	-	-
1,1,2-Trichloroethane	25 ug/kg dry	<30	<430	<27	-	-	-
Trichloroethene	25 ug/kg dry	310	<430	61	-	-	-
1,3,5-Trimethylbenzene	25 ug/kg dry	1900	9700 [1]	980	-	-	-
1,2,4-Trimethylbenzene	25 ug/kg dry	5400 [1]	34000 [1]	3100 [1]	-	-	-
Vinyl chloride	25 ug/kg dry	480	<430	72	-	-	-
m,p-Xylene	50 ug/kg dry	390	3600 [1]	360	-	-	-
o-Xylene	25 ug/kg dry	330	3100 [1]	300	-	-	-
Dibromofluoromethane	140 [surr]	109%	121%	112%	-	-	-
Toluene-d8	140 [surr]	95.5%	104%	96.9%	-	-	-

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 25 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB#		T091702-10	T091702-11	T091702-12	T091702-13	-	-
MATRIX	Minimum	Soil	Soil	Soil	Water	-	-
SAMPLE ID	Reporting Limit	NS-09 (2-3')	NS-10 (8-9')	NS-10 (10-11')	NS-10 (21-25')	-	-
Volatile Organic Compounds by E	PA Method 8260B (continue	d)					
4-Bromofluorobenzene	140 [surr]	104%	105%	103%	-	-	-
Volatile Organic Compoun	ds by EPA Method 826	OB (Water)					
Benzene	1.0 ug/L	-	-	-	<10	-	-
n-Butyl Benzene	1.0 ug/L	-	-	-	<10	-	-
Chloroethane	5.0 ug/L	-	-	-	<50	-	-
Chloroform	1.0 ug/L	-	-	-	<10	-	-
1,1-Dichloroethane	1.0 ug/L	-	-	-	26 [1]	-	-
1,2-Dichloroethane	1.0 ug/L	-	-	-	<10	-	-
trans-1,2-Dichloroethene	1.0 ug/L	-	-	-	13 [1]	-	-
cis-1,2-Dichloroethene	1.0 ug/L	-	-	-	380 [1]	-	-
1,1-Dichloroethene	1.0 ug/L	-	-	-	<10	-	-
Ethylbenzene	1.0 ug/L	-	-	-	<10	-	-
Naphthalene	5.0 ug/L	-	-	-	<50	-	-
n-Propyl Benzene	1.0 ug/L	-	-	-	<10	-	-
Tetrachloroethene	1.0 ug/L	-	-	-	<10	-	-
Toluene	1.0 ug/L	-	-	-	<10	-	-
1,1,1-Trichloroethane	1.0 ug/L	-	-	-	<10	-	-
1,1,2-Trichloroethane	1.0 ug/L	-	-	-	<10	-	-
Trichloroethene	1.0 ug/L	-	-	-	<10	-	-
1,3,5-Trimethylbenzene	1.0 ug/L	-	-	-	<10	-	-
1,2,4-Trimethylbenzene	1.0 ug/L	-	-	-	17 [1]	-	-
Vinyl chloride	1.0 ug/L	-	-	-	45 [1]	-	-
m,p-Xylene	1.0 ug/L	-	-	-	<10	-	-
o-Xylene	1.0 ug/L	-	-	-	<10	-	-

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 26 of 26

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/15/2009 to 04/21/2009 **REPORTED:** 04/30/2009 23:51

**RECEIVED:** 04/15/2009 to 04/21/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091702-10 Soil NS-09 (2-3')	T091702-11 Soil NS-10 (8-9')	T091702-12 Soil NS-10 (10-11')	T091702-13 Water NS-10 (21-25')	- - -	- - -
Volatile Organic Compounds by EPA	Method 8260B (continued	1)					
Dibromofluoromethane	140 [surr]	-	-	-	119%	-	-
Toluene-d8	140 [surr]	-	-	-	106%	-	-
4-Bromofluorobenzene	140 [surr]	-	-	-	98.9%	-	-
Classical Chemistry Parameter	ers (Soil)						
% Solids	0.00 % by Weight	94.1	90.3	82.0	-	-	-

#### **Special Notes**

- 1 = Data reported from a dilution
- 2 = Results may be biased high because of high continuing calibration verification (CCV).
- 3 = The Matrix Spike and/or Matrix Spike Duplicate recovery was outside of the laboratory control limits.
- 4 = Surrogate recovery was outside of laboratory control limits due to an apparent matrix effect.
- 5 = Analyte included in the analysis, but not detected
- 6 = Precision for the MS/MSD or lab duplicate was outside of control limits.

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist



Attachment D B Sample Report

Environmental Chemistry Consulting Services, Inc.





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 1 of 4

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/13/2009 to 04/20/2009 **REPORTED:** 05/01/2009 10:57

**RECEIVED:** 04/13/2009 to 04/20/2009

LAB # MATRIX SAMPLE ID	Minimum Reporting Limit	T091601-03 Water DUP 01	T091602-04 Water Dup-02	T091603-09 Water Dup-03	T091604-05 Water Dup-04	T091604-08 Water Dup-05	T091605-08 Water Dup-06
Volatile Organic Compound	ds by EPA Method 8260	OB (Water)					
1,4-Dioxane	25 ug/L	-	<25 [2]	<25 [2]	<25 [2]	-	<25 [2]
Benzene	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
n-Butyl Benzene	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
Chloroethane	5.0 ug/L	<20	<5.0	<5.0	<250	<5.0	<5.0
Chloroform	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
1,1-Dichloroethane	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
1,2-Dichloroethane	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
trans-1,2-Dichloroethene	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
cis-1,2-Dichloroethene	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
1,1-Dichloroethene	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
Ethylbenzene	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
Naphthalene	5.0 ug/L	<20	<5.0	<5.0	<250	<5.0	<5.0
n-Propyl Benzene	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
Tetrachloroethene	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
Toluene	1.0 ug/L	5.0 [1]	<1.0	<1.0	<50	<1.0	<1.0
1,1,1-Trichloroethane	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
1,1,2-Trichloroethane	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
Trichloroethene	1.0 ug/L	26 [1]	<1.0	<1.0	770 [1]	2.2	<1.0
1,3,5-Trimethylbenzene	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
1,2,4-Trimethylbenzene	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
Vinyl chloride	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
m,p-Xylene	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
o-Xylene	1.0 ug/L	<4.0	<1.0	<1.0	<50	<1.0	<1.0
Dibromofluoromethane	140 [surr]	116%	117%	105%	120%	115%	108%

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 2 of 4

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/13/2009 to 04/20/2009 **REPORTED:** 05/01/2009 10:57

**RECEIVED:** 04/13/2009 to 04/20/2009

LAB #		T091601-03	T091602-04	T091603-09	T091604-05	T091604-08	T091605-08
MATRIX	Minimum	Water	Water	Water	Water	Water	Water
SAMPLE ID	Reporting Limit	DUP 01	Dup-02	Dup-03	Dup-04	Dup-05	Dup-06
Volatile Organic Compounds by E	PA Method 8260B (continue	d)					
Toluene-d8	140 [surr]	103%	99.9%	94.9%	105%	102%	93.2%
4-Bromofluorobenzene	140 [surr]	102%	99.2%	89.0%	102%	99.2%	91.6%

**ECCS** 

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#### **Nick Nigro For Eric Moen**

Chemist





RMT, Inc

#### **SUMMARY REPORT**

2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 3 of 4

Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/13/2009 to 04/20/2009 **REPORTED:** 05/01/2009 10:57

**RECEIVED:** 04/13/2009 to 04/20/2009

MATRIX         Minimum         Water         -         -         -         -           SAMPLE ID         Reporting Limit         Dup-07         -         -         -         -           Volatile Organic Compounds by EPA Method 8260B (Water)           1,4-Dioxane         25 ug/L         <25 [2]	-
Volatile Organic Compounds by EPA Method 8260B (Water)           1,4-Dioxane         25 ug/L         <25 [2]         - <t< th=""><th><u>-</u></th></t<>	<u>-</u>
1,4-Dioxane       25 ug/L       <25 [2]       -       -       -       -         Benzene       1.0 ug/L       <1.0       -       -       -       -         n-Butyl Benzene       1.0 ug/L       <1.0       -       -       -       -         Chloroethane       5.0 ug/L       <5.0       -       -       -       -       -         Chloroform       1.0 ug/L       <1.0       -       -       -       -       -         1,1-Dichloroethane       1.0 ug/L       <1.0       -       -       -       -       -         1,2-Dichloroethene       1.0 ug/L       <1.0       -       -       -       -       -       -         cis-1,2-Dichloroethene       1.0 ug/L       <1.0       -	_
Benzene       1.0 ug/L       <1.0	_
n-Butyl Benzene       1.0 ug/L       <1.0	
Chloroethane       5.0 ug/L       <5.0       - <td>-</td>	-
Chloroform       1.0 ug/L       <1.0       -	-
1,1-Dichloroethane       1.0 ug/L       <1.0	-
1,2-Dichloroethane       1.0 ug/L       <1.0	-
trans-1,2-Dichloroethene       1.0 ug/L       <1.0	-
cis-1,2-Dichloroethene       1.0 ug/L       <1.0	-
1,1-Dichloroethene       1.0 ug/L       <1.0	-
Ethylbenzene 1.0 ug/L <1.0	-
	-
Naphthalene 5.0 ug/L <5.0	-
	-
n-Propyl Benzene 1.0 ug/L <1.0	-
Tetrachloroethene 1.0 ug/L <1.0	-
Toluene 1.0 ug/L <1.0	-
1,1,1-Trichloroethane 1.0 ug/L <1.0	-
1,1,2-Trichloroethane 1.0 ug/L <1.0	-
Trichloroethene 1.0 ug/L <1.0	-
1,3,5-Trimethylbenzene 1.0 ug/L <1.0	-
1,2,4-Trimethylbenzene 1.0 ug/L <1.0	-
Vinyl chloride 1.0 ug/L 1.1	-
m,p-Xylene 1.0 ug/L <1.0	-
o-Xylene 1.0 ug/L <1.0	-
Dibromofluoromethane 140 [surr] 122%	-

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist





2525 Advance Road Madison, WI 53718 608.221.8700 Phone 608.221.4889 Fax Page 4 of 4

**RMT, Inc** Project: Tecumseh Products Company

3754 Ranchero Drive Project Number: [none]

Ann Arbor, MI 48108 Project Manager: Stacy Metz

**SAMPLED:** 04/13/2009 to 04/20/2009 **REPORTED:** 05/01/2009 10:57

**RECEIVED:** 04/13/2009 to 04/20/2009

LAB #		T091701-05	-	-	-	-	-
MATRIX	Minimum	Water	-	-	-	-	-
SAMPLE ID	Reporting Limit	Dup-07	-	-	-	-	-
Volatile Organic Compounds by E	, ,	))					
	, ,	99.2%	-	-	-	-	-

#### **Special Notes**

- 1 = Data reported from a dilution
- 2 = Analyte included in the analysis, but not detected

#### **ECCS**

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#### **Nick Nigro For Eric Moen**

Chemist



#### Attachment E Chain of Custody Documentation

Environmental Chemistry Consulting Services, Inc.

# EST. 1991

# Environmental Chemistry Consulting Services, Inc. 2525 Advance Road

# **CHAIN OF CUSTODY**

Page \_\_\_\_ of 2\_\_\_

Madison V/L 50746																
Madison, WI 53718			Lab	Wor	k Ord	ler #	į.		Mail Report To: PAT,	- S. Metz	/ J. Ba	<b>.</b>				
608-221-8700 (pho 608-221-4889 (fax)	•					•••	•	<b>.</b>	•		A . =		(	10-4	$\neg$	
	<u> </u>				_							Na 7	<del></del>			
Project Number: 7070.62						Ana	lyses F	Reques	ted		Address: 3754 Ro	inchar Dris	? <b>?</b>			
Project Name: TPL Off-Sik					_::	Pre	servati	ол Сос	ies							
Project Location: Tecuminh MI		_			A	A					E-mail Address: Stacy	metz/2 rm	tine . co	n		
Turn Around (circle one): Normal (Rush)											Invoice To: RMT					
f Rush, Report Due Date:				ers							Company:					
Sampled By (Print): 5. M+12, 5 Wide J-Bac	Hebro	k,		Fotal # of Containers		Disagne					Address:					
J. Bac		ection	<u>×</u> .	#	$\alpha$	1							Lab	Lab E	Receipt	
Sample Description	Date	Time	Matrix	Tota	*	1,4					Comment	ا مر : s	Lab ⊶ ID		me	
B-24 6-101	413/09	13:200	GW	工	X	X					T09	1601-01		Assi	erupk	
B-23 14-18'	ŧŧ.	11:23	Gw	2	X							-02				
DUP OI	11	_	&W	2	χ							-03				
STW #1 "	tı	1:039	SW	3	X							-64				
STW#Z	U	10:22A	<b>S</b> W	2	χ							-05				
57W#3	11	[2:38P	<b>G</b> W	3	X		l					-06				
STW#4	۲c	12:58	<b>5</b> W	7	X							67				
STN#5	64	13:10	SW	3	X							OF				
STW#6	ek	13:21	SW	3	X							1-09				
5TW#7	Î1	13:52	SW	3	X	X						V -10		-	$\mathcal{V}_{\perp}$	
Preservation Codes	Relinquish	O BY:	F	_			Date:	/23	Time: / うご		Received By	Vyn	Date: 4/(3/9	Time:	<b>a</b> a	
A=None B=HCL $C=H_2SO_4$ D=HNO $_3$ E=EnCore F=Methanol G=NaOH O=Other (Indicate)	Relinquishe	ed By:					<i>석[[첫</i> Date:	<i>U</i> 1	Time:	<u> </u>	Received By:	-0-0-1	Date:	Time:		
Matrix Codes	Custody Se	al: Presen	t/Abser	nt	Intact	Not In	tact	Seal #	's		Receipt Temp:		<u> </u>			
A=Air S=Soil W=Water O=Other											Temp Blank Y N					

# Environmental Chemistry Consulting Services, Inc. 2525 Advance Road

# **CHAIN OF CUSTODY**

Madison, WI 53718	!													
608-221-8700 (pho					Lab	Wor	k Or	der#	<b>‡</b> :		Mail Report To:	Si Metz/T.L	Bacon	
608-221-4889 (fax)	•										Company: RM	The		
Project Number: \$070.02						Ana	lyses F	Reques	sted		Address: 375	1 Rancher	 ວ	
Project Name: TPC OH-Sike					<del>-</del>	Pre	servati	ion Co	des					
Project Location: Technisch, Mi					A	A					E-mail Address:	ra mote Q1	mtinc	.con
Turn Around (circle one): Normal (Rush)						d					Invoice To: RM1	ri		
If Rush, Report Due Date:				ers		् ह					Company:	•		
Sampled By (Print): Metz Middle	brook,			ontain	5	MA					Address:			
Bason	,			ο Č		6,								·
Sample Description	Colle Date	ection Time	Matrix	Total # of Containers	DON	1,4		:		_	Comr	nents	Lab ID	Lab Receipt Time
B-23 (30-34')	4/13/09	1406	W	2	X						T-09160	11 - 4011	(13/8	As samp
1B-24 (28-321)	6.6	15:15	W	4	X	×						+112°	પાઝ/૧	
STW 8	6.4	15:50	W	3	X	X						-13		
B-319 (25'-29')	lı.	16:49	W	3	X							-14		
B-31a (10'-14')	~	1730	W	3	X							-15		
B-29 A (8-121)	ŧ,	1800	W	4	X	X						1/6		
B-29A (38-421)	10	1730	W	4	X	X					0	/ -17		V
										•				
Preservation Codes A=None B=HCL C=H₂SO₄	Relinquishe	Hav (	luc	-			Date:	3/09	Time:	0	Received By - W	1 see	Date: 4/(3/9	18:20
D=HNO <sub>3</sub> E=EnCore F=Methanol G=NaOH O=Other (Indicate)	Relinquished By:					Date: Time:					Received By:	· · · · ·	Date:	Time:
Matrix Codes						Intact/Not Intact Seal #'s					Receipt Temp:			
A=Air S=Soil W=Water O=Other  Download this form at www eccsmobilelab com	Shipped Vi	a:	PORT	COPY	YFI	1 0//	- LARO	Temp Blank Y N  RATORY COPY PINK - SAMPLER/SUBMITTER Rev. 11/08						

#### **Environmental Chemistry** Consulting Services, Inc. 2525 Advance Road

Madison WI 53718

# **CHAIN OF CUSTODY**

Page  $\underline{l}$  of  $\underline{\mathcal{Z}}$ 

608-221-8700 (p.	hone)				Lab	Wor	k Ord	der #	<b>#</b> :		Mail Report To:				
608-221-4889 (fa	ıx)								Company:						
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Sample Description	Colle	ction	Matrix	Total # of Containers	VO	14						Comments		Lab / ID	Lab Receipt Time
B-329 (25'-29')		0913		·	- M						T0916	02-01	(	*	Sample
B-329 (10'-14')	4-14-09	0948	6W	3	3						,	-02			
B-30a (30-34)	4-14-09	1015	GW	4	X	χ						0	?		
Dup - 02	4/14/09	1015	6W	4	χ	X						-0	4		
B304 (6-11')	4/14/59	1100	SW	4	χ	X						-0	15		
B-18s (32'-36')	4/14/09	1219	6W	3	<b>3</b>							-0	<u></u>		
B-185 (22'-26')	4/14/09	1257	66	3	3							-0	7		
B-14s (36-40)	4 14 09	1350	ധ	4	χ	Х		-				-08	<u>`</u>	ļ <u> </u>	
B-145 (16-20)	ulus	1430	SW	Ч	X	Х						/ -0	9		
B-26 (29'-33')	4/14/09	1542	6W	3	$\propto$						<u>V</u>	-10	)		Ā
Preservation Codes  A=None B=HCL C=H <sub>2</sub> SO <sub>4</sub>	Relinquishe	ed By:	to	5			Date:	30	Time: 4/14/0	9	Received By	-M	, K	Date:	Tinde: Cary
D=HNO <sub>3</sub> E=EnCore F=Methanol G=NaOH O=Other (Indicate)	Relinquishe	ed By:		<i>-</i>			Date:		Time:		Received By:			Date:	Time:
Matrix Codes	Custody Seal: Present/Absent						ot Intact Seal #'s			Receipt Temp:					
A=Air S=Soil W=Water O=Other	Shipped Via	a:	E DF	DODT	CODY	, VE1	1.000	LABOR	A T/	Temp Blank Y N					



# **Environmental Chemistry Consulting Services, Inc.** 2525 Advance Road

# **CHAIN OF CUSTODY**

Page 2 of 2

Mod	icon W/L 52719														
	Madison, WI 53718 608-221-8700 (phone) 608-221-4889 (fax) ect Number:							k Ord	der#	<b>#</b> :		Mail Report To:			
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B-26 (16'-20')	26 (16'-20') 4-1- 22 (18-23) 4/1-				ら	X						T091602-11	f = A	5 Samples	
	5-22 (18-23) 4/14/29					X	χ					-12			
B-22 (18-23) 4/14/29 18-22 (40-44) 4/14/29 16				GW	ų	X	χ					V-13			
		1 (													
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Preservation Codes  A=None B=HCL C=H <sub>2</sub> SO <sub>4</sub> Relinquished By:				Sh	5		Date:	09	Time: 17:3	0	Received By:	Date: 4/14/9	Time: 17=50		
D=HNO <sub>3</sub> E=EnCore F=Methanol Relinquished By: G=NaOH O=Other (Indicate)					Date: Time:										
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#### **Environmental Chemistry** Consulting Services, Inc. 2525 Advance Road Madison, WI 53718

# **CHAIN OF CUSTODY**

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Project Number:  Project Name:								-11	_	<u> </u>	<del></del>				
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4-15-09	0905	6W	3	X	į					109	1603	-01	A	Sam	lef
			3	X							1	-07			
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4/15/54	1126	CW	4	X	X							-04			
		6W	4	X	X							-05			
4/15/09	1145	CN	3	×								-06			
4/15	12:45	دلای	4	X	×							-07			
4/15	12:15	رره	4	X	X							-08			
4/15	_	6W	4	X	X						) )	-09			
4-15-09	1317	6W	3	X								70			
Relinquishe	ed By:		100	1		Date:	15	Time:	Rec	etyed By:	w		Date:	Time:	<i>?</i> />
B=HCL C=H <sub>2</sub> SO <sub>4</sub> :=EnCore F=Methanol Relinquished By: D=Other (Indicate)						Date:	<u>, ,                                    </u>	Time:	Received By: Date: Time:						
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	Colled Date  4-15-09  4-15-09  4-15-09  4 15 56  4 15 56  4 15 56  4 15 56  4 15 56  4 15 56  Relinquished Relinquished Custody Se	Collection Date Time  4-15-09 0905  4-15-09 0940  1-15-09 0955  4 15 4 11-6  4 15 5 1000  4/15 09 1145  4 15 12:45  4 15 12:45  4 15 12:45  4 15 7  Relinquished By:  Relinquished By:	Collection Date Time  4-15-09 0905 6W  4-15-09 0940 6W  4-15-99 0955 6W  4/15/4 1996 6W  4/15/4 1000 6W  4/15/9 1145 6W  4/15 12:45 6W  4/15 12:45 6W  4/15 13:7 6W  Relinquished By:  Custody Seal: Present/Abse Shipped Via:	Collection Date Time # 15-09 0905 6w 3 4-15-09 0905 6w 3 4-15-09 0905 6w 3 4-15-09 0955 6w 4 4-15-09 0955 6w 4 4-15-09 0955 6w 4 4-15-09 0955 6w 4 4-15-09 0955 6w 4 4-15-09 0955 6w 4 4-15-09 0955 6w 4 4-15-09 0955 6w 4 4-15-09 0955 6w 4 4-15-09 0955 6w 4 4-15-09 0955 6w 3 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 005 6w 4 4-15-09 00	Collection Date Time  4-15-09 0905 6w 3 X  4-15-09 0905 6w 3 X  4-15-09 0955 6w 3 X  4-15-09 1317 6w 3 X  4-15-09 1317 6w 4 X  4-15-09 1317 6w 3 X  Relinquished By:  Custody Seal: Present/Absent Intact Shipped Via:	Collection Date Time	Collection   X   Freservation   Date   Time   Tim	Collection   Summary   Date   Time   Summary   Date   Time   Date   Time   Date   Da	Collection   Date   Time   T	Company   Comp	Company:  Analyses Requested  Address:  Preservation Codes  E-mail Address:  Invoice To:  Company:  Address:  Company:  Address:  Preservation Codes  F-mail Address:  Invoice To:  Company:  Address:  4/15-09 0905 6\omega 3 \times 4 \times 6 \times 4 \times 7 \times 6 \times 4 \times 7 \time	Company:  Analyses Requested Address:  Preservation Codes	Analyses Requested   Address:	Company:   Analyses Requested   Address:	Company:   Analyses Requested   Address:



# Environmental Chemistry Consulting Services, Inc. 2525 Advance Road Madison, WI 53718

# **CHAIN OF CUSTODY**

608-221-8700 (pho	ne)			Lab	ıoW	k Or	der i	#:		Mail Report To:					
608-221-4889 (fax)									Сотрапу:						
Project Number:						Ana	alyses	Reque	sted		Address:			-	
Project Name:						Pre	eservat	ion Co	des						
Project Location:											E-mail Address:				
Turn Around (circle one): Normal Rush											Invoice To:				
If Rush, Report Due Date:				Jers	16	É					Company:	4			
Sampled By (Print):				Total # of Containers	00	3					Address:				
Sample Description	Colle Date	ection Time	Matrix	Total #	Ž	1/4/					C	Comments	Lab ID	Lab Receipt Time	
B-19 (12-16')	4-15-09	1415	$6\omega$	3	X	_	_		:		T09	71603 - 11		sauply	
B-238 (14-16)	(14-16) 4/15/09 150										, "	-12			
NS-3 (37-41')	4/15/9	1620	GW	3	X							-13			
SSI (45-49')	ti	15:50	GW	4	k	X						-14		7	
SS-( (24-28°)	CL	16:30	GW	4	X	X						-15			
	((	16:40	S	5	X	X						, -16			
55-1 NS-3 (16'-20')	11	1655		3	X							/ -17			
											3				
														/	
Preservation Codes A=None B=HCL C=H₂SO₄	h	+		<u> </u>	Date:	15	Time:	130	Received By.	Mon	Date:	Time: 17:30			
A=None B=HCL C=H <sub>2</sub> SO <sub>4</sub> D=HNO <sub>3</sub> E=EnCore F=Methanol Relinquished By:  G=NaOH O=Other (Indicate)							Date:		Time:		Received By:		Date:	Time:	
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A=Air S=Soil W=Water O=Other  Download this form at www eccsmobilelab com	Shipped Vi							)RATC	Temp Blank Y N  TORY COPY PINK - SAMPLER/SURMITTER Rev. 11/08						



#### Environmental Chemistry Consulting Services, Inc. 2525 Advance Road Madison. WI 53718

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		ne)				Lab	Wor	k Or	der i	<b>#</b> :	Mail Report To:					
	608-221-4889 (fax)		·									Company:				
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Project Location:												E-mail Address:				
Turn Around (circle one): N	ormal Rush	٠.										Invoice To:				
If Rush, Report Due Date:				] '	ners		. و				,	Company:				
Sampled By (Print):			i		Total # of Containers	100	Dioxano					Address:	<del></del>			
Sample De	escription	Colle Date	ction Time	Matrix	Total #	7	D. 1.						Comments	Lab ID	Lab Receip	
NS-4 (8'-1	(2')	4-16-09	0805	S	2	X						T0916	04-01	1	Saught	
NS-4 (32'-		1/	0853	6W	3	X							-02		(	
NS-4 (14'-1	18')	U ,	0933	66	3	X							-03	//2		
B-11 (29-	33)	Ci	10:02	6W	3	X							-04			
Dup-04		1-	_	GW	4	X	1						-05			
B-24B (5-	ר')	4/16/09	10:35	GW	4	X	X						-06			
B-12 (24-8	<del>)</del> 8')	4/14	1150	GW	3	X	)						-67	·		
DUP- 05		4/16	(	GW	3	X			,				-08			
55-2 (8'-12')	)	4/16	1153	S	4	X	X						1-09			
35-2 (16'-20'	)	4/16	1157	S	4	X	X						1 -10		W	
Preservation  A=None B=HCl  D=HNO <sub>3</sub> E=EnCo  G=NaOH O=Othe	L C=H <sub>2</sub> SO <sub>4</sub> ore F=Methanol	Relinquishe Relinquishe	May	y	Arc	5		Date:	þ	Time:	ଚ	Received By: Received By:	Mou	Date: Collection Date:	Time:	
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#### Environmental Chemistry Consulting Services, Inc. 2525 Advance Road Madison, WI 53718

# **CHAIN OF CUSTODY**

Page 2 of 3

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EST, 1991 60	)8-221-4889 (fax)											Company:				- · · · · · · · · · · · · · · · · · · ·
Project Number:							Ana	llyses F	Reque	sted		Address:	·			
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Turn Around (circle one): Non	mal Rush											Invoice To:				
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Sampled By (Print):	Collection					700	Dioxen					Address:	<del></del>			
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Dup-01		4-16		S	4	X	X					70916	04	-11	As	Sampled
55-2 (42-46	<i>(,')</i>	4-16	1345	$\omega$	4	X	X						<u>'</u>	-(2		1
55-2 (20'-24		4/16	1415	6W	4	X	X					<u></u>		43		
B-10 (24-2	28)	4/16	1430	(Ji)	3	X	X							-14		
B-28B (16-	- 18')	4/16	1500	GW	Ŧ	X	X.							-15		
55-3 (8-12'	')	4/16	1533	5	4	Χ	Х							-16		
55-3 (16-20)	·)	4/16	1550	S	4	X	X.							-17		
55-3 (20-24	·')	4/16	1620	6ω	4	X	X							-18		
B13 (46-5	[6	4/16	A45	GW)	3	X							7	-19		
													<u> </u>			
Preservation A=None B=HCL	Codes C=H₂SO₄		Mary	11	大			Date:	٤	Time: /80	O	Received By:	Med			Time:
D=HNO <sub>3</sub> E=EnCore G=NaOH O=Other		Relinquished By:						Date:		Time:		Received By:			Date:	Time:
Matrix Co A=Air S=Soil W=W		Custody Seal: Present/Absent Shipped Via:					Not In	tact	Seal #	r's	Receipt Temp: Temp Blank Y N					
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#### Environmental Chemistry Consulting Services, Inc. 2525 Advance Road

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608-221-4889 (fax)						_					Company:				
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Project Name:					Preservation Codes										
Project Location:											E-mail Address:				
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If Rush, Report Due Date:			ers							Company:					
Sampled By (Print):				Total # of Containers	20	/					Address:				
Sample Description	Colle Date	ection Time	Matrix	Total # c	2						Comments	Lab ID	Lab Receipt Time		
115-2 (0-4')	4-16	1753	ی	34	X						T091604-20		Serile		
NS-2 (0-4') NS-2 (8-12')	4-16	1745	S	4	X						T091604-20 V-21				
										<u> </u>			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
							†								
Preservation Codes A=None B=HCL C=H₂SO₄	Relinquish	ed by: Mary	Su	t-			Date:	ρ	Time: 1802	<u>ු</u>	Received By: Mon	Date: 4/16/9	Time:		
D=HNO <sub>3</sub> E=EnCore F=Methanol G=NaOH O=Other (Indicate)	Relinquished By:						Date:		Time:		Received By:	Date:	Time:		
Matrix Codes		eal: Preser	ıt/Abseı	nt	Intact/Not Intact Seal #'s						Receipt Temp:				
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# **Environmental Chemistry** Consulting Services, Inc. 2525 Advance Road

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608-221-8700 (pho					Lab	Wor	k Or	der#	<b>#</b> :		Mail Report To:					
608-221-4889 (fax)	)										Company:					
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urn Around (circle one): Normal Rush						2					Invoice To:					
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				of Cc	00	DIOXGN						· · · · · · · · · · · · · · · · · · ·	<del></del>			
Sample Description	Colle	ection Time	Matrix	Total # of Containers	2	0,			·			Comments	Lab ID	Lab Receipt		
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NS-2 (20-24')	4-17	0747	6W	3	X						101	71605-01	1	Sampled		
B13 (29-33)	4/17	840	GŁ	3	X							1-03		1		
NS-1 (20-24')	4-17	1011	6W	3	X							-03				
115-1 (0-4')	4-17	0 920	٤	4	X	X						-04				
NS-1 (16-20')	4-17	0 925	S	4	X	X.						05				
B-25 (7-11)	4/17	1120	GØ	3	X	X						-06				
B-25 (31-35)	4/17	1200	GW	4	X	X						1 -07				
DUP-070	417	·	60	4	X	X						-08				
55-4 (22-24)	4/17	1257	GW	4	×	K						1-09				
55-4 (12-16)	4/17	12:25	5	5	×	X					N	1-10		V		
Preservation Codes	Relinquish	ed By:	. //	ne	2		Date:	)	Time:	. 20	Received By:	11.	Date:	Time:		
A=None B=HCL $C=H_2SO_4$ D=HNO <sub>3</sub> E=EnCore F=Methanol	Relinquish	od By:	_ K	n	<del>)                                    </del>		U/	+	<u>/</u> ク - Time:	: 20	Received By:		Date:	/3:25 Time:		
G=NaOH O=Other (Indicate)	rzennyuisin	cu by.					Date:		riine:		neceived by.		Date.	i Hite.		
Matrix Codes	Custody Seal: Present/Absent In					/Not In	tact	Seal #	's		Receipt Temp:					
A=Air S=Soil W=Water O=Other	Shipped Vi										Temp Blank Y	N				



#### Environmental Chemistry Consulting Services, Inc. 2525 Advance Road Madison, WI 53718

# **CHAIN OF CUSTODY**

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	608-221-8700 (pho	ne)					Lab	Wo	rk Or	der i	<b>#</b> :		Mail Report To:							
EST. 1991	608-221-4889 (fax)	,											Company:							
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			0-11		×	# of	70/	2						<u>-</u>						
Sample	Description		Date	ection Time	Matrix	Total		//-						Comments	Lab ID	Lab Receipt Time				
55-4	(8-12)	4	17	1220	S	5	X	X					T0916	05-11	45	Sample				
SS-5	(3-4)	ч	17	1410	\$	5	X	X					Ì	-12						
55-5	(12-13)	4	17	1415	S	5	×	X						-13						
55-6	(5-7)	4	17	1435	S	5	X	X						-14						
DUP-	02	4	117		2	5	X	X.						15						
55-6	(23-27)	4	17	1511	Gω	4	×	X						-16						
55-5	(20-21)	4	17	15:40	5	5	X	X				,		-17						
55-5	(22-24)	4	17	1635	GU)	4	Х	X						1-18		9				
		+																		
Preserv A=None B=	vation Codes HCL C=H₂SO₄	Rei	inquish	ed By:	1 Ec. 1		n	1	Date/	17/09	Time:	:45	Received By: /	Moe	Date: 4/17/9	Time:				
D=HNO <sub>3</sub> E=E G=NaOH O=0	nCore F=Methanol Other (Indicate)	Relinquished By:						Date: Time:					Received By: Date: Time:							
1	rix Codes	_		eal: Preser	10Abse	nt	Intact/Not Intact Seal #'s						Receipt Temp:							
A=Air S=Soil	W=Water O=Other	Shipped Via:						005		1.004	LARC	N 4 7 /	Temp Blank Y N							



#### Environmental Chemistry Consulting Services, Inc. 2525 Advance Road Madison, WI 53718

# **CHAIN OF CUSTODY**

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Project Number:  Project Name:  Project Location:  Turn Around (circle one): Normal Rush  If Rush, Report Due Date:  Sampled By (Print):  Company:  Analyses Requested Address:  Freservation Codes  E-mail Address:  Invoice To:  Company:  Address:  Company:  Address:  Company:  Address:				
Project Name:  Project Location:  Project Location:  Turn Around (circle one): Normal Rush  Preservation Codes  E-mail Address:  Invoice To:				
Project Name.  Project Location:  E-mail Address:  Invoice To:				
Turn Around (circle one): Normal Rush Invoice To:				
If Rush, Report Due Date:  Sampled By /Print):  Address:				
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Sampled By (Print):  Address:				
	Lab ID	Lab Receipt Time		
55-7 (21'-22') 4-20 0855 S 5 x L 709/605-01 4120/9	As	Samplel		
55-7 (22'-26') 4-20 0921 GW 4 X X 1 1 -02				
B-35 (5-9') 4/20 10:00 60 4 X X -03				
B-35 (30-34) 4/20 9:30 GW 4 XX				
DUP-07 4/20 - 6W4 XX 55				
B17 (24-281) 4/20 12:05 GW 4 XX -06				
B-34 (41-45') 4/20 1124 6W 3 X -07				
B-34 (14-18') 4-20 1213 6W 3 X -08				
MW-1s 4/20 1155 SW 4 XX / -09				
MW-35 4/20 1044 GW 3 X 4 1	•	$\bigvee$		
Preservation Codes A=None B=HCL C=H <sub>2</sub> SO <sub>4</sub> D=HNO <sub>3</sub> E=EnCore F=Methanol G=NaOH O=Other (Indicate)  Relinquished By: Date: Time: Received By: Date: Time: Received By:	Date: 4/25/7 Date:	Time:		
Matrix Codes Custody Seal: Present/Absent Intact/Not Intact Seal #'s Receipt Temp: A=Air S=Soil W=Water O=Other Shipped Via: Temp Blank Y N				

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#### Environmental Chemistry Consulting Services, Inc. 2525 Advance Road Madison, WI 53718

# **CHAIN OF CUSTODY**

Page 2 of  $\overline{Z}$ 

608-221-8700 (pho		Lab	Wor	k Or	der #	<b>#</b> :		Mail Report To:								
608-221-4889 (fax)			*									Company:				
Project Number:							Апа	alyses l	Reque	sted		Address:				
Project Name:		<del> </del>					Pre	eservat	ion Co	des						
Project Location:												E-mail Address:				
Turn Around (circle one): Normal Rush												Invoice To:				
If Rush, Report Due Date:		<u> </u>			ners		ہ ا					Company:				
Sampled By (Print):					Total # of Containers	VOC	MOXANE					Address:				
Sample Description		Colle Date	ection Time	Matrix	Total#	Ŋ	Á					Comments	Lab ID	La	b Receipt Time	
MW-45	4	1/20	1008	SW	3	Х						109/605-11	As	Sa	mpk	
MW -55	4	20	1129	GW	4	X	X					-12			1	
MW-85	4	120	1308	BW	3	X						-13				
MW -9s	4	20	1124	600	4	$\times$	X					/ -/4				
Dup-08	4	Ze		ow	3	X						-15				
NS-05 (20-241)	4	20	1502	GW	3	X						-16				
NS-05 (12-14)	4	20	1445	S	4	X						-17				
NS-04 (22-24)	4	20	1521	GW	3	X						-18				
NS-06 (2-3")	4	20	1440	5	4.	X						, -19			1	
NS- 06 (23-24)	4	20	1445	<	4	X						V -20		V		
Preservation Codes A=None B=HCL C=H₂SO₄ D=HNO₃ E=EnCore F=Methanol G=NaOH O=Other (Indicate)		linquishe linquishe	May	ut	)		Date: 4/2 Date:	107	Time: 1535 Time:	5	Received By:	Date:	Tin /S Tin	5240		
Matrix Codes A=Air S=Soil W=Water O=Other	Custody Seal: Present/Absent Shipped Via:						/Not In	tact	Seal #	"s		Receipt Temp: Temp Blank Y N				
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# Environmental Chemistry Consulting Services, Inc. 2525 Advance Road Madison, WI 53718

# **CHAIN OF CUSTODY**

Page 3 of 3

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	608-221-8700 (phor	ne)					Lab	Wor	k Or	der#	<b>#</b> :		Mail Report To:				
	608-221-4889 (fax)												Company:				
Project Number:								Ana	ilyses F	Reques	sted		Address:				
Project Name:		_					Preservation Codes										
Project Location:		_											E-mail Address:				
Turn Around (circle one): N	ormal Rush												Invoice To:				
If Rush, Report Due Date:		_				ners							Сотрапу:				
Sampled By (Print):						f Contai		DIOKENE					Address:				
Sample De	escription	Da	Colle	ction Time	Matrix	Total # of Containers	VOC	Sign	·				Comments Smy/20/9	Lab ID	Lab Receipt Time		
MW-025		4/2	विव	1441	6W	3	X						T091605-21	As	Pauplel		
MW-065		4/2	159	1537	GW	3	X						1701 22		(		
2 FG-WN		42	) श्रि	1340	6N	3	X						V -23				
B15 (44	-48′)	4/2	• जि	1730	60	궠	Χ	Х					-24				
B18 (2	4-28')	4/2	10	1811	લ્ખ	吗	X	X					-25				
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Preservation A=None B=HC			quishe	Ma	ecel	M	5		Date/	0/01	Time:		Received By: Mac		Time: / タンダ		
D=HNO <sub>3</sub> E=EnCo G=NaOH O=Otho		Relinquished By:						Date: Time:					Received By:	Date:	Time:		
Matrix (								Not Int	tact	Seal #	r's		Receipt Temp:				
A=Air S=Soil W=		Shipped Via:						COPY	VEI	1 0\//	_ I AROP	ΔΤΩ	Temp Blank Y N				

# Environmental Chemistry Consulting Services, Inc. 2525 Advance Road Madison, WI 53718

# **CHAIN OF CUSTODY**

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608-221-8700 (ph		Lab	Wor	k Ord	der #	<b>#</b> :	М	Mail Report To:							
608-221-4889 (fax	()						_			Co	Company:				
Project Number:						Ana	alyses R	eque	sted	Ad	Address:				
Project Name:				· · ·		Pre	eservatio	on Co	des		_				
Project Location:										E-	-mail Address:				
Turn Around (circle one): Normal Rush										In	voice To:				
If Rush, Report Due Date:	Report Due Date:			ers	8					C	ompany:				
Sampled By (Print):				Total # of Containers	Diaxon	VOC	; ;			Ad	ddress:				
Sample Description	Coll Date	ection Time	Matrix	Total #	۵	J						Comments	Lab ID	Lab Receipt Time	
55-8 (23-27)	4/21	1005	6W	4.	文	X					T 091	702-01	As.	Bampled	
55-8 (19'-20')	4/21	093 8	S	5	X	く					· · · · · · · · · · · · · · · · · · ·	1 -02			
NS-07 (10-11)	4/21	1230	5	4	N. B	X				10	oc only sea	-03			
NS-08 (15-16)	1514	1300	5	4		X						-04			
DUP-03	4/21	_	5	4		X						-05			
N5-07 (20-241)	4/21	1308	GW	3		X						-06			
NS-08 (20-24)	4/21	1315	රඟ	3		X						-07			
DUP-DESEM 09	4/21	_	6W)	3		X						-08			
NS-09 20-24	4/21	1535	600	3		X						-08 F-09			
NS-09 (2-3)	4/21	1455	1 .	4		X		- <i>r</i>			0	1-10		A	
Preservation Codes  A=None B=HCL C=H <sub>2</sub> SO <sub>4</sub> D=HNO <sub>3</sub> E=EnCore F=Methanol	Relinquish	Mu	j M	5		56ª	Date: 151/ Date:	4/1	Time:  540 Time:		eceived By:	5 Mon	Date:	Time: /52 95 Time:	
G=NaOH O=Other (Indicate)  Matrix Codes	Custody Seal: Present/Absent Intact/N						tact	Seal #	#s	R	Receipt Temp:				
A=Air S=Soil W=Water O=Other	Shipped V							Τe	Temp Blank Y N						
Download this form at www eccsmobilelah com		WHITE - REPORT COPY YELLOW - LABOR									OPY COPY PINK - SAMPLER/SLIBMITTED Pay 11/08				

### **Environmental Chemistry** Consulting Services, Inc. 2525 Advance Road

# **CHAIN OF CUSTODY**

Page	of
. 490	

608-221-8700 (phone)					Lab Work Order #:				<b>‡</b> :		Mail Report To:				
EST. 1991 608-2	21-4889 (fax)	-a										Сотрапу:			
Project Number:							Ana	llyses F	leques	sted		Address:			
Project Name:							Pre	servati	оп Сос	des					
Project Location:							_					E-mail Address:			
Turn Around (circle one): Normal Rush											Invoice To:				
If Rush, Report Due Date:										Company:					
Sampled By (Print):			Total # of Containers	200						Address:					
Sample Description	on	Colle Date	ection Time	Matrix	Total #	0/0						Comments	Lab ID	Lab Receipt Time	
NS-10 (8-0	1)	4/21	15:25	5	4	X						T091702-11	As	Sanglel	
NS-10 (10	-11)	4/21	15:25	5	4	X						1 42		1	
NS-10 (10 NS-10 (	24-25	4/21	1532	GW	- ىر	X						V -13			
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		-			_						_				
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Preservation Codes  A=None B=HCL C=H <sub>2</sub> SO <sub>4</sub> Relinquished By:		up	Au	1		Dater U2	-1	Time:	<i>b</i>	Received By:		Time:			
D=HNO <sub>3</sub> E=EnCore F= G=NaOH O=Other (Indic		Relinquishe	ea By: *	0				Date:		Time:		Received By:	Date: 1	rime:	
Matrix Codes A=Air S=Soil W=Water	O=Other	Custody Se Shipped Via	eal: Presen	ıt/Abseı	nt	Intact/	Not In	tact	Seal #	's		Receipt Temp: Temp Blank Y N			
			WHIT	F.RF	PORT	COPY	VEI	I OW	ΙΔRΩΙ	RATO	RY CORY PINK - SAMPI ER/SUBMITTER	Comments  Lab Lab Receipt Time  O 91702 - 11  As Saught  12  13  Date: 15:45  By: Date: Time:  emp:  nk Y N			

# **US EPA ARCHIVE DOCUMENT**



May 22, 2009

RMT, Inc. - Ann Arbor Office Attn: John Bacon 3754 Ranchero Drive Ann Arbor, MI 48108-2771

#### **Project: Tecumseh Products**

Dear John Bacon,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
0905290	05/18/2009	<b>Laboratory Services</b>

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Jennifer L. Rice Project Chemist

Enclosures(s)



0905290

Client: RMT, Inc. - Ann Arbor Office Work Order:

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: B-37 (38.5-42.5) Sampled: 05/12/09 13:28 Lab Sample ID: 0905290-01 Sampled By: B. Ritchie Matrix: Received: 05/18/09 07:45 Water Unit: Prepared: mg/L 05/20/09 By: JDM 1 Analyzed: By: JDM Dilution Factor: 05/20/09

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL
71-43-2	Benzene	<0.0010	0.0010
108-86-1	Bromobenzene	< 0.0010	0.0010
75-27-4	Bromodichloromethane	< 0.0010	0.0010
75-25-2	Bromoform	< 0.0010	0.0010
*74-83-9	Bromomethane	< 0.0010	0.0010
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010
108-90-7	Chlorobenzene	< 0.0010	0.0010
75-00-3	Chloroethane	< 0.0010	0.0010
67-66-3	Chloroform	< 0.0010	0.0010
74-87-3	Chloromethane	< 0.0010	0.0010
95-49-8	2-Chlorotoluene	< 0.0010	0.0010
106-43-4	4-Chlorotoluene	< 0.0010	0.0010
124-48-1	Dibromochloromethane	< 0.0010	0.0010
74-95-3	Dibromomethane	< 0.0010	0.0010
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010
75-34-3	1,1-Dichloroethane	< 0.0010	0.0010
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010
594-20-7	2,2-Dichloropropane	< 0.0010	0.0010
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010
10061-01-5	cis-1,3-Dichloropropene	<0.0010	0.0010
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010
100-41-4	Ethylbenzene	<0.0010	0.0010
75-09-2	Methylene Chloride	< 0.0050	0.0050

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:B-37 (38.5-42.5)Sampled:05/12/09 13:28Lab Sample ID:0905290-01Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

CAS Number	Analyte	Analytical Result	RL
OAS HUMBER	Analyte	Rosuit	IVE
100-42-5	Styrene	< 0.0010	0.0010
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010
127-18-4	Tetrachloroethene	< 0.0010	0.0010
108-88-3	Toluene	0.0013	0.0010
120-82-1	1,2,4-Trichlorobenzene	<0.0010	0.0010
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010
79-01-6	Trichloroethene	< 0.0010	0.0010
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010
75-01-4	Vinyl Chloride	< 0.0010	0.0010
1330-20-7	Xylene (Total)	< 0.0030	0.0030
75-01-4	Vinyl Chloride	<0.0010	0.00

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	99	82-118
1,2-Dichloroethane-d4	96	<i>75-128</i>
Toluene-d8	99	88-108
4-Bromofluorobenzene	95	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:B-38 (15-19)Sampled:05/13/09 13:03Lab Sample ID:0905290-02Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	<0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	<0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	<0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	<0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	<0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:B-38 (15-19)Sampled:05/13/09 13:03Lab Sample ID:0905290-02Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

0.0010	RL 0.0010 0.0010
0.0010	0.0010
0.0010	0.0010
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0.0010	0.0010
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0.0010	0.0010
0.0010	0.0010
0.0010	0.0010
0.0010	0.0010
0.0010	0.0010
0.0010	0.0010
0.0010	0.0010
0.0030	0.0030
). ). ). ).	0010 0011 0010 0010 0010 0010 0010 0010 0010

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	99	82-118
1,2-Dichloroethane-d4	97	<i>75-128</i>
Toluene-d8	99	88-108
4-Bromofluorobenzene	95	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: B-36 (16-20) Sampled: 05/13/09 10:02
Lab Sample ID: 0905290-03 Sampled By: B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	< 0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	< 0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	< 0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: B-36 (16-20) Sampled: 05/13/09 10:02
Lab Sample ID: 0905290-03 Sampled By: B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

CAS Number	Analyte	Analytical Result	RL
CAS Number	Allalyte	Result	KL
100-42-5	Styrene	< 0.0010	0.0010
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010
127-18-4	Tetrachloroethene	< 0.0010	0.0010
108-88-3	Toluene	< 0.0010	0.0010
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010
79-01-6	Trichloroethene	< 0.0010	0.0010
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010
75-01-4	Vinyl Chloride	< 0.0010	0.0010
1330-20-7	Xylene (Total)	< 0.0030	0.0030
75-01-4	Vinyl Chloride	<0.0010	0.001

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	98	82-118
1,2-Dichloroethane-d4	98	<i>75-128</i>
Toluene-d8	98	88-108
4-Bromofluorobenzene	96	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:B-39 (15-19)Sampled:05/13/09 15:32Lab Sample ID:0905290-04Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	<0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	<0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	<0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	<0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	<0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



0905290

Client: RMT, Inc. - Ann Arbor Office Work Order:

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: B-39 (15-19) Sampled: 05/13/09 15:32
Lab Sample ID: 0905290-04 Sampled By: B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

CAS Number	Analyte	Analytical Result	RL
CAS Number	Allalyte	Result	KL
100-42-5	Styrene	< 0.0010	0.0010
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010
127-18-4	Tetrachloroethene	< 0.0010	0.0010
108-88-3	Toluene	< 0.0010	0.0010
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010
79-01-6	Trichloroethene	< 0.0010	0.0010
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010
75-01-4	Vinyl Chloride	< 0.0010	0.0010
1330-20-7	Xylene (Total)	< 0.0030	0.0030
75-01-4	Vinyl Chloride	<0.0010	0.001

Surrogates:	% Recovery	Control Limits	
Dibromofluoromethane	100	82-118	
1,2-Dichloroethane-d4	98	<i>75-128</i>	
Toluene-d8	99	88-108	
4-Bromofluorobenzene	95	82-114	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:B-36 (12-16)Sampled:05/13/09 09:20Lab Sample ID:0905290-05Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	<0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	<0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	<0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	<0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	<0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:B-36 (12-16)Sampled:05/13/09 09:20Lab Sample ID:0905290-05Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

Inalyta	Analytical Posult	RL
analyte	Result	RL
Styrene	< 0.0010	0.0010
1,1,1,2-Tetrachloroethane	< 0.0010	0.0010
1,1,2,2-Tetrachloroethane	< 0.0010	0.0010
Tetrachloroethene	< 0.0010	0.0010
Toluene	< 0.0010	0.0010
1,2,4-Trichlorobenzene	< 0.0010	0.0010
1,1,1-Trichloroethane	< 0.0010	0.0010
1,1,2-Trichloroethane	< 0.0010	0.0010
Frichloroethene Trichloroethene	< 0.0010	0.0010
Trichlorofluoromethane	< 0.0010	0.0010
1,2,3-Trichloropropane	< 0.0010	0.0010
/inyl Chloride	< 0.0010	0.0010
(ylene (Total)	< 0.0030	0.0030
	1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene Trichlorofluoromethane 1,2,3-Trichloropropane Vinyl Chloride	Analyte         Result           Styrene         <0.0010

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	99	82-118
1,2-Dichloroethane-d4	97	<i>75-128</i>
Toluene-d8	99	88-108
4-Bromofluorobenzene	94	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:B-38 (36-40)Sampled:05/13/09 12:40Lab Sample ID:0905290-06Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	<0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	<0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	<0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	<0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	<0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:B-38 (36-40)Sampled:05/13/09 12:40Lab Sample ID:0905290-06Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

CAS Number	Analyte	Analytical Result	RL
CAS Number	Allalyte	Result	KL
100-42-5	Styrene	< 0.0010	0.0010
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010
127-18-4	Tetrachloroethene	< 0.0010	0.0010
108-88-3	Toluene	< 0.0010	0.0010
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010
79-01-6	Trichloroethene	< 0.0010	0.0010
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010
75-01-4	Vinyl Chloride	< 0.0010	0.0010
1330-20-7	Xylene (Total)	< 0.0030	0.0030
75-01-4	Vinyl Chloride	<0.0010	0.001

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	100	82-118
1,2-Dichloroethane-d4	99	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	95	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-14SSampled:05/14/09 10:15Lab Sample ID:0905290-07Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 ug/L
 Prepared:
 05/19/09 By: DJM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: DMC

QC Batch: 0905585 Analytical Batch: 9E20029

#### Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte			Analytical Result	RL	
123-91-1	1,4-Dioxane			<3.0	3.0	_
Surrogates:		% Recovery	Control Limits			
Nitrobenzene-d5		83	31-123			
2-Fluorobiphenyl		83	25-113			
o-Terphenyl		85	42-125			



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-14SSampled:05/14/09 10:15

Lab Sample ID: 0905290-07 Sampled By: B. Ritchie

Matrix: Water Received: 05/18/09 07:45

Unit: mg/L Prepared: 05/20/09 By: JDM Dilution Factor: 1 Analyzed: 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

Analytical

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	< 0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	< 0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	<0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	<0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	
74-95-3	Dibromomethane	<0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	<0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	<0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	<0.0010	0.0010	
75-35-4	1,1-Dichloroethene	<0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	<0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	<0.0010	0.0010	
142-28-9	1,3-Dichloropropane	<0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	<0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	<0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



RMT, Inc. - Ann Arbor Office Work Order: 0905290 Client:

0905290-07

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: MW-14S Sampled: 05/14/09 10:15

Lab Sample ID: Sampled By: B. Ritchie Matrix: Water Received: 05/18/09 07:45 Unit: Prepared: mg/L 05/20/09 By: JDM

Dilution Factor: 1 Analyzed: 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

		Analytical		
CAS Number	Analyte	Result	RL	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	
100-42-5	Styrene	< 0.0010	0.0010	
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	
108-88-3	Toluene	< 0.0010	0.0010	
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	
79-01-6	Trichloroethene	< 0.0010	0.0010	
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	< 0.0010	0.0010	
1330-20-7	Xylene (Total)	<0.0030	0.0030	

Surrogates:	% Recovery	Control Limits	
Dibromofluoromethane	99	82-118	
1,2-Dichloroethane-d4	98	<i>75-128</i>	
Toluene-d8	99	88-108	
4-Bromofluorobenzene	95	82-114	



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: MW-11S Sampled: 05/14/09 16:00

 Lab Sample ID:
 0905290-08
 Sampled By:
 B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

Unit: mg/L Prepared: 05/20/09 By: JDM
Dilution Factor: 1 Analyzed: 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	< 0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	< 0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Lab Sample ID:

#### **ANALYTICAL REPORT**

B. Ritchie

RMT, Inc. - Ann Arbor Office Work Order: 0905290 Client:

0905290-08

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: MW-11S Sampled: 05/14/09 16:00

Sampled By: Matrix: Water Received: 05/18/09 07:45 Unit: Prepared: mg/L 05/20/09 By: JDM Dilution Factor: 1 Analyzed: 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

		Analytical		
CAS Number	Analyte	Result	RL	
100-42-5	Styrene	<0.0010	0.0010	
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	<0.0010	0.0010	
108-88-3	Toluene	< 0.0010	0.0010	
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	
79-01-6	Trichloroethene	< 0.0010	0.0010	
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	< 0.0010	0.0010	
1330-20-7	Xylene (Total)	< 0.0030	0.0030	

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	100	82-118
1,2-Dichloroethane-d4	97	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	94	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: **DUP-01** Sampled: 05/13/09 00:00

Lab Sample ID: 0905290-09 Sampled By: B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	< 0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	<0.0010	0.0010	
67-66-3	Chloroform	<0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	<0.0010	0.0010	
106-43-4	4-Chlorotoluene	<0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	<0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	<0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	0.0011	0.0010	
75-34-3	1,1-Dichloroethane	< 0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	< 0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	< 0.0010	0.0010	
100-41-4	Ethylbenzene	< 0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Lab Sample ID:

0905290-09

#### **ANALYTICAL REPORT**

B. Ritchie

RMT, Inc. - Ann Arbor Office Work Order: 0905290 Client:

Project: **Tecumseh Products** Description: **Laboratory Services** Client Sample ID: DUP-01 Sampled: 05/13/09 00:00

Sampled By: Matrix: Water Received: 05/18/09 07:45 Unit: Prepared: mg/L 05/20/09 By: JDM Dilution Factor: 1 Analyzed: 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

Inalyta	Analytical Posult	RL
analyte	Result	RL
Styrene	< 0.0010	0.0010
1,1,1,2-Tetrachloroethane	< 0.0010	0.0010
1,1,2,2-Tetrachloroethane	< 0.0010	0.0010
Tetrachloroethene	< 0.0010	0.0010
Toluene	< 0.0010	0.0010
1,2,4-Trichlorobenzene	< 0.0010	0.0010
1,1,1-Trichloroethane	< 0.0010	0.0010
1,1,2-Trichloroethane	< 0.0010	0.0010
Frichloroethene Trichloroethene	< 0.0010	0.0010
Trichlorofluoromethane	< 0.0010	0.0010
1,2,3-Trichloropropane	< 0.0010	0.0010
/inyl Chloride	< 0.0010	0.0010
(ylene (Total)	< 0.0030	0.0030
	1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene Trichlorofluoromethane 1,2,3-Trichloropropane Vinyl Chloride	Analyte         Result           Styrene         <0.0010

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	99	82-118
1,2-Dichloroethane-d4	98	<i>75-128</i>
Toluene-d8	99	88-108
4-Bromofluorobenzene	95	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: **TB-01** Sampled: 05/15/09 00:00

Lab Sample ID: 0905290-10 Sampled By: TML

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	< 0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	< 0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: **TB-01** Sampled: 05/15/09 00:00

Lab Sample ID: 0905290-10 Sampled By: TML

Matrix: Water Sampled By. TML

Matrix: Water Received: 05/18/09 07:45

Unit: mg/L Prepared: 05/20/09 By: JDM Dilution Factor: 1 Analyzed: 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

CAS Number	Analyte	Analytical Result	RL	
CAS Number	Allalyte	Result	KL	
100-42-5	Styrene	< 0.0010	0.0010	
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	
108-88-3	Toluene	< 0.0010	0.0010	
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	
79-01-6	Trichloroethene	< 0.0010	0.0010	
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	< 0.0010	0.0010	
1330-20-7	Xylene (Total)	< 0.0030	0.0030	
75-01-4	Vinyl Chloride	<0.0010	0.001	

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	100	82-118
1,2-Dichloroethane-d4	99	<i>75-128</i>
Toluene-d8	99	88-108
4-Bromofluorobenzene	94	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: MW-13S Sampled: 05/15/09 09:27

Lab Sample ID: **0905290-11** Sampled By: B. Ritchie

Matrix: Water Received: 05/18/09 07:45

Unit: mg/L Prepared: 05/20/09 By: JDM Dilution Factor: 1 Analyzed: 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	< 0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	< 0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: MW-13S Sampled: 05/15/09 09:27

 Lab Sample ID:
 0905290-11
 Sampled By:
 B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Ibit:
 mg/l
 Proposed:
 05/20/09 Pbit IDN

Unit: mg/L Prepared: 05/20/09 By: JDM Dilution Factor: 1 Analyzed: 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

CAS Number	Analyte	Analytical Result	RL	
CAS Number	Allalyte	Result	KL	
100-42-5	Styrene	< 0.0010	0.0010	
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	
108-88-3	Toluene	< 0.0010	0.0010	
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	
79-01-6	Trichloroethene	< 0.0010	0.0010	
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	< 0.0010	0.0010	
1330-20-7	Xylene (Total)	< 0.0030	0.0030	
75-01-4	Vinyl Chloride	<0.0010	0.001	

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	99	82-118
1,2-Dichloroethane-d4	99	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	95	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-12SSampled:05/15/09 09:50Lab Sample ID:0905290-12Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	< 0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	<0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	<0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	<0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	
142-28-9	1,3-Dichloropropane	<0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	<0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Lab Sample ID:

0905290-12

#### **ANALYTICAL REPORT**

Sampled By:

B. Ritchie

Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: MW-12S Sampled: 05/15/09 09:50

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

CAS Number		Analytical		
	Analyte	Result	RL	
100-42-5	Styrene	<0.0010	0.0010	
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	0.0014	0.0010	
108-88-3	Toluene	< 0.0010	0.0010	
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	
79-01-6	Trichloroethene	< 0.0010	0.0010	
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	< 0.0010	0.0010	
1330-20-7	Xylene (Total)	<0.0030	0.0030	

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	101	82-118
1,2-Dichloroethane-d4	96	<i>75-128</i>
Toluene-d8	99	88-108
4-Bromofluorobenzene	95	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-15SSampled:05/15/09 11:31

Lab Sample ID: 0905290-13 Sampled By: B. Ritchie

Matrix: Water Received: 05/18/09 07:45

Unit: mg/L Prepared: 05/20/09 By: JDM Dilution Factor: 1 Analyzed: 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

#### Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	< 0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	<0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	<0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	<0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	
142-28-9	1,3-Dichloropropane	<0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	<0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: MW-15S Sampled: 05/15/09 11:31

Lab Sample ID: 0905290-13 Sampled By: B. Ritchie Matrix: Water Received: 05/18/09 07:45 Unit: Prepared: mg/L 05/20/09 By: JDM Dilution Factor: 1 Analyzed: 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

## **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

		Analytical		
CAS Number	Analyte	Result	RL	
100-42-5	Styrene	< 0.0010	0.0010	
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	
108-88-3	Toluene	< 0.0010	0.0010	
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	
79-01-6	Trichloroethene	< 0.0010	0.0010	
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	< 0.0010	0.0010	
1330-20-7	Xylene (Total)	< 0.0030	0.0030	

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	100	82-118
1,2-Dichloroethane-d4	98	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	95	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: B-40 (42-46) Sampled: 05/15/09 14:30
Lab Sample ID: 0905290-14 Sampled By: B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

## Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	<0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	<0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	<0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: B-40 (42-46) Sampled: 05/15/09 14:30
Lab Sample ID: 0905290-14 Sampled By: B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

## **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

		Analytical		
CAS Number	Analyte	Result	RL	
100-42-5	Styrene	<0.0010	0.0010	
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	<0.0010	0.0010	
108-88-3	Toluene	< 0.0010	0.0010	
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	
79-01-6	Trichloroethene	< 0.0010	0.0010	
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	< 0.0010	0.0010	
1330-20-7	Xylene (Total)	<0.0030	0.0030	

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	99	82-118
1,2-Dichloroethane-d4	99	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	95	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:B-40 (16-20)Sampled:05/15/09 14:46Lab Sample ID:0905290-15Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

## Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	< 0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	< 0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:B-40 (16-20)Sampled:05/15/09 14:46Lab Sample ID:0905290-15Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

## **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

CAS Number	Analyte	Analytical Result	RL
CAS Number	Allalyte	Result	KL
100-42-5	Styrene	< 0.0010	0.0010
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010
127-18-4	Tetrachloroethene	< 0.0010	0.0010
108-88-3	Toluene	< 0.0010	0.0010
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010
79-01-6	Trichloroethene	< 0.0010	0.0010
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010
75-01-4	Vinyl Chloride	< 0.0010	0.0010
1330-20-7	Xylene (Total)	< 0.0030	0.0030
75-01-4	Vinyl Chloride	<0.0010	0.001

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	100	82-118
1,2-Dichloroethane-d4	99	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	94	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: MW-10S Sampled: 05/15/09 15:14

 Lab Sample ID:
 0905290-16
 Sampled By:
 B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

Dilution Factor: 1 Analyzed: 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

## Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	< 0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	< 0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



QC Batch:

0905713

## **ANALYTICAL REPORT**

Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: MW-10S Sampled: 05/15/09 15:14

 Lab Sample ID:
 0905290-16
 Sampled By:
 B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

Dilution Factor: 1 Analyzed: 05/20/09 By: JDM

## **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

Analytical Batch: 9E21025

CAS Number	Analyte	Analytical Result	RL	
100-42-5	Styrene	<0.0010	0.0010	
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	< 0.0010	0.0010	
108-88-3	Toluene	< 0.0010	0.0010	
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	
79-01-6	Trichloroethene	< 0.0010	0.0010	
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	< 0.0010	0.0010	
1330-20-7	Xylene (Total)	< 0.0030	0.0030	

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	102	82-118
1,2-Dichloroethane-d4	100	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	93	82-114



Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: **DUP-02** Sampled: 05/15/09 00:00

Lab Sample ID: 0905290-17 Sampled By: B. Ritchie

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

## Volatile Organic Compounds in Drinking Water by EPA Method 524.2

CAS Number	Analyte	Analytical Result	RL	
71-43-2	Benzene	<0.0010	0.0010	
108-86-1	Bromobenzene	< 0.0010	0.0010	
75-27-4	Bromodichloromethane	< 0.0010	0.0010	
75-25-2	Bromoform	< 0.0010	0.0010	
*74-83-9	Bromomethane	< 0.0010	0.0010	
56-23-5	Carbon Tetrachloride	< 0.0010	0.0010	
108-90-7	Chlorobenzene	< 0.0010	0.0010	
75-00-3	Chloroethane	< 0.0010	0.0010	
67-66-3	Chloroform	< 0.0010	0.0010	
74-87-3	Chloromethane	< 0.0010	0.0010	
95-49-8	2-Chlorotoluene	< 0.0010	0.0010	
106-43-4	4-Chlorotoluene	< 0.0010	0.0010	
124-48-1	Dibromochloromethane	< 0.0010	0.0010	
74-95-3	Dibromomethane	< 0.0010	0.0010	
95-50-1	1,2-Dichlorobenzene	< 0.0010	0.0010	
541-73-1	1,3-Dichlorobenzene	< 0.0010	0.0010	
106-46-7	1,4-Dichlorobenzene	< 0.0010	0.0010	
75-71-8	Dichlorodifluoromethane	< 0.0010	0.0010	
75-34-3	1,1-Dichloroethane	<0.0010	0.0010	
107-06-2	1,2-Dichloroethane	< 0.0010	0.0010	
75-35-4	1,1-Dichloroethene	< 0.0010	0.0010	
156-59-2	cis-1,2-Dichloroethene	< 0.0010	0.0010	
156-60-5	trans-1,2-Dichloroethene	< 0.0010	0.0010	
78-87-5	1,2-Dichloropropane	< 0.0010	0.0010	
142-28-9	1,3-Dichloropropane	< 0.0010	0.0010	
594-20-7	2,2-Dichloropropane	<0.0010	0.0010	
563-58-6	1,1-Dichloropropene	< 0.0010	0.0010	
10061-01-5	cis-1,3-Dichloropropene	< 0.0010	0.0010	
10061-02-6	trans-1,3-Dichloropropene	<0.0010	0.0010	
100-41-4	Ethylbenzene	<0.0010	0.0010	
75-09-2	Methylene Chloride	< 0.0050	0.0050	

Continued on next page

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<sup>\*</sup>See Statement of Data Qualifications



Lab Sample ID:

0905290-17

## **ANALYTICAL REPORT**

Sampled By:

B. Ritchie

Client: RMT, Inc. - Ann Arbor Office Work Order: 0905290

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: **DUP-02** Sampled: 05/15/09 00:00

 Matrix:
 Water
 Received:
 05/18/09 07:45

 Unit:
 mg/L
 Prepared:
 05/20/09 By: JDM

 Dilution Factor:
 1
 Analyzed:
 05/20/09 By: JDM

QC Batch: 0905713 Analytical Batch: 9E21025

## **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

		Analytical		
CAS Number	Analyte	Result	RL	
100-42-5	Styrene	<0.0010	0.0010	
630-20-6	1,1,1,2-Tetrachloroethane	< 0.0010	0.0010	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.0010	0.0010	
127-18-4	Tetrachloroethene	<0.0010	0.0010	
108-88-3	Toluene	< 0.0010	0.0010	
120-82-1	1,2,4-Trichlorobenzene	< 0.0010	0.0010	
71-55-6	1,1,1-Trichloroethane	< 0.0010	0.0010	
79-00-5	1,1,2-Trichloroethane	< 0.0010	0.0010	
79-01-6	Trichloroethene	< 0.0010	0.0010	
75-69-4	Trichlorofluoromethane	< 0.0010	0.0010	
96-18-4	1,2,3-Trichloropropane	< 0.0010	0.0010	
75-01-4	Vinyl Chloride	< 0.0010	0.0010	
1330-20-7	Xylene (Total)	<0.0030	0.0030	

Surrogates:	% Recovery	Control Limits
Dibromofluoromethane	100	82-118
1,2-Dichloroethane-d4	99	<i>75-128</i>
Toluene-d8	100	88-108
4-Bromofluorobenzene	94	82-114



## Semivolatile Organic Compounds by EPA Method 8270C

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits RL	
<b>QC Batch: 0905585</b> 3510C Liq	uid-Liquid Ex		JSEPA-82700	<u> </u>				
Method Blank					Analyz	red:	05/20/20	009 By: DM0
Unit: ug/L					Analyt	ical Batch:	9E20029	
1,4-Dioxane			<3.0				3.0	
Surrogates:								
Nitrobenzene-d5				77	31-123			
2-Fluorobiphenyl				83	25-113			
o-Terphenyl				84	42-125			
Laboratory Control Sample					Analyz	red:	05/20/20	009 By: DM
Unit: ug/L					Analyt	ical Batch:	9E20029	
1,4-Dioxane		10.0	3.33	33	21-100		3.0	
Surrogates:								
Nitrobenzene-d5				71	31-123			
2-Fluorobiphenyl				82	25-113			
o-Terphenyl				84	42-125			
Laboratory Control Sample D	uplicate				Analyz	red:	05/20/20	009 By: DM
Unit: ug/L					Analyt	ical Batch:	9E20029	
1,4-Dioxane		10.0	2.74	27	21-100	19	20 3.0	
Surrogates:								
Nitrobenzene-d5				91	31-123			
2-Fluorobiphenyl				84	25-113			
o-Terphenyl				94	42-125			



## Volatile Organic Compounds in Drinking Water by EPA Method 524.2

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0905713 5030B Aqueous Purge & Trap/USEPA-524.2

Method Blank		Analyzed: 0	5/20/2009 By: J	JDM
Unit: mg/L		Analytical Batch: 9	E21025	
Benzene	<0.0010		0.0010	
Bromobenzene	<0.0010		0.0010	
Bromodichloromethane	<0.0010		0.0010	
Bromoform	<0.0010		0.0010	
Bromomethane	<0.0010		0.0010	
Carbon Tetrachloride	<0.0010		0.0010	
Chlorobenzene	<0.0010		0.0010	
Chloroethane	<0.0010		0.0010	
Chloroform	<0.0010		0.0010	
Chloromethane	<0.0010		0.0010	
2-Chlorotoluene	<0.0010		0.0010	
4-Chlorotoluene	<0.0010		0.0010	
Dibromochloromethane	< 0.0010		0.0010	
Dibromomethane	<0.0010		0.0010	
1,2-Dichlorobenzene	< 0.0010		0.0010	
1,3-Dichlorobenzene	< 0.0010		0.0010	
1,4-Dichlorobenzene	< 0.0010		0.0010	
Dichlorodifluoromethane	<0.0010		0.0010	
1,1-Dichloroethane	< 0.0010		0.0010	
1,2-Dichloroethane	< 0.0010		0.0010	
1,1-Dichloroethene	< 0.0010		0.0010	
cis-1,2-Dichloroethene	< 0.0010		0.0010	
trans-1,2-Dichloroethene	< 0.0010		0.0010	
1,2-Dichloropropane	<0.0010		0.0010	
1,3-Dichloropropane	<0.0010		0.0010	
2,2-Dichloropropane	< 0.0010		0.0010	
1,1-Dichloropropene	< 0.0010		0.0010	
cis-1,3-Dichloropropene	< 0.0010		0.0010	
trans-1,3-Dichloropropene	< 0.0010		0.0010	
Ethylbenzene	< 0.0010		0.0010	
Methylene Chloride	< 0.0050		0.0050	
Styrene	< 0.0010		0.0010	
1,1,1,2-Tetrachloroethane	< 0.0010		0.0010	
1,1,2,2-Tetrachloroethane	< 0.0010		0.0010	
Tetrachloroethene	< 0.0010		0.0010	
Toluene	< 0.0010		0.0010	

Continued on next page



## **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike	Spike	Control		RPD	
Analyte	Conc.	Qty. Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0905713 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Method Blank (Continued)				Analyzed:	05/20/2009	By: JDM
Unit: mg/L				Analytical Batch:	9E21025	
1,2,4-Trichlorobenzene		< 0.0010			0.0010	
1,1,1-Trichloroethane		< 0.0010			0.0010	
1,1,2-Trichloroethane		< 0.0010			0.0010	
Trichloroethene		< 0.0010			0.0010	
Trichlorofluoromethane		< 0.0010			0.0010	
1,2,3-Trichloropropane		< 0.0010			0.0010	
Vinyl Chloride		< 0.0010			0.0010	
Xylene (Total)		< 0.0030			0.0030	
Method Blank				Analyzed:	05/20/2009	By: JDN
Unit: ug/L				Analytical Batch:	9E21025	
Surrogates:						
Dibromofluoromethane			100	82-118		
1,2-Dichloroethane-d4			97	<i>75-128</i>		
Toluene-d8			99	88-108		
4-Bromofluorobenzene			95	82-114		
Laboratory Control Sample				Analyzed:	05/20/2009	By: JDN
Unit: mg/L				Analytical Batch:	9E21025	
Benzene	0.0100	0.00870	87	70-130	0.0010	
Bromobenzene	0.0100	0.00898	90	70-130	0.0010	
Bromodichloromethane	0.0100	0.00948	95	70-130	0.0010	
Bromoform	0.0100	0.0106	106	70-130	0.0010	
Bromomethane	0.0100	0.00624	62	70-130	0.0010	
Carbon Tetrachloride	0.0100	0.00920	92	70-130	0.0010	
Chlorobenzene	0.0100	0.00921	92	70-130	0.0010	
Chloroethane	0.0100	0.00829	83	70-130	0.0010	
Chloroform	0.0100	0.00858	86	70-130	0.0010	
Chloromethane	0.0100	0.00793	79	70-130	0.0010	
2-Chlorotoluene	0.0100	0.00924	92	70-130	0.0010	
4-Chlorotoluene	0.0100	0.00939	94	70-130	0.0010	
Dibromochloromethane	0.0100	0.0100	100	70-130	0.0010	
Dibromomethane	0.0100	0.00938	94	70-130	0.0010	
1,2-Dichlorobenzene	0.0100	0.00923	92	70-130	0.0010	
1,3-Dichlorobenzene	0.0100	0.00948	95	70-130	0.0010	
1,4-Dichlorobenzene	0.0100	0.00922	92	70-130	0.0010	
Dichlorodifluoromethane	0.0100	0.00749	75	70-130	0.0010	

Continued on next page

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## **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0905713 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Laboratory Control Sample (Continued) Unit: mg/L				Analyzed: Analytical Batch:	05/20/2009 9E21025	By: JDN
1,1-Dichloroethane	0.0100	0.00847	85	70-130	0.0010	
1,2-Dichloroethane	0.0100	0.00882	88	70-130	0.0010	
1,1-Dichloroethene	0.0100	0.00854	85	70-130	0.0010	
cis-1,2-Dichloroethene	0.0100	0.00889	89	70-130	0.0010	
trans-1,2-Dichloroethene	0.0100	0.00899	90	70-130	0.0010	
1,2-Dichloropropane	0.0100	0.00884	88	70-130	0.0010	
1,3-Dichloropropane	0.0100	0.00932	93	70-130	0.0010	
2,2-Dichloropropane	0.0100	0.0107	107	70-130	0.0010	
1,1-Dichloropropene	0.0100	0.00844	84	70-130	0.0010	
cis-1,3-Dichloropropene	0.0100	0.00845	84	70-130	0.0010	
trans-1,3-Dichloropropene	0.0100	0.00899	90	70-130	0.0010	
Ethylbenzene	0.0100	0.00936	94	70-130	0.0010	
Methylene Chloride	0.0100	0.00861	86	70-130	0.0050	
Styrene	0.0100	0.00974	97	70-130	0.0010	
1,1,1,2-Tetrachloroethane	0.0100	0.0101	101	70-130	0.0010	
1,1,2,2-Tetrachloroethane	0.0100	0.0104	104	70-130	0.0010	
Tetrachloroethene	0.0100	0.00964	96	70-130	0.0010	
Toluene	0.0100	0.00905	91	70-130	0.0010	
1,2,4-Trichlorobenzene	0.0100	0.00737	74	70-130	0.0010	
1,1,1-Trichloroethane	0.0100	0.00890	89	70-130	0.0010	
1,1,2-Trichloroethane	0.0100	0.00941	94	70-130	0.0010	
Trichloroethene	0.0100	0.00864	86	70-130	0.0010	
Trichlorofluoromethane	0.0100	0.00947	95	70-130	0.0010	
1,2,3-Trichloropropane	0.0100	0.0107	107	70-130	0.0010	
Vinyl Chloride	0.0100	0.00820	82	70-130	0.0010	
Xylene (Total)	0.0300	0.0290	97	70-130	0.0030	
Laboratory Control Sample				Analyzed:	05/20/2009	By: JDN
Unit: ug/L				Analytical Batch:	9E21025	
Surrogates:						
Dibromofluoromethane			101	82-118		
1,2-Dichloroethane-d4			95	<i>75-128</i>		
Toluene-d8			98	88-108		
4-Bromofluorobenzene			99	82-114		
Laboratory Control Sample Duplicate Unit: mg/L				Analyzed: Analytical Batch:	05/20/2009 9E21025	By: JDN
	0.0100		88	70-130 2	20 0.0010	

Continued on next page

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## **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0905713 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

<b>Laboratory Control Sample Dupl</b> Unit: mg/L	licate (Continued	)		Analy Analy	yzed: ytical Batch:	05/20/2009 9E21025		By: JDM
Bromobenzene	0.0100	0.00894	89	70-130	0.4	20	0.0010	
Bromodichloromethane	0.0100	0.00937	94	70-130	1	20	0.0010	
Bromoform	0.0100	0.0106	106	70-130	0.2	20	0.0010	
Bromomethane	0.0100	0.00711	71	70-130	13	20	0.0010	
Carbon Tetrachloride	0.0100	0.00947	95	70-130	3	20	0.0010	
Chlorobenzene	0.0100	0.00912	91	70-130	1	20	0.0010	
Chloroethane	0.0100	0.00886	89	70-130	7	20	0.0010	
Chloroform	0.0100	0.00871	87	70-130	2	20	0.0010	
Chloromethane	0.0100	0.00803	80	70-130	1	20	0.0010	
2-Chlorotoluene	0.0100	0.00925	92	70-130	0.1	20	0.0010	
4-Chlorotoluene	0.0100	0.00936	94	70-130	0.3	20	0.0010	
Dibromochloromethane	0.0100	0.0100	100	70-130	0	20	0.0010	
Dibromomethane	0.0100	0.00924	92	70-130	2	20	0.0010	
1,2-Dichlorobenzene	0.0100	0.00925	92	70-130	0.2	20	0.0010	
I,3-Dichlorobenzene	0.0100	0.00942	94	70-130	0.6	20	0.0010	
I,4-Dichlorobenzene	0.0100	0.00921	92	70-130	0.1	20	0.0010	
Dichlorodifluoromethane	0.0100	0.00760	76	70-130	1	20	0.0010	
I,1-Dichloroethane	0.0100	0.00854	85	70-130	0.8	20	0.0010	
1,2-Dichloroethane	0.0100	0.00866	87	70-130	2	20	0.0010	
I,1-Dichloroethene	0.0100	0.00876	88	70-130	3	20	0.0010	
cis-1,2-Dichloroethene	0.0100	0.00889	89	70-130	0	20	0.0010	
rans-1,2-Dichloroethene	0.0100	0.00925	92	70-130	3	20	0.0010	
1,2-Dichloropropane	0.0100	0.00885	88	70-130	0.1	20	0.0010	
1,3-Dichloropropane	0.0100	0.00927	93	70-130	0.5	20	0.0010	
2,2-Dichloropropane	0.0100	0.0109	109	70-130	2	20	0.0010	
1,1-Dichloropropene	0.0100	0.00879	88	70-130	4	20	0.0010	
cis-1,3-Dichloropropene	0.0100	0.00872	87	70-130	3	20	0.0010	
rans-1,3-Dichloropropene	0.0100	0.00895	90	70-130	0.4	20	0.0010	
Ethylbenzene	0.0100	0.00932	93	70-130	0.4	20	0.0010	
Methylene Chloride	0.0100	0.00862	86	70-130	0.1	20	0.0050	
Styrene	0.0100	0.00986	99	70-130	1	20	0.0010	
1,1,1,2-Tetrachloroethane	0.0100	0.0101	101	70-130	0.7	20	0.0010	
1,1,2,2-Tetrachloroethane	0.0100	0.0101	101	70-130	3	20	0.0010	
Tetrachloroethene	0.0100	0.00967	97	70-130	0.3	20	0.0010	
Toluene	0.0100	0.00907	91	70-130	0.2	20	0.0010	
1,2,4-Trichlorobenzene	0.0100	0.00754	75	70-130	2	20	0.0010	

Continued on next page



## **Volatile Organic Compounds in Drinking Water by EPA Method 524.2 (Continued)**

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0905713 (Continued) 5030B Aqueous Purge & Trap/USEPA-524.2

Laboratory Control Sample Duplicate (Continued) Unit: mg/L					Analyzed: Analytical Batch:		/20/2009	By: JDM
							21025	
1,1,1-Trichloroethane	0.0100	0.00888	89	70-130	0.2	20	0.0010	
1,1,2-Trichloroethane	0.0100	0.00948	95	70-130	0.7	20	0.0010	
Trichloroethene	0.0100	0.00893	89	70-130	3	20	0.0010	
Trichlorofluoromethane	0.0100	0.00979	98	70-130	3	20	0.0010	
1,2,3-Trichloropropane	0.0100	0.0101	101	70-130	5	20	0.0010	
Vinyl Chloride	0.0100	0.00851	85	70-130	4	20	0.0010	
Xylene (Total)	0.0300	0.0293	98	70-130	8.0	20	0.0030	
Laboratory Control Sample Duplicate			Analy	yzed:	05	/20/2009	By: JDM	
Unit: ug/L				Analy	ytical Batch:	9E	21025	

Su	irro	ga	tes:

101	82-118
96	<i>75-128</i>
99	88-108
98	82-114
	96 99



## STATEMENT OF DATA QUALIFICATIONS

## Volatile Organic Compounds in Drinking Water by EPA Method 524.2

Qualification: The LCS and/or LCSD recovery was less than the lower control limit but greater than or equal to

10%. All results for this analyte in all samples from the associated QC batch are considered

estimated.

0905290-17 DUP-02

Analysis: USEPA-524.2

Sample/Analyte: 0905290-01 B-37 (38.5-42.5) Bromomethane

0905290-02 B-38 (15-19) Bromomethane 0905290-03 B-36 (16-20) Bromomethane 0905290-04 B-39 (15-19) Bromomethane 0905290-05 B-36 (12-16) Bromomethane 0905290-06 B-38 (36-40) Bromomethane 0905290-07 MW-14S Bromomethane 0905290-08 MW-11S Bromomethane 0905290-09 DUP-01 Bromomethane 0905290-10 TB-01 Bromomethane 0905290-11 MW-13S Bromomethane 0905290-12 MW-12S **Bromomethane** 0905290-13 MW-15S Bromomethane 0905290-14 B-40 (42-46) Bromomethane 0905290-15 B-40 (16-20) Bromomethane 0905290-16 MW-10S Bromomethane

Bromomethane

5560 Corporate Exchange Court SE Grand Rapids, MI 49512 Phone (616) 975-4500 Fax (616) 942-7463

# Chain of Custody Record COC No. 128647

For L	ab Use Only						Analyses Requeste	d	Page 1 of 2
	8	Client Name RMT	Project Nam		,	D	A		◆ PRESERVATIVES A NONE pH-7
400R	, 359 61	KMI		sch Produ	c+s	11	1	111	B HNO, pH<2
Receipt Log N	27.1	3754 Ranchero Prive	Bo70	1 No./P.O. No.		1.1.	(ox		C H,SO, pH<2 D 1+1 HC1 pH<2
Project Chemi		Ann Arbor, M1 48108	Invoice No.		comments)	1.400			E NaOH pH>12 F ZnAc/NaOH pH>
Laboratory Pr	905290	Phone 734,971,7630 Fax 734,971,9022	G. CT	on To J.	Bacon	Containe	er Type (corresponds to Container Packin	ng List)	G MeOH H Other (note below
Test Matrix Group Code	Laboratory Sample Number	5577879.577	Cooler ID Samp Date		C G R Matrix.	12	Number of Containers Submitted	Total	Sample Comments
G4	01	1 3-37 (38.5-42.5)		1328	X GW	2		2	
1	02	2 B-38(15-19)	5/13	69 1303	×	2		2	
	03	3 B-36 (16-20)		1002	×	2		2	
	04	1 6-39 (15-19)		1532	×	2		2	
	05	5 B-36 (12-16)		0920	×	コ		2	
	06	· 6-38 (36-40)	7	1240	×	2		2	
04	07	7 MW-145	5/14	109 1015	X	22		4	
06	08	* MW-11S	1	1600	X	2		2	
1	09	· Dup-01	SI	-	× GW	2		2	
05	10	" TB-01	-	-	- DI	1		1	
Sampled By (p	Brent	How Shipped? Hand Carrier_ Tracking No.	Feder	Comments					
Company	0 00	1. Heringuaged By Date She	Time 5:00	2. Relinquished FC 0	4	Date	Time 3. Relinquished By	Date	Time
	14/11	It. Received By Date	109 5:00	2. Received By	271	Date	Time Received For Lab By	Cella	18:09 074°

TriMatrix Laboratories, Inc.

5560 Corporate Exchange Court SE Grand Rapids, MI 49512 Phone (616) 975-4500 Fax (616) 942-7463

# Chain of Custody Record

COC No. 128633

For L	ab Use Only										Anal	yses Requested		Page 2 of 2
VOA Rack/Tr 400 Receipt Log N Project Chem Laboratory Pr	27·1	Client Addre	Name RMT 3754 Ranchers Dr Ann Arbor, MI 481 734.971.7080 734.971.9022	7 Che	ent Project No. 8070 - pice No.	OQ Client Other (c				VO7		onds to Container Packing List)		♦ PRESERVADVES A NONE pH~7 B HNO <sub>3</sub> pH<2 C H <sub>2</sub> SO <sub>4</sub> pH<2 D 1+1 HC1 pH<2 E NaOH pH>12 F ZnAc/NaOH pH=4 G MeOH H Other (note below)
Test Matrix Group Code	Laboratory Sample Number		Sample ID	Cooler ID	Panala	Sample Time	E D M P	G R A B	Matrix			ntainers Submitted	limat.	Sample Conuncuts
56	11	3	MW-135		5/15/	69 92		×	GW	2			2	
ſ	12	2	MW-125			950		λ	GW	2			2	
	13	3	MW-155		+	1131		X	GW	2			2	
	Н	4	B-40 (42-46)			1430		X	ew	2			2	
	15	5	8-40 (16-20)			1446		X	GW	2			2	
	16	6	MW-105		1	1514		X	GW	2			2	
		8					H							
		9					Ī							
06	17	10	0up-02		-	-	1	×	GW	2			a	
Sampled By ()	rent Ritchi		How Shipped? Hand Carrier Tracking No.  1. Relinquished By Da  1. Reperved By Da	15/55 5	e× me	2. Relinquished: FEDEX 2. Received By				Date		Refinquished By      Received For Lab By:	Date	Tune 8:09 0745

# **US EPA ARCHIVE DOCUMENT**



August 03, 2009

RMT, Inc. - Ann Arbor Office Attn: John Bacon 3754 Ranchero Drive Ann Arbor, MI 48108-2771

## **Project: Tecumseh Products**

Dear John Bacon,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
0907498	07/25/2009	Laboratory Services

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Jennifer L. Rice Project Chemist

Enclosures(s)



Client: RMT, Inc. - Ann Arbor Office Work Order: 0907498

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-17SSampled:07/23/09 16:25Lab Sample ID:0907498-01Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 07/25/09 08:55

 Unit:
 ug/L
 Prepared:
 07/27/09 By: DLV

 Dilution Factor:
 1
 Analyzed:
 07/27/09 By: DLV

QC Batch: 0908638 Analytical Batch: 9G28010

## **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
74-83-9	Bromomethane	<5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	< 5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	< 5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	< 5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	< 5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0

Continued on next page



Client: RMT, Inc. - Ann Arbor Office Work Order: 0907498

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: MW-17S Sampled: 07/23/09 16:25
Lab Sample ID: 0907498-01 Sampled By: B. Ritchie

Lab Sample ID: Sampled By: Matrix: Water Received: 07/25/09 08:55 Unit: Prepared: ug/L 07/27/09 By: DLV Dilution Factor: 1 Analyzed: 07/27/09 By: DLV

QC Batch: 0908638 Analytical Batch: 9G28010

## **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	

Continued on next page



Client: RMT, Inc. - Ann Arbor Office Work Order: 0907498

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-17SSampled:07/23/09 16:25Lab Sample ID:0907498-01Sampled By:B. Ritchie

Matrix: Water Received: 07/25/09 08:55
Unit: ug/L Prepared: 07/27/09 By: DLV
Dilution Factor: 1 Analyzed: 07/27/09 By: DLV

QC Batch: 0908638 Analytical Batch: 9G28010

## **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte			Analytical Result	RL
75-01-4	Vinyl Chloride			<1.0	1.0
136777-61-2	Xylene, Meta + Para			<2.0	2.0
95-47-6	Xylene, Ortho			<1.0	1.0
Surrogates:	%	6 Recovery	Control Limits		
Dibromofluorom	nethane	102	88-115		
1,2-Dichloroetha	ane-d4	102	81-116		
Toluene-d8		104	87-113		
4-Bromofluorobe	enzene	96	<i>78-116</i>		



Client: RMT, Inc. - Ann Arbor Office Work Order: 0907498

Project:Tecumseh ProductsDescription:Laboratory ServicesClient Sample ID:MW-17SSampled:07/23/09 16:25Lab Sample ID:0907498-01Sampled By:B. Ritchie

 Matrix:
 Water
 Received:
 07/25/09 08:55

 Unit:
 ug/L
 Prepared:
 07/29/09 By: BJH

 Dilution Factor:
 1
 Analyzed:
 07/30/09 By: DMC

QC Batch: 0908612 Analytical Batch: 9G30043

## Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte			Analytical Result	RL	
123-91-1	1,4-Dioxane			<3.0	3.0	
Surrogates:		% Recovery	Control Limits			
Nitrobenzene-d5		81	31-123			
2-Fluorobiphenyl		73	<i>25-113</i>			
o-Terphenyl		93	42-125			



Client: RMT, Inc. - Ann Arbor Office Work Order: 0907498

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: **TB-01** Sampled: 07/23/09 00:00

Lab Sample ID: 0907498-02 Sampled By: TML

Matrix: Water Received: 07/25/09 08:55

Unit: ug/L Prepared: 07/27/09 By: DLV Dilution Factor: 1 Analyzed: 07/27/09 By: DLV

QC Batch: 0908638 Analytical Batch: 9G28010

## **Volatile Organic Compounds by EPA Method 8260B**

CAS Number	Analyte	Analytical Result	RL	
67-64-1	Acetone	<20	20	
107-13-1	Acrylonitrile	<2.0	2.0	
71-43-2	Benzene	<1.0	1.0	
108-86-1	Bromobenzene	<1.0	1.0	
74-97-5	Bromochloromethane	<1.0	1.0	
75-27-4	Bromodichloromethane	<1.0	1.0	
75-25-2	Bromoform	<1.0	1.0	
74-83-9	Bromomethane	<5.0	5.0	
104-51-8	n-Butylbenzene	<1.0	1.0	
135-98-8	sec-Butylbenzene	<1.0	1.0	
98-06-6	tert-Butylbenzene	<1.0	1.0	
75-15-0	Carbon Disulfide	<1.0	1.0	
56-23-5	Carbon Tetrachloride	<1.0	1.0	
108-90-7	Chlorobenzene	<1.0	1.0	
75-00-3	Chloroethane	<5.0	5.0	
67-66-3	Chloroform	<1.0	1.0	
74-87-3	Chloromethane	< 5.0	5.0	
96-12-8	1,2-Dibromo-3-chloropropane	<5.0	5.0	
124-48-1	Dibromochloromethane	<1.0	1.0	
106-93-4	1,2-Dibromoethane	<1.0	1.0	
74-95-3	Dibromomethane	<1.0	1.0	
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0	
95-50-1	1,2-Dichlorobenzene	<1.0	1.0	
541-73-1	1,3-Dichlorobenzene	<1.0	1.0	
106-46-7	1,4-Dichlorobenzene	<1.0	1.0	
75-71-8	Dichlorodifluoromethane	<5.0	5.0	
75-34-3	1,1-Dichloroethane	<1.0	1.0	
107-06-2	1,2-Dichloroethane	<1.0	1.0	
75-35-4	1,1-Dichloroethene	<1.0	1.0	
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0	
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0	

Continued on next page



Client: RMT, Inc. - Ann Arbor Office Work Order: 0907498

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: **TB-01** Sampled: 07/23/09 00:00

Lab Sample ID: 0907498-02 Sampled By: TML

 Matrix:
 Water
 Received:
 07/25/09 08:55

 Unit:
 ug/L
 Prepared:
 07/27/09 By: DLV

Dilution Factor: 1 Analyzed: 07/27/09 By: DLV

QC Batch: 0908638 Analytical Batch: 9G28010

## **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte	Analytical Result	RL	
78-87-5	1,2-Dichloropropane	<1.0	1.0	
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0	
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0	
100-41-4	Ethylbenzene	<1.0	1.0	
60-29-7	Ethyl Ether	<5.0	5.0	
591-78-6	2-Hexanone	<5.0	5.0	
74-88-4	Iodomethane	<1.0	1.0	
98-82-8	Isopropylbenzene	<1.0	1.0	
99-87-6	4-Isopropyltoluene	<5.0	5.0	
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0	
75-09-2	Methylene Chloride	< 5.0	5.0	
78-93-3	2-Butanone (MEK)	< 5.0	5.0	
91-57-6	2-Methylnaphthalene	< 5.0	5.0	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 5.0	5.0	
91-20-3	Naphthalene	< 5.0	5.0	
103-65-1	n-Propylbenzene	<1.0	1.0	
100-42-5	Styrene	<1.0	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0	
127-18-4	Tetrachloroethene	<1.0	1.0	
109-99-9	Tetrahydrofuran	< 5.0	5.0	
108-88-3	Toluene	<1.0	1.0	
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0	
120-82-1	1,2,4-Trichlorobenzene	< 5.0	5.0	
71-55-6	1,1,1-Trichloroethane	<1.0	1.0	
79-00-5	1,1,2-Trichloroethane	<1.0	1.0	
79-01-6	Trichloroethene	<1.0	1.0	
75-69-4	Trichlorofluoromethane	<1.0	1.0	
96-18-4	1,2,3-Trichloropropane	<1.0	1.0	
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0	
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0	

Continued on next page



Client: RMT, Inc. - Ann Arbor Office Work Order: 0907498

Project: Tecumseh Products Description: Laboratory Services
Client Sample ID: **TB-01** Sampled: 07/23/09 00:00

Lab Sample ID: 0907498-02 Sampled By: TML

Matrix: Water Received: 07/25/09 08:55

Unit: ug/L Prepared: 07/27/09 By: DLV Dilution Factor: 1 Analyzed: 07/27/09 By: DLV

QC Batch: 0908638 Analytical Batch: 9G28010

## **Volatile Organic Compounds by EPA Method 8260B (Continued)**

CAS Number	Analyte			Analytical Result	RL	
75-01-4	Vinyl Chloride			<1.0	1.0	
136777-61-2	Xylene, Meta + Par	a		<2.0	2.0	
95-47-6	Xylene, Ortho			<1.0	1.0	
Surrogates:		% Recovery	Control Limits			
Dibromofluorome	ethane	104	88-115			
1,2-Dichloroetha	ne-d4	103	81-116			
Toluene-d8		106	87-113			
4-Bromofluorobe	nzene	94	<i>78-116</i>			



## Volatile Organic Compounds by EPA Method 8260B

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	₹L

QC Batch: 0908638 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank		Analyzed: 07/27/2009 By: DLV
Unit: ug/L		Analytical Batch: 9G28010
Acetone	<20	20
Acrylonitrile	<2.0	2.0
Benzene	<1.0	1.0
Bromobenzene	<1.0	1.0
Bromochloromethane	<1.0	1.0
Bromodichloromethane	<1.0	1.0
Bromoform	<1.0	1.0
Bromomethane	< 5.0	5.0
n-Butylbenzene	<1.0	1.0
sec-Butylbenzene	<1.0	1.0
tert-Butylbenzene	<1.0	1.0
Carbon Disulfide	<1.0	1.0
Carbon Tetrachloride	<1.0	1.0
Chlorobenzene	<1.0	1.0
Chloroethane	< 5.0	5.0
Chloroform	<1.0	1.0
Chloromethane	< 5.0	5.0
1,2-Dibromo-3-chloropropane	< 5.0	5.0
Dibromochloromethane	<1.0	1.0
1,2-Dibromoethane	<1.0	1.0
Dibromomethane	<1.0	1.0
trans-1,4-Dichloro-2-butene	<1.0	1.0
1,2-Dichlorobenzene	<1.0	1.0
1,3-Dichlorobenzene	<1.0	1.0
1,4-Dichlorobenzene	<1.0	1.0
Dichlorodifluoromethane	< 5.0	5.0
1,1-Dichloroethane	<1.0	1.0
1,2-Dichloroethane	<1.0	1.0
1,1-Dichloroethene	<1.0	1.0
cis-1,2-Dichloroethene	<1.0	1.0
trans-1,2-Dichloroethene	<1.0	1.0
1,2-Dichloropropane	<1.0	1.0
cis-1,3-Dichloropropene	<1.0	1.0
trans-1,3-Dichloropropene	<1.0	1.0
Ethylbenzene	<1.0	1.0
Ethyl Ether	< 5.0	5.0

Continued on next page



## Volatile Organic Compounds by EPA Method 8260B (Continued)

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits	RL

QC Batch: 0908638 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank (Continued)				Analyzed:	07/27/2009	By: DLV
Unit: ug/L				Analytical Batch:	9G28010	
2-Hexanone		< 5.0			5.0	
Iodomethane		<1.0			1.0	
Isopropylbenzene		<1.0			1.0	
4-Isopropyltoluene		< 5.0			5.0	
Methyl tert-Butyl Ether		< 5.0			5.0	
Methylene Chloride		< 5.0			5.0	
2-Butanone (MEK)		< 5.0			5.0	
2-Methylnaphthalene		< 5.0			5.0	
4-Methyl-2-pentanone (MIBK)		< 5.0			5.0	
Naphthalene		< 5.0			5.0	
n-Propylbenzene		<1.0			1.0	
Styrene		<1.0			1.0	
1,1,1,2-Tetrachloroethane		<1.0			1.0	
1,1,2,2-Tetrachloroethane		<1.0			1.0	
Tetrachloroethene		<1.0			1.0	
Tetrahydrofuran		< 5.0			5.0	
Toluene		<1.0			1.0	
1,2,3-Trichlorobenzene		< 5.0			5.0	
1,2,4-Trichlorobenzene		< 5.0			5.0	
1,1,1-Trichloroethane		<1.0			1.0	
1,1,2-Trichloroethane		<1.0			1.0	
Trichloroethene		<1.0			1.0	
Trichlorofluoromethane		<1.0			1.0	
1,2,3-Trichloropropane		<1.0			1.0	
1,2,4-Trimethylbenzene		<1.0			1.0	
1,3,5-Trimethylbenzene		<1.0			1.0	
Vinyl Chloride		<1.0			1.0	
Xylene, Meta + Para		<2.0			2.0	
Xylene, Ortho		<1.0			1.0	
Surrogates:						
Dibromofluoromethane			104	88-115		
1,2-Dichloroethane-d4			100	81-116		
Toluene-d8			105	87-113		
4-Bromofluorobenzene			97	78-116		
Laboratory Control Sample Unit: ug/L				Analyzed: Analytical Batch:	07/27/2009 9G28010	By: DLV
Benzene	40.0	36.4	91	86-122	1.0	
	10.0		,,			

Continued on next page

Page 10 of 13



## Volatile Organic Compounds by EPA Method 8260B (Continued)

	Sample	Spike		Spike	Control		RPD	
Analyte	Conc.	Qty.	Result	% Rec.	Limits	RPD	Limits F	RL

QC Batch: 0908638 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Laboratory Control Sample (Continued) Unit: ug/L				Analyzed: Analytical Batch:	07/27/2009 9G28010	By: DLV
Chlorobenzene	40.0	37.0	92	88-114	1.0	
1,1-Dichloroethene	40.0	36.6	91	81-125	1.0	
Toluene	40.0	35.2	88	87-123	1.0	
Trichloroethene	40.0	36.4	91	80-122	1.0	
Surrogates:						
Dibromofluoromethane			99	88-115		
1,2-Dichloroethane-d4			97	81-116		
Toluene-d8			97	87-113		
4-Bromofluorobenzene			100	<i>78-116</i>		



## **Semivolatile Organic Compounds by EPA Method 8270C**

	Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
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Method Blank				Analyzed:	07/30/2009	By: DMC
Unit: ug/L				Analytical Batch:	9G30043	
1,4-Dioxane		<3.0			3.0	
Surrogates:						
Nitrobenzene-d5			83	31-123		
2-Fluorobiphenyl			74	25-113		
o-Terphenyl			79	42-125		
Laboratory Control Sample				Analyzed:	07/30/2009	By: DMC
Unit: ug/L				Analytical Batch:	9G30043	
1,4-Dioxane	10.0	4.72	47	21-100	3.0	
Surrogates:						
Nitrobenzene-d5			86	31-123		
2-Fluorobiphenyl			81	25-113		
o-Terphenyl			87	42-125		
Laboratory Control Sample Duplicate				Analyzed:	07/30/2009	By: DMC
Unit: ug/L				Analytical Batch:	9G30043	
1,4-Dioxane	10.0	4.54	45	21-100 4	20 3.0	
Surrogates:						
Nitrobenzene-d5			88	31-123		
2-Fluorobiphenyl			<i>85</i>	25-113		
o-Terphenyl			88	42-125		



## STATEMENT OF DATA QUALIFICATIONS

All analyses have been validated and comply with our Quality Control Program.

No Qualifications required.

4	Tri	Ma	trix
00	Labor	ratorie	es, Inc.

5560 Corporate Exchange Court SE Grand Rapids, MI 49512 Phone (616) 975-4500 Fax (616) 942-7463

# Chain of Custody Record COC No. 128849

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CATEGORY "S"
BASELINE ENVIRONMENTAL ASSESSMENT
FORMER TECUMSEH PRODUCTS PLANT
100 AND 101 EAST PATTERSON STREET
TECUMSEH, MICHIGAN
ATC PROJECT NO.: 39.02922.8N01

**VOLUME 3 OF 3** 

Category "S" Baseline Environmental Assessment Former Tecumseh Products Plant 100 and 101 East Patterson Street, Tecumseh, Michigan 49286 January 21, 2010

## **APPENDIX H**

LIST OF APPROVED HAZARDOUS SUBSTANCES FOR ON-SITE USE/STORAGE, LIST OF PROHIBITED HAZARDOUS SUBSTANCES AND MATERIAL SAFETY DATA SHEETS

**VOLUME 3 OF 3** 

## EXHIBIT B

## APPROVED HAZARDOUS SUBSTANCES

number	Chemical or Material Identification	Supplier	vendor number	Maximum Amount in Stock	Storage Container Information
111	Xylenes	Fisher	X5-20	20 liters	metal can
122	Arsenic, 100 ppm	Conostan		100 ml	glass bottle
131	Lead, Concentrate, 10.47% Pb	Conostan		50 ml	plastic bottle
174	Industrial Enamel	Sherwin Williams	B54 T 104	1 gallon	metal can
175	Impervo Enamel #1 Base	Benjamin Moore & Co.	23591	1 gallon	metal can
176	Flash Bond 400 White Primer	X-I-M Products, Inc.		1 gallon	metal can
177	Fabulon Crystal Gloss Wood Finish	Pierce & Stevens Co.	P83-1274-1	8 X 1 gallon	metal can
182	Almond	Rust-Oleum	V2170		metal spray can
183	Semi-gloss Black	Rust-Oleum	V2177		metal spray can
184	Safety Blue	Rust-Oleum	7524		metal spray can
186	Gloss Black	Rust-Oleum	7579	1 X 1 quart	metal can
188	Smoke Gray, oil based enamel	Rust-Oleum	7786	1 gallon	metal can
189	Heavy Duty Epoxy, HS 9381 Gray Primer	Rust-Oleum	HS 9381	1 gallon	metal can
190 195	Rust-O-Thane Aliphatic Polyurethane Coating, Gray Base Component Opti Bond	Rust-Oleum Sherwin Williams	9483 B50 W 100	1 gallon 1300 ounces	metal can
196	Industrial Enamel	Sherwin Williams	B54 W 101	5 gallons	metal car

588	197	Tile-Clad HS Epoxy	Sherwin Williams	B62 WZ 113	2 gallons	metal can
588626v1	198	Tile-Clad HS Hardener	Sherwin Williams	B60 VZ 70	1 gallon	metal can
7	301	Quik Spray Gloss Black Enamel	Sheffield Bronze Paint Corp., Cleveland, OH 44119	UPC: 0 88289 14233	1 X 12 ounce	metal spray can
	302	Quik Spray Gloss White Enamel	Sheffield Bronze Paint Corp., Cleveland, OH 44119	UPC: 0 88289 14231	1 X 12 ounce	metal spray can
<b>S</b>	303	Spravar Spray Paint, Black - Flat	Spravar (Sherwin Williams)	No P/N or UPC	1 X 11 ounce	metal spray can
	304	Blitz Black Paint	John Deere, 1- 800-822-8262	MSDS Sheet No. 8503- 60,105	1 X 12 ounce	metal spray can
	336	Glyptal 1201 Red Enamel (Insulating Paint)	Glyptal, Inc., Chelsea, MA 02150		1 X 1 gallon	metal can
	354	Sprayon S00603 Blue Layout Fluid	Sherwin Williams (Diversified Brands)	MSDS: 1-800-955-MSDS (6737)	1 X 12 ounce	metal spray can
	419	Corrosion Shield, Chassis Black	Sherwin Williams	F7B155	3 X 1 gallon	metal can
	421	Hi-Glo Interlock Hardener	Western Automotive Finishes, Cleveland, OH 44115	W1020, UPC is partially missing	1 X 16 ounce	metal spray can

_		VII				
58	422	Super-Flo Enamel Reducer	Sherwin Williams	R4K179	2 X 1 gallon	metal can
862	423	Amendment 1 Thinner, Aircraft Coating	Sherwin Williams	R91 K 20	1 X 1 gallon	metal can
588626v1	424	481LT-R Thinner	Brenntag Great Lakes, Butler, WI 53007	Prod. Code 672560 No UPC ph 262-252-6444	1 X 5 gallon	metal can
	426	Auto Body Master Engine Enamel, AB606 Ford Dk Blu	Aftermarket Auto Parts Alliance, San Antonio, TX 78258	UPC: 0 71915 21554 4	1 X 11 ounce	metal spray can
6	427	Precision Color, Masterflux Purple (Packaged for Tecumseh Products Co.)	Raabe Company, 800-966-7580	04205 66163	3 X 12 ounce	metal spray can
	438	Recoatable Epoxy Primer	Sherwin Williams	B67 V 5	2 X 1 gallon	metal can
	451	Rust Oleum Enamel, Gloss Black	Rust Oleum Corp.	V2179, UPC: 0 20066 00128 5	1 X 15 ounce	metal spray can
	452	Ace Premium Enamel, Chrome Aluminum	Ace Hardware Corp., Oak Brook, IL 60521	17006, UPC: 0 82901 17006 8	8 X 12 ounce	metal spray can
	456	Kyrlon Paint, Plum Safety Purple	Kyrlon Division, Sherwin Williams	1929, UPC: 7 24504 01929 9	5 X 12 ounce	metal spray can

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457	Rust Oleum Metallic Finish, Copper	Rust Oleum Corp.	7714, UPC: 0 20066 77148 5	2 X 11 ounce	metal spray ca
459	Rust Oleum Safety Orange	Rust Oleum Corp.	2155, UPC: 0 20066 21559 0	1 X 15 ounce	metal spray ca
460	Valspar Gloss Enamel, Gloss Gray	Valspar, Wheeling	64010, UPC: 0 71915 23239 8	1 X 12 ounce	metal spray ca
461	Ace Rust Stopper Enamel, International Blue	Ace Hardware	17140, UPC: 0 82901 17140 9	1 X 15 ounce	metal spray ca
463	Kyrlon Metallic Enamel, Bright Silver	Kyrlon Division, Sherwin Williams	1401, UPC: 7 24504 01401 0	1 x 11 ounce	metal spray ca
467	Startex Liquid Sander Deglosser	Startex Chemical, Inc., Cut and Shoot, TX 77303	UPC: 0 86236 70029 7	1 X 1 gallon	metal can
475	Primer/Splice Wash 9705	Triumph Roofing Products, Carmel, IN 46032 5607	W56-GAC-4955, No UPC Now Firestone 317-575- 7000	2 X 1 gallon	metal can

588626v1

476	Splice Adhesive 9053	Triumph Roofing Products, Carmel, IN 46032 5607	W56-GAC-4043, No UPC now Firestone 317-575- 7000	2 X 1 gallon	metal can
477	Tile-Clad HS	Sherwin Williams	B60 VZ 70	1 X 1 gallon	metal can
478	Xylene	Sherwin Williams	154-8684	1 X 1 gallon	metal can
484	Opti-Bond Multi-Surface Alkyd Coating, White	Sherwin Williams	B50 W 100	6 X 5 gallon	metal can
489	Sherwin Williams Industrial Enamel, Safety Orange	Sherwin Williams	B54 E 39	1 X 1 gallon	metal can
490	Kem Kromik Universal Alkyd Metal Primer, Brown	Sherwin Williams	B50 NZ 6	1 X 1 gallon	metal can
491	AS-150 Non-Slip Safety Coating Safety Yellow	American Safety Technologies, www.astantislip.c om, 800-631- 7841	51113117	1 X 1 gallon	metal can
498			27.05-N.A.ToA.41.0		
526					
527					

# EXHIBIT C

# PROHIBITED HAZARDOUS SUBSTANCES

Any compounds or materials with chlorinated solvents, including, without limitation, the following chemicals and their associated breakdown or daughter products:

trichloroethylene (TCE)
1,1,1-trichloroethane (1,1,1-TCA)
1, 1, 2 -trichloroethane (1, 1, 2 -TCA)
1,1-dichloroethene (1,1-DCE)
1, 1 - dichloroethane (1, 1-DCA)
tetrachloroethene (PCE)
cis-1,2-dichlorethene (cis-1,2-DCE)
trans-1, 2 dichloroethene (trans-1, 2-DCE)
chloroethane
vinyl chloride (VC)

	Stored/Used Materials Containing Facility Constituents  Tecumseh Approximate Percent by Weight, from MSDS Sheets Legation at Tecumseh Facility							
Tecumseh								Location at Tecumseh Facility
MSDS Number	Xylene	Ethylbenzene	1,2,4-TMB	1,3,5-TMB	Arsenic	Lead	Benzene	Materials Lab (Observations and Materillans)
111	96	4			0.4			Materials Lab (Chemistry and Metallurgy)
122					<0.1			Materials Lab (Chemistry and Metallurgy)
131						1		Materials Lab (Chemistry and Metallurgy)
174		0.1						Work Shop
175	1.5	0.2						Work Shop
176	11	1.1					<0.005	Work Shop
177			1					Work Shop
182	10	5	5					Work Shop
183	10	5	5					Work Shop
184	25	10	5					Work Shop
186	25	10	5					Work Shop
188		1						Work Shop
189	15	5						Work Shop
190	15	5						Work Shop
195		0.2						Work Shop
196		0.1						Work Shop
197	11	2	3					Work Shop
198	19	3	5	4				Work Shop
301		0.1						Work Shop
302		0.1						Work Shop
303	8	1						Work Shop
304	10 -15	1 - 5						Work Shop
336	34.5							Work Shop
354	2	0.3						Tool Room and Model Shop
419	5	0.8	4	1			1	Model Shop
421		0.1	4	2				Model Shop
422	46	8	5	1			1	Model Shop
423	6	1	3	'				Model Shop
424	9	9					1	Model Shop
426	5 - 10	1 - 5						Model Shop
427	3-10	<0.2					1	Model Shop
438	9	2						Work Shop
450 451	10	5	5					Work Shop
			5					
452	2	0.4					1	Work Shop
456	10	2						Work Shop
457	40	1	<b>.</b>				1	Work Shop
459	10	5					1	Work Shop
460		0.1 - 1.0					1	Work Shop
461	9	2	ļ				1	Work Shop
463	4	0.7						Work Shop
467	35 - 45	5 - 15					1	Work Shop
475	19	4					1	Work Shop
476	5							Work Shop
477	19	3	5	4				Work Shop
478	85	15						Work Shop
484		0.2						Work Shop
489	·	0.1				-		Work Shop
490	10	2	2					Work Shop
491	5 - 10	1 - 5						Work Shop
498	10	5						Work Shop
526	30 -60	10 -30	1					Materials Lab (Chemistry and Metallurgy)
527	<1	<1	1					Materials Lab (Chemistry and Metallurgy)
527	<1	<1						Materials Lab (Chemistry and Metallu

# Material Safety Data Sheet

Xylenes, mixed isomers with ethylbenzene (Flash Point 26.1°C / 79°F; PG III)

ACC# 25150

# Section 1 - Chemical Product and Company Identification

MSDS Name: Xylenes, mixed isomers with ethylbenzene (Flash Point 26.1°C / 79°F; PG III)

Catalog Numbers: 23402725, S566CA, S71233, X16-4, X3F-1GAL, X3FB50, X3P-1GAL,

X3P1GALLC, X3POPB50, X3RB50, X3S-20, X3S-200, X3S-4, X3SJ4, X4-20, X4-4, X4P-1GAL, X5-1, X5-20,

X5-200, X5-4, X5-500, X5FB115, X5FB19, X5FB200, X5FB50, X5J4, X5J500, X5P-1GAL, X5POP19, X5POP200, X5POP50, X5POPB19, X5POPB200, X5POPB50, X5RB115, X5RB200, X5RB50, X5RS115, X5RS19, X5RS200, X5RS50, X5S-4, X5SK-4, X5SS115, X5SS19,

X5SS200, X5SS28, X5SS50

Synonyms: Dimethylbenzene; Methyltoluene.

Company Identification:

Fisher Scientific 1 Reagent Lane Fair Lawn, NJ 07410

For information, call: 201-796-7100 Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

# Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
1330-20-7	Xylenes (o-, m-, p- isomers)	96	215-535-7
100-41-4	Ethylbenzene	4	202-849-4

# Section 3 - Hazards Identification

# **EMERGENCY OVERVIEW**

Appearance: clear, colorless liquid.

Warning! Flammable liquid and vapor. Causes eye, skin, and respiratory tract irritation.

Aspiration hazard if swallowed. Can enter lungs and cause damage. May be harmful if absorbed through skin or if inhaled. May cause central nervous system depression.

Target Organs: Central nervous system, respiratory system, eyes, skin.

# **Potential Health Effects**

**Eye:** Splashes of xylene in human eyes generally cause transient superficial injury. The liquid is probably a mild irritant, based on animal information for mixed xylene isomers.

**Skin:** May be harmful if absorbed through the skin. Xylene contact causes defatting of the skin with irritation, dryness, and cracking. Blistering may occur, particularly if exposure to concentrated xylene is prolonged and the exposed area of skin is occluded. Xylene liquid or vapor can be absorbed through the skin, but not as readily as when inhaled or ingested. Skin absorption has been reported to be slow and significant harmful effects are not expected by this route. There is one case report of a person developing an allergic skin reaction (contact urticaria) following exposure to xylene (unspecified composition) vapor. The person subsequently tested positive in a patch test. No information was provided regarding previous history of allergies. No conclusions can be drawn regarding the potential for xylene to produce allergic skin reactions, based on this single case report.

**Ingestion:** Aspiration hazard. May cause irritation of the digestive tract. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to

respiratory failure. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal.

**Inhalation:** Causes respiratory tract irritation. Irritation may lead to chemical pneumonitis and pulmonary edema. Odor thresholds ranging from 0.07 to 40 ppm have been reported for xylenes. Inhalation overexposure may lead to central nervous system depression, producing effects such as dizziness, headache, confusion, incoordination, nausea, weakness, and loss of consciousness. Extreme exposures may cause other CNS effects including death. Reversible liver and kidney damage has been reported in cases of severe xylene exposure. Industrial fatalities due to gross inhalation exposure have been described.

**Chronic:** Chronic exposure to xylene may cause defatting dermatitis, reversible eye damage, dyspnea (labored breathing), confusion, dizziness, apprehension, memory loss, headache, tremors, weakness, anorexia, nausea, ringing in the ears, irritability, thirst, mild changes in liver function, kidney impairment, anemia, and hyperplasia, but not destruction, of the bone marrow.

# Section 4 - First Aid Measures

**Eyes:** In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid.

**Skin:** In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

**Ingestion:** Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**Notes to Physician:** Treat symptomatically and supportively.

# Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Vapors may form an explosive mixture with air. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. This liquid floats on water and may travel to a source of ignition and spread fire. May accumulate static electricity.

**Extinguishing Media:** Water may be ineffective. This material is lighter than water and insoluble in water. The fire could easily be spread by the use of water in an area where the water cannot be contained. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: 25.6-32.2 deg C

**Autoignition Temperature:** 527 deg C ( 980.60 deg F)

**Explosion Limits, Lower:**1.1%

**Upper:** 7.0%

NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 0

# Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8. **Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces. U.S. regulations require reporting spills and releases to soil, water and air in excess of reportable quantities. This material creates a fire hazard because it floats on water. If possible, try to contain floating material.

# Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Keep away from heat, sparks and flame. Avoid breathing vapor or mist.

Storage: Keep away from sources of ignition. Keep container closed when not in use. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances.

# Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Ventilation fans and other electrical service must be non-sparking and have an explosion-proof design.

# **Exposure Limits**

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Xylenes (o-, m-, p- isomers)	100 ppm TWA; 150 ppm STEL	none listed	100 ppm TWA; 435 mg/m3 TWA
Ethylbenzene	100 ppm TWA; 125 ppm STEL	100 ppm TWA; 435 mg/m3 TWA 800 ppm IDLH (10% LEL)	100 ppm TWA; 435 mg/m3 TWA

OSHA Vacated PELs: Xylenes (o-, m-, p- isomers): 100 ppm TWA; 435 mg/m3 TWA Ethylbenzene:

100 ppm TWA; 435 mg/m3 TWA **Personal Protective Equipment Eyes:** Wear chemical splash goggles.

**Skin:** Wear appropriate gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits

are exceeded or if irritation or other symptoms are experienced.

# Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless

Odor: aromatic odor **pH:** Not applicable.

Vapor Pressure: 8.29 mm Hg @ 25 deg C

Vapor Density: 3.66 (air=1)

**Evaporation Rate:**0.7 (butyl acetate=1)

Viscosity: <32.6 SUS

Boiling Point: 136 - 140 deg C Freezing/Melting Point:-34 deg C

**Decomposition Temperature:** Not available.

Solubility: Insoluble.

Specific Gravity/Density:0.865 (water=1)

Molecular Formula:C8H10 Molecular Weight: 106.17

# Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures.

Conditions to Avoid: High temperatures, ignition sources.

Incompatibilities with Other Materials: Strong oxidizing agents, nitric acid. Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

# Section 11 - Toxicological Information

```
CAS# 1330-20-7: ZE2100000
CAS# 100-41-4: DA0700000
LD50/LC50:
CAS# 1330-20-7:
   Draize test, rabbit, eye: 87 mg Mild;
   Draize test, rabbit, eye: 5 mg/24H Severe;
   Draize test, rabbit, skin: 100% Moderate;
   Draize test, rabbit, skin: 500 mg/24H Moderate;
   Inhalation, rat: LC50 = 5000 \text{ ppm/4H};
   Oral, mouse: LD50 = 2119 \text{ mg/kg};
   Oral, rat: LD50 = 4300 \text{ mg/kg};
   Skin, rabbit: LD50 = >1700 \text{ mg/kg};
CAS# 100-41-4:
   Draize test, rabbit, eye: 500 mg Severe;
   Inhalation, mouse: LC50 = 35500 mg/m3/2H;
   Inhalation, rat: LC50 = 55000 \text{ mg/m}3/2H;
   Oral, rat: LD50 = 3500 \text{ mg/kg};
   Oral, rat: LD50 = 3500 \text{ mg/kg};
   Skin, rabbit: LD50 = 17800 \text{ uL/kg};
```

# Carcinogenicity:

RTECS#:

CAS# 1330-20-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65. CAS# 100-41-4:

- ACGIH: A3 Confirmed animal carcinogen with unknown relevance to humans
- California: carcinogen, initial date 6/11/04
- NTP: Not listed.
- IARC: Group 2B carcinogen

Epidemiology: 175 workers were exposed to 21 ppm of xylene for 7 years. Subjective symptoms such as anxiety, forgetfulness, inability to concentrate and dizziness were reported. Xylenes accounted for >70% of the total exposure. Liver & kidney effects were not reported

Teratogenicity: No increased incidence of birth defects was reported in a study of lab workers exposed to xylene during early pregnancy. Exposure to other solvents and chemicals also occurred. An increased incidence of spontaneous abortions was reported. Animal information suggests that xylene is not teratogenic or embryotoxic at exposure levels that are not harmful to the mother.

Reproductive Effects: An increase in menstrual disorders has been reported in women exposed to organic solvents such as benzene, toluene, and xylenes. It is not possible to attribute these effects to xylenes in particular.

Mutagenicity: Xylene does not appear to be a mutagen.

Neurotoxicity: Xylene may be ototoxic (damages hearing or enhances sensitivity to noise) in chronic occupational exposures, probably from a neurotoxic mechanism.

Other Studies:

# Section 12 - Ecological Information

**Ecotoxicity:** Fish: Rainbow trout: LC50 = 13.5 mg/L; 96 Hr; UnspecifiedFish: Goldfish: LD50 = 13 mg/L; 24 Hr; UnspecifiedFish: Fathead Minnow: LC50 = 46 mg/L; 1 Hr; Static bioassay Acute and long-term toxicity to fish and invertebrates: LD50 for goldfish is 13 mg/L/24 Hr.Cas#1330-20-7:LC50 (96Hr.) rainbow trout = 8.05 mg/L, Static condition; LC50(96Hr.) fathead minnow = 16.1 mg/L, flow-through conditions; LC50(96Hr.) bluegill = 16.1 mg/L, flow-through; EC50 (48 Hr.) water flea = 3.82 mg/L, flow-through conditions; EC50(24 Hr.) photobacterium phosphoreum = 0.0084 mg/L, Microtox test. **Environmental:** In air, xylenes degrade by reacting with photochemically produced hydroxyl radicals. In

**Physical:** ATMOSPHERIC FATE: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere, xylene, which has an experimental vapor pressure of 7.99 mm Hg at 25 deg C, will exist solely as a vapor in the ambient atmosphere. Vapor-phase xylene is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the atmospheric lifetime of xylene is about 14-26 hours. Ambient levels of xylene are detected in the atmosphere due to large emissions of this compound.

soil it will volatilize and leach into groundwater. Little bioconcentration is expected.

Other: No information available.

# Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series:

CAS# 1330-20-7: waste number U239 (Ignitable waste, Toxic waste).

# Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	XYLENES	XYLENES
Hazard Class:	3	3
UN Number:	UN1307	UN1307
Packing Group:	II	III

# Section 15 - Regulatory Information

#### **US FEDERAL**

# **TSCA**

CAS# 1330-20-7 is listed on the TSCA inventory.

CAS# 100-41-4 is listed on the TSCA inventory.

# **Health & Safety Reporting List**

CAS# 100-41-4: Effective 6/19/87, Sunset 6/19/97

# **Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

# TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

# **CERCLA Hazardous Substances and corresponding RQs**

# SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 1330-20-7: immediate, delayed, fire.

CAS # 100-41-4: immediate, delayed, fire.

# Section 313

This material contains Xylenes (o-, m-, p- isomers) (CAS# 1330-20-7, 96%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

This material contains Ethylbenzene (CAS# 100-41-4, 4%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

#### Clean Air Act:

CAS# 1330-20-7 is listed as a hazardous air pollutant (HAP).

CAS# 100-41-4 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

# Clean Water Act:

CAS# 1330-20-7 is listed as a Hazardous Substance under the CWA. CAS# 100-41-4 is listed as a Hazardous Substance under the CWA. CAS# 100-41-4 is listed as a Priority Pollutant under the Clean Water Act. CAS# 100-41-4 is listed as a Toxic Pollutant under the Clean Water Act.

#### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

#### STATE

CAS# 1330-20-7 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 100-41-4 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

# California Prop 65

WARNING: This product contains Ethylbenzene, a chemical known to the state of California to cause cancer. California No Significant Risk Level: None of the chemicals in this product are listed.

# European/International Regulations European Labeling in Accordance with EC Directives Hazard Symbols:

XN

#### **Risk Phrases:**

R 10 Flammable.

R 20/21 Harmful by inhalation and in contact with skin.

R 36/38 Irritating to eyes and skin.

# Safety Phrases:

S 25 Avoid contact with eyes.

# WGK (Water Danger/Protection)

CAS# 1330-20-7: 2

CAS# 100-41-4: 1

# Canada - DSL/NDSL

CAS# 1330-20-7 is listed on Canada's DSL List.

CAS# 100-41-4 is listed on Canada's DSL List.

# Canada - WHMIS

This product has a WHMIS classification of B2, D2B, D2A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

# Canadian Ingredient Disclosure List

CAS# 1330-20-7 is not listed on the Canadian Ingredient Disclosure List.

CAS# 100-41-4 is listed on the Canadian Ingredient Disclosure List.

# Section 16 - Additional Information

MSDS Creation Date: 6/22/1999 Revision #15 Date: 2/13/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.



# MATERIAL SAFETY DATA SHEET CONOSTAN Arsenic (As) Standards

# 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** 

CONOSTAN Arsenic (As) Standards

Synonyms:

Conoco MSDS CONC0030

Intended Use:

Instrument Calibration

**Chemical Family:** 

Petroleum hydrocarbon

Responsible Party:

ConocoPhillips PO Box 2197

Houston, TX 77252

For Additional MSDSs 580-767-3078

Technical Information: 580-767-3078

The intended use of this product is indicated above. If any additional use is known, please contact us at the

Technical Information number listed.

# **EMERGENCY OVERVIEW**

24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident

Call CHEMTREC

North America: (800)424-9300 Others: (703)527-3887 (collect)

Health Hazards/Precautionary Measures: Avoid contact with eyes, skin and clothing. Wash thoroughly after

handling.

Physical Hazards/Precautionary Measures: Keep away from all sources of ignition.

Appearance:

Clear, light yellow

Physical form:

Liquid

Odor:

Hydrocarbon

# NFPA Hazard Class:

**HMIS Hazard Class** 

Health: 0 (Least) Flammability:1 (Slight) Reactivity: 0 (Least)

1 (Slight) Health: Flammability: 1 (Slight) Physical Hazard: 0 (Least)

# 2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS

% WEIGHT

**EXPOSURE GUIDELINE** 

Agency

Type

California Poison Control System: (800) 356-3129

Arsenic Amine Sulfonate (% as As)

Not Established

Limits

CAS# Proprietary

< 0.1

<u>Type</u>

OTHER COMPONENTS % WEIGHT EXPOSURE GUIDELINE
Limits Agency

White Mineral Oil CAS# 8042-47-5

100 (See:

(See: Oil Mist, If Generated)

REFERENCE **EXPOSURE GUIDELINE** Limits <u>Agency</u> **Type** 5 mg/m3ACGIH TWA Oil Mist, If Generated 10 mg/m3 STEL CAS# None ACGIH 5 mg/m3TWA OSHA 2500 mg/m3 NIOSH IDLH 5 mg/m3NOHSC TWA

A typical concentration of the above metal compound is 100 ppm As.

Refer to container for exact concentration.

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

1%=10,000 PPM.

# 3. HAZARDS IDENTIFICATION

# **Potential Health Effects:**

Eye: Not known to be an eye irritant.

Skin: Not known to be a skin irritant. No harmful effects from skin absorption have been reported.

Inhalation (Breathing): No harmful effects reported.

Ingestion (Swallowing): No harmful effects reported from ingestion.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract and diarrhea.

Cancer: No evidence of cancer has been demonstrated in several well conducted animal studies.

Target Organs: No data available for this material.

Developmental: No data available for this material.

Pre-Existing Medical Conditions: None Known

# 4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

(MSDS: 005207) Page 3 of 6

Skin: First aid is not normally required. However, it is good practice to wash any chemical from the

Inhalation (Breathing): First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air. Seek immediate medical attention.

Ingestion (Swallowing): First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Note To Physicians: Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhaiation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

# 5. FIRE FIGHTING MEASURES

Flammable Properties: Flash Point: >340°F/>171°C (COC)

OSHA Flammability Class: Not regulated

LEL/UEL%: No Data

Autoignition Temperature: No Data

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

**Fire Fighting Instructions:** For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

# 6. ACCIDENTAL RELEASE MEASURES

This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

# 7. HANDLING AND STORAGE

Handling: Do not wear contaminated clothing or shoes. Use good personal hygiene practices.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

**Storage:** Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required.

# Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified air purifying respirator with a Type 95 (R or P) particulate filter may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode if there is potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

**Skin:** The use of gloves impervious to the specific material handled is advised to prevent skin contact and possible irritation (see manufacturers literature for information on permeability). Examples of approved materials are nitrile, neoprene.

Eye/Face: While contact with this material is not expected to cause irritation, the use of approved eye protection to safeguard against potential eye contact is considered good practice.

Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed. Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Appearance: Clear, light yellow

Physical State: Liquid Odor: Hydrocarbon pH: not applicable

Vapor Pressure (mm Hg): Negligible Vapor Density (air=1): Not applicable Boiling Point/Range: >599°F / >315°C Freezing/Melting Point: No Data Solubility in Water: Negligible Specific Gravity: 0.6-0.9 Percent Volatile: Negligible

Evaporation Rate (nBuAc=1): Negligible

Bulk Density: 7.09 lbs/gal

Flash Point: >340°F / >171°C (COC)

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Flammable/Explosive Limits (%): No Data

# 10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products: Combustion can yield carbon, nitrogen and sulfur oxides and other compounds of arsenic.

Hazardous Polymerization: Will not occur.

# 11. TOXICOLOGICAL INFORMATION

No definitive information available on carcinogenicity, mutagenicity, target organs or developmental toxicity.

# 12. ECOLOGICAL INFORMATION

Not evaluated at this time

# 13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, is not a RCRA "listed" hazardous waste. However, it should be fully characterized for toxicity prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

# 14. TRANSPORT INFORMATION

**DOT Shipping Description:** 

Not regulated

Note:

Material is unregulated unless in container of 3500 gal or more then provisions of 49 CFR Part 130 apply for land shipment.

IMDG: Not regulated IATA: Not regulated

# 15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

(MSDS: 005207)

Acute Health:

No

**Chronic Health:** 

No

Fire Hazard:

No

Pressure Hazard: Reactive Hazard:

Nο

# SARA 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

--None--

# California Proposition 65:

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

--None Known--,

#### Carcinogen Identification:

This material has not been identified as a carcinogen by NTP, IARC, or OSHA.

# **EPA (CERCLA) Reportable Quantity:**

--None--

# Canada - Domestic Substances List: Listed

# WHMIS Class:

Not regulated

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

# **16. OTHER INFORMATION**

Issue Date: 09/18/03

Previous Issue Date: 06/06/00 Revised Sections: New Format

MSDS Number: 005207

Status: Final

# Disclaimer of Expressed and Implied Warranties:

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any fallure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

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# MATERIAL SAFETY DATA SHEET CONOSTAN® Lead (Pb) Standards

# 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: CONOSTAN® Lead (Pb) Standards

Synonyms:

Intended Use: Instrument Calibration

Chemical Family: Petroleum hydrocarbon

Responsible Party: SCP SCIENCE

21800 Clark Graham

Baie D'Urfé, QC, Canada, H9X 4B6

For Additional MSDSs 514-457-0701 Technical Information: 514-457-0701

The intended use of this product is indicated above. If any additional use is known, please contact us at the Technical Information number listed.

# **EMERGENCY OVERVIEW**

California Poison Control System: (800) 356-3129

# 24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident

Call CHEMTREC

North America: (800)424-9300 Others: (703)527-3887 (collect)

**Health Hazards/Precautionary Measures:** Overexposure to a component may cause damage to the nervous system, kidneys and male reproductive system. Use ventilation adequate to keep exposure below recommended limits, if any. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards/Precautionary Measures: Keep away from all sources of ignition.

Appearance: Clear, amber

Physical form: Liquid

Odor: Hydrocarbon

# NFPA Hazard Class: HMIS Hazard Class

Health:0 (Least)Health:1\*(Slight)Flammability:1 (Slight)Flammability:1 (Slight)Reactivity:0 (Least)Physical Hazard:0 (Least)

# 2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	<u>% WEIGHT</u>	EXPOSURE GUIDELINE		
		<u>Limits</u>	<u>Agency</u>	<u>Type</u>
Lead Alkylaryl Sulfonate (Lead Compound) (% as Pb)	<=1	0.05 mg/m3 0.05 mg/m3	ACGIH OSHA	TWA TWA

<sup>\*</sup>Indicates possible chronic health effects.

**EPA ARCHIVE DOCUMENT** 

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100 mg/m3

IDLH

NIOSH

**EXPOSURE GUIDELINE** 

CAS# Proprietary

OTHER COMPONENTS	% WEIGHT	EXPOSU		
		Limits	<u>Agency</u>	<b>Type</b>
White Mineral Oil CAS# 8042-47-5	100	(See: Oil Mis	t, If Generate	ed)

<u>KEI EKEITOE</u>	EXI COURT GOIDELINE			
	<u>Limits</u>	<u>Agency</u>	<u>Type</u>	
Oil Mist, If Generated CAS# None	5 mg/m3 10 mg/m3	ACGIH ACGIH	TWA STEL	
Orten Hono	5 mg/m3	OSHA	TWA	
	2500 mg/m3	NIOSH	IDLH	
	5 mg/m3	NOHSC	TWA	

A typical concentration of the above metal compound is 5000 ppm Pb.

Refer to container for exact concentration.

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

1%=10,000 PPM.

REFERENCE

All components are listed on the TSCA inventory.

# 3. HAZARDS IDENTIFICATION

# **Potential Health Effects:**

**Eye:** Not known to be an eye irritant.

Skin: Not known to be a skin irritant. No harmful effects from skin absorption have been reported.

Inhalation (Breathing): No harmful effects reported.

**Ingestion (Swallowing):** No harmful effects reported from ingestion.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract and diarrhea.

**Cancer:** A component is a probable cancer hazard (see Sections 11 and 15).

Target Organs: No data available for this material. Overexposure to a component may cause injury to the nervous system, kidney and male reproductive system (see Section 11).

**Developmental:** No data available for this material. A component is a potential hazard to the fetus (see Section 11).

**Pre-Existing Medical Conditions:** None Known (MSDS: 775222) Page 3 of 7

# 4. FIRST AID MEASURES

**Eye:** If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: First aid is not normally required. However, it is good practice to wash any chemical from the

skin.

**Inhalation (Breathing):** First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air. Seek immediate medical attention.

**Ingestion (Swallowing):** First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

**Note To Physicians:** Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

# 5. FIRE FIGHTING MEASURES

Flammable Properties: Flash Point: >340°F/>171°C (COC)

OSHA Flammability Class: Not regulated

LEL/UEL%: No Data

Autoignition Temperature: No Data

**Unusual Fire & Explosion Hazards:** This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

**Extinguishing Media:** Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

**Fire Fighting Instructions:** For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

# 6. ACCIDENTAL RELEASE MEASURES

This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

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# 7. HANDLING AND STORAGE

Handling: Do not wear contaminated clothing or shoes. Use good personal hygiene practices.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

**Storage:** Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required.

# **Personal Protective Equipment (PPE):**

**Respiratory:** A NIOSH certified air purifying respirator with a Type 95 (R or P) particulate filter may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a NIOSH approved self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode if there is potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

**Skin:** The use of gloves impervious to the specific material handled is advised to prevent skin contact and possible irritation (see manufacturers literature for information on permeability). Examples of approved materials are nitrile, neoprene.

**Eye/Face:** While contact with this material is not expected to cause irritation, the use of approved eye protection to safeguard against potential eye contact is considered good practice.

**Other Protective Equipment:** A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Appearance: Clear, amber Physical State: Liquid Odor: Hydrocarbon pH: not applicable

Vapor Pressure (mm Hg): Negligible Vapor Density (air=1): Not applicable Boiling Point/Range: >599°F / >315°C Freezing/Melting Point: No Data Solubility in Water: Negligible EPA ARCHIVE DOCUMENT

Specific Gravity: 0.6-0.9 Percent Volatile: Negligible

Evaporation Rate (nBuAc=1): Negligible

Bulk Density: 7.16 lbs/gal

Flash Point: >340°F / >171°C (COC)

Flammable/Explosive Limits (%): No Data

# 10. STABILITY AND REACTIVITY

**Stability:** Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidizing agents.

**Hazardous Decomposition Products:** Combustion can yield carbon, nitrogen and sulfur oxides and some metallic oxides.

Hazardous Polymerization: Will not occur.

# 11. TOXICOLOGICAL INFORMATION

# Lead Alkylaryl Sulfonate (Lead Compound) (% as Pb)(CAS# Proprietary)

**Carcinogenicity:** Chronic oral ingestion of various inorganic lead compounds resulted in increased renal tumors in laboratory animals. Lead and inorganic lead compounds have been identified as carcinogens by NTP, IARC and OSHA. Organic lead compounds have not been identified as a carcinogen by NTP, IARC, or OSHA.

**Target Organ(s):** Chronic exposure to organic lead compounds is associated with toxicity of the hematopoietic, vascular, male reproductive, and nervous systems, and of the kidney. Hematological effects include anemia, decreased hemoglobin, and increased urinary porphyrins. Vascular effects are manifested as high blood pressure. Neurotoxic effects may involve both sensory and motor neurons and may include encephalopathy and peripheral neuropathy. Kidney damage is characterized by nephropathy, interstitial fibrosis, and tubular damage. Effects on the male reproductive system may include decreased sperm count and motility, and testicular atrophy.

**Developmental:** Administration of certain organic lead compounds during pregnancy has caused developmental toxicity (neurobehavioral effects) in laboratory animals.

# 12. ECOLOGICAL INFORMATION

Not evaluated at this time

# 13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, is not a RCRA "listed" hazardous waste. However, it should be fully characterized for toxicity prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

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Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

# 14. TRANSPORT INFORMATION

**DOT Shipping Description:** Not regulated

Note: Material is unregulated unless in container of 3500 gal or more then provisions of 49 CFR Part 130 apply

for land shipment.

IMDG: Not regulated IATA: Not regulated

# 15. REGULATORY INFORMATION

# EPA SARA 311/312 (Title III Hazard Categories):

Acute Health: No Yes Chronic Health: Yes Fire Hazard: No Pressure Hazard: No Reactive Hazard: No

# SARA 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

Component CAS Number Weight %

Lead Compounds Various <=1

#### California Proposition 65:

**Warning:** This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

ComponentEffectLead and Lead CompoundsCancer

# **Carcinogen Identification:**

This material has not been identified as a carcinogen by NTP, IARC, or OSHA. See Section 11 for carcinogenicity information of individual components, if any.

# **EPA (CERCLA) Reportable Quantity:**

--None--

Canada - Domestic Substances List: Listed

# WHMIS Class:

D2A-Materials causing other toxic effects - Very Toxic Material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

# 16. OTHER INFORMATION

Issue Date: 05/02/08

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Previous Issue Date: 10/19/07 Revised Sections: New Format

MSDS Number: 775222

Status: Final

# Disclaimer of Expressed and Implied Warranties:

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

# **MATERIAL SAFETY DATA SHEET**

**B54T104 26 00 DATE OF PREPARATION**Sep 8, 2008

# SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

# PRODUCT NUMBER

B54T104

#### PRODUCT NAME

Industrial Enamel, Ultradeep Base

# **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

Product Information	www.sherwin-williams.com
Regulatory Information	(216) 566-2902
	www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)	

# SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
43	64742-88-7	Mineral Spirits		
		ACGIH TLV	100 PPM	2 mm
		OSHA PEL	100 PPM	
0.1	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
15	471-34-1	Calcium Carbonate		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	15 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

# **SECTION 3 — HAZARDS IDENTIFICATION**

# **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

# **EFFECTS OF OVEREXPOSURE**

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver and urinary systems.

# SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists. Redness and itching or burning sensation may indicate eye or excessive skin exposure.

# MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

HMIS Codes

Health 2\*
Flammability 2
Reactivity 0

# **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

INGESTION: Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL FLAMMABILITY CLASSIFICATION

101° F PMCC 1.0 6.0 Combustible, Flash above 99 and below 200° F

**EXTINGUISHING MEDIA** 

Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

# SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

# **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- · Remove with inert absorbent.

#### SECTION 7 — HANDLING AND STORAGE

# STORAGE CATEGORY

DOL Storage Class II

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

# SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

# **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

# PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

# **OTHER PRECAUTIONS**

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

# **SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

PRODUCT WEIGHT 8.37 lb/gal 1003 g/l SPECIFIC GRAVITY 1.01

**BOILING POINT** 300 - 395° F

MELTING POINT Not Available VOLATILE VOLUME 58%

EVAPORATION RATE Slower than ether VAPOR DENSITY Heavier than air

SOLUBILITY IN WATER N.A.

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

3.71lb/gal 444g/l Less Water and Federally Exempt Solvents

148 - 201° C

3.71lb/gal 444g/l Emitted VOC

# **SECTION 10 — STABILITY AND REACTIVITY**

STABILITY — Stable CONDITIONS TO AVOID

None known.

**INCOMPATIBILITY** 

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION** 

Will not occur

# **SECTION 11 — TOXICOLOGICAL INFORMATION**

#### **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name				
64742-88-7	Mineral Spirits				
	-	LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
100-41-4	Ethylbenzene				
	·	LC50 RAT	4HR	Not Available	
		LD50 RAT		3500 mg/kg	
471-34-1	Calcium Carbonate				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	

# **SECTION 12 — ECOLOGICAL INFORMATION**

# **ECOTOXICOLOGICAL INFORMATION**

No data available.

# **SECTION 13 — DISPOSAL CONSIDERATIONS**

#### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

# **SECTION 14 — TRANSPORT INFORMATION**

# **US Ground (DOT)**

May be Classed as a Combustible Liquid for U.S. Ground. UN1263, PAINT, 3, PG III, (ERG#128)

# DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

# Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT, COMBUSTIBLE LIQUID, PG III, (ERG#128)

#### Canada (TDG)

May be Classed as a Combustible Liquid for Canadian Ground.

UN1263, PAINT, CLASS 3, PG III, (ERG#128)

#### IMC

UN1263, PAINT, CLASS 3, PG III, (38 C c.c.), EmS F-E, S-E

# **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.1	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

#### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

# **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

MATERIAL SAFETY DATA SHEET For Coating, Resins, and Related Materials NPCA 1-84 Manufacturer's Name Emergency Telephone No. BENJAMIN MOORE & CO. 800-424-9300 (CHEMTREC)

51 CHESTNUT RIDGE RD

MONTVALE, NJ 07645

Date Prepared Last Rev Date Information Telephone No. 201-573-9600

01-19-01 12-15-97

For the most up-to-date MSDS information please visit our website www.benjaminmoore.com/msds/go.html

# SECTION I - PRODUCT ID

\*\* HMIS CODE \*\* HEALTH: 2\*

PRODUCT\*: 133, n133

CLASS: SOLVENT THINNED PAINT

NAME: IMPERVO ALKYD HIGH GLOSS METAL & WOOD ENAMEL

COLOR: ALL

REACTIVITY: 0 PERSONAL PROT:

FLAMMABILITY: 2

\*\* SARA TITLE 312 \*\*

ACUTE: Y CHRONIC: Y FIRE: Y PRESSURE: N REACTIVITY: N

For a complete description of HMIS and an explanation of the PERSONAL PROT:

code, see Section XX.

\*NOTE: In the PRODUCT code a little n can be any capital letter of the

alphabet except P or Q.

			SE	CTION II	HA2	ZARDOUS II	NGREDIENT	 S	
HAZ	REDIEN SARA		CAS #	 [	LV	PEL	STEL	CEIL	MM Hg
Xyle	ne	1.5	001330-20-	7 100	) ppm	100 ppm	150 ppm	N/E	21 @ 38C
_	l Benz N		000100-41-	4 100	) ppm	100 ppm	125 ppm	N/E	10 @ 20C
	onite N	_	121888-66-	2 .1	mg/M3	N/E	N/E	N/E	N/A
		0ioxide 24.4	e 013463-67-	7 10	mg/M3	10 mg/M3	N/E	N/E	N/A
_			licates 001332-58-	7 10	mg/M3	10 mg/M3	N/E	N/E	N/A
		Solvent	008052-41-	3 100	) ppm	100 ppm	N/E	N/E	2.0 @ 20
		nyl Ket .3	oxime 000096-29-	7 0.1	. ppm	N/E	N/E	N/E	2.0 @ 68
	Oxide Y		001314-13-	2 10	mg/M3	10 mg/M3	N/E	N/E	N/A
_	Oxide N		001332-37-	2 5 n	ng/M3	10 mg/M3	N/E	N/E	N/A

MSDS #: 133, n133 Page 2

C.I. Pigment Blue 15 Y N 1.4 000147-14-8 1 mg/M3 1 mg/M3 N/E N/E N/A C.I. Pigment Black 7 N/EY N 2.0 001333-86-4  $3.5 \text{mg/M3} \ 3.5 \text{mg/M3} \ \text{N/E}$ \_\_\_\_\_\_ C.I. Pigment Green 7 Y N 2.3 001328-53-6  $1 \text{ mg/M3} \quad 1 \text{ mg/M3} \quad \text{N/E}$ N/E\_\_\_\_\_\_ This product contains one or more reported carcinogens or suspected carcinogens which are noted NTP, IARC, or OSHA-Z in the other limits recommended column. \* Note: This product contains pigments which may become a dust nuisance when removed by abrasive blasting, sanding, or grinding. This product may contain small amounts of materials known to the State of

\_\_\_\_\_

#### SECTION III PHYSICAL DATA

BOIL RANGE: 340.0 to 406.0 WT/GL: 7.6 to 9.8 %VOL/VOL: 48.1 to 49.8 EVAPORATION RATE: SLOWER THAN ETHER VAPOR DENSITY: HEAVIER THAN AIR

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#### SECTION IV FIRE AND EXPLOSION HAZARD DATA

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D.O.T. FLAMMABILITY CLASS.: COMBUSTIBLE FLASH POINT: 110 F PMCC

California to cause cancer and reproductive harm.

LEL %: 1.0

EXTINGUISHING MEDIA: FOAM CO2 DRY CHEMICAL WATER FOG UNUSUAL FIRE AND EXPLOSION HAZARDS:

Toxic gases may form when product burns.

Closed containers may burst if exposed to extreme heat or fire.

SPECIAL FIRE FIGHTING PROCEDURES:

Cool exposed containers with water. Use self-contained breathing apparatus. Do not use water stream on burning liquid. Use self-contained breathing apparatus.

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# SECTION V HEALTH HAZARD DATA

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EFFECTS OF OVEREXPOSURE - ACUTE:

Inhalation - Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea.

Contact - Causes eye irritation.

Contact - Causes skin irritation.

Skin Absorption - Hazardous ingredients contained in this product have the capacity to be absorbed through the skin in sufficient quantities to cause systemic toxicity. See Safe Handling and Use Information (Section VIII). Ingestion - Irritation of the digestive tract and nervous system depression (drowsiness, dizziness, loss of coordination and fatigue). Aspiration Hazard - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

EFFECTS OF OVEREXPOSURE - CHRONIC:

IARC has classified Carbon Black as possibly carcinogenic for humans (2B). NOTICE: Reports have associated permanent brain and nervous system damage with repeated, prolonged overexposure to solvents among persons engaged in the painting trade. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

MSDS #: 133, n133 Page 3

IARC has classified Ethyl Benzene as possibly carcinogenic for humans (2B). MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE:

None expected when used in accordance with Safe Handling and Use Information (Section VIII).

Contains Methyl Ethyl Ketoxime (MEKO) which has been identified as a potential animal liver carcinogen. Currently, MEKO is not listed as a potential carcinogen by IARC, NTP or OSHA.

PRIMARY ROUTE(S) OF ENTRY: DERMAL INHALATION INGESTION EMERGENCY AND FIRST AID PROCEDURES:

Inhalation - Remove from hazard area, maintain breathing, call physician. Skin Contact - Remove with soap and water.

Eye Contact - Flush immediately with large amounts of water. Call physician Ingestion - Drink 1 or 2 glasses of water to dilute.

DO NOT induce vomiting. Call physician.

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# SECTION VI REACTIVITY DATA

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STABILITY: STABLE HAZARDOUS POLYMERIZATION WILL NOT OCCUR HAZARDOUS DECOMPOSITION PRODUCTS:

Burning may produce carbon dioxide and carbon monoxide.

CONDITIONS TO AVOID: Elevated temperatures and build up of vapors INCOMPATABILITY (MATERIALS TO AVOID): None reasonably foreseeable.

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#### SECTION VII SPILL OR LEAK PROCEDURES

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Remove all sources of ignition. Avoid breathing vapors. Use non-sparking tools to return materials to container. Absorb residue with Fullers earth. WASTE DISPOSAL METHOD:

Conventional procedures in compliance with local, state and federal regulations. Do not incinerate sealed containers.

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SECTION VIII SAFE HANDLING AND USE INFORMATION

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# RESPIRATORY PROTECTION:

Wear a properly fitted vapor/particulate respirator approved by NIOSH for use with paints during application or sanding and until all vapors and spray mist are exhausted. In confined spaces or in situations where continuous spray operations are typical, or if proper respirator fit is not possible, wear a positive-pressure, supplied air respirator approved by NIOSH.

#### **VENTILATION:**

Adequate to maintain working atmosphere below T.L.V. and L.E.L.

(See Sect. II for ingredient data and concentrations). Mechanical exhaust may be required in confined areas.

Discharge exhaust only in area away from ignition sources.

PROTECTIVE GLOVES: Solvent impermeable gloves are required.

EYE PROTECTION: Splash goggles or safety glasses with side shields.

OTHER PROTECTIVE EQUIPMENT: Clothing adequate to protect skin.

HYGIENIC PRACTICES:

Remove and wash clothing before reuse. Wash hands before eating, smoking or using the washroom.

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SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Combustible - Keep away from heat and flame

MSDS # : 133, n133 Page 4

#### OTHER PRECAUTIONS :

Use only with adequate ventilation. Avoid prolonged contact with skin and breathing of vapor spray mist or sanding dust.

Close container after each use. Keep out of reach of children. Do not take internally.

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#### SECTION XX

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HMIS (Hazardous Materials Identification System)(R) NPCA HMIS is a recognized workplace Hazard Communications System as required by OSHA (29 CFR 1910.1200). Information on establishing a compliant hazardous communication program using HMIS is available from:

American Labelmark Co., Inc., Labelmaster Division 5724 N. Pulaski Rd., Chicago, IL 60646 1-800-621-5808

The ratings assigned by Benjamin Moore & Co. are only suggested ratings; the contractor/employer has ultimate responsibility for HMIS rating where this system is used.

PERSONAL PROTECTION: This code is left blank on Benjamin Moore & Co. MSDS's as it depends on application technique and the workplace ventilation. Please read Sections II through IX of this MSDS before deciding on appropriate protective equipment and beginning work. There are codes available for this section which can be obtained from Labelmaster. This product contains at least one toxic chemical listed in Section II that is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR 372.

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#### DISCLAIMER

The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

NOTICE: Removal of old paint by sanding, scraping or other means may generate dust or fumes which contain lead. Exposure to lead dust or fumes may cause adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For additional information, contact the USEPA/Lead Information Hotline at 1-800-LEAD-FYI.

# **EPA ARCHIVE DOCUMENT**

# **Material Safety Data Sheet (MSDS)** Fiche technique de sécurité

# XIM 400W White #1102

XIM 400W Blanc #1102

HMIS Codes

Complies with OSHA's Hazard Communications Standard 29CFR 1910.1	200
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Quick Identifier, Common Name: (Used on Label and Data Sheet) Identifiant rapide, appellation commune : (utilisée sur étiquette et fiche technique)

# **SECTION 1:**

SUPPLIER INFORMATION: INFORMATIONS DE FOURNISSEUR: Manufacturer's Name: XIM Products, Inc. Nom du fabricant: XIM Products, Inc.

Address: 1169 Bassett Road, Westlake, Ohio 44145 Adresse: 1169 Bassett Road, Westlake, Ohio 44145 USA

Emergency Calls: (800) 424-9300 **Appels d'urgence:** (800) 424-9300 **Information Calls:** (440) 871-4737 Demandes d'informations: (440) 871-4737

#### PRODUCT IDENTIFICATION IDENTIFICATION DU PRODUIT

XIM 400W White #1102 **HMIS Codes Date Prepared:** 02/09/09 Health Prepared By: J.E. Jarufe Flammability

**Updated:** 02/09/09 Reactivity Product Class: Modified Alkyd

XIM 400W Blanc #1102 Date de préparation: 02/09/09

Préparé par: J.E .Jarufe Inflammabilité Mise à jour: 02/09/09 Réactivité

Classe de produit: Modified Alkyd

PROPRIÉTÉS PHYSIQUES ET CHIMIQUES

# **SECTION 2:** COMPOSITION/INFORMATION ON INGREDIENTS

WT%	CAS NO.	INGREDIENT	UNITS
< 0.005	71-43-2	† Benzene	
		ACGIH TLV	0.50 ppm
		OSHA TLV	1.00 ppm
< 1.10	100-41-4	† Ethyl Benzene	
		ACGIH TLV	100 ppm
		OSHA TLV	100 ppm
< 0.003	108-88-3	†Toluene	
		ACGIH TLV	20 ppm
		OSHA TLV	200 ppm
< 11.00	1330-20-7	Xylene	
		ACGIH TLV	150 ppm
		OSHA TLV	100 ppm
< 24.00	64742-89-8	VM&P Naphtha	
		ACGIH TLV	300 ppm
		OSHA PEL	400 ppm
< 10.50	14807-96-6	Magnesium Silicate Hydrate	
		ACGIH TLV	2 mg/m <sup>3</sup> (respirable)
		OSHA TLV	2 mg/m <sup>3</sup> (Mineral Dust)

These chemicals are not added by XIM to its products. These chemicals are naturally occurring chemicals in the solvents, pigments and/or additives used by XIM and the paint industry. Ces produits chimiques ne sont pas ajoutés par XIM dans ses produits. Ils apparaissent naturellement comme dans solvants, pigments et/ou additifs utilisés par XIM et l'industrie de la peinture.

#### **SECTION 3:**

PHYSICAL AND CHEMICAL PROPERTIES

THISICAL AND CHEWICAL I KOI EKITES	TROTRIETES THISTQUES ET CHIMIQUES
Physical Form: Liquid	Forme physique: Liquide
Appearance and Odor: White color liquid, solvent odor	Apparence et odeur: Liquide Blanc, odeur de solvant
<b>Boiling Range:</b> 245-288° F	Limites d'ébullition: 118-142° C
Vapor Pressure: 26 mm Hg @100°.F	Pression de vapeur: 26 mm Hg @ 38.8° C
<b>Vapor Density:</b> Heavier than air 3.8 (Air = 1)	<b>Densité de vapeur:</b> Plus lourd que l'air 3.8 (Air = 1)
Evaporation Rate: Slower than ether	Taux d'évaporation: Plus lent que l'éther
Weight per Gallon: 10.38 lb/gal	<b>Poids par gallon:</b> 10.38 lb/gal 1.24 kg / l
Solubility in Water: Negligible	Solubilité dans l'eau: Négligeable
<b>VOC:</b> < 450 g/l < 3.76 lb/gal	<b>VOC:</b> < 450g/l < 3.76 lb/gal 0.45 kg/l
Percent Volatile: 57.5 % by Volume	Pourcentage volatile: 57.5 % by Volume

# PA ARCHIVE DOCUMENT

### FIRE AND EXPLOSION DATA

Flash Point: 40-80° F TCC (ASTM D-56)
Flammability Limits: LEL - 1.0 % UEL - 7.0 %
Extinguishing Media: Dry Chemical, Carbon dioxide, Foam

Flammability Class: DOT: Flammable Liquid

OSHA: Class 1B

**Special Fire Fighting Procedures:** Wear protective equipment including NIOSH approved self-contained breathing apparatus. Isolate from heat, sparks, electrical equipment and open flame.

**Unusual Fire and Explosion Hazards:** During a fire, vapors may form an explosive mixture in air. Closed containers may explode when exposed to extreme heat. Solvent vapors may be heavier than air. Vapors may build up and travel along the ground to an ignition source which may result in a flash back to the source of the vapors. Cool fire exposed containers with water. Heavy build up on filters, rags, etc. Can trap solvents and result in spontaneous combustion.

### DONNÉES SUR INCENDIE ET EXPLOSION

**Point d'éclair :** 4.4-26.7° C TCC (ASTM D-56) **Limites d'inflammabilité :** LEL - 1.0 % UEL - 7.0 %

Matériaux d'extinction: Poudre chimique, dioxyde de carbone, mousse

Classe d'inflammabilité : DOT: Liquide inflammable

OSHA: Class 1B

Procédures spéciales de lutte contre le feu : Porter un équipement de protection incluant un appareil respiratoire autonome approuvé NIOSH. Garder à l'écart de chaleur, étincelles, équipement électrique et flamme nue. Dangers inhabituels d'incendie et explosion : Durant un incendie, des vapeurs peuvent former un mélange explosif dans l'air. Des conteneurs fermés peuvent exploser s'ils sont exposés à une chaleur intense. Les vapeurs de solvants peuvent être plus lourdes que l'air. Elles peuvent s'accumuler et suivre le sol jusqu'à une source d'inflammation avec un retour jusqu'à leur source. Refroidir les conteneurs exposés avec de l'eau. Des dépôts épais sur filtres, chiffons, etc., peuvent capter des solvants et entraîner une combustion spontanée.

### **SECTION 5:**

### HEALTH HAZARD DATA

**Routes of Entry:** Inhalation, Skin Contact, Eye Contact from Liquid and vapors, Ingestion.

### **Effects of Overexposure:**

**Inhalation** – **ACUTE:** Irritation of the nose, throat and eyes: Asthma-like breathing may be a delayed reaction. Other possible symptoms of overexposure may include headache, nausea, narcosis, fatigue and loss of appetite.

**Inhalation – CHRONIC:** Chronic exposure to solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Symptoms include loss of memory, loss of intellectual ability and loss of coordination.

**Eye Contact:** Liquid and vapors are irritating to the eyes and can cause pain, tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible.

**Skin Contact:** Repeated or prolonged skin contact can result in dry, defatted and cracked skin causing increased susceptibility to infection.

**Ingestion:** Ingestion can result in irritation in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea. Vomiting may cause aspiration resulting in chemical pneumonitis

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Asthma, other respiratory disorders (bronchitis, etc.), skin allergies, eczema. **EMERGENCY AND FIRST AID PROCEDURES:** 

Eyes: Flush eyes with clean water for at least 15 minutes. Obtain medical attention

**Skin:** Remove contaminated clothing immediately. Wash affected areas thoroughly with soap and water. Obtain medical attention if irritation develops or persists.

**Inhalation:** Remove from exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention.

**Ingestion:** DO NOT INDUCE VOMITING. Give 1-2 glasses of water to dilute. Consult a physician immediately.

### DONNÉES SUR LES RISQUES POUR LA SANTÉ

**Voies d'entrée :** Inhalation, contact avec la peau, contact avec les yeux de liquide et vapeurs, ingestion

### Effets d'une surexposition :

**Inhalation** – **AIGUË**: Irritation de nez, gorge et yeux : Une respiration de type asthmatique peut être une réaction avec retard. D'autres symptômes possibles peuvent inclure mal de tête, nausée, narcose, fatigue et perte d'appétit.

**Inhalation – CHRONIQUE :** Une exposition chronique aux solvants a été associée avec divers effets neurotoxiques dont des dommages permanents au cerveau et au système nerveux. Les symptômes incluent perte de mémoire, perte de capacité intellectuelle et perte de coordination.

Contact avec les yeux : Liquides et vapeurs dont des irritants pour les yeux et peuvent causer douleur, larmoiement, rougissement et gonflement. À défaut de soins, des dommages à la cornée peuvent arriver, et la blessure est longue à cicatriser. Cependant les dommages sont généralement réversibles.

Contact avec la peau : Un contact cutané répété ou prolongé peut amener assèchement, dégraissage et craquèlement de la peau, entraînant une sensibilité accrue aux infections.

**Ingestion :** Une ingestion peut amener une irritation de bouche, tissu stomacal et voies digestives. Les symptômes peuvent inclure irritation de gorge, douleur abdominale, nausée, vomissement et diarrhée. Le vomissement peut entraîner une aspiration causant une pneumonite chimique.

### ÉTATS MÉDICAUX AGGRAVÉS PAR UNE EXPOSITION:

Asthme, autres désordres respiratoires (bronchite, etc.), allergies cutanées, eczéma

### PROCÉDURES D'URGENCE ET DE PREMIERS SOINS :

Yeux: Rincer les yeux à l'eau propre pendant au moins 15 minutes. Obtenir une intervention médicale

**Peau :** Ôter immédiatement les vêtements contaminés. Laver les zones affectées soigneusement à l'eau et au savon. Obtenir immédiatement une intervention médicale si une irritation se développe et persiste.

**Inhalation:** Sortir du lieu d'exposition. Administrer oxygène ou respiration artificielle selon le besoin. Obtenir une intervention médicale.

**Ingestion:** NE PAS PROVOQUER LE VOMISSEMENT. Faire avaler 1-2 verres d'eau pour diluer le produit. Consulter immédiatement un médecin.

### **SECTION 6:**

### REACTIVITY DATA

Stability: This material is stable

Materials to avoid: Strong oxidizing agents. Hazardous Polymerization: Will not occur.

Decomposition Products: By high heat and fire: CO2, CO and other toxic

vapors and mist.

### DONNÉES SUR LA RÉACTIVITÉ

Stabilité: Ce matériau est stable.

Matériaux à éviter : Agents fortement oxydants. Polymérisation dangereuse : Ne se produira pas.

 $\boldsymbol{Produits}$  de décomposition : En cas de forte chaleur ou de feu : CO2, CO et

autres vapeurs et brouillards toxiques.

### ACCIDENTAL RELEASE MEASURES

### MESURES EN CAS DE DÉVERSEMENT ACCIDENTEL

**Precautions for handling and storage:** Keep from fire, sparks and open flame. Do not smoke. Keep container tightly closed. Wash thoroughly after handling.

**Other precautions:** Remove sources of ignition. Provide explosion proof ventilation and/or respiratory protection. Use non-sparking tools.

**Steps to take in case of spills:** Pick up large spills with non-sparking tools; small spills with absorbent material. Wash down area with liquid decontaminant and flush spill area with water.

**Waste Disposal Method:** If discarded this material and containers should be treated as a hazardous waste, based on the Ignitability characteristics as defined under Federal RCRA Regulations (40 CFR 261). Dispose of in accordance with local, state, and federal regulations. DO NOT INCINERATE IN CLOSED CONTAINERS.

**For further information**, contact the United States Environmental Protection Agency RCRA hotline (800) 242-9342.

**Précautions de manutention et entreposage :** Garder à l'écart de feu, étincelles et flamme nue. Ne pas fumer. Garder le conteneur bien fermé. Se laver soigneusement après manutention.

**Autres précautions :** Écarter les sources d'inflammation. Fournir une ventilation anti-déflagration et/ou une protection respiratoire. Utiliser des outils non générateurs d'étincelles.

Actions à mener en cas de déversement : Récupérer les gros déversements avec des outils non générateurs d'étincelles, et les plus réduits avec de la matière absorbante. Laver la zone du déversement avec un décontaminant liquide, et bien la rincer à l'eau.

Méthode de mise au rebut des déchets : En cas de mise au rebut, matière et conteneurs doivent être traités comme des déchets dangereux, sur la base des caractéristiques d'inflammabilité définies par les exigences fédérales RCRA (40 CFR 261). Jeter en conformité avec les réglementations locales, provinciales et nationales. NE PAS INCINÉRER DE PRODUIT DANS DES CONTENEURS FERMÉS.

**Pour plus d'informations**, contacter l'agence américaine de protection de l'environnement sur la ligne d'urgence RCRA au (800) 242-9342

### **SECTION 8:**

EPA ARCHIVE DOCUMEN

### SPECIAL PROTECTION/SAFE HANDLING INFORMATION

**Special Sensitivity:** Avoid exposing the container to high heat. This can cause sealed containers to pressurize and possibly rupture.

Handling and Storage: Keep away from heat, sparks and open flame. Ground the container during storage and transfer operations. When storing, tightly close containers to prevent moisture contamination. Do not reseal if contamination is suspected. Do not breathe vapors. Employee education and training in safe handling of this product are required under OSHA Hazard Communication Standard.

**Respiratory Protection:** Use air-purifying respirator that the respirator supplier has demonstrated to be effective for solvent vapors. Where overspray is present, or if the concentration of solvents is not known or exceeds the level at which the air purifying respirator is effective, a positive pressure air-supplied respirator (TC19C NIOSH) is recommended.

**Ventilation:** Design and maintain to provide volume and pattern to prevent vapor concentration in excess of TLV or PEL

**Protective Gloves:** Wear gloves which are recommended by glove supplier for protection against Materials in Section 2.

**Eye Protection:** Wear safety glasses with unperforated side shields.

# INFORMATIONS SUR PROTECTION SPÉCIALE/MANUTENTION SÛRE

Sensibilité spéciale : Éviter l'exposition du conteneur à une forte chaleur. Cela peut amener à une montée en pression des conteneurs hermétiques avec possible rupture.

Manutention et entreposage : À garder à l'écart de chaleur, étincelles et flamme nue. Mettre le conteneur à la terre durant l'entreposage et les opérations de transfert. Durant le stockage bien fermer les conteneurs pour éviter une contamination par l'humidité. Ne pas refermer si de la contamination est suspectée. Ne pas respirer les vapeurs. Une formation des employés et un apprentissage pour une manipulation de ce produit sont exigés par la norme OSHA de communication.

**Protection respiratoire:** Utiliser un appareil de protection respiratoire à adduction d'air filtré dont le fabricant a démontré l'efficacité pour protéger des vapeurs de solvants. S'il y a de la surpulvérisation ou si la concentration en solvants est inconnue ou dépasse le niveau pour lequel le respirateur reste efficace, il est recommandé d'utiliser un appareil respiratoire à apport d'air en pression positive (TC19C NIOSH)

**Ventilation :** Concevoir et entretenir afin de fournir volume et configuration empêchant que la concentration de vapeur dépasse les seuils de VLE ou PEL. **Gants de protection :** Porter des gants de type recommandé par leur

fournisseur pour se protéger des matières de la section 2.

**Protection des yeux :** Porter des lunettes de sécurité avec des protections latérales non perforées.

TOXICOLOGY INFORMATION INFORMAION TOXICOLOGIQUE	CAS NO.	LD50 RAT (oral)	LC50 RAT (inhalation)
Benzene	71-43-2	930 mg/kg	Not Available (Non disponible)
Ethyl Benzene	100-41-4	3500 mg/kg	Not Available
Toluene	108-88-3	636 mg kg <sup>-1</sup>	49 gm/m <sup>3</sup> (4hours)
Xylene	1330-20-7	4300 mg/kg	26800 ppm/m <sup>3</sup> /8hr
VM&P Naphtha	64742-89-8	5000 mg/kg	Not Available
Magnesium Silicate Hydrate	14807-96-6	Not Available	Not Available

### **Health Concerns:**

(Dangers pour la santé)

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats, and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

L'éthyle benzène est classé par l'IARC comme cancérigène possible pour les humains (2B), sur la base d'une évidence insuffisante pour les humains mais d'une évidence suffisante sur des animaux en laboratoire. Une exposition par inhalation à de fortes concentrations d'éthyle benzène durant toute la vie de rats et souris a entraînér l'augmentation de certains types de cancers, incluant des tumeurs rénales chez les rats, et des tumeurs du foie et des poumons chez les souris. Ces effets n'étaient pas observés sur des animaux exposés à de plus faibles concentrations. Il n'y a pas d'évidence que l'éthyle benzène cause le cancer chez l'homme.

### California Proposition 65 (Proposition 65 de Californie)

Warning: This product contains chemicals known to the state of California to cause cancer and birth defects, or other reproductive harm.

Avertissement : Ce produit contient des produits chimiques reconnus par l'état de Californie pour causer des cancers ou anomalies congénitales, ou d'autres atteintes à la reproduction.

This product contains pigments that may be classified as nuisance particles which may present hazardous levels only during sanding or abrading. Inhaling of dust may aggravate existing respiratory disorders (i.e. asthma, emphysema, bronchitis...). Inhalation of inorganic dusts has been linked to the development of Fibrotic and Benign Pneumoconiosis

Ce produit contient des pigments pouvant être classés comme poussières nuisibles, qui peuvent présenter des niveaux dangereux uniquement lors de ponçage ou abrasion. L'inhalation de ces poussières peut aggraver des troubles respiratoires existants (comme asthme, emphysème, bronchite). L'inhalation de poussières minérales a été corrélée au développement de pneumoconiose fibreuse ou bénigne. (www.bibalex.org/supercourse/supercourse/PT/32011-33001/32551.ppt)

### This product does not contain asbestos

Ce produit ne contient pas d'amiante

IARC: Ethylbenzene: Group 2B (Groupe 2B) NTP: Benzene: Listed (Cotée)

**Benzene: Group 1** (Groupe 1)

### **SECTION 10:**

PA ARCHIVE DOCUMENT

TRANSPORTATION INFORMATION	INFORMATIONS SUR LE TRANSPORT
DOT INFORMATION:	INFORMATIONS DOT:
Paint	Peinture
Consumer commodity, ORM-D	Bien de consommation, AARD
All raw materials in this product are listed on the Canadian DSL.	Toutes les matières premières contenues dans ce produit font
	Partie de la liste Canadienne DSL sur les substances
	Domestiques.

NOTE: Read MSDS completely before use and follow all label instructions.

**REMARQUE:** Lire complètement la MSDS avant utilisation et suivre les instructions de l'étiquette

The information contained in this MSDS is based on the present state of knowledge and is based on sources believed to be reliable. However, since the data safety standards and government regulations are subject to change and the conditions of handling and use or misuse are beyond our control, XIM Products makes no warranty, either express or implied, with respect to the information contained herein and disclaims all liability for reliance thereon.

Les informations contenues dans cette MSDS sont basées sur l'état actuel des connaissances, et sur des sources d'information réputées fiables. Cependant, comme les normes sur les données de sécurité et les réglementations gouvernementales sont sujettes à changements, et comme les conditions de manutention et d'utilisation ou de mésusage sont hors de notre contrôle, XIM Products ne donne aucune garantie, explicite ou implicite, à propos des informations contenues ici, et rejette toutes responsabilité quant à leur exactitude.

# **EPA ARCHIVE DOCUMENT**

# **Material Safety Data Sheet (MSDS)** Fiche technique de sécurité

### XIM 400W White Aerosol # 1102

XIM 400W Blanc Aérosol # 1102

Complies with OSHA's Hazard Communications Standard 29CFR 1910.1200

Quick Identifier, Common Name: (Used on Label and Data Sheet) Identifiant rapide, appellation commune : (utilisée sur étiquette et fiche technique)

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SUPPLIER INFORMATION:	INFORMATIONS DE FOURNISSEUR:
Manufacturer's Name: XIM Products, Inc.	Nom du fabricant: XIM Products, Inc.
Address: 1169 Bassett Road, Westlake, Ohio 44145	Adresse: 1169 Bassett Road, Westlake, Ohio 44145 USA
Emergency Calls: (800) 424-9300	<b>Appels d'urgence:</b> (800) 424-9300
<b>Information Calls:</b> (440) 871-4737	Demandes d'informations: (440) 871-4737
PRODUCT IDENTIFICATION	IDENTIFICATION DU PRODUIT

XIM 400W White Aerosol #1102 **Date Prepared:** 02/09/09 Prepared By: J.E .Jarufe **Updated:** 02/09/09

Product Class: Modified Alkyd

**HMIS Codes** Health Flammability Reactivity

XIM 400W Blanc Aérosol #1102 **Date de préparation**: 02/09/09 Préparé par: J.E .Jarufe Mise à jour: 02/09/09 Classe de produit: Modified Alkyd

HMIS Codes Santé Inflammabilité Réactivité

### **SECTION 2:** COMPOSITION/INFORMATION ON INGREDIENTS

WT%	CAS NO.	INGREDIENT	UNITS
< 0.0035	71-43-2	†Benzene	
		ACGIH TLV	0.50 ppm
		OSHA TLV	1.00 ppm
< 0.70	100-41-4	†Ethyl Benzene	
		ACGIH TLV	100 ppm
		OSHA TLV	100 ppm
< 3.00	108-65-6	Propylene Glycol Monomethyl Ether Acet	tate
		ACGIH TLV	Not Established
		OSHA PEL	Not Established
< 0.002	108-88-3	†Toluene	
		ACGIH TLV	20 ppm
		OSHA TLV	200 ppm
< 15.00	64742-89-8	VM&P Naphtha	
		ACGIH TLV	300 ppm
		OSHA PEL	400 ppm
< 6.85	1330-20-7	Xylene	
		ACGIH TLV	150 ppm
		OSHA TLV	100 ppm
< 11.00	67-64-1	Acetone	
		ACGIH TLV	750 ppm
		OSHA PEL	750 ppm
< 6.00	106-97-8	N-Butane	
		ACGIH TLV	800 ppm
		OSHA PEL	800 ppm
< 17.00	74-98-6	Propane	
		ACGIH TLV	1000 ppm
		OSHA PEL	Not Available
< 5.00	14807-96-6	Magnesium Silicate Hydrate	
		ACGIH TLV	2 mg/m <sup>3</sup> (respirable)
		OSHA TLV	2 mg/m <sup>3</sup> (Mineral Dust)

These chemicals are not added by XIM to its products. These chemicals are naturally occurring chemicals in the solvents, pigments and/or additives used by XIM and the paint industry. Ces produits chimiques ne sont pas ajoutés par XIM dans ses produits. Ils apparaissent naturellement comme dans solvants, pigments et/ou additifs utilisés par XIM et l'industrie de la peinture.

### **SECTION 3:**

PHYSICAL AND CHEMICAL PROPERTIES	PROPRIÉTÉS PHYSIQUES ET CHIMIQUES
Physical Form: Aerosol	Forme physique: Aérosol
Appearance and Odor: White color liquid, solvent odor	Apparence et odeur: Liquide blanc, odeur de solvant
<b>Boiling Range:</b> 1 – 279 ° F	Limites d'ébullition: -17.2 - 137.2 ° C
Vapor Pressure: 5585.20 mm HG @ 20 °C	Pression de vapeur: 5585.20 mm HG @ 20 °C
Vapor Density: N/A	Densité de vapeur: N/A
Evaporation Rate: 7.700 (n-butyl Acetate = 1)	Taux d'évaporation: 7.700 (n-butyl Acetate = 1)
Weight per Gallon: 7.35 lb/gal	<b>Poids par gallon:</b> 7.35 lb/gal 0.88 kg / l
Solubility in Water: Negligible	Solubilité dans l'eau: Négligeable
VOC (By Weight): < 60 %	VOC (By Weight): < 60 %
<b>MRI</b> : < 1.20	MRI: < 1.20

### FIRE AND EXPLOSION DATA

Flash Point: < -25° F TCC (ASTM D-56)
Flammability Limits: LEL - 1.0 % UEL - 7.0 %
Extinguishing Media: Dry Chemical, Carbon dioxide, Foam

Flammability Class: DOT: Aerosol Flammable OSHA: Class 2.1

**Special Fire Fighting Procedures:** Wear protective equipment including NIOSH approved self-contained breathing apparatus. Isolate from heat, sparks, electrical equipment and open flame.

**Unusual Fire and Explosion Hazards:** During a fire, vapors may form an explosive mixture in air. Closed containers may explode when exposed to extreme heat. Solvent vapors may be heavier than air. Vapors may build up and travel along the ground to an ignition source which may result in a flash back to the source of the vapors. Cool fire exposed containers with water. Heavy build up on filters, rags, etc. Can trap solvents and result in spontaneous combustion.

### **SECTION 5:**

### HEALTH HAZARD DATA

**Routes of Entry:** Inhalation, Skin Contact, Eye Contact from Liquid and vapors, Ingestion.

### **Effects of Overexposure:**

**Inhalation** – **ACUTE:** Irritation of the nose, throat and eyes: Asthma-like breathing may be a delayed reaction. Other possible symptoms of overexposure may include headache, nausea, narcosis, fatigue and loss of appetite.

**Inhalation – CHRONIC:** Chronic exposure to solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Symptoms include loss of memory, loss of intellectual ability and loss of coordination.

**Eye Contact:** Liquid and vapors are irritating to the eyes and can cause pain, tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible.

**Skin Contact:** Repeated or prolonged skin contact can result in dry, defatted and cracked skin causing increased susceptibility to infection.

**Ingestion:** Ingestion can result in irritation in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea. Vomiting may cause aspiration resulting in chemical pneumonitis.

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Asthma, other respiratory disorders (bronchitis, etc.), skin allergies, eczema. **EMERGENCY AND FIRST AID PROCEDURES:** 

Eyes: Flush eyes with clean water for at least 15 minutes. Obtain medical attention.

**Skin:** Remove contaminated clothing immediately. Wash affected areas thoroughly with soap and water. Obtain medical attention if irritation develops or persists.

**Inhalation:** Remove from exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention.

**Ingestion:** DO NOT INDUCE VOMITING. Give 1-2 glasses of water to dilute. Consult a physician immediately.

### DONNÉES SUR INCENDIE ET EXPLOSION

Point d'éclair : < -31.7° C TCC (ASTM D-56) Limites d'inflammabilité : LEL - 1.0 % UEL - 7.0 %

Matériaux d'extinction : Poudre chimique, dioxyde de carbone, mousse

 $\textbf{Classe d'inflammabilit\'e: DOT}: A\'{e}rosol inflammable$ 

OSHA: Class 2.1

Procédures spéciales de lutte contre le feu : Porter un équipement de protection incluant un appareil respiratoire autonome approuvé NIOSH. Garder à l'écart de chaleur, étincelles, équipement électrique et flamme nue. Dangers inhabituels d'incendie et explosion : Durant un incendie, des vapeurs peuvent former un mélange explosif dans l'air. Des conteneurs fermés peuvent exploser s'ils sont exposés à une chaleur intense. Les vapeurs de solvants peuvent être plus lourdes que l'air. Elles peuvent s'accumuler et suivre le sol jusqu'à une source d'inflammation avec un retour jusqu'à leur source. Refroidir les conteneurs exposés avec de l'eau. Des dépôts épais sur filtres, chiffons, etc., peuvent capter des solvants et entraîner une combustion spontanée.

### DONNÉES SUR LES RISQUES POUR LA SANTÉ

Voies d'entrée : Inhalation, contact avec la peau, contact avec les yeux de liquide et vapeurs, ingestion

### **Effets d'une surexposition :**

sensibilité accrue aux infections.

**Inhalation** – **AIGUË**: Irritation de nez, gorge et yeux : Une respiration de type asthmatique peut être une réaction avec retard. D'autres symptômes possibles peuvent inclure mal de tête, nausée, narcose, fatigue et perte d'appétit.

**Inhalation – CHRONIQUE :** Une exposition chronique aux solvants a été associée avec divers effets neurotoxiques dont des dommages permanents au cerveau et au système nerveux. Les symptômes incluent perte de mémoire, perte de capacité intellectuelle et perte de coordination.

Contact avec les yeux : Liquides et vapeurs dont des irritants pour les yeux et peuvent causer douleur, larmoiement, rougissement et gonflement. À défaut de soins, des dommages à la cornée peuvent arriver, et la blessure est longue à cicatriser. Cependant les dommages sont généralement réversibles. Contact avec la peau : Un contact cutané répété ou prolongé peut amener assèchement, dégraissage et craquèlement de la peau, entraînant une

**Ingestion :** Une ingestion peut amener une irritation de bouche, tissu stomacal et voies digestives. Les symptômes peuvent inclure irritation de gorge, douleur abdominale, nausée, vomissement et diarrhée. Le vomissement peut entraîner une aspiration causant une pneumonite chimique.

### ÉTATS MÉDICAUX AGGRAVÉS PAR UNE EXPOSITION:

Asthme, autres désordres respiratoires (bronchite, etc.), allergies cutanées, eczéma

### PROCÉDURES D'URGENCE ET DE PREMIERS SOINS :

**Yeux :** Rincer les yeux à l'eau propre pendant au moins 15 minutes. Obtenir une intervention médicale

**Peau :** Ôter immédiatement les vêtements contaminés. Laver les zones affectées soigneusement à l'eau et au savon. Obtenir immédiatement une intervention médicale si une irritation se développe et persiste.

**Inhalation:** Sortir du lieu d'exposition. Administrer oxygène ou respiration artificielle selon le besoin. Obtenir une intervention médicale.

**Ingestion:** NE PAS PROVOQUER LE VOMISSEMENT. Faire avaler 1-2 verres d'eau pour diluer le produit. Consulter immédiatement un médecin.

### REACTIVITY DATA

Stability: This material is stable

**Materials to avoid:** Strong oxidizing agents. **Hazardous Polymerization:** Will not occur.

Decomposition Products: By high heat and fire: CO2, CO and other toxic

vapors and mist.

### DONNÉES SUR LA RÉACTIVITÉ

**Stabilité**: Ce matériau est stable.

Matériaux à éviter : Agents fortement oxydants. Polymérisation dangereuse : Ne se produira pas.

Produits de décomposition : En cas de forte chaleur ou de feu : CO2, CO et

autres vapeurs et brouillards toxiques.

### **SECTION 7:**

### ACCIDENTAL RELEASE MEASURES

**Precautions for handling and storage:** Keep from fire, sparks and open flame. Do not smoke. Keep container tightly closed. Wash thoroughly after handling.

**Other precautions:** Remove sources of ignition. Provide explosion proof ventilation and/or respiratory protection. Use non-sparking tools.

**Steps to take in case of spills:** Pick up large spills with non-sparking tools; small spills with absorbent material. Wash down area with liquid decontaminant and flush spill area with water.

**Waste Disposal Method:** If discarded this material and containers should be treated as a hazardous waste, based on the Ignitability characteristics as defined under Federal RCRA Regulations (40 CFR 261). Dispose of in accordance with local, state, and federal regulations. DO NOT INCINERATE IN CLOSED CONTAINERS.

**For further information**, contact the United States Environmental Protection Agency RCRA hotline (800) 242-9342.

### MESURES EN CAS DE DÉVERSEMENT ACCIDENTEL

**Précautions de manutention et entreposage :** Garder à l'écart de feu, étincelles et flamme nue. Ne pas fumer. Garder le conteneur bien fermé. Se laver soigneusement après manutention.

**Autres précautions :** Écarter les sources d'inflammation. Fournir une ventilation anti-déflagration et/ou une protection respiratoire. Utiliser des outils non générateurs d'étincelles.

Actions à mener en cas de déversement : Récupérer les gros déversements avec des outils non générateurs d'étincelles, et les plus réduits avec de la matière absorbante. Laver la zone du déversement avec un décontaminant liquide, et bien la rincer à l'eau.

Méthode de mise au rebut des déchets : En cas de mise au rebut, matière et conteneurs doivent être traités comme des déchets dangereux, sur la base des caractéristiques d'inflammabilité définies par les exigences fédérales RCRA (40 CFR 261). Jeter en conformité avec les réglementations locales, provinciales et nationales. NE PAS INCINÉRER DE PRODUIT DANS DES CONTENEURS FERMÉS.

**Pour plus d'informations**, contacter l'agence américaine de protection de l'environnement sur la ligne d'urgence RCRA au (800) 242-9342

### **SECTION 8:**

### SPECIAL PROTECTION/SAFE HANDLING INFORMATION

**Special Sensitivity:** Avoid exposing the container to high heat. This can cause sealed containers to pressurize and possibly rupture.

**Handling and Storage:** Keep away from heat, sparks and open flame. Ground the container during storage and transfer operations. When storing, tightly close containers to prevent moisture contamination. Do not reseal if contamination is suspected. Do not breathe vapors. Employee education and training in safe handling of this product are required under OSHA Hazard Communication Standard.

**Respiratory Protection:** Use air-purifying respirator that the respirator supplier has demonstrated to be effective for solvent vapors. Where overspray is present, or if the concentration of solvents is not known or exceeds the level at which the air purifying respirator is effective, a positive pressure air-supplied respirator (TC19C NIOSH) is recommended.

**Ventilation:** Design and maintain to provide volume and pattern to prevent vapor concentration in excess of TLV or PEL

**Protective Gloves:** Wear gloves which are recommended by glove supplier for protection against Materials in Section 2.

**Eye Protection:** Wear safety glasses with unperforated side shields.

# INFORMATIONS SUR PROTECTION SPÉCIALE/MANUTENTION SÛRE

Sensibilité spéciale : Éviter l'exposition du conteneur à une forte chaleur. Cela peut amener à une montée en pression des conteneurs hermétiques avec possible rupture.

Manutention et entreposage: À garder à l'écart de chaleur, étincelles et flamme nue. Mettre le conteneur à la terre durant l'entreposage et les opérations de transfert. Durant le stockage bien fermer les conteneurs pour éviter une contamination par l'humidité. Ne pas refermer si de la contamination est suspectée. Ne pas respirer les vapeurs. Une formation des employés et un apprentissage pour une manipulation de ce produit sont exigés par la norme OSHA de communication.

**Protection respiratoire:** Utiliser un appareil de protection respiratoire à adduction d'air filtré dont le fabricant a démontré l'efficacité pour protéger des vapeurs de solvants. S'il y a de la surpulvérisation ou si la concentration en solvants est inconnue ou dépasse le niveau pour lequel le respirateur reste efficace, il est recommandé d'utiliser un appareil respiratoire à apport d'air en pression positive (TC19C NIOSH)

**Ventilation :** Concevoir et entretenir afin de fournir volume et configuration empêchant que la concentration de vapeur dépasse les seuils de VLE ou PEL.

Gants de protection: Porter des gants de type recommandé par leur fournisseur pour se protéger des matières de la section 2.

**Protection des yeux :** Porter des lunettes de sécurité avec des protections latérales non perforées.

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TOXICOLOGY INFORMATION			
INFORMAION TOXICOLOGIQUE	CAS NO.	LD50 RAT (oral)	LC50 RAT (inhalation)
Benzene	71-43-2	930 mg/kg	Not Available (Non disponible)
Ethyl Benzene	100-41-4	3500 mg/kg	Not Available
Propylene Glycol Monomethyl Ether Acet	ate 108-65-6	10,000 mg/kg	4345 ppm (6 hours)
Toluene	108-88-3	636 mg kg <sup>-1</sup>	49 gm/m <sup>3</sup> (4hours)
VM&P Naphtha	64742-89-8	5000 mg/kg	Not Available
Xylene	1330-20-7	4300 mg/kg	26800 ppm/m <sup>3</sup> /8hr
Acetone	67-64-1	5800 mg/kg	$50100 \text{ mg/m}^3/8\text{hr}$
N-Butane	160-97-8	Not Available	$658000 \text{ mg/m}^3$
Propane	74-98-6	Not Available	Not Available
Magnesium Silicate Hydrate	14807-96-6	Not Available	Not Available

### **Health Concerns:**

(Dangers pour la santé)

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats, and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

L'éthyle benzène est classé par l'IARC comme cancérigène possible pour les humains (2B), sur la base d'une évidence insuffisante pour les humains mais d'une évidence suffisante sur des animaux en laboratoire. Une exposition par inhalation à de fortes concentrations d'éthyle benzène durant toute la vie de rats et souris a entraînér l'augmentation de certains types de cancers, incluant des tumeurs rénales chez les rats, et des tumeurs du foie et des poumons chez les souris. Ces effets n'étaient pas observés sur des animaux exposés à de plus faibles concentrations. Il n'y a pas d'évidence que l'éthyle benzène cause le cancer chez l'homme.

This product contains pigments that may be classified as nuisance particles which may present hazardous levels only during sanding or abrading. Inhaling of dust may aggravate existing respiratory disorders (i.e. asthma, emphysema, bronchitis...). Inhalation of inorganic dusts has been linked to the development of Fibrotic and Benign Pneumoconiosis

Ce produit contient des pigments pouvant être classés comme poussières nuisibles, qui peuvent présenter des niveaux dangereux uniquement lors de ponçage ou abrasion. L'inhalation de ces poussières peut aggraver des troubles respiratoires existants (comme asthme, emphysème, bronchite). L'inhalation de poussières minérales a été corrélée au développement de pneumoconiose fibreuse ou bénigne. (www.bibalex.org/supercourse/supercourse/PT/32011-33001/32551.ppt)

This product does not contain asbestos (Ce produit ne contient pas d'amiante.)

California Proposition 65 (Proposition 65 de Californie)

Warning: This product contains chemicals known to the state of California to cause cancer and birth defects, or other reproductive harm.

Avertissement : Ce produit contient des produits chimiques reconnus par l'état de Californie pour causer des cancers ou anomalies congénitales, ou d'autres atteintes à la reproduction.

IARC: Ethylbenzene: Group 2B (Groupe 2B) NTP: Benzene: Listed (Cotée)

**Benzene: Group 1** (Groupe 1)

### **SECTION 10:**

TRANSPORTATION INFORMATION	INFORMATIONS SUR LE TRANSPORT
DOT INFORMATION:	INFORMATIONS DOT:
Aerosol	Aérosol
Consumer Commodity, ORM-D, UN1950	Bien de consommation, AARD, UN1950
All raw materials in this product are listed on the Canadian DSL.	Toutes les matières premières contenues dans ce produit font
	Partie de la liste Canadienne DSL sur les substances
	Domestiques.

NOTE: Read MSDS completely before use and follow all label instructions

**REMARQUE**: Lire complètement la MSDS avant utilisation et suivre les instructions de l'étiquette

The information contained in this MSDS is based on the present state of knowledge and is based on sources believed to be reliable. However, since the data safety standards and government regulations are subject to change and the conditions of handling and use or misuse are beyond our control, XIM Products makes no warranty, either express or implied, with respect to the information contained herein and disclaims all liability for reliance thereon.

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# PA ARCHIVE DOCUMENT

# **Material Safety Data Sheet (MSDS)** Fiche technique de sécurité

XIM 400W White #1102

XIM 400W Blanc #1102

Complies with OSHA's Hazard	Communications	Standard 29CFR	1910.1200
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Quick Identifier, Common Name: (Used on Label and Data Sheet) Identifiant rapide, appellation commune : (utilisée sur étiquette et fiche technique)

### **SECTION 1:**

SUPPLIER INFORMATION: INFORMATIONS DE FOURNISSEUR:

Manufacturer's Name: XIM Products, Inc. Nom du fabricant: XIM Products, Inc.

Address: 1169 Bassett Road, Westlake, Ohio 44145 Adresse: 1169 Bassett Road, Westlake, Ohio 44145 USA Emergency Calls: (800) 424-9300 **Appels d'urgence:** (800) 424-9300 **Information Calls:** (440) 871-4737 Demandes d'informations: (440) 871-4737

**HMIS Codes** 

### PRODUCT IDENTIFICATION

XIM 400W White #1102 **Date Prepared:** 02/09/09 Health Prepared By: J.E. Jarufe Flammability **Updated:** 02/09/09 Reactivity

Product Class: Modified Alkyd

# IDENTIFICATION DU PRODUIT

XIM 400W Blanc #1102 Date de préparation: 02/09/09 Préparé par: J.E .Jarufe Mise à jour: 02/09/09

Classe de produit: Modified Alkyd

# HMIS Codes Inflammabilité

Réactivité

# **SECTION 2:** COMPOSITION/INFORMATION ON INGREDIENTS

WT%	CAS NO.	INGREDIENT	UNITS
< 0.005	71-43-2	† Benzene	
		ACGIH TLV	0.50 ppm
		OSHA TLV	1.00 ppm
< 1.10	100-41-4	† Ethyl Benzene	
		ACGIH TLV	100 ppm
		OSHA TLV	100 ppm
< 0.003	108-88-3	†Toluene	
		ACGIH TLV	20 ppm
		OSHA TLV	200 ppm
< 11.00	1330-20-7	Xylene	
		ACGIH TLV	150 ppm
		OSHA TLV	100 ppm
< 24.00	64742-89-8	VM&P Naphtha	
		ACGIH TLV	300 ppm
		OSHA PEL	400 ppm
< 10.50	14807-96-6	Magnesium Silicate Hydrate	
		ACGIH TLV	2 mg/m <sup>3</sup> (respirable)
		OSHA TLV	2 mg/m <sup>3</sup> (Mineral Dust)

These chemicals are not added by XIM to its products. These chemicals are naturally occurring chemicals in the solvents, pigments and/or additives used by XIM and the paint industry. Ces produits chimiques ne sont pas ajoutés par XIM dans ses produits. Ils apparaissent naturellement comme dans solvants, pigments et/ou additifs utilisés par XIM et l'industrie de la peinture.

### **SECTION 3:**

PHYSICAL AND CHEMICAL PROPERTIES	PROPRIÉTÉS PHYSIQUES ET CHIMIQUES
Physical Form: Liquid	Forme physique: Liquide
Appearance and Odor: White color liquid, solvent odor	Apparence et odeur: Liquide Blanc, odeur de solvant
<b>Boiling Range:</b> 245-288° F	Limites d'ébullition: 118-142° C
Vapor Pressure: 26 mm Hg @100°.F	Pression de vapeur: 26 mm Hg @ 38.8° C
<b>Vapor Density:</b> Heavier than air 3.8 (Air = 1)	<b>Densité de vapeur:</b> Plus lourd que l'air 3.8 (Air = 1)
Evaporation Rate: Slower than ether	Taux d'évaporation : Plus lent que l'éther
Weight per Gallon: 10.38 lb/gal	Poids par gallon: 10.38 lb/gal 1.24 kg / l
Solubility in Water: Negligible	Solubilité dans l'eau: Négligeable
<b>VOC:</b> < 450 g/l < 3.76 lb/gal	<b>VOC:</b> < 450g/l < 3.76 lb/gal 0.45 kg/l
Percent Volatile: 57.5 % by Volume	Pourcentage volatile: 57.5 % by Volume

# PA ARCHIVE DOCUMENT

### FIRE AND EXPLOSION DATA

Flash Point: 40-80° F TCC (ASTM D-56)
Flammability Limits: LEL - 1.0 % UEL - 7.0 %
Extinguishing Media: Dry Chemical, Carbon dioxide, Foam

Flammability Class: DOT: Flammable Liquid

OSHA: Class 1B

**Special Fire Fighting Procedures:** Wear protective equipment including NIOSH approved self-contained breathing apparatus. Isolate from heat, sparks, electrical equipment and open flame.

**Unusual Fire and Explosion Hazards:** During a fire, vapors may form an explosive mixture in air. Closed containers may explode when exposed to extreme heat. Solvent vapors may be heavier than air. Vapors may build up and travel along the ground to an ignition source which may result in a flash back to the source of the vapors. Cool fire exposed containers with water. Heavy build up on filters, rags, etc. Can trap solvents and result in spontaneous combustion.

### DONNÉES SUR INCENDIE ET EXPLOSION

**Point d'éclair :** 4.4-26.7° C TCC (ASTM D-56) **Limites d'inflammabilité :** LEL - 1.0 % UEL - 7.0 %

Matériaux d'extinction: Poudre chimique, dioxyde de carbone, mousse

Classe d'inflammabilité : DOT: Liquide inflammable

OSHA: Class 1B

Procédures spéciales de lutte contre le feu : Porter un équipement de protection incluant un appareil respiratoire autonome approuvé NIOSH. Garder à l'écart de chaleur, étincelles, équipement électrique et flamme nue. Dangers inhabituels d'incendie et explosion : Durant un incendie, des vapeurs peuvent former un mélange explosif dans l'air. Des conteneurs fermés peuvent exploser s'ils sont exposés à une chaleur intense. Les vapeurs de solvants peuvent être plus lourdes que l'air. Elles peuvent s'accumuler et suivre le sol jusqu'à une source d'inflammation avec un retour jusqu'à leur source. Refroidir les conteneurs exposés avec de l'eau. Des dépôts épais sur filtres, chiffons, etc., peuvent capter des solvants et entraîner une combustion spontanée.

### **SECTION 5:**

### HEALTH HAZARD DATA

**Routes of Entry:** Inhalation, Skin Contact, Eye Contact from Liquid and vapors, Ingestion.

### **Effects of Overexposure:**

**Inhalation** – **ACUTE:** Irritation of the nose, throat and eyes: Asthma-like breathing may be a delayed reaction. Other possible symptoms of overexposure may include headache, nausea, narcosis, fatigue and loss of appetite.

**Inhalation – CHRONIC:** Chronic exposure to solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Symptoms include loss of memory, loss of intellectual ability and loss of coordination.

**Eye Contact:** Liquid and vapors are irritating to the eyes and can cause pain, tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible.

**Skin Contact:** Repeated or prolonged skin contact can result in dry, defatted and cracked skin causing increased susceptibility to infection.

**Ingestion:** Ingestion can result in irritation in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea. Vomiting may cause aspiration resulting in chemical pneumonitis

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Asthma, other respiratory disorders (bronchitis, etc.), skin allergies, eczema. **EMERGENCY AND FIRST AID PROCEDURES:** 

Eyes: Flush eyes with clean water for at least 15 minutes. Obtain medical attention

**Skin:** Remove contaminated clothing immediately. Wash affected areas thoroughly with soap and water. Obtain medical attention if irritation develops or persists.

**Inhalation:** Remove from exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention.

**Ingestion:** DO NOT INDUCE VOMITING. Give 1-2 glasses of water to dilute. Consult a physician immediately.

### DONNÉES SUR LES RISQUES POUR LA SANTÉ

**Voies d'entrée :** Inhalation, contact avec la peau, contact avec les yeux de liquide et vapeurs, ingestion

### Effets d'une surexposition :

**Inhalation** – **AIGUË**: Irritation de nez, gorge et yeux : Une respiration de type asthmatique peut être une réaction avec retard. D'autres symptômes possibles peuvent inclure mal de tête, nausée, narcose, fatigue et perte d'appétit.

**Inhalation – CHRONIQUE :** Une exposition chronique aux solvants a été associée avec divers effets neurotoxiques dont des dommages permanents au cerveau et au système nerveux. Les symptômes incluent perte de mémoire, perte de capacité intellectuelle et perte de coordination.

Contact avec les yeux : Liquides et vapeurs dont des irritants pour les yeux et peuvent causer douleur, larmoiement, rougissement et gonflement. À défaut de soins, des dommages à la cornée peuvent arriver, et la blessure est longue à cicatriser. Cependant les dommages sont généralement réversibles.

Contact avec la peau : Un contact cutané répété ou prolongé peut amener assèchement, dégraissage et craquèlement de la peau, entraînant une sensibilité accrue aux infections.

**Ingestion :** Une ingestion peut amener une irritation de bouche, tissu stomacal et voies digestives. Les symptômes peuvent inclure irritation de gorge, douleur abdominale, nausée, vomissement et diarrhée. Le vomissement peut entraîner une aspiration causant une pneumonite chimique.

### ÉTATS MÉDICAUX AGGRAVÉS PAR UNE EXPOSITION:

Asthme, autres désordres respiratoires (bronchite, etc.), allergies cutanées, eczéma

### PROCÉDURES D'URGENCE ET DE PREMIERS SOINS :

Yeux: Rincer les yeux à l'eau propre pendant au moins 15 minutes. Obtenir une intervention médicale

**Peau :** Ôter immédiatement les vêtements contaminés. Laver les zones affectées soigneusement à l'eau et au savon. Obtenir immédiatement une intervention médicale si une irritation se développe et persiste.

**Inhalation:** Sortir du lieu d'exposition. Administrer oxygène ou respiration artificielle selon le besoin. Obtenir une intervention médicale.

**Ingestion:** NE PAS PROVOQUER LE VOMISSEMENT. Faire avaler 1-2 verres d'eau pour diluer le produit. Consulter immédiatement un médecin.

### **SECTION 6:**

### REACTIVITY DATA

Stability: This material is stable

Materials to avoid: Strong oxidizing agents. Hazardous Polymerization: Will not occur.

Decomposition Products: By high heat and fire: CO2, CO and other toxic

vapors and mist.

### DONNÉES SUR LA RÉACTIVITÉ

Stabilité: Ce matériau est stable.

Matériaux à éviter : Agents fortement oxydants. Polymérisation dangereuse : Ne se produira pas.

 $\boldsymbol{Produits}$  de décomposition : En cas de forte chaleur ou de feu : CO2, CO et

autres vapeurs et brouillards toxiques.

### ACCIDENTAL RELEASE MEASURES

### MESURES EN CAS DE DÉVERSEMENT ACCIDENTEL

**Precautions for handling and storage:** Keep from fire, sparks and open flame. Do not smoke. Keep container tightly closed. Wash thoroughly after handling.

**Other precautions:** Remove sources of ignition. Provide explosion proof ventilation and/or respiratory protection. Use non-sparking tools.

**Steps to take in case of spills:** Pick up large spills with non-sparking tools; small spills with absorbent material. Wash down area with liquid decontaminant and flush spill area with water.

**Waste Disposal Method:** If discarded this material and containers should be treated as a hazardous waste, based on the Ignitability characteristics as defined under Federal RCRA Regulations (40 CFR 261). Dispose of in accordance with local, state, and federal regulations. DO NOT INCINERATE IN CLOSED CONTAINERS.

**For further information**, contact the United States Environmental Protection Agency RCRA hotline (800) 242-9342.

**Précautions de manutention et entreposage :** Garder à l'écart de feu, étincelles et flamme nue. Ne pas fumer. Garder le conteneur bien fermé. Se laver soigneusement après manutention.

**Autres précautions :** Écarter les sources d'inflammation. Fournir une ventilation anti-déflagration et/ou une protection respiratoire. Utiliser des outils non générateurs d'étincelles.

Actions à mener en cas de déversement : Récupérer les gros déversements avec des outils non générateurs d'étincelles, et les plus réduits avec de la matière absorbante. Laver la zone du déversement avec un décontaminant liquide, et bien la rincer à l'eau.

Méthode de mise au rebut des déchets : En cas de mise au rebut, matière et conteneurs doivent être traités comme des déchets dangereux, sur la base des caractéristiques d'inflammabilité définies par les exigences fédérales RCRA (40 CFR 261). Jeter en conformité avec les réglementations locales, provinciales et nationales. NE PAS INCINÉRER DE PRODUIT DANS DES CONTENEURS FERMÉS.

**Pour plus d'informations**, contacter l'agence américaine de protection de l'environnement sur la ligne d'urgence RCRA au (800) 242-9342

### **SECTION 8:**

EPA ARCHIVE DOCUMEN

### SPECIAL PROTECTION/SAFE HANDLING INFORMATION

**Special Sensitivity:** Avoid exposing the container to high heat. This can cause sealed containers to pressurize and possibly rupture.

Handling and Storage: Keep away from heat, sparks and open flame. Ground the container during storage and transfer operations. When storing, tightly close containers to prevent moisture contamination. Do not reseal if contamination is suspected. Do not breathe vapors. Employee education and training in safe handling of this product are required under OSHA Hazard Communication Standard.

**Respiratory Protection:** Use air-purifying respirator that the respirator supplier has demonstrated to be effective for solvent vapors. Where overspray is present, or if the concentration of solvents is not known or exceeds the level at which the air purifying respirator is effective, a positive pressure air-supplied respirator (TC19C NIOSH) is recommended.

**Ventilation:** Design and maintain to provide volume and pattern to prevent vapor concentration in excess of TLV or PEL

**Protective Gloves:** Wear gloves which are recommended by glove supplier for protection against Materials in Section 2.

**Eye Protection:** Wear safety glasses with unperforated side shields.

# INFORMATIONS SUR PROTECTION SPÉCIALE/MANUTENTION SÛRE

Sensibilité spéciale : Éviter l'exposition du conteneur à une forte chaleur. Cela peut amener à une montée en pression des conteneurs hermétiques avec possible rupture.

Manutention et entreposage : À garder à l'écart de chaleur, étincelles et flamme nue. Mettre le conteneur à la terre durant l'entreposage et les opérations de transfert. Durant le stockage bien fermer les conteneurs pour éviter une contamination par l'humidité. Ne pas refermer si de la contamination est suspectée. Ne pas respirer les vapeurs. Une formation des employés et un apprentissage pour une manipulation de ce produit sont exigés par la norme OSHA de communication.

**Protection respiratoire:** Utiliser un appareil de protection respiratoire à adduction d'air filtré dont le fabricant a démontré l'efficacité pour protéger des vapeurs de solvants. S'il y a de la surpulvérisation ou si la concentration en solvants est inconnue ou dépasse le niveau pour lequel le respirateur reste efficace, il est recommandé d'utiliser un appareil respiratoire à apport d'air en pression positive (TC19C NIOSH)

**Ventilation :** Concevoir et entretenir afin de fournir volume et configuration empêchant que la concentration de vapeur dépasse les seuils de VLE ou PEL. **Gants de protection :** Porter des gants de type recommandé par leur

fournisseur pour se protéger des matières de la section 2.

**Protection des yeux :** Porter des lunettes de sécurité avec des protections latérales non perforées.

TOXICOLOGY INFORMATION INFORMAION TOXICOLOGIQUE	CAS NO.	LD50 RAT (oral)	LC50 RAT (inhalation)
Benzene	71-43-2	930 mg/kg	Not Available (Non disponible)
Ethyl Benzene	100-41-4	3500 mg/kg	Not Available
Toluene	108-88-3	636 mg kg <sup>-1</sup>	49 gm/m <sup>3</sup> (4hours)
Xylene	1330-20-7	4300 mg/kg	26800 ppm/m <sup>3</sup> /8hr
VM&P Naphtha	64742-89-8	5000 mg/kg	Not Available
Magnesium Silicate Hydrate	14807-96-6	Not Available	Not Available

### **Health Concerns:**

(Dangers pour la santé)

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats, and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

L'éthyle benzène est classé par l'IARC comme cancérigène possible pour les humains (2B), sur la base d'une évidence insuffisante pour les humains mais d'une évidence suffisante sur des animaux en laboratoire. Une exposition par inhalation à de fortes concentrations d'éthyle benzène durant toute la vie de rats et souris a entraînér l'augmentation de certains types de cancers, incluant des tumeurs rénales chez les rats, et des tumeurs du foie et des poumons chez les souris. Ces effets n'étaient pas observés sur des animaux exposés à de plus faibles concentrations. Il n'y a pas d'évidence que l'éthyle benzène cause le cancer chez l'homme.

### California Proposition 65 (Proposition 65 de Californie)

Warning: This product contains chemicals known to the state of California to cause cancer and birth defects, or other reproductive harm.

Avertissement : Ce produit contient des produits chimiques reconnus par l'état de Californie pour causer des cancers ou anomalies congénitales, ou d'autres atteintes à la reproduction.

This product contains pigments that may be classified as nuisance particles which may present hazardous levels only during sanding or abrading. Inhaling of dust may aggravate existing respiratory disorders (i.e. asthma, emphysema, bronchitis...). Inhalation of inorganic dusts has been linked to the development of Fibrotic and Benign Pneumoconiosis

Ce produit contient des pigments pouvant être classés comme poussières nuisibles, qui peuvent présenter des niveaux dangereux uniquement lors de ponçage ou abrasion. L'inhalation de ces poussières peut aggraver des troubles respiratoires existants (comme asthme, emphysème, bronchite). L'inhalation de poussières minérales a été corrélée au développement de pneumoconiose fibreuse ou bénigne. (www.bibalex.org/supercourse/supercourse/PT/32011-33001/32551.ppt)

### This product does not contain asbestos

Ce produit ne contient pas d'amiante

IARC: Ethylbenzene: Group 2B (Groupe 2B) NTP: Benzene: Listed (Cotée)

**Benzene: Group 1** (Groupe 1)

### **SECTION 10:**

PA ARCHIVE DOCUMENT

TRANSPORTATION INFORMATION	INFORMATIONS SUR LE TRANSPORT
DOT INFORMATION:	INFORMATIONS DOT:
Paint	Peinture
Consumer commodity, ORM-D	Bien de consommation, AARD
All raw materials in this product are listed on the Canadian DSL.	Toutes les matières premières contenues dans ce produit font
	Partie de la liste Canadienne DSL sur les substances
	Domestiques.

NOTE: Read MSDS completely before use and follow all label instructions.

**REMARQUE:** Lire complètement la MSDS avant utilisation et suivre les instructions de l'étiquette

The information contained in this MSDS is based on the present state of knowledge and is based on sources believed to be reliable. However, since the data safety standards and government regulations are subject to change and the conditions of handling and use or misuse are beyond our control, XIM Products makes no warranty, either express or implied, with respect to the information contained herein and disclaims all liability for reliance thereon.

Les informations contenues dans cette MSDS sont basées sur l'état actuel des connaissances, et sur des sources d'information réputées fiables. Cependant, comme les normes sur les données de sécurité et les réglementations gouvernementales sont sujettes à changements, et comme les conditions de manutention et d'utilisation ou de mésusage sont hors de notre contrôle, XIM Products ne donne aucune garantie, explicite ou implicite, à propos des informations contenues ici, et rejette toutes responsabilité quant à leur exactitude.

# **EPA ARCHIVE DOCUMENT**

# **Material Safety Data Sheet (MSDS)** Fiche technique de sécurité

### XIM 400W White Aerosol # 1102

XIM 400W Blanc Aérosol # 1102

Complies with OSHA's Hazard Communications Standard 29CFR 1910.1200

Quick Identifier, Common Name: (Used on Label and Data Sheet) Identifiant rapide, appellation commune : (utilisée sur étiquette et fiche technique)

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SUPPLIER INFORMATION:	INFORMATIONS DE FOURNISSEUR:
Manufacturer's Name: XIM Products, Inc.	Nom du fabricant: XIM Products, Inc.
Address: 1169 Bassett Road, Westlake, Ohio 44145	Adresse: 1169 Bassett Road, Westlake, Ohio 44145 USA
Emergency Calls: (800) 424-9300	<b>Appels d'urgence:</b> (800) 424-9300
<b>Information Calls:</b> (440) 871-4737	Demandes d'informations: (440) 871-4737
PRODUCT IDENTIFICATION	IDENTIFICATION DU PRODUIT

XIM 400W White Aerosol #1102 **Date Prepared:** 02/09/09 Prepared By: J.E .Jarufe **Updated:** 02/09/09

Product Class: Modified Alkyd

**HMIS Codes** Health Flammability Reactivity

XIM 400W Blanc Aérosol #1102 **Date de préparation**: 02/09/09 Préparé par: J.E .Jarufe Mise à jour: 02/09/09 Classe de produit: Modified Alkyd

HMIS Codes Santé Inflammabilité Réactivité

### **SECTION 2:** COMPOSITION/INFORMATION ON INGREDIENTS

WT%	CAS NO.	INGREDIENT	UNITS
< 0.0035	71-43-2	†Benzene	
		ACGIH TLV	0.50 ppm
		OSHA TLV	1.00 ppm
< 0.70	100-41-4	†Ethyl Benzene	
		ACGIH TLV	100 ppm
		OSHA TLV	100 ppm
< 3.00	108-65-6	Propylene Glycol Monomethyl Ether Acet	tate
		ACGIH TLV	Not Established
		OSHA PEL	Not Established
< 0.002	108-88-3	†Toluene	
		ACGIH TLV	20 ppm
		OSHA TLV	200 ppm
< 15.00	64742-89-8	VM&P Naphtha	
		ACGIH TLV	300 ppm
		OSHA PEL	400 ppm
< 6.85	1330-20-7	Xylene	
		ACGIH TLV	150 ppm
		OSHA TLV	100 ppm
< 11.00	67-64-1	Acetone	
		ACGIH TLV	750 ppm
		OSHA PEL	750 ppm
< 6.00	106-97-8	N-Butane	
		ACGIH TLV	800 ppm
		OSHA PEL	800 ppm
< 17.00	74-98-6	Propane	
		ACGIH TLV	1000 ppm
		OSHA PEL	Not Available
< 5.00	14807-96-6	Magnesium Silicate Hydrate	
		ACGIH TLV	2 mg/m <sup>3</sup> (respirable)
		OSHA TLV	2 mg/m <sup>3</sup> (Mineral Dust)

These chemicals are not added by XIM to its products. These chemicals are naturally occurring chemicals in the solvents, pigments and/or additives used by XIM and the paint industry. Ces produits chimiques ne sont pas ajoutés par XIM dans ses produits. Ils apparaissent naturellement comme dans solvants, pigments et/ou additifs utilisés par XIM et l'industrie de la peinture.

### **SECTION 3:**

PHYSICAL AND CHEMICAL PROPERTIES	PROPRIÉTÉS PHYSIQUES ET CHIMIQUES
Physical Form: Aerosol	Forme physique: Aérosol
Appearance and Odor: White color liquid, solvent odor	Apparence et odeur: Liquide blanc, odeur de solvant
<b>Boiling Range:</b> 1 – 279 ° F	Limites d'ébullition: -17.2 - 137.2 ° C
Vapor Pressure: 5585.20 mm HG @ 20 °C	Pression de vapeur: 5585.20 mm HG @ 20 °C
Vapor Density: N/A	Densité de vapeur: N/A
Evaporation Rate: 7.700 (n-butyl Acetate = 1)	Taux d'évaporation: 7.700 (n-butyl Acetate = 1)
Weight per Gallon: 7.35 lb/gal	<b>Poids par gallon:</b> 7.35 lb/gal 0.88 kg / l
Solubility in Water: Negligible	Solubilité dans l'eau: Négligeable
VOC (By Weight): < 60 %	VOC (By Weight): < 60 %
<b>MRI</b> : < 1.20	MRI: < 1.20

### FIRE AND EXPLOSION DATA

Flash Point: < -25° F TCC (ASTM D-56)
Flammability Limits: LEL - 1.0 % UEL - 7.0 %
Extinguishing Media: Dry Chemical, Carbon dioxide, Foam

Flammability Class: DOT: Aerosol Flammable

OSHA: Class 2.1

**Special Fire Fighting Procedures:** Wear protective equipment including NIOSH approved self-contained breathing apparatus. Isolate from heat, sparks, electrical equipment and open flame.

**Unusual Fire and Explosion Hazards:** During a fire, vapors may form an explosive mixture in air. Closed containers may explode when exposed to extreme heat. Solvent vapors may be heavier than air. Vapors may build up and travel along the ground to an ignition source which may result in a flash back to the source of the vapors. Cool fire exposed containers with water. Heavy build up on filters, rags, etc. Can trap solvents and result in spontaneous combustion.

### **SECTION 5:**

### HEALTH HAZARD DATA

**Routes of Entry:** Inhalation, Skin Contact, Eye Contact from Liquid and vapors, Ingestion.

### **Effects of Overexposure:**

**Inhalation** – **ACUTE:** Irritation of the nose, throat and eyes: Asthma-like breathing may be a delayed reaction. Other possible symptoms of overexposure may include headache, nausea, narcosis, fatigue and loss of appetite.

**Inhalation – CHRONIC:** Chronic exposure to solvents has been associated with various neurotoxic effects including permanent brain and nervous system damage. Symptoms include loss of memory, loss of intellectual ability and loss of coordination.

**Eye Contact:** Liquid and vapors are irritating to the eyes and can cause pain, tearing, reddening and swelling. If left untreated, corneal damage can occur and injury is slow to heal. However, damage is usually reversible.

**Skin Contact:** Repeated or prolonged skin contact can result in dry, defatted and cracked skin causing increased susceptibility to infection.

**Ingestion:** Ingestion can result in irritation in the mouth, stomach tissue and digestive tract. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea. Vomiting may cause aspiration resulting in chemical pneumonitis.

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Asthma, other respiratory disorders (bronchitis, etc.), skin allergies, eczema. **EMERGENCY AND FIRST AID PROCEDURES:** 

Eyes: Flush eyes with clean water for at least 15 minutes. Obtain medical attention.

**Skin:** Remove contaminated clothing immediately. Wash affected areas thoroughly with soap and water. Obtain medical attention if irritation develops or persists.

**Inhalation:** Remove from exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention.

**Ingestion:** DO NOT INDUCE VOMITING. Give 1-2 glasses of water to dilute. Consult a physician immediately.

### DONNÉES SUR INCENDIE ET EXPLOSION

Point d'éclair : < -31.7° C TCC (ASTM D-56) Limites d'inflammabilité : LEL - 1.0 % UEL - 7.0 %

Matériaux d'extinction: Poudre chimique, dioxyde de carbone, mousse

 $\textbf{Classe d'inflammabilit\'e: DOT}: A\'{e}rosol inflammable$ 

OSHA: Class 2.1

Procédures spéciales de lutte contre le feu : Porter un équipement de protection incluant un appareil respiratoire autonome approuvé NIOSH. Garder à l'écart de chaleur, étincelles, équipement électrique et flamme nue. Dangers inhabituels d'incendie et explosion : Durant un incendie, des vapeurs peuvent former un mélange explosif dans l'air. Des conteneurs fermés peuvent exploser s'ils sont exposés à une chaleur intense. Les vapeurs de solvants peuvent être plus lourdes que l'air. Elles peuvent s'accumuler et suivre le sol jusqu'à une source d'inflammation avec un retour jusqu'à leur source. Refroidir les conteneurs exposés avec de l'eau. Des dépôts épais sur filtres, chiffons, etc., peuvent capter des solvants et entraîner une combustion spontanée.

### DONNÉES SUR LES RISQUES POUR LA SANTÉ

Voies d'entrée : Inhalation, contact avec la peau, contact avec les yeux de liquide et vapeurs, ingestion

### **Effets d'une surexposition :**

**Inhalation** – **AIGUË**: Irritation de nez, gorge et yeux : Une respiration de type asthmatique peut être une réaction avec retard. D'autres symptômes possibles peuvent inclure mal de tête, nausée, narcose, fatigue et perte d'appétit.

**Inhalation – CHRONIQUE :** Une exposition chronique aux solvants a été associée avec divers effets neurotoxiques dont des dommages permanents au cerveau et au système nerveux. Les symptômes incluent perte de mémoire, perte de capacité intellectuelle et perte de coordination.

Contact avec les yeux : Liquides et vapeurs dont des irritants pour les yeux et peuvent causer douleur, larmoiement, rougissement et gonflement. À défaut de soins, des dommages à la cornée peuvent arriver, et la blessure est longue à cicatriser. Cependant les dommages sont généralement réversibles. Contact avec la peau : Un contact cutané répété ou prolongé peut amener assèchement, dégraissage et craquèlement de la peau, entraînant une

sensibilité accrue aux infections.

Ingestion: Une ingestion peut amener une irritation de bouche, tissu stomacal et voies digestives. Les symptômes peuvent inclure irritation de gorge, douleur abdominale, nausée, vomissement et diarrhée. Le vomissement peut entraîner une aspiration causant une pneumonite chimique.

### ÉTATS MÉDICAUX AGGRAVÉS PAR UNE EXPOSITION:

Asthme, autres désordres respiratoires (bronchite, etc.), allergies cutanées, eczéma

### PROCÉDURES D'URGENCE ET DE PREMIERS SOINS :

Yeux: Rincer les yeux à l'eau propre pendant au moins 15 minutes. Obtenir une intervention médicale

**Peau :** Ôter immédiatement les vêtements contaminés. Laver les zones affectées soigneusement à l'eau et au savon. Obtenir immédiatement une intervention médicale si une irritation se développe et persiste.

**Inhalation:** Sortir du lieu d'exposition. Administrer oxygène ou respiration artificielle selon le besoin. Obtenir une intervention médicale.

**Ingestion:** NE PAS PROVOQUER LE VOMISSEMENT. Faire avaler 1-2 verres d'eau pour diluer le produit. Consulter immédiatement un médecin.

### REACTIVITY DATA

Stability: This material is stable

**Materials to avoid:** Strong oxidizing agents. **Hazardous Polymerization:** Will not occur.

Decomposition Products: By high heat and fire: CO2, CO and other toxic

vapors and mist.

### DONNÉES SUR LA RÉACTIVITÉ

**Stabilité**: Ce matériau est stable.

Matériaux à éviter : Agents fortement oxydants. Polymérisation dangereuse : Ne se produira pas.

Produits de décomposition : En cas de forte chaleur ou de feu : CO2, CO et

autres vapeurs et brouillards toxiques.

### **SECTION 7:**

### ACCIDENTAL RELEASE MEASURES

**Precautions for handling and storage:** Keep from fire, sparks and open flame. Do not smoke. Keep container tightly closed. Wash thoroughly after handling.

**Other precautions:** Remove sources of ignition. Provide explosion proof ventilation and/or respiratory protection. Use non-sparking tools.

**Steps to take in case of spills:** Pick up large spills with non-sparking tools; small spills with absorbent material. Wash down area with liquid decontaminant and flush spill area with water.

**Waste Disposal Method:** If discarded this material and containers should be treated as a hazardous waste, based on the Ignitability characteristics as defined under Federal RCRA Regulations (40 CFR 261). Dispose of in accordance with local, state, and federal regulations. DO NOT INCINERATE IN CLOSED CONTAINERS.

**For further information**, contact the United States Environmental Protection Agency RCRA hotline (800) 242-9342.

### MESURES EN CAS DE DÉVERSEMENT ACCIDENTEL

**Précautions de manutention et entreposage :** Garder à l'écart de feu, étincelles et flamme nue. Ne pas fumer. Garder le conteneur bien fermé. Se laver soigneusement après manutention.

**Autres précautions :** Écarter les sources d'inflammation. Fournir une ventilation anti-déflagration et/ou une protection respiratoire. Utiliser des outils non générateurs d'étincelles.

Actions à mener en cas de déversement : Récupérer les gros déversements avec des outils non générateurs d'étincelles, et les plus réduits avec de la matière absorbante. Laver la zone du déversement avec un décontaminant liquide, et bien la rincer à l'eau.

Méthode de mise au rebut des déchets : En cas de mise au rebut, matière et conteneurs doivent être traités comme des déchets dangereux, sur la base des caractéristiques d'inflammabilité définies par les exigences fédérales RCRA (40 CFR 261). Jeter en conformité avec les réglementations locales, provinciales et nationales. NE PAS INCINÉRER DE PRODUIT DANS DES CONTENEURS FERMÉS.

**Pour plus d'informations**, contacter l'agence américaine de protection de l'environnement sur la ligne d'urgence RCRA au (800) 242-9342

### **SECTION 8:**

### SPECIAL PROTECTION/SAFE HANDLING INFORMATION

**Special Sensitivity:** Avoid exposing the container to high heat. This can cause sealed containers to pressurize and possibly rupture.

**Handling and Storage:** Keep away from heat, sparks and open flame. Ground the container during storage and transfer operations. When storing, tightly close containers to prevent moisture contamination. Do not reseal if contamination is suspected. Do not breathe vapors. Employee education and training in safe handling of this product are required under OSHA Hazard Communication Standard.

**Respiratory Protection:** Use air-purifying respirator that the respirator supplier has demonstrated to be effective for solvent vapors. Where overspray is present, or if the concentration of solvents is not known or exceeds the level at which the air purifying respirator is effective, a positive pressure air-supplied respirator (TC19C NIOSH) is recommended.

**Ventilation:** Design and maintain to provide volume and pattern to prevent vapor concentration in excess of TLV or PEL

**Protective Gloves:** Wear gloves which are recommended by glove supplier for protection against Materials in Section 2.

**Eye Protection:** Wear safety glasses with unperforated side shields.

# INFORMATIONS SUR PROTECTION SPÉCIALE/MANUTENTION SÛRE

Sensibilité spéciale : Éviter l'exposition du conteneur à une forte chaleur. Cela peut amener à une montée en pression des conteneurs hermétiques avec possible rupture.

Manutention et entreposage: À garder à l'écart de chaleur, étincelles et flamme nue. Mettre le conteneur à la terre durant l'entreposage et les opérations de transfert. Durant le stockage bien fermer les conteneurs pour éviter une contamination par l'humidité. Ne pas refermer si de la contamination est suspectée. Ne pas respirer les vapeurs. Une formation des employés et un apprentissage pour une manipulation de ce produit sont exigés par la norme OSHA de communication.

**Protection respiratoire:** Utiliser un appareil de protection respiratoire à adduction d'air filtré dont le fabricant a démontré l'efficacité pour protéger des vapeurs de solvants. S'il y a de la surpulvérisation ou si la concentration en solvants est inconnue ou dépasse le niveau pour lequel le respirateur reste efficace, il est recommandé d'utiliser un appareil respiratoire à apport d'air en pression positive (TC19C NIOSH)

**Ventilation :** Concevoir et entretenir afin de fournir volume et configuration empêchant que la concentration de vapeur dépasse les seuils de VLE ou PEL.

Gants de protection: Porter des gants de type recommandé par leur fournisseur pour se protéger des matières de la section 2.

**Protection des yeux :** Porter des lunettes de sécurité avec des protections latérales non perforées.

		or 110 <b>-</b>	111111 100 11 214110 1101 0501 11 1102		
TOXICOLOGY INFORMATION					
INFORMAION TOXICOLOGIQUE	CAS NO.	LD50 RAT (oral)	LC50 RAT (inhalation)		
Benzene	71-43-2	930 mg/kg	Not Available (Non disponible)		
Ethyl Benzene	100-41-4	3500 mg/kg	Not Available		
Propylene Glycol Monomethyl Ether Acet	ate 108-65-6	10,000 mg/kg	4345 ppm (6 hours)		
Toluene	108-88-3	636 mg kg <sup>-1</sup>	49 gm/m <sup>3</sup> (4hours)		
VM&P Naphtha	64742-89-8	5000 mg/kg	Not Available		
Xylene	1330-20-7	4300 mg/kg	26800 ppm/m <sup>3</sup> /8hr		
Acetone	67-64-1	5800 mg/kg	$50100 \text{ mg/m}^3/8\text{hr}$		
N-Butane	160-97-8	Not Available	$658000 \text{ mg/m}^3$		
Propane	74-98-6	Not Available	Not Available		
Magnesium Silicate Hydrate	14807-96-6	Not Available	Not Available		

### **Health Concerns:**

(Dangers pour la santé)

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats, and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

L'éthyle benzène est classé par l'IARC comme cancérigène possible pour les humains (2B), sur la base d'une évidence insuffisante pour les humains mais d'une évidence suffisante sur des animaux en laboratoire. Une exposition par inhalation à de fortes concentrations d'éthyle benzène durant toute la vie de rats et souris a entraînér l'augmentation de certains types de cancers, incluant des tumeurs rénales chez les rats, et des tumeurs du foie et des poumons chez les souris. Ces effets n'étaient pas observés sur des animaux exposés à de plus faibles concentrations. Il n'y a pas d'évidence que l'éthyle benzène cause le cancer chez l'homme.

This product contains pigments that may be classified as nuisance particles which may present hazardous levels only during sanding or abrading. Inhaling of dust may aggravate existing respiratory disorders (i.e. asthma, emphysema, bronchitis...). Inhalation of inorganic dusts has been linked to the development of Fibrotic and Benign Pneumoconiosis

Ce produit contient des pigments pouvant être classés comme poussières nuisibles, qui peuvent présenter des niveaux dangereux uniquement lors de ponçage ou abrasion. L'inhalation de ces poussières peut aggraver des troubles respiratoires existants (comme asthme, emphysème, bronchite). L'inhalation de poussières minérales a été corrélée au développement de pneumoconiose fibreuse ou bénigne. (www.bibalex.org/supercourse/supercourse/PT/32011-33001/32551.ppt)

This product does not contain asbestos (Ce produit ne contient pas d'amiante.)

California Proposition 65 (Proposition 65 de Californie)

Warning: This product contains chemicals known to the state of California to cause cancer and birth defects, or other reproductive harm.

Avertissement : Ce produit contient des produits chimiques reconnus par l'état de Californie pour causer des cancers ou anomalies congénitales, ou d'autres atteintes à la reproduction.

IARC: Ethylbenzene: Group 2B (Groupe 2B) NTP: Benzene: Listed (Cotée)

**Benzene: Group 1** (Groupe 1)

### **SECTION 10:**

TRANSPORTATION INFORMATION	INFORMATIONS SUR LE TRANSPORT
DOT INFORMATION:	INFORMATIONS DOT:
Aerosol	Aérosol
Consumer Commodity, ORM-D, UN1950	Bien de consommation, AARD, UN1950
All raw materials in this product are listed on the Canadian DSL.	Toutes les matières premières contenues dans ce produit font
	Partie de la liste Canadienne DSL sur les substances
	Domestiques.

 ${\it NOTE:}\ {\it Read\ MSDS}\ {\it completely}\ {\it before}\ {\it use}\ {\it and}\ {\it follow}\ {\it all}\ {\it label}\ {\it instructions.}$ 

**REMARQUE**: Lire complètement la MSDS avant utilisation et suivre les instructions de l'étiquette

The information contained in this MSDS is based on the present state of knowledge and is based on sources believed to be reliable. However, since the data safety standards and government regulations are subject to change and the conditions of handling and use or misuse are beyond our control, XIM Products makes no warranty, either express or implied, with respect to the information contained herein and disclaims all liability for reliance thereon.

Les informations contenues dans cette MSDS sont basées sur l'état actuel des connaissances, et sur des sources d'information réputées fiables. Cependant, comme les normes sur les données de sécurité et les réglementations gouvernementales sont sujettes à changements, et comme les conditions de manutention et d'utilisation ou de mésusage sont hors de notre contrôle, XIM Products ne donne aucune garantie, explicite ou implicite, à propos des informations contenues ici, et rejette toutes responsabilité quant à leur exactitude.

### **MATERIAL SAFETY DATA SHEET**

**P831274 04 00 DATE OF PREPARATION**Feb 28, 2009

### SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NUMBER

P831274

### **PRODUCT NAME**

CRYSTAL™ Clear and Natural Finish, Gloss Finish

### **MANUFACTURER'S NAME**

FABULON PRODUCTS 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

relephone Humbers and Websites		
Regulatory Information	(216) 566-2902	
	www.paintdocs.com	
Medical Emergency	(216) 566-2917	
Transportation Emergency*	(800) 424-9300	
*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident		

### SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
1	95-63-6	1,2,4-Trimethylbenzene		
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
4	107-98-2	1-Methoxy-2-propanol		
		ACGIH TLV	100 PPM	10.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
2	34590-94-8	2-Methoxymethylethoxyp	oropanol	
		ACGIH TLV	100 PPM (Skin)	0.4 mm
		ACGIH TLV	150 PPM (Skin) STEL	
		OSHA PEL	100 PPM (Skin)	
		OSHA PEL	150 PPM (Skin) STEL	
1	872-50-4	1-Methyl-2-Pyrrolidone		
		ACGIH TLV	Not Available	1 mm
		OSHA PEL	Not Available	

### **SECTION 3 — HAZARDS IDENTIFICATION**

### **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE** 

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

In a confined area vapors in high concentration may cause headache, nausea or dizziness.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary and reproductive systems.

### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

### CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

HMIS Codes
Health 2
Flammability 0
Reactivity 0

### **SECTION 4 — FIRST AID MEASURES**

**EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

INGESTION: Do not induce vomiting. Get medical attention immediately.

### **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL FLAMMABILITY CLASSIFICATION

Not Applicable N.A. N.A. Not Applicable

**EXTINGUISHING MEDIA** 

Carbon Dioxide, Dry Chemical, Alcohol Foam

### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode (due to the build-up of pressure) when exposed to extreme heat.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

### SECTION 6 — ACCIDENTAL RELEASE MEASURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- · Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

### **SECTION 7 — HANDLING AND STORAGE**

### STORAGE CATEGORY

Not Applicable

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

### SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

### PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

### **SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

 PRODUCT WEIGHT
 8.52 lb/gal
 1021 g/l

 SPECIFIC GRAVITY
 1.03

 BOILING POINT
 212 - 396° F
 100 - 202° C

MELTING POINT Not Available

**VOLATILE VOLUME** 73%

EVAPORATION RATE Slower than ether VAPOR DENSITY Heavier than air

SOLUBILITY IN WATER N.A.

**pH** 8.5

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

2.64lb/gal 316g/l Less Water and Federally Exempt Solvents

1.06lb/gal 127g/l Emitted VOC

### **SECTION 10 — STABILITY AND REACTIVITY**

STABILITY — Stable CONDITIONS TO AVOID

None known.

**INCOMPATIBILITY** 

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

### **SECTION 11 — TOXICOLOGICAL INFORMATION**

### **CHRONIC HEALTH HAZARDS**

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

### **TOXICOLOGY DATA**

Ingredient Name				
1,2,4-Trimethylbenzene				
LC50 RAT	4HR	Not Available		
LD50 RAT		Not Available		
1-Methoxy-2-propanol				
LC50 RAT	4HR	Not Available		
LD50 RAT		6600. mg/kg		
2-Methoxymethylethoxypropanol				
LC50 RAT	4HR	Not Available		
LD50 RAT		5135 mg/kg		
1-Methyl-2-Pyrrolidone				
LC50 RAT	4HR	Not Available		
LD50 RAT		4200 mg/kg		
	1,2,4-Trimethylbenzene  LC50 RAT LD50 RAT  1-Methoxy-2-propanol  LC50 RAT LD50 RAT  LD50 RAT  LD50 RAT  LD50 RAT  1-Methoxymethylethoxypropanol  LC50 RAT LD50 RAT  LD50 RAT  LD50 RAT  LC50 RAT  LC50 RAT	1,2,4-Trimethylbenzene  LC50 RAT LD50 RAT  1-Methoxy-2-propanol  LC50 RAT LD50 RAT LD50 RAT LD50 RAT LC50 RAT L	1,2,4-Trimethylbenzene       LC50 RAT LD50 RAT LD50 RAT Not Available Not Available         1-Methoxy-2-propanol       LC50 RAT LD50 RAT LD50 RAT G600. mg/kg         2-Methoxymethylethoxypropanol LC50 RAT LD50 RAT LD50 RAT LD50 RAT S135 mg/kg       4HR Not Available S135 mg/kg         1-Methyl-2-Pyrrolidone       LC50 RAT LD50 RAT LD	

### **SECTION 12 — ECOLOGICAL INFORMATION**

### **ECOTOXICOLOGICAL INFORMATION**

No data available.

### **SECTION 13 — DISPOSAL CONSIDERATIONS**

### **WASTE DISPOSAL METHOD**

Waste from this product is not hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

### **SECTION 14 — TRANSPORT INFORMATION**

**US Ground (DOT)** 

Not Regulated for Transportation.

Canada (TDG)

Not Regulated for Transportation.

### IMO

Not Regulated for Transportation.

### **SECTION 15 — REGULATORY INFORMATION**

### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
95-63-6	1,2,4-Trimethylbenzene	1	
872-50-4	1-Methyl-2-Pyrrolidone	1	

### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **TSCA CERTIFICATION** 

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

### **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# Material Safety Data Sheet

24 Hour Assistance: 1-847-367-7700 Rust-Oleum Corp. www.rustoleum.com

# Section 1 - Chemical Product / Company Information

Rust-Oleum High Performance Industrial

Product Name: Enamel Aerosol Topcoats (Hard Hat) Revision Date: 04/05/2006

V2123838, V2134838, V2147838, V2155838, V2156838, V2167838, V2170838, V2171838, V2174838, V2175838, V2178838, V2183838, V2184838, V2184848,  V2184848, , V21848484, V21848484, V21848484, V21848484, V218484848, V21848484, , V21848484, V21848484, V21848484, V21848484, V21848484, V218484844, V218484844, V218484844, V2184844, V2184844, V2184844, V2184844, V2184844, V2184844, V2184844, V2184844, V2184844, V21848

Identification V2183838, V2184838, V2188838, V2184838, V2125838, V2133838, V2137838, V2137838, V2143838, V2143838, V2148838, V2163838, V2164838, V2164838, V2163838, V2164838, V2164848, V2164848, V2164848, V216488, V2164884, V2

V2177838, V2187838, V2190838, V2192838, V2196838, 209567

Product Use/Class: Topcoats/Aerosol

Supplier: Rust-Oleum Corporation Manufacturer: Rust-Oleum Corporation

11 Hawthorn Parkway
Vernon Hills, IL 60061

11 Hawthorn Parkway
Vernon Hills, IL 60061

USA USA

Preparer: Regulatory Department

# Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Tha	n ACGIH TLV-TWA	<b>ACGIH TLV-STEL</b>	OSHA PEL-TWA	OSHA PEL-CEILING
Acetone	67-64-1	30.0	500 PPM	750 PPM	750 PPM	N.E.
Liquefied Petroleum Gas	68476-86-8	30.0	1000 PPM	N.E.	1000 PPM	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	10 mg/m3	N.E.
Magnesium Silicate	14807-96-6	15.0	10 mg/m3	N.E.	15 mg/m3	N.E.
N-Butyl Acetate	123-86-4	10.0	150 PPM	200 PPM	150 PPM	N.E.
Xylene	1330 -20-7	10.0	100 PPM	150 PPM	100 PPM	N.E.
Methyl Ethyl Ketone	78-93-3	10.0	200 PPM	300 PPM	200 PPM	N.E.
Stoddard Solvents	8052 -41 -3	5.0	100 PPM	N.E.	500 PPM	N.E.
Ethylene Glycol Monobutyl Ethe	r 111-76 <i>-</i> 2	5.0	20 PPM	N.E.	50 PPM	N.E.
Toluene	108-88-3	5.0	50 PPM	150 PPM	200 PPM	300 PPM
Ethylbenzene	100-41 -4	5.0	100 PPM	125 PPM	100 PPM	N.E.
Aromatic Hydrocarbon	64742-95-6	5.0	N.E.	N.E.	N.E.	N.E.
1,2,4-Trimethylbenzene	95-63-6	5.0	25 PPM	N.E.	N.E.	N.E.
Pigment Black 7	1333 -86-4	5.0	3.5 mg/m3	N.E.	3.5 mg/m3	N.E.
Pigment Yellow 17	4531 -49-1	5.0	2 mg/m3	N.E.	5 mg/m3	N.E.
Pigment Violet 32	12225-08-0	1.0	N.E.	N.E.	N.E.	N.E.
Pigment Red 122	980-26-7	1.0	15mg/m3	N.E.	5mg/m3	N.E.

# Section 3 - Hazards Identification

\*\*\* Emergency Overview \*\*\*: Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Vapors may cause flash fire or explosion. Extremely flammable liquid and vapor. Contents Under Pressure. Harmful if swallowed.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: May be harmful if absorbed through skin. Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). May cause central nervous system disorder (e,g.,narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. Overexposure to toluene in laboratory animals has been associated with liver abnormalities, kidney, lung and spleen damage. Effects in humans have included liver and cardiac abnormalities. Overexposure to methyl ethyl ketone in laboratory animals has been associated with liver abnormalities, kidney and lung damage. Fetotoxic/embryotoxic effects from inhalation have been seen in rats exposed to >1000ppm during gestation.

Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hampster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

### Section 4 - First Aid Measures

First Aid - Eye Contact: Hold eyelids apart and flush with plenty of water for at least 15 minutes. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

# Section 5 - Fire Fighting Measures

Flash Point: -156 F LOWER EXPLOSIVE LIMIT: 0.7 % (Setaflash) UPPER EXPLOSIVE LIMIT: 32.5 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID

AND VAPOR! Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

# Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

# Section 7 - Handling And Storage

Handling: Use only in a well-ventilated area. Avoid breathing vapor or mist. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Wash thoroughly after handling. Wash hands before eating.

Storage: Contents under pressure. Do not expose to heat or store above 120 ° F. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

# Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use explosion-proof ventilation equipment.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

# **Section 9 - Physical And Chemical Properties**

Boiling Range: -34 - 900 F Vapor Density: Heavier than Air

Odor: Solvent-like Odor Threshold: ND

Appearance: Liquid Evaporation Rate: Faster than Ether

Solubility in H2O: Slight

Freeze Point: ND Specific Gravity: 0.8660 Vapor Pressure: ND PH: ND

Physical State: Liquid

(See section 16 for abbreviation legend)

# Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

## Section 11 - Toxicological Information

Product LD50: ND Product LC50: ND

 Chemical Name
 LD50
 LC50

 Acetone
 N.D.
 N.D.

 Liquefied Petroleum Gas
 N.D.
 N.D.

 Titanium Dioxide
 >7500 mg/kg (ORAL, RAT)
 N.D.

Magnesium Silicate

N.D.

TCLo:11mg/m3 inh.

N-Butyl Acetate

13100 mg/kg (ORAL, RAT)

2000 PPM (INH 4 Hr, RAT)

Xylene N.D. N.D.
Methyl Ethyl Ketone N.D. N.D.
Stoddard Solvents N.D. N.D.

Ethylene Glycol Monobutyl Ether 1519 mg/kg (ORAL, MOUSE)700 PPM (INH 7 Hr, RAT)

Toluene N.D. N.D. Ethylbenzene 3500 mg/kg (ORAL, RAT) N.D. Aromatic Hydrocarbon N.D. N.D. N.D.

1,2,4-Trimethylbenzene N.D. 18000 mg/m3 (RAT, 4 HR)

Pigment Black 7 >8000 mg/kg (ORAL, RAT) N.D.
Pigment Violet 32 >10000 mg/kg (ORAL, RAT) N.D.
Pigment Red 122 N.D.
N.D.

# Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

## Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do

# Section 14 - Transportation Information

DOT Proper Shipping Name: Aerosol Packing Group: --DOT Technical Name: --DOT Hazard Class: 2.1 Resp. Guide Page: 126

DOT UN/NA Number: UN1950

# Section 15 - Regulatory Information

### **CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

### **SARA Section 313:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS Number</u>
Xylene	1330-20-7
Methyl Ethyl Ketone	78-93-3
Ethylene Glycol Monobutyl Ether	111-76-2
Toluene	108-88-3
Ethylbenzene	100-41-4
1,2,4-Trimethylbenzene	95-63-6

### **Toxic Substances Control Act:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None known

# U.S. State Regulations: As follows -

### **New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

Chemical NameCAS NumberAlkyd ResinMIXTURE

### Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name
Alkyd Resin
Barium Sulfate
Calcium Carbonate
Yellow Iron Oxide

### **California Proposition 65:**

WARNING! This product contains a chemical(s) known by the State of California to cause cancer.

WARNING! This product contains a chemical(s) known to the state of California to cause birth defects or other reproductive harm.

**CAS Number** 

MIXTURE

7727-43-7

1317-65-3

51274-00-1

International Regulations: As follows -

### **CANADIAN WHMIS:**

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5, D2A, D2B

# Section 16 - Other Information

**HMIS Ratings:** 

Health: 2 Flammability: 4 Reactivity: 0 Personal Protection: X

### **VOLATILE ORGANIC COMPOUNDS, g/I:**

### **REASON FOR REVISION:**

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

# Material Safety Data Sheet

24 Hour Assistance: 1-847-367-7700 Rust-Oleum Corp. www.rustoleum.com

# Section 1 - Chemical Product / Company Information

Rust-Oleum High Performance Industrial

Product Name: Enamel Aerosol Topcoats (Hard Hat) Revision Date: 04/05/2006

V2123838, V2134838, V2147838, V2155838, V2156838, V2167838, V2170838, V2171838, V2174838, V2175838, V2178838, V2183838, V2184838, V2184848,  V2184848, , V21848484, V21848484, V21848484, V21848484, V218484848, V21848484, , V21848484, V21848484, V21848484, V21848484, V21848484, V218484844, V218484844, V218484844, V2184844, V2184844, V2184844, V2184844, V2184844, V2184844, V2184844, V2184844, V2184844, V21848

Identification V2183838, V2184838, V2188838, V2184838, V2125838, V2133838, V2137838, V2137838, V2143838, V2143838, V2148838, V2163838, V2164838, V2164838, V2163838, V2164838, V2164848, V2164848, V2164848, V2164848, V216488, V2164884, V2

V2177838, V2187838, V2190838, V2192838, V2196838, 209567

Product Use/Class: Topcoats/Aerosol

Supplier: Rust-Oleum Corporation Manufacturer: Rust-Oleum Corporation

11 Hawthorn Parkway
Vernon Hills, IL 60061

11 Hawthorn Parkway
Vernon Hills, IL 60061

USA USA

Preparer: Regulatory Department

# Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Tha	n ACGIH TLV-TWA	<b>ACGIH TLV-STEL</b>	OSHA PEL-TWA	OSHA PEL-CEILING
Acetone	67-64-1	30.0	500 PPM	750 PPM	750 PPM	N.E.
Liquefied Petroleum Gas	68476-86-8	30.0	1000 PPM	N.E.	1000 PPM	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	10 mg/m3	N.E.
Magnesium Silicate	14807-96-6	15.0	10 mg/m3	N.E.	15 mg/m3	N.E.
N-Butyl Acetate	123-86-4	10.0	150 PPM	200 PPM	150 PPM	N.E.
Xylene	1330 -20-7	10.0	100 PPM	150 PPM	100 PPM	N.E.
Methyl Ethyl Ketone	78-93-3	10.0	200 PPM	300 PPM	200 PPM	N.E.
Stoddard Solvents	8052 -41 -3	5.0	100 PPM	N.E.	500 PPM	N.E.
Ethylene Glycol Monobutyl Ethe	r 111-76 <i>-</i> 2	5.0	20 PPM	N.E.	50 PPM	N.E.
Toluene	108-88-3	5.0	50 PPM	150 PPM	200 PPM	300 PPM
Ethylbenzene	100-41 -4	5.0	100 PPM	125 PPM	100 PPM	N.E.
Aromatic Hydrocarbon	64742-95-6	5.0	N.E.	N.E.	N.E.	N.E.
1,2,4-Trimethylbenzene	95-63-6	5.0	25 PPM	N.E.	N.E.	N.E.
Pigment Black 7	1333 -86-4	5.0	3.5 mg/m3	N.E.	3.5 mg/m3	N.E.
Pigment Yellow 17	4531 -49-1	5.0	2 mg/m3	N.E.	5 mg/m3	N.E.
Pigment Violet 32	12225-08-0	1.0	N.E.	N.E.	N.E.	N.E.
Pigment Red 122	980-26-7	1.0	15mg/m3	N.E.	5mg/m3	N.E.

# Section 3 - Hazards Identification

\*\*\* Emergency Overview \*\*\*: Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Vapors may cause flash fire or explosion. Extremely flammable liquid and vapor. Contents Under Pressure. Harmful if swallowed.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: May be harmful if absorbed through skin. Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). May cause central nervous system disorder (e,g.,narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. Overexposure to toluene in laboratory animals has been associated with liver abnormalities, kidney, lung and spleen damage. Effects in humans have included liver and cardiac abnormalities. Overexposure to methyl ethyl ketone in laboratory animals has been associated with liver abnormalities, kidney and lung damage. Fetotoxic/embryotoxic effects from inhalation have been seen in rats exposed to >1000ppm during gestation.

Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hampster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

### Section 4 - First Aid Measures

First Aid - Eye Contact: Hold eyelids apart and flush with plenty of water for at least 15 minutes. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

# Section 5 - Fire Fighting Measures

Flash Point: -156 F LOWER EXPLOSIVE LIMIT: 0.7 % (Setaflash) UPPER EXPLOSIVE LIMIT: 32.5 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID

AND VAPOR! Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

# Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

# Section 7 - Handling And Storage

Handling: Use only in a well-ventilated area. Avoid breathing vapor or mist. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Wash thoroughly after handling. Wash hands before eating.

Storage: Contents under pressure. Do not expose to heat or store above 120 ° F. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

# Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use explosion-proof ventilation equipment.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

# **Section 9 - Physical And Chemical Properties**

Boiling Range: -34 - 900 F Vapor Density: Heavier than Air

Odor: Solvent-like Odor Threshold: ND

Appearance: Liquid Evaporation Rate: Faster than Ether

Solubility in H2O: Slight

Freeze Point: ND Specific Gravity: 0.8660 Vapor Pressure: ND PH: ND

Physical State: Liquid

(See section 16 for abbreviation legend)

# Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

## Section 11 - Toxicological Information

Product LD50: ND Product LC50: ND

 Chemical Name
 LD50
 LC50

 Acetone
 N.D.
 N.D.

 Liquefied Petroleum Gas
 N.D.
 N.D.

 Titanium Dioxide
 >7500 mg/kg (ORAL, RAT)
 N.D.

Magnesium Silicate

N.D.

TCLo:11mg/m3 inh.

N-Butyl Acetate

13100 mg/kg (ORAL, RAT)

2000 PPM (INH 4 Hr, RAT)

Xylene N.D. N.D.
Methyl Ethyl Ketone N.D. N.D.
Stoddard Solvents N.D. N.D.

Ethylene Glycol Monobutyl Ether 1519 mg/kg (ORAL, MOUSE)700 PPM (INH 7 Hr, RAT)

Toluene N.D. N.D. Ethylbenzene 3500 mg/kg (ORAL, RAT) N.D. Aromatic Hydrocarbon N.D. N.D. N.D.

1,2,4-Trimethylbenzene N.D. 18000 mg/m3 (RAT, 4 HR)

Pigment Black 7 >8000 mg/kg (ORAL, RAT) N.D.
Pigment Violet 32 >10000 mg/kg (ORAL, RAT) N.D.
Pigment Red 122 N.D.
N.D.

# Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

## Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do

# Section 14 - Transportation Information

DOT Proper Shipping Name: Aerosol Packing Group: --DOT Technical Name: --DOT Hazard Class: 2.1 Resp. Guide Page: 126

DOT UN/NA Number: UN1950

# Section 15 - Regulatory Information

### **CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

### **SARA Section 313:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS Number</u>
Xylene	1330-20-7
Methyl Ethyl Ketone	78-93-3
Ethylene Glycol Monobutyl Ether	111-76-2
Toluene	108-88-3
Ethylbenzene	100-41-4
1,2,4-Trimethylbenzene	95-63-6

### **Toxic Substances Control Act:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None known

# U.S. State Regulations: As follows -

### **New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

Chemical NameCAS NumberAlkyd ResinMIXTURE

### Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name
Alkyd Resin
Barium Sulfate
Calcium Carbonate
Yellow Iron Oxide

### **California Proposition 65:**

WARNING! This product contains a chemical(s) known by the State of California to cause cancer.

WARNING! This product contains a chemical(s) known to the state of California to cause birth defects or other reproductive harm.

**CAS Number** 

MIXTURE

7727-43-7

1317-65-3

51274-00-1

International Regulations: As follows -

### **CANADIAN WHMIS:**

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5, D2A, D2B

# Section 16 - Other Information

**HMIS Ratings:** 

Health: 2 Flammability: 4 Reactivity: 0 Personal Protection: X

### **VOLATILE ORGANIC COMPOUNDS, g/I:**

### **REASON FOR REVISION:**

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

# Material Safety Data Sheet

24 Hour Assistance: 1-847-367-7700 Rust-Oleum Corp. www.rustoleum.com

# Section 1 - Chemical Product / Company Information

Product Name: Rust-Oleum Professional High

Performance Enamel Aerosol

7524838, 7527838, 7533838, 7538838,

239107, 239108, 239109, 239110,

239111, 239112

Product Use/Class: Topcoats/Aerosol

Supplier: Rust-Oleum Corporation

11 Hawthorn Parkway Vernon Hills, IL 60061

USA

Preparer: Regulatory Department

Revision Date: 06/02/2006

Manufacturer: Rust-Oleum Corporation

11 Hawthorn Parkway Vernon Hills, IL 60061

USA

# Section 2 - Composition / Information On Ingredients

Chemical Name	<b>CAS Number</b>	Weight % Less Tha	n ACGIH TLV-TWA	<b>ACGIH TLV-STEL</b>	OSHA PEL-TWA	OSHA PEL-CEILING
Magnesium Silicate	14807-96-6	40.0	10 mg/m3	N.E.	15 mg/m3	N.E.
Acetone	67-64-1	30.0	500 PPM	750 PPM	750 PPM	N.E.
Liquefied Petroleum Gas	68476-86-8	30.0	1000 PPM	N.E.	1000 PPM	N.E.
Xylene	1330-20-7	25.0	100 PPM	150 PPM	100 PPM	N.E.
Alkyd Resin	NOT AVAILABLE	E 25.0	N.E.	N.E.	N.E.	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	10 mg/m3	N.E.
N-Butyl Acetate	123-86-4	10.0	150 PPM	200 PPM	150 PPM	N.E.
Methyl Ethyl Ketone	78-93-3	10.0	200 PPM	300 PPM	200 PPM	N.E.
Ethylbenzene	100-41-4	10.0	100 PPM	125 PPM	100 PPM	N.E.
Toluene	108-88-3	5.0	50 PPM	150 PPM	200 PPM	300 PPM
Ethylene Glycol Monobutyl Ethe	er 111-76-2	5.0	20 PPM	N.E.	50 PPM	N.E.
Pigment Black 7	1333-86-4	5.0	3.5 mg/m3	N.E.	3.5 mg/m3	N.E.
Stoddard Solvents	8052-41-3	5.0	100 PPM	N.E.	500 PPM	N.E.
Aromatic Hydrocarbon	64742-95-6	5.0	N.E.	N.E.	N.E.	N.E.
1,2,4-Trimethylbenzene	95-63-6	5.0	25 PPM	N.E.	N.E.	N.E.
Chlorite	14998-27-7	5.0	N.E.	N.E.	N.E.	N.E.
Pigment Yellow 17	4531-49-1	5.0	2 mg/m3	N.E.	5 mg/m3	N.E.

### Section 3 - Hazards Identification

\*\*\* Emergency Overview \*\*\*: Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Vapors may cause flash fire or explosion. Extremely flammable liquid and vapor. Contents Under Pressure. Harmful if swallowed.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: May be harmful if absorbed through skin. Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). May cause central nervous system disorder (e,g.,narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. Overexposure to toluene in laboratory animals has been associated with liver abnormalities, kidney, lung and spleen damage. Effects in humans have included liver and cardiac abnormalities. Overexposure to methyl ethyl ketone in laboratory animals has been associated with liver abnormalities, kidney and lung damage. Fetotoxic/embryotoxic effects from inhalation have been seen in rats exposed to >1000ppm during gestation.

Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hampster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

### Section 4 - First Aid Measures

First Aid - Eye Contact: Hold eyelids apart and flush with plenty of water for at least 15 minutes. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

# Section 5 - Fire Fighting Measures

Flash Point: -156 F LOWER EXPLOSIVE LIMIT: 0.7 % (Setaflash) UPPER EXPLOSIVE LIMIT: 32.5 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the

pressurized container may cause bursting of the can.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

### Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

# Section 7 - Handling And Storage

Handling: Use only in a well-ventilated area. Avoid breathing vapor or mist. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Wash thoroughly after handling. Wash hands before eating.

Storage: Contents under pressure. Do not expose to heat or store above 120 ° F. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

# Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use explosion-proof ventilation equipment.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

# **Section 9 - Physical And Chemical Properties**

Slight

Solubility in H2O:

Boiling Range: -34 - 900 F Vapor Density: Heavier than air

Odor: Solvent Like Odor Threshold: N

Appearance: Liquid Evaporation Rate: Faster than Ether

Freeze Point: ND Specific Gravity:

Vapor Pressure: PH: NE

Physical State: Liquid

(See section 16 for abbreviation legend)

## **Section 10 - Stability And Reactivity**

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

# **Section 11 - Toxicological Information**

Product LD50: ND Product LC50: ND

Chemical Name	<u>LD50</u>	<u>LC50</u>
Magnesium Silicate	N.D.	TCLo:11mg/m3 inh.
Acetone	N.D.	N.D.
Liquefied Petroleum Gas	N.D.	N.D.
Xylene	N.D.	N.D.
Alkyd Resin	N.D.	N.D.
Titanium Dioxide	>7500 mg/kg (ORAL, RAT)	N.D.
N-Butyl Acetate	13100 mg/kg (ORAL, RAT)	2000 PPM (INH 4 Hr, RAT)
Methyl Ethyl Ketone	N.D.	N.D.
Ethylbenzene	3500 mg/kg (ORAL, RAT)	N.D.
Toluene	N.D.	N.D.
Ethylene Glycol Monobutyl Ether	1519 mg/kg (ORAL, MOUSE	E)700 PPM (INH 7 Hr, RAT)
Pigment Black 7	>8000 mg/kg (ORAL, RAT)	N.D.
Stoddard Solvents	N.D.	N.D.
Aromatic Hydrocarbon	N.D.	N.D.
1,2,4-Trimethylbenzene	N.D.	18000 mg/m3 (RAT, 4 HR)
Chlorite	N.D.	N.D.
Pigment Yellow 17	N.D.	N.D.

# Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

### Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

# EPA ARCHIVE DOCUMENT

# Section 14 - Transportation Information

DOT Proper Shipping Name: Aerosol Packing Group: --DOT Technical Name: --DOT Hazard Class: 2.1 Packing Group: --Resp. Guide Page: 126

DOT UN/NA Number: UN1950

# Section 15 - Regulatory Information

### **CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

### SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	CAS Number
Xylene	1330-20-7
Methyl Ethyl Ketone	78-93-3
Ethylbenzene	100-41-4
Toluene	108-88-3
Ethylene Glycol Monobutyl Ether	111-76-2
1,2,4-Trimethylbenzene	95-63-6

### **Toxic Substances Control Act:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None known

### U.S. State Regulations: As follows -

### **New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

none

### Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name
Alkyd Resin

MIXTURE

#### **California Proposition 65:**

WARNING! This product contains a chemical(s) known by the State of California to cause cancer.

WARNING! This product contains a chemical(s) known to the state of California to cause birth defects or other reproductive harm.

International Regulations: As follows -

#### **CANADIAN WHMIS:**

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5, D2A, D2B

# Section 16 - Other Information

**HMIS Ratings:** 

Health: 2\* Flammability: 4 Reactivity: 0 Personal Protection: X

## **VOLATILE ORGANIC COMPOUNDS, g/I:**

## **REASON FOR REVISION:**

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

# Material Safety Data Sheet

24 Hour Assistance: 1-847-367-7700 Rust-Oleum Corp. www.rustoleum.com

# Section 1 - Chemical Product / Company Information

Product Name: Rust-Oleum Professional High

Performance Enamel Aerosol

Revision Date: 02/23/2009

7524838, 7527838, 7533838, 7538838,

7548838, 7555838, 7564838, 7565838, 7570838, 7578838, 7579838, 7581838, 7587838, 7592838, 239107, 239108,

239109, 239110, 239111, 239112

Product Use/Class: Topcoat/Aerosols

Identification

Number:

Supplier: Rust-Oleum Corporation

11 Hawthorn Parkway Vernon Hills, IL 60061

USA

Preparer: Regulatory Department

Manufacturer: Rust-Oleum Corporation

11 Hawthorn Parkway Vernon Hills, IL 60061

USA

# Section 2 - Composition / Information On Ingredients

Chemical Name	<b>CAS Number</b>	Weight % Less Tha	an ACGIH TLV-TWA	<b>ACGIH TLV-STEL</b>	OSHA PEL-TWA	OSHA PEL-CEILING
Magnesium Silicate	14807-96-6	40.0	10 mg/m3	N.E.	15 mg/m3	N.E.
Acetone	67-64-1	30.0	500 ppm	750 ppm	750 ppm	N.E.
Liquefied Petroleum Gas	68476-86-8	30.0	1000 ppm	N.E.	1000 ppm	N.E.
Xylene	1330 -20-7	25.0	100 ppm	150 ppm	100 ppm	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	10 mg/m3	N.E.
n-Butyl Acetate	123-86-4	10.0	150 ppm	200 ppm	150 ppm	N.E.
Methyl Ethyl Ketone	78-93-3	10.0	200 ppm	300 ppm	200 ppm	N.E.
Ethylbenzene	100-41-4	10.0	100 ppm	125 ppm	100 ppm	N.E.
Toluene	108-88-3	5.0	20 ppm	150 ppm	200 ppm	300 ppm
Ethylene Glycol Monobutyl Ethe	er 111-76-2	5.0	20 ppm	N.E.	50 ppm	N.E.
Pigment Black 7	1333 -86-4	5.0	3.5 mg/m3	N.E.	3.5 mg/m3	N.E.
Stoddard Solvents	8052 -41 -3	5.0	100 ppm	N.E.	500 ppm	N.E.
Aromatic Hydrocarbon	64742-95-6	5.0	N.E.	N.E.	N.E.	N.E.
1,2,4-Trimethylbenzene	95-63-6	5.0	25 ppm	N.E.	N.E.	N.E.
Chlorite	14998-27-7	5.0	N.E.	N.E.	N.E.	N.E.
Pigment Yellow 17	4531 -49-1	5.0	2 mg/m3	N.E.	5 mg/m3	N.E.
Quartz (Crystalline Silica)	14808-60-7	1.0	0.025 mg/m3	N.E.	0.10 mg/m3	N.E.

## Section 3 - Hazards Identification

\*\*\* Emergency Overview \*\*\*: Contains Aromatic Distillate, which may cause cancer. Contents Under Pressure. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Harmful if swallowed. Extremely flammable liquid and vapor. Vapors may cause flash fire or explosion.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: May be harmful if absorbed through skin. Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs.

Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing vapors or mists.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of Titanium Dioxide in the formula.

May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. Overexposure to toluene in laboratory animals has been associated with liver abnormalities, kidney, lung and spleen damage. Effects in humans have included liver and cardiac abnormalities. Overexposure to methyl ethyl ketone in laboratory animals has been associated with liver abnormalities, kidney and lung damage. Fetotoxic/embryotoxic effects from inhalation have been seen in rats exposed to >1000ppm during gestation.

Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hamster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula. Contains crystalline silica as silicon dioxide. Excessive inhalation of respirable crystalline silica dust may cause lung disease, silicosis or lung cancer. Significant exposure is not anticipated during brush or trowel application or drying. Risk of overexposure depends on the duration and level of exposure to dust from repeated sanding of surfaces, mechanical abrasion or spray mist and actual concentration of crystalline silica in the formula. Crystalline silica is listed as Group 1 "carcinogenic to humans" by the International Agency for Research on Cancer (IARC,) and Group 2, "reasonably anticipated to be a carcinogen" by the National Toxicology Program (NTP)

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

# Section 4 - First Aid Measures

First Aid - Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

# Section 5 - Fire Fighting Measures

Flash Point: -156 F LOWER EXPLOSIVE LIMIT: 0.7 % (Setaflash) UPPER EXPLOSIVE LIMIT: 32.5 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: Water spray may be ineffective. FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

## Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

# Section 7 - Handling And Storage

Handling: Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing vapor or mist. Wash thoroughly after handling. Use only in a well-ventilated area. Wash hands before eating.

Storage: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Contents under pressure. Do not expose to heat or store above 120 ° F.

# Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

## **Section 9 - Physical And Chemical Properties**

Boiling Range: -34 - 900 F Vapor Density: Heavier than air

Odor: Solvent Like Odor Threshold: N.E.

Appearance: Liquid Evaporation Rate: Faster than Ether

Solubility in H2O: Slight

Freeze Point: N.D. Specific Gravity: N.A. Vapor Pressure: N.D. PH: N.A.

Physical State: Liquid

(See section 16 for abbreviation legend)

## **Section 10 - Stability And Reactivity**

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. By open flame, carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

## **Section 11 - Toxicological Information**

Product LD50: N.D. Product LC50: N.D.

Chemical Name LD50 LC50

Magnesium Silicate

N.E.

TCLo: 11 mg/m3 (Inhalation)
5800 mg/kg (Rat)

50100 mg/m3 (Rat, 8Hr)

Liquefied Petroleum Gas N.E. N.E.

Xylene 4300 mg/kg (Rat, Oral) 5000 ppm (Rat, Inhalation, 4Hr)

Titanium Dioxide >7500 mg/kg (Rat, Oral) N.E.

n-Butyl Acetate 13100 mg/kg (Rat, Oral) 2000 ppm (Rat, Inhalation, 4 Hr)

Methyl Ethyl Ketone N.E. N.E. Ethylbenzene 3500 mg/kg (Rat, Oral) N.E.

Toluene 636 mg/kg (Rat, Oral) >26700 ppm (Rat, Inhalation, 1Hr) Ethylene Glycol Monobutyl Ether 1519 mg/kg (Mouse, Oral) 700 ppm (Rat, Inhalation, 7Hr)

Pigment Black 7 >8000 mg/kg (Rat, Oral) N.E. Stoddard Solvents N.E. N.E. Aromatic Hydrocarbon N.E. N.E. N.E.

1,2,4-Trimethylbenzene N.E. 18000 mg/m3 (Rat, 4Hr)

Chlorite N.E. N.E.
Pigment Yellow 17 N.E.
Quartz (Crystalline Silica) N.E.
N.E.
N.E.

## Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

## Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

## Section 14 - Transportation Information

DOT Proper Shipping Name:AerosolPacking Group:N.A.DOT Technical Name:N.A.Hazard Subclass:N.A.DOT Hazard Class:2.1Resp. Guide Page:126

DOT UN/NA Number: UN1950

# Section 15 - Regulatory Information

#### **CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD, PRESSURIZED GAS HAZARD

#### SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS Number</u>
Xylene	1330-20-7
Methyl Ethyl Ketone	78-93-3
Ethylbenzene	100-41-4
Toluene	108-88-3
Ethylene Glycol Monobutyl Ether	111-76-2
1 2 4-Trimethylhenzene	95-63-6

#### **Toxic Substances Control Act:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None known

## U.S. State Regulations: As follows -

#### **New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

Chemical Name CAS Number

Alkyd Resin PROPRIETARY

#### Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name
Alkyd Resin
Alkyd Resin
Calcium Carbonate
Barium Sulfate

CAS Number PROPRIETARY PROPRIETARY 1317-65-3 7727-43-7

#### **California Proposition 65:**

WARNING! This product contains a chemical(s) known by the State of California to cause cancer.

WARNING! This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

International Regulations: As follows -

#### **CANADIAN WHMIS:**

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5, D2A, D2B

# Section 16 - Other Information

**HMIS Ratings:** 

Health: 2\* Flammability: 4 Reactivity: 0 Personal Protection: X

#### **REASON FOR REVISION:**

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

# Material Safety Data Sheet

24 Hour Assistance: 1-847-367-7700 Rust-Oleum Corp. www.rustoleum.com

# Section 1 - Chemical Product / Company Information

Product Name: Rust-Oleum Professional Oil Based

Enamels - Topcoats

7738402, 7765402, 7775402, 7727402,

Identification 7748402, 7770402, 7776402, 7779300, 7779402, 7781402, 7786402, 7790402, 7792300, 7792402, 7771402, 239076,

239094, 239078

Product Use/Class: Topcoat/Alkyd

Supplier: Rust-Oleum Corporation Mar

11 Hawthorn Parkway Vernon Hills, IL 60061

USA

Preparer: Regulatory Department

Manufacturer: Rust-Oleum Corporation

Revision Date: 11/13/2007

11 Hawthorn Parkway Vernon Hills, IL 60061

USA

# Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Tha	n ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING
Stoddard Solvents	8052 -41 -3	50.0	100 PPM	N.E.	500 PPM	N.E.
Titanium Dioxide	13463-67-7	25.0	10 mg/m3	N.E.	10 mg/m3	N.E.
Calcined Aluminum Silicate	1332 -58-7	20.0	2 mg/m3	N.E.	5 mg/m3	N.E.
Magnesium Silicate	14807-96-6	15.0	10 mg/m3	N.E.	15 mg/m3	N.E.
Pigment Black 7	1333 -86-4	5.0	3.5 mg/m3	N.E.	3.5 mg/m3	N.E.
Microcrystalline Silica	14808-60-7	1.0	0.025 mg/m3	N.E.	0.10 mg/m3	N.E.
Ethylbenzene	100-41 -4	1.0	100 PPM	125 PPM	100 PPM	N.E.

## Section 3 - Hazards Identification

\*\*\* Emergency Overview \*\*\*: Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Harmful if swallowed. Causes eye irritation. Vapors irritating to eyes and respiratory tract. Combustible liquid and vapor.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: May cause skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. May cause headaches and dizziness. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of Titanium Dioxide in the formula.

IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hampster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula. Contains crystalline silica as silicon dioxide. Excessive inhalation of respirable crystalline silica dust may cause lung disease, silicosis or lung cancer. Significant exposure is not anticipated during brush or trowel application or drying. Risk of overexposure depends on the duration and level of exposure to dust from repeated sanding of surfaces, mechanical abrasion or spray mist and actual concentration of crystalline silica in the formula. Crystalline silica is listed as Group 1 "carcinogenic to humans" by the International Agency for Research on Cancer (IARC,) and Group 2, "reasonably anticipated to be a carcinogen" by the National Toxicology Program (NTP)

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

## Section 4 - First Aid Measures

First Aid - Eye Contact: Hold eyelids apart and flush with plenty of water for at least 15 minutes. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

# Section 5 - Fire Fighting Measures

Flash Point: 104 F LOWER EXPLOSIVE LIMIT: 0.7 % (Setaflash) UPPER EXPLOSIVE LIMIT : 22.0 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: Keep containers tightly closed.

Special Firefighting Procedures: Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. Evacuate area and fight fire from a safe distance.

## Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

11/13/2007

# Section 7 - Handling And Storage

Handling: Wash hands before eating. Wash thoroughly after handling. Avoid breathing vapor or mist. Avoid contact with eyes. Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

Storage: Keep container closed when not in use. Keep away from heat, sparks, flame and sources of ignition. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

## Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

## **Section 9 - Physical And Chemical Properties**

Boiling Range: 176 - 900 F Vapor Density: Heavier than air

Odor: Solvent Like Odor Threshold: NE

Appearance: Liquid Evaporation Rate: Slower than Ether

Solubility in H2O: Slight

Freeze Point: ND Specific Gravity: 1.2100
Vapor Pressure: ND PH: NE

Physical State: Liquid

(See section 16 for abbreviation legend)

## Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. By open flame, carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

## **Section 11 - Toxicological Information**

Product LD50: ND Product LC50: ND

**Chemical Name** LD50 LC50 Stoddard Solvents N.D. N.D. Titanium Dioxide >7500 mg/kg (ORAL, RAT)N.D. Calcined Aluminum Silicate 5000 mg/kg (ORAL RAT) N.D. Magnesium Silicate TCLo:11mg/m3 inh. >8000 mg/kg (ORAL, RAT)N.D. Pigment Black 7 Microcrystalline Silica N.D. N.D. Ethylbenzene 3500 mg/kg (ORAL, RAT) N.D.

## Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

## Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

## Section 14 - Transportation Information

DOT Proper Shipping Name: Paint Packing Group: III

DOT Technical Name: --- Hazard Subclass: --
DOT Hazard Class: 3 Resp. Guide Page: 128

DOT UN/NA Number: UN1263

# Section 15 - Regulatory Information

#### **CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

## SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical NameCAS NumberEthylbenzene100-41-4

#### **Toxic Substances Control Act:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None known

## U.S. State Regulations: As follows -

#### **New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

Chemical NameCAS NumberCalcium Carbonate1317-65-3Alkyd ResinPROPRIETARYAlkyd ResinPROPRIETARY

#### Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

 Chemical Name
 CAS Number

 Calcium Carbonate
 1317-65-3

 Alkyd Resin
 PROPRIETARY

 Alkyd Resin
 PROPRIETARY

 Pigment Yellow 74
 6358-31-2

 Yellow Iron Oxide
 51274-00-1

#### **California Proposition 65:**

WARNING! This product contains a chemical(s) known by the State of California to cause cancer.

WARNING! This product contains a chemical(s) known to the state of California to cause birth defects or other reproductive harm.

International Regulations: As follows -

#### **CANADIAN WHMIS:**

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: B3 D2A D2B

## Section 16 - Other Information

**HMIS Ratings:** 

Health: 2\* Flammability: 2 Reactivity: 0 Personal Protection: X

VOLATILE ORGANIC COMPOUNDS, g/I: <450

**REASON FOR REVISION:** Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

# Material Safety Data Sheet

24 Hour Assistance: 1-847-367-7700 Rust-Oleum Corp. www.rustoleum.com

# Section 1 - Chemical Product / Company Information

Product Name: Rust-Oleum Industrial Epoxy Primers Revision Date: 08/16/2006

Identification US0360407 US0391399 US

Number: HS9369407, HS9381388, HS9381407

Product Use/Class: Primer/High Solids Epoxy

Supplier: Rust-Oleum Corporation Manufacturer: Rust-Oleum Corporation

11 Hawthorn Parkway
Vernon Hills, IL 60061
Vernon Hills, IL 60061

USA

USA
Preparer: Regulatory Department

# Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Tha	nACGIH TLV-TWA	<b>ACGIH TLV-STE</b>	LOSHA PEL-TWA	OSHA PEL-CEILING
Xylene	1330-20-7	15.0	100 PPM	150 PPM	100 PPM	N.E.
Tremolite (nonasbestiform)	14567-73-8	15.0	N.E.	N.E.	N.E.	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	10 mg/m3	N.E.
Serpentine	12135-86-3	10.0	N.E.	N.E.	N.E.	N.E.
Propylene Glycol Monomethyl Eth	er107-98-2	5.0	100 PPM	150 PPM	100PPM-NIOSH	N.E.
Methyl Isobutyl Ketone	108-10-1	5.0	50 PPM	75 PPM	100 PPM	N.E.
Ethylbenzene	100-41-4	5.0	100 PPM	125 PPM	100 PPM	N.E.
Calcium Silicate	13983-17-0	5.0	10 MG/M3	N.E.	N.E.	N.E.
Anthophylite (nonasbestiform)	17068-78-9	5.0	N.E.	N.E.	N.E.	N.E.

# Section 3 - Hazards Identification

\*\*\* Emergency Overview \*\*\*: High vapor concentrations can irritate eyes, nose and respiratory passages. Causes nose and throat irritation. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Flammable liquid and vapor. Harmful if inhaled. Harmful if swallowed. Causes eye irritation. Causes skin irritation.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: May cause skin sensitization, an allergic reaction, which becomes evident on re-exposure to this material. Causes skin irritation. Allergic reactions are possible. Prolonged or repeated skin contact may cause irritation.

Effects Of Overexposure - Inhalation: Prolonged or excessive inhalation may cause respiratory tract irritation. High vapor concentrations are irritating to the eyes, nose, throat and lungs. May cause headaches and dizziness. Avoid breathing vapors or mists. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Harmful if swallowed. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. Contains Calcium Silicate (Wollastonite), which is an IARC 3 Agent "unclassifiable as to carcinogenicity to humans" via inhalation. Inhalation exposure to Calcium Silicate is not anticipated through brush application nor normal use. Calcium Silicate is NOT classified as a carcinogen by NIOSH, ACGIH, NTP nor OSHA.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

## Section 4 - First Aid Measures

First Aid - Eye Contact: Hold eyelids apart and flush with plenty of water for at least 15 minutes. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately. Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention. If swallowed, do not induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

# Section 5 - Fire Fighting Measures

Flash Point: 73 F LOWER EXPLOSIVE LIMIT: 1.0 % (Setaflash) UPPER EXPLOSIVE LIMIT : 12.6 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: Isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode when exposed to extreme heat due to buildup of steam. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion.

## Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Eliminate all ignition sources; use explosion-proof equipment. Place material in a container and dispose of according to local, provincial, state and federal regulations. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust.

# Section 7 - Handling And Storage

Handling: Use only in a well-ventilated area. Use with adequate ventilation. Wash hands before eating. Remove contaminated clothing and launder before reuse. Wash thoroughly after handling. Follow all MSDS/label

precautions even after container is emptied because it may retain product residues. Avoid prolonged or repeated contact with skin.

Storage: Keep away from heat, sparks, flame and sources of ignition. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Keep container closed when not in use.

## Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Respiratory Protection: A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin Protection: Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further guidance on types of personal protective equipment and their applications. Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking. Remove contaminated clothing immediately and launder before reuse.

# Section 9 - Physical And Chemical Properties

Boiling Range: 212 - 999 F Vapor Density: Heavier than air

Odor: Solvent Like Odor Threshold: ND

Appearance: Liquid Evaporation Rate: Slower than Ether

Solubility in H2O: Slight

Freeze Point: ND Specific Gravity: 1.4900 Vapor Pressure: PH: NE

Physical State: Liquid

(See section 16 for abbreviation legend)

## Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid all possible sources of ignition. Avoid contact with strong acid and strong bases.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. Contains solvents which may form carbon monoxide, carbon dioxide, and formaldehyde By open flame, carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: May form peroxides of unkown stability This product is stable under normal storage conditions.

## Section 11 - Toxicological Information

Product LD50: ND Product LC50: ND

**Chemical Name LD50 LC50** Xvlene N.D. N.D. Tremolite (nonasbestiform) N.D. N.D. **Titanium Dioxide** >7500 mg/kg (ORAL, RAT)N.D. Serpentine N.D. N.D. Propylene Glycol Monomethyl Ether 7200 mg/kg (ORAL, RAT) N.D. Methyl Isobutyl Ketone N.D. Ethylbenzene 3500 mg/kg (ORAL, RAT) N.D. Calcium Silicate N.D. Anthophylite (nonasbestiform) N.D.

# Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components. Product is a mixture of listed components.

## Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

## Section 14 - Transportation Information

DOT Proper Shipping Name: Paint Packing Group: III

DOT Technical Name: --- Hazard Subclass: --
DOT Hazard Class: 3 Resp. Guide Page: 128

DOT UN/NA Number: UN1263

# Section 15 - Regulatory Information

#### **CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

#### SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number
Xylene	1330-20-7
Methyl Isobutyl Ketone	108-10-1
Ethylbenzene	100-41-4

#### **Toxic Substances Control Act:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None known

## U.S. State Regulations: As follows -

#### **New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

Chemical NameCAS NumberEpoxy Resin25036-25-3Magnesium SilicateMIXTURE

#### Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical NameCAS NumberEpoxy Resin25036-25-3Magnesium SilicateMIXTURERed Iron Oxide1332-37-2Barium Sulfate7727-43-7

### **California Proposition 65:**

WARNING! This product contains a chemical(s) known by the State of California to cause cancer.

These products contain no known chemicals known by the State of California to cause birth defects or other reproductive harm.

## International Regulations: As follows -

## **CANADIAN WHMIS:**

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

#### CANADIAN WHMIS CLASS: B2 D2A D2B

## Section 16 - Other Information

**HMIS Ratings:** 

Health: 2\* Flammability: 3 Reactivity: 0 Personal Protection: X

**VOLATILE ORGANIC COMPOUNDS, g/I: ---**

**REASON FOR REVISION:** 

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

# Material Safety Data Sheet

24 Hour Assistance: 1-847-367-7700 Rust-Oleum Corp. www.rustoleum.com

# Section 1 - Chemical Product / Company Information

Product Name: Rust-Oleum High Performance

Industrial High Gloss Urethane Revision Date: 05/17/2006

Identification 9425402, 9465402, 9479402, 9483402,

Vernon Hills, IL 60061

Number: 9492300, 9492402

Product Use/Class: Topcoat/High Gloss Polyurethane

Supplier: Rust-Oleum Corporation Manufacturer: Rust-Oleum Corporation
11 Hawthorn Parkway 11 Hawthorn Parkway

11 Hawthorn Parkway Vernon Hills, IL 60061

USA

USA

Preparer: Regulatory Department

# Section 2 - Composition / Information On Ingredients

Chemical Name	<b>CAS Numbe</b>	r Weight % Less Tha	nACGIH TLV-TWA	ACGIH TLV-STEI	OSHA PEL-TWA
Titanium Dioxide	13463-67-7	40.0	10 mg/m3	N.E.	10 mg/m3
Propylene Glycol Monomethyl Ether Acetate	108-65-6	15.0	N.E.	N.E.	30 p.p.m. (Supplier recommendation
Xylene	1330 -20-7	15.0	100 PPM	150 PPM	100 PPM
Methyl Ethyl Ketone	78 -93 - 3	10.0	200 PPM	300 PPM	200 PPM
Methyl Isoamyl Ketone	110-12-3	10.0	50 PPM	N.E.	50 PPM
Pigment Black 7	1333 -86-4	10.0	3.5 mg/m3	N.E.	3.5 mg/m3
Ethyl 3-Ethoxypropionate	763-69-9	5.0	N.E.	N.E.	N.E.
Ethylbenzene	100-41-4	5.0	100 PPM	125 PPM	100 PPM

## Section 3 - Hazards Identification

\*\*\* Emergency Overview \*\*\*: High vapor concentrations can irritate eyes, nose and respiratory passages. Causes nose and throat irritation. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Flammable liquid and vapor. Harmful if swallowed. Causes eye irritation.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: Prolonged or repeated skin contact may cause irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. May cause headaches and dizziness. Avoid breathing vapors or mists. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage.

Overexposure to methyl ethyl ketone in laboratory animals has been associated with liver abnormalities, kidney and lung damage. Fetotoxic/embryotoxic effects from inhalation have been seen in rats exposed to >1000ppm during gestation.

Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hampster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Govermental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

## Section 4 - First Aid Measures

First Aid - Eye Contact: Hold eyelids apart and flush with plenty of water for at least 15 minutes. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

# Section 5 - Fire Fighting Measures

Flash Point: 50 F LOWER EXPLOSIVE LIMIT: 0.6 % (Setaflash) UPPER EXPLOSIVE LIMIT : 13.1 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Isolate from heat, electrical equipment, sparks and open flame.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion.

## Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Eliminate all ignition sources; use explosion-proof equipment. Place material in a container and dispose of according to local, provincial, state and federal regulations.

# Section 7 - Handling And Storage

Handling: Use with adequate ventilation. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Wash thoroughly after handling. Wash hands before eating.

Storage: Keep container closed when not in use. Keep away from heat, sparks, flame and sources of ignition. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

## Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

## **Section 9 - Physical And Chemical Properties**

Boiling Range: 51 - 900 F Vapor Density: Heavier than air

Odor: Solvent Like Odor Threshold: ND

Appearance: Liquid Evaporation Rate: Slower than Ether

Solubility in H2O: Slight

Freeze Point: ND Specific Gravity: 1,4500 Vapor Pressure: PH: NE

Physical State: Liquid

(See section 16 for abbreviation legend)

# Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

## **Section 11 - Toxicological Information**

Product LD50: ND Product LC50: ND

Chemical NameLD50LC50Titanium Dioxide>7500 mg/kg (ORAL, RAT) N.D.Propylene Glycol Monomethyl Ether Acetate>10000 mg/kg (ORAL, RAT) N.D.XyleneN.D.N.D.Methyl Ethyl KetoneN.D.N.D.

Methyl Isoamyl Ketone 5700 mg/kg (ORAL, RAT) 3813 PPM (INH 6 Hr, RAT)

Pigment Black 7 >8000 mg/kg (ORAL, RAT) N.D.

Ethyl 3-Ethoxypropionate 4.3 g/kg (ORAL, RAT) >1000 PPM (6 HR INH, RAT)

Ethylbenzene 3500 mg/kg (ORAL, RAT) N.D.

## Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

## Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

# Section 14 - Transportation Information

DOT Proper Shipping Name: Paint Packing Group: II

DOT Technical Name: --- Hazard Subclass: --
DOT Hazard Class: 3 Resp. Guide Page: 128

DOT UN/NA Number: UN1263

# Section 15 - Regulatory Information

#### **CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

#### SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

 Chemical Name
 CAS Number

 Xylene
 1330-20-7

 Methyl Ethyl Ketone
 78-93-3

 Ethylbenzene
 100-41-4

#### **Toxic Substances Control Act:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None known

## U.S. State Regulations: As follows -

#### **New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

<u>Chemical Name</u>
Polyester Resin Solution

CAS Number
PROPRIETARY

#### Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name.CAS NumberPolyester Resin SolutionPROPRIETARYPigment Red 1702786-76-7Reactive DiluentMIXTURERed Iron Oxide1332-37-2

#### **California Proposition 65:**

WARNING! This product contains a chemical(s) known by the State of California to cause cancer.

These products contain no known chemicals known by the State of California to cause birth defects or other reproductive harm.

International Regulations: As follows -

#### **CANADIAN WHMIS:**

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: B2, D2B

# Section 16 - Other Information

**HMIS Ratings:** 

Health: 2\* Flammability: 3 Reactivity: 0 Personal Protection: X

**VOLATILE ORGANIC COMPOUNDS, g/I:** 

**REASON FOR REVISION:** 

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

## **MATERIAL SAFETY DATA SHEET**

B50W100 **DATE OF PREPARATION** 05 00 Feb 21, 2009

#### SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

#### **PRODUCT NUMBER**

B50W100

#### **PRODUCT NAME**

OPTI-BOND™ Multi-Surface Coating, White

#### **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

Product Information	www.sherwin-williams.com	
Regulatory Information	(216) 566-2902	
	www.paintdocs.com	
Medical Emergency	(216) 566-2917	
Transportation Emergency*	(800) 424-9300	
*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)		

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
19	64742-88-7	Mineral Spirits		
		ACGIH TLV	100 PPM	2 mm
		OSHA PEL	100 PPM	
0.2	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
13	14807-96-6	Talc		
		ACGIH TLV	2 mg/m3 as Resp. Dust	
		OSHA PEL	2 mg/m3 as Resp. Dust	
18	65997-15-1	Portland Cement		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	
12	471-34-1	Calcium Carbonate		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	15 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	
17	13463-67-7	Titanium Dioxide		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

### **SECTION 3 — HAZARDS IDENTIFICATION**

### **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE** 

EYES: Causes burns. SKIN: Causes burns.

**INHALATION:** Irritation of the upper respiratory system.

**HMIS Codes** Health 2\* Flammability Reactivity

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death. Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver and urinary systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

#### **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention IMMEDIATELY.

**SKIN:** Wash affected area thoroughly with soap and water.

If irritation persists or occurs later, get medical attention. Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

**FLASH POINT**104° F PMCC
1.0

LEL
UEL
FLAMMABILITY CLASSIFICATION
Combustible, Flash above 99 and below 200° F

#### **EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

#### **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- · Remove all sources of ignition. Ventilate the area.
- · Remove with inert absorbent.

#### **SECTION 7 — HANDLING AND STORAGE**

#### STORAGE CATEGORY

DOL Storage Class II

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

#### SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Do not get in eyes or on skin. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

#### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

#### PROTECTIVE GLOVES

To prevent skin contact, wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### **EYE PROTECTION**

To prevent eye contact, wear safety spectacles with unperforated sideshields.

#### OTHER PROTECTIVE EQUIPMENT

Use barrier cream on exposed skin.

#### **OTHER PRECAUTIONS**

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

#### **SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

PRODUCT WEIGHT 13.15 lb/gal

SPECIFIC GRAVITY 1.58 **BOILING POINT** 300 - 395° F

1575 g/l 148 - 201° C

**MELTING POINT** Not Available

**VOLATILE VOLUME** 41%

**EVAPORATION RATE** Slower than ether **VAPOR DENSITY** Heavier than air

SOLUBILITY IN WATER N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

2.66lb/gal 319g/l Less Water and Federally Exempt Solvents

2.66lb/gal 319g/l **Emitted VOC** 

#### SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable **CONDITIONS TO AVOID** 

None known.

**INCOMPATIBILITY** 

None known.

**HAZARDOUS DECOMPOSITION PRODUCTS** 

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION** 

Will not occur

#### **SECTION 11 — TOXICOLOGICAL INFORMATION**

### **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint.'

#### **TOXICOLOGY DATA**

Ingredient Name				
Mineral Spirits				
•	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
Ethylbenzene				
•	LC50 RAT	4HR	Not Available	
	LD50 RAT		3500 mg/kg	
Talc				
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
Portland Cement				
	LC50 RAT	4HR	Not Available	
	LD50 RAT		599.9 mg/kg	
Calcium Carbonate				
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
Titanium Dioxide				
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
	Mineral Spirits  Ethylbenzene  Talc  Portland Cement  Calcium Carbonate	Mineral Spirits	Mineral Spirits	LC50 RAT

#### **SECTION 12 — ECOLOGICAL INFORMATION**

#### **ECOTOXICOLOGICAL INFORMATION**

No data available.

#### **SECTION 13 — DISPOSAL CONSIDERATIONS**

#### **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

#### **SECTION 14 — TRANSPORT INFORMATION**

#### **US Ground (DOT)**

May be Classed as a Combustible Liquid for U.S. Ground.

UN1263, PAINT, 3, PG III, (ERG#128)

#### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

#### Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT, COMBUSTIBLE LIQUID, PG III, (ERG#128)

#### Canada (TDG)

May be Classed as a Combustible Liquid for Canadian Ground.

UN1263, PAINT, CLASS 3, PG III, (ERG#128)

#### IMC

UN1263, PAINT, CLASS 3, PG III, (40 C c.c.), EmS F-E, S-E

#### **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.1	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

#### **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

## **MATERIAL SAFETY DATA SHEET**

**B54W101 38 00 DATE OF PREPARATION**Feb 21, 2009

#### SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

#### **PRODUCT NUMBER**

B54W101

#### **PRODUCT NAME**

Industrial Enamel, Pure White

#### **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

Product Information	www.sherwin-williams.com	
Regulatory Information	(216) 566-2902	
	www.paintdocs.com	
Medical Emergency	(216) 566-2917	
Transportation Emergency*	(800) 424-9300	
*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)		

#### SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
39	64742-88-7	Mineral Spirits		
		ACGIH TLV	100 PPM	2 mm
		OSHA PEL	100 PPM	
0.1	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
5	14807-96-6	Talc		
		ACGIH TLV	2 mg/m3 as Resp. Dust	
		OSHA PEL	2 mg/m3 as Resp. Dust	
15	13463-67-7	Titanium Dioxide		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

#### **SECTION 3 — HAZARDS IDENTIFICATION**

#### **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

#### **EFFECTS OF OVEREXPOSURE**

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death. Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver and urinary systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists. Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

HMIS Codes

Health 2\*

Flammability 2
Reactivity 0

#### **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

INGESTION: Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL FLAMMABILITY CLASSIFICATION

101° F PMCC 1.0 6.0 Combustible, Flash above 99 and below 200° F

**EXTINGUISHING MEDIA** 

Carbon Dioxide, Dry Chemical, Foam

#### UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

#### **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- · Remove with inert absorbent.

#### SECTION 7 — HANDLING AND STORAGE

#### STORAGE CATEGORY

DOL Storage Class II

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

## SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

#### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

## PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

#### **OTHER PRECAUTIONS**

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

#### **SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

 PRODUCT WEIGHT
 8.83 lb/gal
 1057 g/l

 SPECIFIC GRAVITY
 1.06

 BOILING POINT
 300 - 395° F
 148 - 201° C

**BOILING POINT** 300 - 395° F **MELTING POINT** Not Available

**VOLATILE VOLUME** 57%

EVAPORATION RATE Slower than ether VAPOR DENSITY Heavier than air

SOLUBILITY IN WATER N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

3.67lb/gal 440g/l Less Water and Federally Exempt Solvents

3.67lb/gal 440g/l Emitted VOC

#### **SECTION 10 — STABILITY AND REACTIVITY**

STABILITY — Stable CONDITIONS TO AVOID

None known.

**INCOMPATIBILITY** 

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

#### SECTION 11 — TOXICOLOGICAL INFORMATION

#### **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name				
64742-88-7	Mineral Spirits				
	•	LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
100-41-4	Ethylbenzene				
	•	LC50 RAT	4HR	Not Available	
		LD50 RAT		3500 mg/kg	
14807-96-6	Talc				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
13463-67-7	Titanium Dioxide				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	

#### **SECTION 12 — ECOLOGICAL INFORMATION**

#### **ECOTOXICOLOGICAL INFORMATION**

No data available.

#### **SECTION 13 — DISPOSAL CONSIDERATIONS**

#### **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

#### **SECTION 14 — TRANSPORT INFORMATION**

#### **US Ground (DOT)**

May be Classed as a Combustible Liquid for U.S. Ground.

UN1263, PAINT, 3, PG III, (ERG#128)

#### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

#### Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT, COMBUSTIBLE LIQUID, PG III, (ERG#128)

#### Canada (TDG)

May be Classed as a Combustible Liquid for Canadian Ground.

UN1263, PAINT, CLASS 3, PG III, (ERG#128)

IMC

UN1263, PAINT, CLASS 3, PG III, (38 C c.c.), EmS F-E, S-E

#### **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.1	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

#### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

#### **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

## **MATERIAL SAFETY DATA SHEET**

**B62WZ113 O7 00**DATE OF PREPARATION

Mar 5, 2009

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

## PRODUCT NUMBER

B62WZ113

#### **PRODUCT NAME**

TILE-CLAD® HS High Solids Epoxy (Part A), Deep Base

#### MANUFACTURER'S NAME

THE SHERWIN-WILLIAMS COMPANY 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

Product Information	www.sherwin-williams.com
Regulatory Information	(216) 566-2902
	www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
*for Chemical Emergency ONLY (spi	ill, leak, fire, exposure, or accident)

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight CAS Number		Ingredient	Units	Vapor Pressure	
2	100-41-4	Ethylbenzene		-	
_		ACGIH TLV	100 PPM	7.1 mm	
		ACGIH TLV	125 PPM STEL		
		OSHA PEL	100 PPM		
		OSHA PEL	125 PPM STEL		
11	1330-20-7	Xylene			
		ACGIH TLV	100 PPM	5.9 mm	
		ACGIH TLV	150 PPM STEL		
		OSHA PEL	100 PPM		
		OSHA PEL	150 PPM STEL		
2	64742-95-6	Light Aromatic Hydrocarbons			
		ACGIH TLV	Not Available	3.8 mm	
		OSHA PEL	Not Available		
3	95-63-6	1,2,4-Trimethylbenzene			
		ACGIH TLV	25 PPM	2.03 mm	
		OSHA PEL	25 PPM		
1	71-36-3	1-Butanol			
		ACGIH TLV	20 PPM	5.5 mm	
		OSHA PEL	50 PPM (Skin) CEILING		
5	107-98-2	1-Methoxy-2-propanol			
		ACGIH TLV	100 PPM	10.9 mm	
		ACGIH TLV	150 PPM STEL		
		OSHA PEL	100 PPM		
		OSHA PEL	150 PPM STEL		
3	111-76-2	2-Butoxyethanol			
		ACGIH TLV	20 PPM	0.88 mm	
		OSHA PEL	25 PPM		
28	68410-23-1	Polyamide			
		ACGIH TLV	Not Available		
		OSHA PEL	Not Available		
7	14807-96-6	Talc			
		ACGIH TLV	2 mg/m3 as Resp. Dust		
		OSHA PEL	2 mg/m3 as Resp. Dust		
20	13463-67-7	Titanium Dioxide			
		ACGIH TLV	10 mg/m3 as Dust		
		OSHA PEL	10 mg/m3 Total Dust		
		OSHA PEL	5 mg/m3 Respirable Fraction		

#### **SECTION 3 — HAZARDS IDENTIFICATION**

#### **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE** 

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary, blood forming and reproductive systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

May cause allergic skin reaction in susceptible persons or skin sensitization.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

#### **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

If irritation persists or occurs later, get medical attention. Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL FLAMMABILITY CLASSIFICATION

80 °F PMCC 0.7 13.7 RED LABEL -- Flammable, Flash below 100 °F (38 °C)

**EXTINGUISHING MEDIA** 

Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

## SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

#### **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

#### **SECTION 7 — HANDLING AND STORAGE**

#### STORAGE CATEGORY

DOL Storage Class IC

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

**HMIS Codes** 

3\*

3

Health

Flammability

Reactivity

#### SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

#### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

#### **PROTECTIVE GLOVES**

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

#### OTHER PROTECTIVE EQUIPMENT

Use of barrier cream on exposed skin is recommended.

#### **OTHER PRECAUTIONS**

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

#### SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT 10.72 lb/gal 1284 g/l

SPECIFIC GRAVITY 1.29

**BOILING POINT** 243 - 360 °F 117 - 182 °C

**MELTING POINT** Not Available

VOLATILE VOLUME 43%

**EVAPORATION RATE** Slower than ether

VAPOR DENSITY Heavier than air

SOLUBILITY IN WATER N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

3.14lb/gal 376g/l Less Water and Federally Exempt Solvents

3.14lb/gal 376g/l Emitted VOC

#### **SECTION 10 — STABILITY AND REACTIVITY**

STABILITY — Stable CONDITIONS TO AVOID

None known.

**INCOMPATIBILITY** 

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

#### **SECTION 11 — TOXICOLOGICAL INFORMATION**

#### **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

### **TOXICOLOGY DATA**

CAS No.	Ingredient Name				
100-41-4	Ethylbenzene				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		3500 mg/kg	
1330-20-7	Xylene				
		LC50 RAT	4HR	5000 ppm	
		LD50 RAT		4300 mg/kg	
64742-95-6	Light Aromatic Hydro	ocarbons			
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
95-63-6	1,2,4-Trimethylbenze	ene			
	•	LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
71-36-3	1-Butanol				
		LC50 RAT	4HR	8000 ppm	
		LD50 RAT		790 mg/kg	
107-98-2	1-Methoxy-2-propand	ol			
		LC50 RAT	4HR	Not Available	
		LD50 RAT		6600. mg/kg	
111-76-2	2-Butoxyethanol				
	•	LC50 RAT	4HR	Not Available	
		LD50 RAT		470 mg/kg	
68410-23-1	Polyamide				
	•	LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
14807-96-6	Talc				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
13463-67-7	Titanium Dioxide				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	

### **SECTION 12 — ECOLOGICAL INFORMATION**

### **ECOTOXICOLOGICAL INFORMATION**

No data available.

### **SECTION 13 — DISPOSAL CONSIDERATIONS**

### **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

### **SECTION 14 — TRANSPORT INFORMATION**

### **US Ground (DOT)**

1 Gallon and Less may be Classed as CONSUMER COMMODITY, ORM-D Larger Containers are Regulated as:

UN1263, PAINT, 3, PG III, (ERG#128)

# DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

### Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1263, PAINT, 3, PG III, (XYLENES (ISOMERS AND MIXTURE)), (ERG#128)

### Canada (TDG)

UN1263, PAINT, CLASS 3, PG III, LIMITED QUANTITY, (ERG#128)

### IMC

UN1263, PAINT, CLASS 3, PG III, (27 C c.c.), EmS F-E, S-E

### **SECTION 15 — REGULATORY INFORMATION**

### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	2	
1330-20-7	Xylene	11	
95-63-6	1,2,4-Trimethylbenzene	3	
71-36-3	1-Butanol	1	
	Glycol Ethers	3	

### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

### **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

### **MATERIAL SAFETY DATA SHEET**

**B60VZ70 02 00 DATE OF PREPARATION**Mar 2, 2009

### SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

### **PRODUCT NUMBER**

B60VZ70

### **PRODUCT NAME**

TILE-CLAD® High Solids Enamel (Part B), Hardener

### **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

Product Information	www.sherwin-williams.com
Regulatory Information	(216) 566-2902
	www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
*for Chemical Emergency ONLY (sp.	ill, leak, fire, exposure, or accident)

### SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
3	100-41-4	Ethylbenzene		•
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
19	1330-20-7	Xylene		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
3	64742-95-6	Light Aromatic Hydrocarl	bons	
		ACGIH TLV	Not Available	3.8 mm
		OSHA PEL	Not Available	
4	108-67-8	1,3,5-Trimethylbenzene		
		ACGIH TLV	25 PPM	2 mm
		OSHA PEL	25 PPM	
5	95-63-6	1,2,4-Trimethylbenzene		
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
65	Proprietary	Epoxy Polymer	·	·
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	

### **SECTION 3 — HAZARDS IDENTIFICATION**

### **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE** 

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary and reproductive systems.

### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

HMIS Codes					
Health	2*				
Flammability	3				

Reactivity

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

May cause allergic skin reaction in susceptible persons or skin sensitization.

### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

### **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

Wash affected area thoroughly with soap and water.

If irritation persists or occurs later, get medical attention.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and guiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

### **SECTION 5 — FIRE FIGHTING MEASURES**

**FLASH POINT LEL UEL** FLAMMABILITY CLASSIFICATION

RED LABEL -- Flammable, Flash below 100° F (38 °C) 82° F PMCC 0.7 7.0

**EXTINGUISHING MEDIA** 

Carbon Dioxide, Dry Chemical, Foam

### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

### **SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

### SECTION 6 — ACCIDENTAL RELEASE MEASURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- · Remove with inert absorbent.

### SECTION 7 — HANDLING AND STORAGE

### STORAGE CATEGORY

DOL Storage Class IC

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

### SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

### **PROTECTIVE GLOVES**

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

### OTHER PROTECTIVE EQUIPMENT

Use of barrier cream on exposed skin is recommended.

### **OTHER PRECAUTIONS**

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

1048 g/l

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

### SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT 8.75 lb/gal

SPECIFIC GRAVITY 1.05

277 - 360° F **BOILING POINT** 136 - 182° C

MELTING POINT Not Available **VOLATILE VOLUME** 

42%

**EVAPORATION RATE** Slower than ether

VAPOR DENSITY Heavier than air

**SOLUBILITY IN WATER** N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

3.06lb/gal 366g/l Less Water and Federally Exempt Solvents

**Emitted VOC** 3.06lb/gal 366g/l

### SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable **CONDITIONS TO AVOID** 

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION** 

Will not occur

### **SECTION 11 — TOXICOLOGICAL INFORMATION**

### **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

### **TOXICOLOGY DATA**

CAS No.	Ingredient Name			
100-41-4	Ethylbenzene			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		3500 mg/kg	
1330-20-7	Xylene			
	LC50 RAT	4HR	5000 ppm	
	LD50 RAT		4300 mg/kg	
64742-95-6	Light Aromatic Hydrocarbons			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
108-67-8	1,3,5-Trimethylbenzene			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
95-63-6	1,2,4-Trimethylbenzene			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
Proprietary	Epoxy Polymer			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	

### **SECTION 12 — ECOLOGICAL INFORMATION**

### **ECOTOXICOLOGICAL INFORMATION**

No data available.

### **SECTION 13 — DISPOSAL CONSIDERATIONS**

### **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

### **SECTION 14 — TRANSPORT INFORMATION**

### **US Ground (DOT)**

1 Gallon and Less may be Classed as CONSUMER COMMODITY, ORM-D

Larger Containers are Regulated as:

UN1263, PAINT RELATED MATERIAL, 3, PG III, (ERG#128)

### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Ethyl benzene 1000 lb RQ

Xylenes (isomers and mixture) 100 lb RQ

### Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1263, PAINT RELATED MATERIAL, 3, PG III, (XYLENES (ISOMERS AND MIXTURE)), (ERG#128)

### Canada (TDG)

UN1263, PAINT RELATED MATERIAL, CLASS 3, PG III, LIMITED QUANTITY, (ERG#128)

### IMO

UN1263, PAINT RELATED MATERIAL, CLASS 3, PG III, (28 C c.c.), EmS F-E, S-E

### **SECTION 15 — REGULATORY INFORMATION**

### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	3	
1330-20-7	Xylene	19	
95-63-6	1,2,4-Trimethylbenzene	5	

### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

### **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

### MATERIAL SAFETY DATA SHEET

C19967 01 00

Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

HMIS CODES PRODUCT NUMBER Health Flammability C19967

PRODUCT NAME

QS GLOSS BLACK ENAMEL

MANUFACTURER'S NAME SHEFFIELD BRONZE PAINT CORP.

17814 South Waterloo Road

Cleveland, OH 44119 DATE OF PREPARATION 30-AUGUST-07

EMERGENCY TELEPHONE NO.

Reactivity

216-481-8330

INFORMATION TELEPHONE NO.

216-481-8330

h	WT W	CAS	No.	COMPOSITION INGREDIENT	,	010011	UNIT	S	VA	POR	PRESS	URE
_~												
	14	74-9	8-6	Propane								
	70.000			ACGIH	TLV	2500	mqq (				760	mr
				OSHA	PEL	1000	maga (					
	1.3	106-9	7-8	Butane			25000					
				ACGIH		800					760	m
				OSHA	PEL	800	) ppm					
- 3	21	108-8	8-3	Toluene				one care action			27/27	
				ACGIH		50		(skin)			22	mn
				OSHA	PEL	100						
				OSHA	PEL	150	) ppm	(skin)	STEL			
0	. 1	100-4	1-4	Ethylbenzer						200		
				ACGIH		100					7.1	mn
				ACGIH		125	mag	STEL				
				OSHA	PEL	100						
	201221		20 (20)	OSHA	PEL	125	mag	STEL				
	36	67-6	4-1	Acetone		0.00000.0						
				ACGIH		500					180	ma
				ACGIH			) ppm	STEL				
	150		9 101 1	OSHA	PEL	1000						
	2	763-6	9-9	Ethyl 3-Eth	oxyp	ropior	late	020		100	120111210	
				ACGIH			wailah				1.11	mn
		* * * * * * * * * * * * * * * * * * *	2 000	OSHA	PEL	Not A	lvailáb	ole				
0	.7	1333-8	6-4	Carbon Blac								
				ACGIH			mg/m					
				OSHA	PEL	3.5	mg/m	13 .				

Section 3 -- HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE

Exposure may be by INHALATION and/or SKIN or EYE contact, depending on conditions of use. To minimize exposure, follow recommendations for proper use, ventilation, and personal protective equipment.

EFFECTS OF OVEREXPOSURE

Irritation of eyes, skin and upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive

skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

Section 4 -- FIRST AID MEASURES

If INHALED: If affected, remove from exposure. Restore breathing.

Keep warm and quiet.

If on SKIN: Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

If in EYES: Flush eyes with large amounts of water for 15 minutes.

Get medical attention.

If SWALLOWED: Do not induce vomiting.

Get medical attention immediately.

Section 5 -- FIRE FIGHTING MEASURES

FLASH POINT LEL UEL Propellant < 0 F 1.0 12.8

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam JNUSUAL FIRE AND EXPLOSION HAZARDS

Containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain nedical attention.

PECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are referable. Water may be used to cool closed containers to prevent ressure build-up and possible autoignition or explosion when exposed to extreme heat.

Section 6 -- ACCIDENTAL RELEASE MEASURES .

TEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Remove all sources of ignition. Ventilate the area. Remove with inert absorbent.

Section 7 -- HANDLING AND STORAGE

STORAGE CATEGORY

NFPA 30B Level 2 Aerosol

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep away from heat, sparks, and open flame. Vapors will accumulate

readily and may ignite explosively.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves,

electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120F. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children. internally. Keep out of the reach of children.

Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority.

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Respiratory ROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

PROTECTIVE GLOVES

None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemical resistant gloves.

YE PROTECTION

Wear safety spectacles with unperforated sideshields.

2164816606

OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT SPECIFIC GRAVITY BOILING POINT VOLATILE VOLUME EVAPORATION RATE

VAPOR DENSITY SOLUBILITY IN WATER 6.15 lb/gal 737 g/l 0.74 <0 - 342 F <-18 - 172 C Not Available 91

Faster than ether Heavier than air

N.A. 7.0

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical)

Volatile Weight 51.44 % Less Water and Federally Exempt Solvents 

Section 10 -- STABILITY AND REACTIVITY

\_\_\_\_\_\_\_\_ STABILITY -- Stable CONDITIONS TO AVOID None known.

INCOMPATIBILITY

DOCUMEN

**EPA ARCHIVE** 

None known.

AZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

. Will not occur

Section 11 -- TOXICOLOGICAL INFORMATION

THRONIC HEALTH HAZARDS

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in aboratory animals. Lifetime inhalation exposure of rats and mice to high thylbenzene concentrations resulted in increases in certain types of ancer, including kidney tumors in rats and lung and liver tumors in mice. hese effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Carbon Black is classified by IARC as possibly carcinogenic to humans group 2B) based on experimental animal data, however, there is

nsufficient evidence in humans for its carcinogenicity.
Prolonged overexposure to solvent ingredients in Section 2 may cause dverse effects to the liver, urinary, cardiovascular and reproductive

Reports have associated repeated and prolonged overexposure to solvents ith permanent brain and nervous system damage. 

'OXICOLOGY DATA

SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No. CHEMICAL/COMPOUND % by WT % Element 108-88-3 Toluene 21

100-41-4 Ethylbenzene

0.1

Continued on page 6

OCUMENT

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EPA

CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

Section 16 -- OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of educers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are utside our control, we make no warranties, express or implied, and assume to liability in connection with any use of this information.

### MATERIAL SAFETY DATA SHEET

C19957 01 00

Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

HMIS CODES PRODUCT NUMBER

Health' 4 Flammability C19957 Reactivity

PRODUCT NAME

OS GLOSS WHITE ENAMEL

MANUFACTURER'S NAME

SHEFFIELD BRONZE PAINT CORP.

17814 South Waterloo Road

Cleveland, OH 44119 DATE OF PREPARATION

INFORMATION TELEPHONE NO

EMERGENCY TELEPHONE NO.

216-481-8330

216-481-8330

20-MAY-03 Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS CAS NO. INGREDIENT UNITS VAPOR PRESSURE 74-98-6 Propane

ACGIH TLV 2500 ppm OSHA PEL 1000 ppm 760 mm 13 106-97-8 Butane ACGIH TLV 800 ppm OSHA PEL 800 ppm 750 mm 21 108-88-3 Toluene ACGIH TLV 50 ppm (skin) OSHA PEL 100 ppm (skin) OSHA PEL 150 ppm (skin) STEL 22 mm 100-41-4 Ethylbenzene 0.2 ACGIH TLV 100 ppm ACGIH TLV 125 ppm STEL OSHA PEL 100 ppm OSHA PEL 125 ppm STEL 7 . 1 rem 67-64-1 Acetone 26 ACGIH TLV 500 ppm ACGIH TLV 750 ppm STEL OSHA PEL 1000 ppm 180 mm 763-69-9 Ethyl 3-Ethoxypropionate ACGIH TLV Not Available OSHA PEL Not Available 1.11 mm 10 13463-67-7 Titanium Dioxide ACGIH TLV 10 mg/m3 as Dust
OSHA PEL 10 mg/m3 Total Dust
OSHA PEL 5 mg/m3 Respirable Fraction

Section 3 -- HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE

Exposure may be by INHALATION and/or SKIN or EYE contact, depending on conditions of use. To minimize exposure, follow recommendations for proper use, ventilation, and personal protective equipment.

SHEFFIELD BRONZE PT

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**EPA ARCHIVE DOCUMENT** 

EFFECTS OF OVEREXPOSURE

Irritation of eyes, skin and upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death. SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

Section 4 -- FIRST AID MEASURES

If INHALED: . If affected, remove from exposure. Restore breathing.

Keep warm and quiet.

Wash affected area thoroughly with soap and water If on SKIN:

Remove contaminated clothing and launder before re-use. Flush eyes with large amounts of water for 15 minutes. If in EYES:

Get medical attention. If SWALLOWED: Do not induce vomiting.

Get medical attention immediately. 日本非过江紅紅斑斑綠鄉 网络巴里瓦 都江 目目目目 随道面面接触 医复数引引口口口过度 **动物或紧紧 手工 占为 加**利特 化硫酸酯 **机械 克克 单**色 含乎识 双河内对 口口口

Section 5 -- FIRE FIGHTING MEASURES 

LEL UEL FLASH POINT Propellant < 0 F 1.0

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam UNUSUAL PIRE AND EXPLOSION HAZARDS

Containers may explode when exposed to extreme hear.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent preseure build-up and possible autoignition or explosion when exposed to extreme heat.

Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

Section 7 -- HANDLING AND STORAGE

STORAGE CATEGORY

NFPA 30B Level 2 Aerosol

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep away from heat, sparks, and open flame. Vapors will accumulate

readily and may ignite explosively.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120F. Heat from sunlight, radiators, stoves, not water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children. · 我们还是这些是一个,我们也不是我们的,我们就是我们的,我们就是我们的,我们就是我们的,我们就会会会会会会会会会会会会。

Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH

TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-500-424-LEAD (in US) or contact your local health authority. VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108. RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product. underlying paint, or the abrasive. PROTECTIVE GLOVES

None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemical resistant gloves. EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

6.62 lb/gal 793 g/l PRODUCT WEIGHT SPECIFIC GRAVITY 0.80 <0 - 342 F <-18 - 172 C BOILING POINT Not Available MELTING POINT VOLATILE VOLUME 88 Faster than ether EVAPORATION RATE VAPOR DENSITY SOLUBILITY IN WATER Heavier than air N.A. VOLATILE ORGANIC COMPOUNDS (VOC Theoretical)

Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

Volatile Weight 50.76 % Less Water and Federally Exempt Solvents

Section 10 -- STABILITY AND REACTIVITY

STABILITY -- Stable CONDITIONS TO AVOID None known. :NCOMPATIBILITY None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

MAZARDOUS POLYMERIZATION

Will not occur

Section 11 -- TOXICOLOGICAL INFORMATION

THRONIC HEALTH HAZARDS

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in aboratory animals. Lifetime inhalation exposure of rats and mice to high thylbenzene concentrations resulted in increases in certain types of sancer, including kidney tumors in rats and lung and liver tumors in mice. hese effects were not observed in animals exposed to lower concentrations. here is no evidence that ethylbenzene causes cancer in humans.

Prolonged overexposure to solvent ingredients in Section 2 may cause dverse effects to the liver, urinary, cardiovascular and reproductive ystems.

Rats exposed to titanium dioxide dust at 250 mg./m3 developed lung sancer, however, such exposure levels are not attainable in the workplace. Reports have associated repeated and prolonged overexposure to solvents

ith permanent brain and nervous system damage.

'OXICOLOGY DATA

**EPA ARCHIVE DOCUMEN** 

C19957	:33 2164816606			HEFFIELD B				pag	06/1  e 5
CAS No.	Ingredient	Name							
74-98-6	Propane								
, , , , ,		LC50	RAT	4 HR	Not	Avai	lable		
		LD50					lable		
106-97-8	Butane		707070						
1224 H 1251 1441		LC50	RAT	4HR	Not	Avai	lable		
		LD50			Not	Ava	lable		
108-88-3	Toluene								
		LC50		4HR	400				
		LD50	RAT		500	00	mg/kg		
100-41-4	Ethylbenzen						10 300		
		LCSO		4HR			lable		
67-64-1	420000000000000000000000000000000000000	LD50	RAT		35	00	mg/kg		
67-64-1	Acetone	120222	202020	11222	1221101				
		LC50	RAT	4 HR			llable		
200 00 0	mala 2 a mala	LD50	RAT		58	00	mg/kg		
753-69-9	Ethyl 3-Eth		onate	4.175			2.11		
		LC50		4HR	Not		lable		
12462-67 7	Titanium Di	LD50	RAT		50	50	mg/kg		
13403-0/-/	Ticanium Di		Dam	4110	Mak	2000	llable		
20		LD50	RAT	4HR	MOC		llable		
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CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. ISCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing,

on the TSCA Inventory.

Section 15 -- OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

### **MATERIAL SAFETY DATA SHEET**

**S117 04 00 DATE OF PREPARATION**Feb 9, 2009

### SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

### **PRODUCT NUMBER**

S117

### **PRODUCT NAME**

SPARVAR® Indoor/Outdoor Paint, Semi-Flat Black

### **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY KRYLON PRODUCTS GROUP Cleveland, OH 44115

**Telephone Numbers and Websites** 

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Product Information	(800) 247-3266
	www.kpg-industrial.com
Regulatory Information	(216) 566-2902
	www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
*for Chemical Emergency ONLY (spill.	leak, fire, exposure, or accident)

# SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
15	74-98-6	Propane		
		ACGIH TLV	2500 PPM	760 mm
		OSHA PEL	1000 PPM	
7	106-97-8	Butane		
		ACGIH TLV	800 PPM	760 mm
		OSHA PEL	800 PPM	
1	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
8	1330-20-7	Xylene		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
42	67-64-1	Acetone		
		ACGIH TLV	500 PPM	180 mm
		ACGIH TLV	750 PPM STEL	
		OSHA PEL	1000 PPM	
11	78-93-3	Methyl Ethyl Ketone		
		ACGIH TLV	200 PPM	70 mm
		ACGIH TLV	300 PPM STEL	
		OSHA PEL	200 PPM	
		OSHA PEL	300 PPM STEL	
1	108-10-1	Methyl Isobutyl Ketone		
		ACGIH TLV	50 PPM	16 mm
		ACGIH TLV	75 PPM STEL	
		OSHA PEL	50 PPM	
		OSHA PEL	75 PPM STEL	
4	108-65-6	1-Methoxy-2-Propanol Ac	etate	
		ACGIH TLV	Not Available	1.8 mm
		OSHA PEL	Not Available	
1.0	1333-86-4	Carbon Black		
		ACGIH TLV	3.5 MG/M3	
		OSHA PEL	3.5 MG/M3	

### **SECTION 3 — HAZARDS IDENTIFICATION**

### **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

### **EFFECTS OF OVEREXPOSURE**

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary, blood forming and reproductive systems.

### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

### **SECTION 4 — FIRST AID MEASURES**

**EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention.

SKIN: Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

### **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL EXTINGUISHING MEDIA

Propellant < 0° F 1.0 13.1 Carbon Dioxide, Dry Chemical, Foam

### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

### **SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

### **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

### **SECTION 7 — HANDLING AND STORAGE**

### STORAGE CATEGORY

Not Available

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep away from heat, sparks, and open flame. Vapors will accumulate readily and may ignite explosively.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120F. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children.

### **SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION**

### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

**HMIS Codes** 

2\*

3

Health

Flammability

Reactivity

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

### **PROTECTIVE GLOVES**

None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemical resistant gloves.

### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

### OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

### SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT 6.21 lb/gal 743 g/l

SPECIFIC GRAVITY 0.75

**BOILING POINT** <0 - 302° F <-18 - 150° C

**MELTING POINT** Not Available

**VOLATILE VOLUME** 94%

**EVAPORATION RATE** Faster than ether

VAPOR DENSITY Heavier than air

SOLUBILITY IN WATER N.A.

**pH** 7.0

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

Volatile Weight 49.37% Less Water and Federally Exempt Solvents

### **SECTION 10 — STABILITY AND REACTIVITY**

STABILITY — Stable CONDITIONS TO AVOID

None known.

**INCOMPATIBILITY** 

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

### **SECTION 11 — TOXICOLOGICAL INFORMATION**

### **CHRONIC HEALTH HAZARDS**

Methyl Ethyl Ketone may increase the nervous system effects of other solvents.

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Carbon Black is classified by IARC as possibly carcinogenic to humans (group 2B) based on experimental animal data, however, there is insufficient evidence in humans for its carcinogenicity.

### **TOXICOLOGY DATA**

CAS No.	Ingredient Name				
74-98-6	Propane				
	-	LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
106-97-8	Butane				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
100-41-4	Ethylbenzene				
	•	LC50 RAT	4HR	Not Available	
		LD50 RAT		3500 mg/kg	
1330-20-7	Xylene				
	•	LC50 RAT	4HR	5000 ppm	
		LD50 RAT		4300 mg/kg	
67-64-1	Acetone				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		5800 mg/kg	
78-93-3	Methyl Ethyl Ketone				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		2740 mg/kg	
108-10-1	Methyl Isobutyl Ketor	ne			
	,	LC50 RAT	4HR	Not Available	
		LD50 RAT		2080 mg/kg	
108-65-6	1-Methoxy-2-Propand	ol Acetate			
	, ,	LC50 RAT	4HR	Not Available	
		LD50 RAT		8500 mg/kg	
1333-86-4	Carbon Black				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
		LD50 RAT		Not Available	

### **SECTION 12 — ECOLOGICAL INFORMATION**

### **ECOTOXICOLOGICAL INFORMATION**

No data available.

### **SECTION 13 — DISPOSAL CONSIDERATIONS**

### **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Do not incinerate. Depressurize container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

### **SECTION 14 — TRANSPORT INFORMATION**

### **US Ground (DOT)**

May be classed as Consumer Commodity, ORM-D

UN1950, AEROSOLS, 2.1, LIMITED QUANTITY, (ERG#126)

### Canada (TDG)

May be classed as Consumer Commodity, ORM-D

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, (ERG#126)

### IMO

May be shipped as Limited Quantity

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, EmS F-D, S-U

### **SECTION 15 — REGULATORY INFORMATION**

### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	1	
1330-20-7	Xylene	8	
108-10-1	Methyl Isobutyl Ketone	1	

### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

### **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# The Valspar Corporation Material Safety Data Sheet

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Material Identification** 

**Product ID: TY25825, TY25826** 

Product Name: JDM Blitz Black 2.8 VOC Enamel

Product Use: Paint product.

Date Published: 2004/05/10

Revision Date: 2004/05/10

**Company Identification** 

The Valspar Corporation 1215 Nelson Blvd. Rockford, IL 61104

Manufacturer's Phone: 1-877-724-0597

**24-Hour Medical Emergency** 1-888-345-5732

Phone:

### 2. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Common Name CAS #	Approx Wt%	Chemical name
DIMETHYL KETONE 67-64-1	20 - 25	Acetone
TALC 14807-96-6	15 - 20	TALC (MG3H2(SI03)4)
XYLENE 1330-20-7	10 - 15	Xylenes (o-, m-, p- isomers)
ETHYLBENZENE 100-41-4	1 - 5	Ethyl benzene
ZINC OXIDE PIGMENT 1314-13-2	1 - 5	Zinc oxide
CARBON BLACK 1333-86-4	.1 - 1	Carbon black
CRYSTALLINE SILICA 14808-60-7	.1 - 1	QUARTZ (Si02)

If this section is blank there are no hazardous components per OSHA guidelines.

## 3. HAZARDS IDENTIFICATION

### **Primary Routes of Exposure:**

Inhalation Ingestion Skin absorption

### **Emergency Overview:**

This section not in use.

### This product contains ingredients that may contribute to the following potential acute health effects:

### **Inhalation Effects:**

Harmful if inhaled. May affect the brain, nervous system, or respiratory system, causing dizziness, headache, nausea or respiratory irritation. May cause Metal Fume Fever which is characterized by chills, fever, aching muscles, dryness and metal taste in mouth and throat, headaches, sneezing, nausea, and irritation of the nose and trachea.

### **Eye Contact:**

Causes eye irritation.

### **Skin Contact:**

May cause moderate skin irritation.

### **Acute Ingestion:**

None known

### Other Effects:

May cause liver damage. May cause kidney damage.

### This product contains ingredients that may contribute to the following potential chronic health effects:

Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Prolonged exposure to respirable crystalline quartz silica may cause delayed chronic injury (silicosis). Prolonged exposure over TLV may produce pneumoconiosis. Prolonged inhalation of dusts may result in shortness of breath.Prolonged and/or repeated contact can result in skin irritation. May cause skin drying with prolonged exposure.Possible cancer hazard. Contains ingredients which may cause cancer based on animal data. Risk of cancer depends on duration and level of exposure.

See Section 11 for toxicological information about Mutagens, Teratogens and Carcinogens.

If this section is blank, no information is available.

### 4. FIRST AID MEASURES

### Inhalation:

If affected by inhalation, move victim to fresh air. If symptoms persist, seek medical attention.

### **Eye Contact:**

In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

### **Skin Contact:**

In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. If irritation persists get medical attention.

### Ingestion:

If swallowed, contact medical personnel immediately to determine best course of action.

Medical conditions aggravated by exposure: Any respiratory or skin condition.

# DOCUMENT EPA ARCHIVE

### 5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit): 4° F ( -16° C) TCC/PM

Lower explosive limit: 1 %

Upper explosive limit: 13 %

Autoignition temperature: Not available.º F ( ° C)

Sensitivity to impact: No.

Sensitivity to static discharge: Subject to static discharge hazards. Please see bonding and grounding

information in Section 7.

Hazardous combustion products: See Section 10.

### Unusual fire and explosion hazards:

Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers until disposed of in compliance with applicable regulations. Contains oxidizable materials.

### Extinguishing media:

Carbon dioxide, dry chemical, foam and/or water fog.

### Fire fighting procedures:

Use water spray to cool nearby containers and structures exposed to fire.

### 6. ACCIDENTAL RELEASE MEASURES

### Action to be taken if material is released or spilled:

Ventilate area. Avoid breathing of vapors. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 5, "Unusual Fire and Explosion Hazards", for proper container and storage procedures. Remove sources of ignition. Remove with inert absorbent and non sparking tools. Avoid contact with eyes.

### 7. HANDLING AND STORAGE

### Precautions to be taken in handling and storage:

Keep away from heat, sparks, and flames. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

### 8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

### **Personal Protective Equipment**

### Eye and face protection:

Avoid contact with eyes. Wear chemical goggles if there is the possibility of contact or splashing in the eye.

### Skin protection:

Appropriate chemical resistant gloves should be worn. To prevent skin contact wear protective clothing covering all exposed areas.

### Respiratory protection:

If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air

purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

### Ventilation

Required when spraying or applying in confined area. Ventilation equipment should be explosion proof. Eliminate ignition sources.

### **Exposure Guidelines**

### **OSHA Permissible Exposure Limits (PEL's)**

Common Name CAS #	Approx Wt%	TWA (final)	Ceilings limits (final)	Skin designations
TALC 14807-96-6	15 - 20	see Table Z-3		
XYLENE 1330-20-7	10 - 15	100 ppm TWA; 435 mg/m3 TWA		
ETHYLBENZENE 100-41-4	1 - 5	100 ppm TWA; 435 mg/m3 TWA		
ZINC OXIDE PIGMENT 1314-13-2	1 - 5	5 mg/m3 TWA (fume); 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)		
CARBON BLACK 1333-86-4	.1 - 1	3.5 mg/m3 TWA		
CRYSTALLINE SILICA 14808-60-7	.1 - 1	see Table Z-3		

### **ACGIH Threshold Limit Value (TLV's)**

Common Name CAS #	Approx Wt%	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE 67-64-1	20 - 25	750 PPM			
TALC 14807-96-6		2 mg/m3 TWA (this TLV is for the respirable fraction of dust for Talc containing no asbestos and <1% crystalline silica)			
XYLENE 1330-20-7	10 - 15	100 ppm TWA	150 ppm STEL		
ETHYLBENZENE 100-41-4	1 - 5	100 ppm TWA	125 ppm STEL		

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ZINC OXIDE PIGMENT	1 - 5	5 mg/m3 TWA 10 mg/m3 STEL
1314-13-2		(fume); 10 mg/m3 (fume)
		TWA (dust) (The
		value for Zinc
		oxide 'dust' is for
		total dust
		containing no
		asbestos and <
		1% crystalline
		silica)
CARBON BLACK	.1 - 1	3.5 mg/m3 TWA
1333-86-4		
CRYSTALLINE SILICA	.1 - 1	0.05 mg/m3
14808-60-7		TWA (this TLV is
		for the respirable
		fraction of dust)

If this section is blank, no information is available.

### 9. PHYSICAL PROPERTIES

Odor: Normal for this product type.

Physical State: Liquid

pH: Not determined.

Vapor pressure: 182 mmHG @ 68° F ( 20° C)

Vapor density (air = 1.0): 3.7

Boiling point: 133° F ( 56° C)

Solubility in water: Soluble

Coefficient of water/oil distribution: Not determined.

Density (weight per gallon): 9.42

Specific gravity (water = 1): Not determined.

Evaporation rate (butyl acetate = 1.0): 5.6

### 10. STABILITY AND REACTIVITY

Stability: This product is stable.

Conditions to Avoid:

Incompatibility:

Hazardous Polymerization:

None known.

Strong oxidizers.

None anticipated.

Hazardous Decomposition Products: Silicon dioxide. Carbon monoxide and carbon dioxide. Metal oxide fumes.

**Sensitivity to static discharge:** Subject to static discharge hazards. Please see bonding and grounding

information in Section 7.

### 11. TOXICOLOGICAL INFORMATION

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. Contains crystaline silica. The IARC has determined that crystaline silica inhaled in the form of quartz or cristobablite from occupational sources is carcinogenic to humans (group 1). Refer to IARC monograph 68 in conjunction with the use of these materials. Risk of cancer depends on the duration and level of exposure. In coatings products, risk is due primarily to inhalation of sanding dusts or respirable particles in spray mists. The NTP has also determined that crystaline silica is a known human carcinogen in the form of fine, breathable particles. Risk of cancer depends on duration and level of exposure in coatings products, risk is

due primarily to inhalation of sanding dust or respirable particles in spray mist.

Common Name CAS #	Approx Wt%	IARC Group 1 - Human Evidence	IARC Group 2A - limited human data	IARC Group 2b - sufficient animal data
ETHYLBENZENE 100-41-4	1 - 5			Monograph 77, 2000
CARBON BLACK 1333-86-4	.1 - 1			Monograph 65, 1996
CRYSTALLINE SILICA 14808-60-7	.1 - 1	Monograph 68, 1997; (inhaled in the form of quartz or cristobalite from occupational sources)		

Common Name CAS #	Approx Wt%	NTP Known	NTP Suspect carcinogens	NTP Evidence of
TALC 14807-96-6	15 - 20	carcinogens	carcinogens	carcinogenicity  male rat-some evidence; female rat- clear evidence; male mice-no evidence; female mice-no evidence
ETHYLBENZENE 100-41-4	1 - 5			male rat-clear evidence; female rat- some evidence; male mice-some evidence; female mice-some evidence
CRYSTALLINE SILICA 14808-60-7	.1 - 1	Known Carcinogen		

Common Name CAS #	Approx Wt%	OSHA Select carcinogens	OSHA Possible select carcinogens	ACGIH Carcinogens
ETHYLBENZENE 100-41-4	1 - 5		Monograph 77, 2000 IARC - Group 2B (Possibly carcinogenic to humans)	
CARBON BLACK 1333-86-4	.1 - 1		Monograph 65, 1996 IARC - Group 2B (Possibly carcinogenic to humans)	A4 - Not Classifiable as a Human Carcinogen
CRYSTALLINE SILICA 14808-60-7	.1 - 1			A2 - Suspected Human Carcinogen

If this section is blank, no information is available.

### 12. ECOLOGICAL DATA

Not available at this time.

### 13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

### 14. TRANSPORTATION INFORMATION

### **U.S. Department of Transportation**

Proper Shipping Name: PAINT

Hazard Class: 3

UN ID Number: UN1263

Packing Group:

### 49 CFR Hazardous Material Regulations Parts 100-180

The supplier will apply the combustible liquid exception in 49 CFR 173.150(f), limited quantity or "does not sustain combustion" exceptions and consumer commodity rules, when authorized. Please check 49 CFR Parts 100-180 to determine if the use of these exceptions applies to your shipments when re-shipping our products.

### **International Air Transport Association:**

Proper Shipping Name: PAINT

Hazard Class: 3

UN ID Number: UN1263

Packing Group:

### **International Maritime Organization:**

Proper Shipping Name: PAINT

Hazard Class: 3

UN ID Number: UN1263

Packing Group:

### 15. REGULATORY INFORMATION

### **U.S. FEDERAL REGULATIONS:**

Common Name CAS #	Approx Wt%	SARA 302	SARA 313	CERCLA RQ IN LBS.
XYLENE 1330-20-7	10 - 15		form R reporting required for 1.0% de minimis concentration	100
ETHYLBENZENE 100-41-4	1 - 5		form R reporting required for 1.0% de minimis concentration	1000
ZINC OXIDE PIGMENT 1314-13-2	1 - 5		YES	

### SARA 311/312 Hazard Class:

Acute: Yes
Chronic: Yes
Flammability: Yes
Reactivity: No
Sudden Pressure: No

### **U.S. STATE REGULATIONS:**

### Pennsylvania Right To Know:

 XYLENE
 1330-20-7

 DIMETHYL KETONE
 67-64-1

 ETHYLBENZENE
 100-41-4

**Product ID:** TY25825, TY25826

Page 7 of 8

Additional Non-Hazardous Materials

PROPRIETARY RESIN Trade Secret
PROPRIETARY INERT Trade Secret
PROPRIETARY RESIN Trade Secret

### **California Proposition 65:**

WARNING: This product contains a chemical known to the State of California to cause cancer.

Rule 66 status of product Photochemically reactive.

### **INTERNATIONAL REGULATIONS - Chemical Inventories**

**TSCA Inventory:** All components of this product are in compliance with U.S. TSCA Chemical

Substance Inventory Requirements.

Canada Domestic Substances List: Not all components in this product are listed on the Domestic Substances List.

### 16. OTHER INFORMATION

**HMIS Codes** 

Health: 2 Flammability: 3 Reactivity: 1

PPE: X - See Section 8 for Personal Protective Equipment (PPE).

### **Abbreviations:**

PA ARCHIVE DOCUMENT

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OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

### Disclaimer:

The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

,D1475and D3960.

VAPOR PRESSURE: 5.79 mm/hg

7/28/06 DATE OF PRINTING SECTION I MANUFACTURER: GLYPTAL, INC. 305 EASTERN AVE CHELSEA, MA 02150 TELEPHONE: 617-884-6918 PRODUCT CLASS: AIR DRY ENAMEL CODE IDENTIFICATION: 1201 TRADE NAME: GLYPTAL HMIS 2 3 0 PAINT, 3, UN1263, PGII SECTION II - HAZARDOUS INGREDIENTS PERCENT ACGIH TLV OSHA PEL INGREDIENT BY WEIGHT PPM mg/cu.m. PPM mg/cu.m. 100 XYLENE 34.5 100 CAS NUMBER 1330-20-7 HMIS HEALTH=1 FLAMMABILITY=3 REACTIVITY=0 XYLOL VM&P NAPTHA 5.6 300 300 CAS NUMBER 8030-30-6 HMIS HEALTH=2 FLAMMABILITY=3 REACTIVITY=0 ALIPHATIC HYDROCARBON STODDARD SOLVENT 100 CAS NUMBER 8052-41-3 HMIS HEALTH=2 FLAMMABILITY=2 REACTIVITY=0 HYDROCARBON MIXTURE IRON OXIDE CAS NUMBER 1309-37-1 HMIS HEALTH=0 FLAMMABILITY=1 REACTIVITY=1 FERRIC OXIDE HYDRATED MAGNESIUM SILICATE 16.9 . CAS NUMBER 14807-96-6 HMIS HEALTH=2 FLAMMABILITY=0 REACTIVITY=0 TALC Remaining 34.7 % is a non-hazardoys alkyd resin. VM & P (CAS# 8030-30-6). AGENCY OSHA.TYPE STEL. EXPOSURE LIMIT 400 PPM N/A MEANS NOT AVAILABLE N/EST MEANS NOTESTABLISHED NOT EST. means NOT ESTABLISHED NOT EST. means NOT ESTABLISHED N/A MEANS NOT AVAILABLE NOT EST MEANS NOT ESTABLISHED SECTION III - PHYSICAL DATA BOILING RANGE: 250.0 TO 345.0 F VAPOR DENSITY: HEAVIER THAN AIR EVAPORATION RATE: SLOWER THAN ETHER PERCENT VOLATILE BY VOLUME: 56.5 VOC (less water): 3.98 LBS/GALLON WEIGHT PER GALLON: 9.91 POUNDS V.O. $\mathcal{L}$ .Is determined per EPA Reference Method 24 using ASTM procedures D2369

MELTING POINT: NOT APPLICABLE

MSDS: 1201 PAGE: 2

SOLUBILITY IN WATER: NEGLIGBLE

APPEARANCE AND ODOR: RED LQUID WITH PAINT ODOR

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

OSHA CATEGORY: FLAMMABLE LIQUID

FLASH POINT : 72 F PENSKY MARTIN LEL: 1.0 UEL: N/A

EXTINGUISHING MEDIA:

Carbon dioxide, dry chemical or foam

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Pressure may build up in closed containers that are exposed to heat.

Solvent vapors are heavier than air and may travel a considerable distance along the ground to an ignition source and "flash back".

SPECIAL FIRE FIGHTING PROCEDURES:

Water may be ineffective, however, water may be used to cool closed containers that are exposed to heat. Firefighting personnel should wear self-contained breathing apparatus.

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: SEE SECTION II

PRIMARY ROUTE(S) OF ENTRY:

Inhalation and skin contact

EFFECTS OF OVEREXPOSURE:

Headache, nausea, dizziness, confusion, irritability.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Respiratory difficulties or preexisting skin sensitization.

CARCINOGENICITY:

None of the components of this product are reported carcinogens in A/C with OSHA,NTP,IARC and NIOSH.

EMERGENCY FIRST AID PROCEDURES:

INHALATION: Remove to fresh air. Administer artificial respiration or oxygen if breathing is difficult.

SKIN: Wash affected area with soap and water. Remove and launder contaminated clothing. Consult a physician if irritation persists.

EYES: Flush immediately with large amounts of water for at least 15 minutes. Take to a physician for medical treatment.

INGESTION: Call a physician immediately.

ACUTE: Skin and eye contact: Primary irritation.

CHRONIC: Xylene contained in this material has been found to cause the following effects in laboratory animals: amenia, liver abnormalities, liver and eye damage.

Pre-Exiting liver and/or kidney disorders may be aggrevated by exposure to xylene. Reports have associated repeated and prolonged occupational overexposure to xylene with permanent brain and nervous system damage.

SECTION VI - REACTIVITY DATA

STABILITY: NORMALLY STABLE

CONDITIONS TO AVOID:

None known

MSDS: 1201 PAGE: 3

INCOMPATIBILITY (Materials to avoid)

Strong acids and bases

HAZARDOUS DECOMPOSITION PRODUCTS:

BY FIRE: Normal products of incomplete combustion.

HAZARDOUS POLYMERIZATION: DOES NOT OCCUR

CONDITIONS TO AVOID:

None known

### SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Provide adequate ventilation. Remove all possible ignition sources.

Absorb and dispose using non-sparking tools.

Eliminate all sources of ignition. Evacuate unprotected personnel. Water spray may be used. To contain run-off, cover with an absorbent material and place in containers for proper disposal. Flush area with water to remove residue.

WASTE DISPOSAL METHOD:

Dispose in accordance with local applicable regulations. Dispose of using an approved incineration process or in accordance with local, state, and federal regulations regarding health and pollution.

# SECTION VIII - SPECIAL PROTECTION INFORMATION

### RESPIRATORY PROTECTION:

In outdoor or open areas use Bureau of Mines approved mechanical filter respirator to remove solid airborne particulates of overspray. Indoors, where ventilation is inadequate. use Bureau of Mines approved chemical-mechanical respirators designed to remove both particulate and vapor.

VENTILATION:

PROTECTIVE GLOVES:

Recommended if skin contact is likely.

EYE PROTECTION:

Chemical splash goggles recommended if potential for splash or eye contact is likely.

OTHER PROTECTIVE EQUIPMENT:

Recommended as needed to avoid contact.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING OR STORING:

Store in a cool dry place away from heat, sparks and open flame. Keep containers closed and upright to prevent leakage. Outside or detached storage is preferred. Inside storage should be in a standard flammable liquid storeroom or cabinet. Metal containers should be grounded when transferring material from one container to another. Do not reuse product container for any purpose.

OTHER PRECAUTIONS:

MSDS: 1201 PAGE: 4

PREPARED BY: TECHNICAL STAFF

REFERENCE DATE:

7/28/06

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, IS MADE WITH RESPECT TO THE INFORMATION ABOVE.

TO WHOM IT MAY CONCERN: EFFECTIVE JAN 1, 1989, WE ARE REQUIRED BY SARA TIT LE III SECTION 313 OF THE RIGHT TO KNOW LEGISLATION, TO INFORM YOU OF THE PERCENTAGE OF ANY INGREDIENT IN A PRODUCT WHICH IS IN THE 313 LIST OR AS AN LISTING AS A COMPONENT OF A MATERIAL WHICH IS IN A CATEGORY OF CHEMICAL LIST.

PRODUCT: 1201 GLYPTAL

34.5% XYLENE (CAS NUMBER 1330-20-7)

IF YOU WILL MULTIPLY YOUR TOTAL PURCHASES FROM US AS WELL AS FROM OTHER SU PPLIERS BY THE PERCENTAGE OF EACH INGREDIENT FOUND IN EACH PRODUCT AND IF THE TOTAL QUANTITY EXCEEDS THE REPORTABLE QUANTITY FOR THAT INGREDIENT YOU ARE REQUIRED TO FILE FORM R REPORTS.

### **MATERIAL SAFETY DATA SHEET**

**S00603 02 00 DATE OF PREPARATION**Feb 9, 2009

### SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NUMBER

S00603

### **PRODUCT NAME**

SPRAYON® Blue Layout Fluid

### MANUFACTURER'S NAME

THE SHERWIN-WILLIAMS COMPANY KRYLON PRODUCTS GROUP Cleveland, OH 44115

**Telephone Numbers and Websites** 

relephone Humbers and Hebbites	
Product Information	(800) 251-2486
	www.kpg-industrial.com
Regulatory Information	(216) 566-2902
	www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
*for Chemical Emergency ONLY (spill.	leak, fire, exposure, or accident)

## **SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS**

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
12	74-98-6	Propane		
		ACGIH TLV	2500 PPM	760 mm
		OSHA PEL	1000 PPM	
12	106-97-8	Butane		
		ACGIH TLV	800 PPM	760 mm
		OSHA PEL	800 PPM	
1	64742-88-7	Mineral Spirits		
		ACGIH TLV	100 PPM	2 mm
		OSHA PEL	100 PPM	
9	108-88-3	Toluene		
		ACGIH TLV	20 PPM	22 mm
		OSHA PEL	100 PPM (Skin)	
		OSHA PEL	150 PPM (Skin) STEL	
0.3	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
2	1330-20-7			
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
-		OSHA PEL	150 PPM STEL	
1	71-36-3	1-Butanol		
		ACGIH TLV	20 PPM	5.5 mm
-		OSHA PEL	50 PPM (Skin) CEILING	
4	123-42-2	Diacetone Alcohol		
		ACGIH TLV	50 PPM	1.2 mm
		OSHA PEL	50 PPM	
48	67-64-1	Acetone		
		ACGIH TLV	500 PPM	180 mm
		ACGIH TLV	750 PPM STEL	
		OSHA PEL	1000 PPM	
2	78-93-3	Methyl Ethyl Ketone		
		ACGIH TLV	200 PPM	70 mm
		ACGIH TLV	300 PPM STEL	
		OSHA PEL	200 PPM	
	400.40.4	OSHA PEL	300 PPM STEL	
3	108-10-1	Methyl Isobutyl Ketone	FO DDM	40
		ACGIH TLV	50 PPM	16 mm
		ACGIH TLV	75 PPM STEL	
		OSHA PEL	50 PPM	
		OSHA PEL	75 PPM STEL	

## **SECTION 3 — HAZARDS IDENTIFICATION**

## **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

#### **EFFECTS OF OVEREXPOSURE**

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary, cardiovascular and reproductive systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

## MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

## **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

**HMIS Codes** 

Health 2\*
Flammability 4
Reactivity 0

#### **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL EXTINGUISHING MEDIA

Propellant < 0° F 1.0 12.8 Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### **SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

## **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

## **SECTION 7 — HANDLING AND STORAGE**

#### STORAGE CATEGORY

Not Available

## PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep away from heat, sparks, and open flame. Vapors will accumulate readily and may ignite explosively.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120F. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children.

# SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

#### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

## RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

#### PROTECTIVE GLOVES

None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemical resistant gloves.

#### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

## OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

## **SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

PRODUCT WEIGHT 6.09 lb/gal 729 g/l

SPECIFIC GRAVITY 0.73

**BOILING POINT** <0 - 395° F

MELTING POINT Not Available

**VOLATILE VOLUME** 97%

EVAPORATION RATE Faster than ether

VAPOR DENSITY Heavier than air

SOLUBILITY IN WATER N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

Volatile Weight 47.05% Less Water and Federally Exempt Solvents

## **SECTION 10 — STABILITY AND REACTIVITY**

STABILITY — Stable CONDITIONS TO AVOID

None known.

**INCOMPATIBILITY** 

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION** 

Will not occur

# **SECTION 11 — TOXICOLOGICAL INFORMATION**

#### **CHRONIC HEALTH HAZARDS**

Methyl Ethyl Ketone may increase the nervous system effects of other solvents.

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

<-18 - 201° C

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name				
74-98-6	Propane				
	·	LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
106-97-8	Butane				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
64742-88-7	Mineral Spirits				
	•	LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
108-88-3	Toluene				
		LC50 RAT	4HR	4000 ppm	
		LD50 RAT		5000 mg/kg	
100-41-4	Ethylbenzene				
	, , , , , ,	LC50 RAT	4HR	Not Available	
		LD50 RAT		3500 mg/kg	
1330-20-7	Xylene			3 3	
	,	LC50 RAT	4HR	5000 ppm	
		LD50 RAT		4300 mg/kg	
71-36-3	1-Butanol			5 5	
		LC50 RAT	4HR	8000 ppm	
		LD50 RAT		790 mg/kg	
123-42-2	Diacetone Alcohol			0 0	
		LC50 RAT	4HR	Not Available	
		LD50 RAT		4000. mg/kg	
67-64-1	Acetone			<u> </u>	
		LC50 RAT	4HR	Not Available	
		LD50 RAT		5800 mg/kg	
78-93-3	Methyl Ethyl Ketone			3 3	
· · · · · ·		LC50 RAT	4HR	Not Available	
		LD50 RAT		2740 mg/kg	
108-10-1	Methyl Isobutyl Ketone				
· · · · ·		LC50 RAT	4HR	Not Available	
		LD50 RAT		2080 mg/kg	

## **SECTION 12 — ECOLOGICAL INFORMATION**

## **ECOTOXICOLOGICAL INFORMATION**

No data available.

# **SECTION 13 — DISPOSAL CONSIDERATIONS**

## **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Do not incinerate. Depressurize container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## **SECTION 14 — TRANSPORT INFORMATION**

#### **US Ground (DOT)**

May be classed as Consumer Commodity, ORM-D UN1950, AEROSOLS, 2.1, LIMITED QUANTITY, (ERG#126)

## Canada (TDG)

May be classed as Consumer Commodity, ORM-D

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, (ERG#126)

#### IM

May be shipped as Limited Quantity

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, EmS F-D, S-U

# **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
108-88-3	Toluene	9	
100-41-4	Ethylbenzene	0.3	
1330-20-7	Xylene	2	
71-36-3	1-Butanol	1	
108-10-1	Methyl Isobutyl Ketone	3	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **TSCA CERTIFICATION** 

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

## **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# **MATERIAL SAFETY DATA SHEET**

**F7B155 08 00**DATE OF PREPARATION

Mar 1, 2009

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

# **PRODUCT NUMBER**

F7B155

#### **PRODUCT NAME**

Chassis Enamel, Black

# MANUFACTURER'S NAME

SHERWIN-WILLIAMS AUTOMOTIVE FINISHES 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

olophono mamboro ana mobolico				
Product Information	(800) 798-5872			
	www.sherwin-automotive.com			
Regulatory Information	(216) 566-2902			
Medical Emergency	(216) 566-2917			
Transportation Emergency*	(800) 424-9300			
*for Chemical Emergency ONLY (spill leak fire exposure or accident)				

# SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
26	64742-89-8	V. M. & P. Naphtha		
		ACGIH TLV	300 PPM	12 mm
		OSHA PEL	300 PPM	
		OSHA PEL	400 PPM STEL	
24	108-88-3	Toluene		
		ACGIH TLV	20 PPM	22 mm
		OSHA PEL	100 PPM (Skin)	
		OSHA PEL	150 PPM (Skin) STEL	
0.8	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
5	1330-20-7	Xylene		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
3	64742-95-6	Light Aromatic Hydrocar	bons	
		ACGIH TLV	Not Available	3.8 mm
		OSHA PEL	Not Available	
1	108-67-8	1,3,5-Trimethylbenzene		
		ACGIH TLV	25 PPM	2 mm
		OSHA PEL	25 PPM	
4	95-63-6	1,2,4-Trimethylbenzene		
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
1	Proprietary	Polyamide		
	, ,	ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
2	1333-86-4	Carbon Black		
		ACGIH TLV	3.5 MG/M3	
		OSHA PEL	3.5 MG/M3	

# **SECTION 3 — HAZARDS IDENTIFICATION**

#### **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

#### **EFFECTS OF OVEREXPOSURE**

EYES: Causes burns. SKIN: Causes burns.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary, cardiovascular and reproductive systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

May cause allergic skin reaction in susceptible persons or skin sensitization.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

#### **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention IMMEDIATELY.

**SKIN:** Wash affected area thoroughly with soap and water. If irritation persists or occurs later, get medical attention.

if irritation persists or occurs later, get medical attention.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL FLAMMABILITY CLASSIFICATION

51° F PMCC 0.7 7.0 RED LABEL -- Flammable, Flash below 100° F (38 °C)

#### **EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

# **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

## STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- · Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

#### SECTION 7 — HANDLING AND STORAGE

#### STORAGE CATEGORY

DOL Storage Class IB

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

## SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Do not get in eyes or on skin. Avoid breathing vapor and spray mist.

Wash hands after using.

**HMIS Codes** 

Health 2\*

Reactivity 0

Flammability

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

#### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

891 a/l

#### PROTECTIVE GLOVES

To prevent skin contact, wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### **EYE PROTECTION**

To prevent eye contact, wear safety spectacles with unperforated sideshields.

#### OTHER PROTECTIVE EQUIPMENT

Use barrier cream on exposed skin.

#### OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

#### **SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

PRODUCT WEIGHT 7.44 lb/gal

SPECIFIC GRAVITY 0.90

**BOILING POINT** 222 - 360° F 105 - 182° C

**MELTING POINT** Not Available

**VOLATILE VOLUME** 70%

**EVAPORATION RATE** Slower than ether

VAPOR DENSITY Heavier than air

SOLUBILITY IN WATER N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

4.78lb/gal 573g/l Less Water and Federally Exempt Solvents

4.78lb/gal 573g/l Emitted VOC

#### **SECTION 10 — STABILITY AND REACTIVITY**

STABILITY — Stable CONDITIONS TO AVOID

None known.

**INCOMPATIBILITY** 

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

## SECTION 11 — TOXICOLOGICAL INFORMATION

## **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Carbon Black is classified by IARC as possibly carcinogenic to humans (group 2B) based on experimental animal data, however, there is insufficient evidence in humans for its carcinogenicity.

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name			
64742-89-8	V. M. & P. Naphtha			
	LC50 R	AT 4HR	Not Available	
	LD50 R	AT	Not Available	
108-88-3	Toluene			
	LC50 R	AT 4HR	4000 ppm	
	LD50 R	AT	5000 mg/kg	
100-41-4	Ethylbenzene			
	LC50 R	AT 4HR	Not Available	
	LD50 R	AT	3500 mg/kg	
1330-20-7	Xylene			
	LC50 R	AT 4HR	5000 ppm	
	LD50 R	AT	4300 mg/kg	
64742-95-6	Light Aromatic Hydrocarbons			
	LC50 R	AT 4HR	Not Available	
	LD50 R	AT	Not Available	
108-67-8	1,3,5-Trimethylbenzene			
	LC50 R	AT 4HR	Not Available	
	LD50 R	AT	Not Available	
95-63-6	1,2,4-Trimethylbenzene			
	LC50 R	AT 4HR	Not Available	
	LD50 R	AT	Not Available	
Proprietary	Polyamide			
	LC50 R	AT 4HR	Not Available	
	LD50 R	AT	Not Available	
1333-86-4	Carbon Black			
	LC50 R	AT 4HR	Not Available	
	LD50 R	AT	Not Available	

#### **SECTION 12 — ECOLOGICAL INFORMATION**

#### **ECOTOXICOLOGICAL INFORMATION**

No data available.

## **SECTION 13 — DISPOSAL CONSIDERATIONS**

#### **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## **SECTION 14 — TRANSPORT INFORMATION**

## **US Ground (DOT)**

1 Gallon and Less may be Classed as CONSUMER COMMODITY, ORM-D

Larger Containers are Regulated as:

UN1263, PAINT, 3, PG II, (ERG#128)

#### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Toluene 1000 lb RQ

Xylenes (isomers and mixture) 100 lb RQ

#### Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT, 3, PG II, (ERG#128)

#### Canada (TDG)

UN1263, PAINT, CLASS 3, PG II, (ERG#128)

IMO

UN1263, PAINT, CLASS 3, PG II, (11 C c.c.), EmS F-E, S-E

#### **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
108-88-3	Toluene	24	
100-41-4	Ethylbenzene	0.7	
1330-20-7	Xylene	5	
95-63-6	1,2,4-Trimethylbenzene	4	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

## **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

#### **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# **MATERIAL SAFETY DATA SHEET**

**W1020 11 00**DATE OF PREPARATION

Mar 3, 2009

## **SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION**

## **PRODUCT NUMBER**

W1020

#### **PRODUCT NAME**

HI-GLO® INTERLOCK® Gloss Hardener

#### **MANUFACTURER'S NAME**

WESTERN AUTOMOTIVE FINISHES 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

Regulatory Information	(216) 566-2902				
Medical Emergency	(216) 566-2917				
Transportation Emergency*	(800) 424-9300				
*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)					

# SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
0.1	100-41-4	Ethylbenzene		<u> </u>
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
2	64742-95-6	Light Aromatic Hydroc	arbons	
		ACGIH TLV	Not Available	3.8 mm
		OSHA PEL	Not Available	
2	108-67-8	1,3,5-Trimethylbenzene	e	
		ACGIH TLV	25 PPM	2 mm
		OSHA PEL	25 PPM	
4	95-63-6	1,2,4-Trimethylbenzene	e	
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
27	123-86-4	n-Butyl Acetate		
		ACGIH TLV	150 PPM	10 mm
		ACGIH TLV	200 PPM STEL	
		OSHA PEL	150 PPM	
		OSHA PEL	200 PPM STEL	
19	108-65-6	1-Methoxy-2-Propanol		
		ACGIH TLV	Not Available	1.8 mm
		OSHA PEL	Not Available	
0.2	4098-71-9	Isophorone Diisocyana		
		ACGIH TLV	0.005 PPM (Skin)	
		OSHA PEL	0.005 PPM (Skin)	
		OSHA PEL	0.02 PPM (Skin) STEL	
13	28182-81-2	Hexamethylene Diisoc	yanate Polymer	
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
31	Proprietary	Isophorone Diisocyana		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	

# **SECTION 3 — HAZARDS IDENTIFICATION**

#### **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist. EYE or SKIN contact with the product, vapor or spray mist.

HIVIS Code:				
Health	3*			
Flammability	3			
Reactivity	1			

#### **EFFECTS OF OVEREXPOSURE**

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary, blood forming and reproductive systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

May cause allergic respiratory and/or skin reaction in susceptible persons or sensitization. This effect may be delayed several hours after exposure.

Persons sensitive to isocyanates will experience increased allergic reaction on repeated exposure.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

#### **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

SKIN: Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If any breathing problems occur during use, LEAVE THE AREA and get fresh air. If problems remain or occur later,

**IMMEDIATELY** get medical attention.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

# **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL FLAMMABILITY CLASSIFICATION

80° F PMCC 0.7 13.1 RED LABEL -- Flammable, Flash below 100° F (38 °C)

#### **EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### **SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

# SECTION 6 — ACCIDENTAL RELEASE MEASURES

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- All personnel in the area should be protected as in Section 8.
- Cover spill with absorbent material. Deactivate spilled material with a 10% ammonium hydroxide solution (household ammonia). After 10 minutes, collect in open containers and add more ammonia. Cover loosely. Wash spill area with soap and water.

# **SECTION 7 — HANDLING AND STORAGE**

#### STORAGE CATEGORY

DOL Storage Class IC

# PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

# SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

NO PERSON SHOULD USE THIS PRODUCT, OR BE IN THE AREA WHERE IT IS BEING USED, IF THEY HAVE CHRONIC (LONG-TERM) LUNG OR BREATHING PROBLEMS OR IF THEY EVER HAD A REACTION TO ISOCYANATES.

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

#### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

Where overspray is present, a positive pressure air supplied respirator (TC19C NIOSH/MSHA approved) should be worn. If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2 may be effective. Follow respirator manufacturers directions for use. Wear the respirator for the whole time of spraying and until all vapors and mists are gone. NO PERSONS SHOULD BE ALLOWED IN THE AREA WHERE THIS PRODUCT IS BEING USED UNLESS EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

#### PROTECTIVE GLOVES

To prevent skin contact, wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

#### OTHER PROTECTIVE EQUIPMENT

Use barrier cream on exposed skin.

#### OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

#### SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT 8.37 lb/gal 1002 g/l

SPECIFIC GRAVITY 1.01

**BOILING POINT** 255 - 360° F 123 - 182° C

**MELTING POINT** Not Available

**VOLATILE VOLUME** 61%

**EVAPORATION RATE** Slower than ether **VAPOR DENSITY** Heavier than air

SOLUBILITY IN WATER N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

4.61lb/gal 553g/l Less Water and Federally Exempt Solvents

4.61lb/gal 553g/l Emitted VOC

## **SECTION 10 — STABILITY AND REACTIVITY**

# STABILITY — Stable CONDITIONS TO AVOID

None known.

#### INCOMPATIBILITY

Contamination with Water, Alcohols, Amines and other compounds which react with isocyanates, may result in dangerous pressure in, and possible bursting of, closed containers.

## HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide, Oxides of Nitrogen, possibility of Hydrogen Cyanide

## HAZARDOUS POLYMERIZATION

Will not occur

# **SECTION 11 — TOXICOLOGICAL INFORMATION**

## **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name			
100-41-4	Ethylbenzene			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		3500 mg/kg	
64742-95-6	Light Aromatic Hydrocarbons			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
108-67-8	1,3,5-Trimethylbenzene			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
95-63-6	1,2,4-Trimethylbenzene			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
123-86-4	n-Butyl Acetate			
	LC50 RAT	4HR	2000 ppm	
	LD50 RAT		13100 mg/kg	
108-65-6	1-Methoxy-2-Propanol Acetate			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		8500 mg/kg	
4098-71-9	Isophorone Diisocyanate (max.)			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		2500. mg/kg	
28182-81-2	Hexamethylene Diisocyanate Polymer			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
Proprietary	Isophorone Diisocyanate Polymer			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		4825 mg/kg	

#### **SECTION 12 — ECOLOGICAL INFORMATION**

#### **ECOTOXICOLOGICAL INFORMATION**

No data available.

## **SECTION 13 — DISPOSAL CONSIDERATIONS**

#### **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## **SECTION 14 — TRANSPORT INFORMATION**

## **US Ground (DOT)**

1 Gallon and Less may be Classed as CONSUMER COMMODITY, ORM-D

Larger Containers are Regulated as:

UN1263, PAINT RELATED MATERIAL, 3, PG III, (ERG#128)

#### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

n-Butyl acetate 5000 lb RQ

Xylenes (isomers and mixture) 100 lb RQ

#### Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT RELATED MATERIAL, 3, PG III, (ERG#128)

#### Canada (TDG)

UN1263, PAINT RELATED MATERIAL, CLASS 3, PG III, LIMITED QUANTITY, (ERG#128)

#### IMO

UN1263, PAINT RELATED MATERIAL, CLASS 3, PG III, (27 C c.c.), EmS F-E, S-E

## **SECTION 15 — REGULATORY INFORMATION**

## SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.1	
95-63-6	1,2,4-Trimethylbenzene	4	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

## **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

#### **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# **MATERIAL SAFETY DATA SHEET**

**R4K179 20 00**DATE OF PREPARATION

Mar 1, 2009

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT NUMBER

R4K179

#### PRODUCT NAME

KEM-TRANSPORT® Synthetic Enamel Reducer, Medium

# MANUFACTURER'S NAME

SHERWIN-WILLIAMS AUTOMOTIVE FINISHES 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

Telephone Humbers and Websites	
Product Information	(800) 798-5872
	www.sherwin-automotive.com
Regulatory Information	(216) 566-2902
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
*for Chemical Emergency ONLY (s	spill, leak, fire, exposure, or accident)

## **SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS**

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
8	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
46	1330-20-7	Xylene		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
3	64742-95-6	Light Aromatic Hydrocar		
		ACGIH TLV	Not Available	3.8 mm
		OSHA PEL	Not Available	
1	108-67-8	1,3,5-Trimethylbenzene		
		ACGIH TLV	25 PPM	2 mm
		OSHA PEL	25 PPM	
5	95-63-6	1,2,4-Trimethylbenzene		
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
36	67-64-1	Acetone		
		ACGIH TLV	500 PPM	180 mm
		ACGIH TLV	750 PPM STEL	
		OSHA PEL	1000 PPM	

## **SECTION 3 — HAZARDS IDENTIFICATION**

## **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE** 

EYES: Irritation

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary and reproductive systems.

HMIS Codes

Health 2\*
Flammability 3
Reactivity 0

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

## **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

#### SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT LEL UEL FLAMMABILITY CLASSIFICATION

40° F TCC 0.7 12.8 RED LABEL -- Flammable, Flash below 100° F (38 °C)

#### **EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

## **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

#### **SECTION 7 — HANDLING AND STORAGE**

#### STORAGE CATEGORY

DOL Storage Class IB

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

# SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

#### VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

## PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

## EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

#### **OTHER PRECAUTIONS**

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

## **SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

PRODUCT WEIGHT 6.96 lb/gal 833 g/l

SPECIFIC GRAVITY 0.84

55 - 182° C

**BOILING POINT** 

132 - 360° F

MELTING POINT **VOLATILE VOLUME** 99%

Not Available

**EVAPORATION RATE** 

Slower than ether

VAPOR DENSITY Heavier than air

SOLUBILITY IN WATER N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

860g/l Less Water and Federally Exempt Solvents 7.18lb/gal

4.45lb/gal 533g/l **Emitted VOC** 

## **SECTION 10 — STABILITY AND REACTIVITY**

STABILITY — Stable **CONDITIONS TO AVOID** 

None known.

**INCOMPATIBILITY** 

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

# **SECTION 11 — TOXICOLOGICAL INFORMATION**

#### **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name			
100-41-4	Ethylbenzene			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		3500 mg/kg	
1330-20-7	Xylene			
	LC50 RAT	4HR	5000 ppm	
	LD50 RAT		4300 mg/kg	
64742-95-6	Light Aromatic Hydrocarbons			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
108-67-8	1,3,5-Trimethylbenzene			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
95-63-6	1,2,4-Trimethylbenzene			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
67-64-1	Acetone			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		5800 mg/kg	

# **SECTION 12 — ECOLOGICAL INFORMATION**

## **ECOTOXICOLOGICAL INFORMATION**

No data available.

## **SECTION 13 — DISPOSAL CONSIDERATIONS**

#### **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

#### **SECTION 14 — TRANSPORT INFORMATION**

#### **US Ground (DOT)**

1 Gallon and Less may be Classed as CONSUMER COMMODITY, ORM-D

Larger Containers are Regulated as:

UN1263, PAINT RELATED MATERIAL, 3, PG II, (ERG#128)

#### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Acetone 5000 lb RQ

Ethyl benzene 1000 lb RQ

Xylenes (isomers and mixture) 100 lb RQ

#### Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1263, PAINT RELATED MATERIAL, 3, PG II, (XYLENES (ISOMERS AND

MIXTURE)), (ERG#128)

#### Canada (TDG)

UN1263, PAINT RELATED MATERIAL, CLASS 3, PG II, (ERG#128)

IMC

UN1263, PAINT RELATED MATERIAL, CLASS 3, PG II, (4 C c.c.), EmS F-E,

S-E

## **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	8	
1330-20-7	Xylene	46	
95-63-6	1,2,4-Trimethylbenzene	5	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

#### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

## **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# **MATERIAL SAFETY DATA SHEET**

**R91K20 02 00 DATE OF PREPARATION**Mar 2, 2009

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

#### **PRODUCT NUMBER**

R91K20

#### **PRODUCT NAME**

MIL-T-81772B, Type I Urethane Thinner (P&L 702900)

# **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS CO. 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

relephone Numbers and Websites	
Regulatory Information	(216) 566-2902
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
*for Chemical Emergency ONLY (spill, leak, f	ire, exposure, or accident)

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

0/ by Maiabt	CAC Number	In ava diamt	Units	Vaner Brassura
% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
10	108-88-3	Toluene	00 DDM	00
		ACGIH TLV	20 PPM	22 mm
		OSHA PEL	100 PPM (Skin)	
		OSHA PEL	150 PPM (Skin) STEL	
1.0	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
6	1330-20-7	Xylene		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
28	78-93-3	Methyl Ethyl Ketone		
		ACGIH TLV	200 PPM	70 mm
		ACGIH TLV	300 PPM STEL	
		OSHA PEL	200 PPM	
		OSHA PEL	300 PPM STEL	
11	123-86-4	n-Butyl Acetate		
		ACGIH TLV	150 PPM	10 mm
		ACGIH TLV	200 PPM STEL	
		OSHA PEL	150 PPM	
		OSHA PEL	200 PPM STEL	
44	108-65-6	1-Methoxy-2-Propanol	Acetate	
		ÁCGIH TLV	Not Available	1.8 mm
		OSHA PEL	Not Available	

# **SECTION 3 — HAZARDS IDENTIFICATION**

#### **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

EFFECTS OF OVEREXPOSURE

**EYES:** Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

HMIS Codes

Health 2\*
Flammability 3
Reactivity 0

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary, blood forming, cardiovascular and reproductive systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

#### SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL FLAMMABILITY CLASSIFICATION

24° F PMCC 1.0 13.1 RED LABEL -- Flammable, Flash below 100° F (38 °C)

**EXTINGUISHING MEDIA** 

Carbon Dioxide, Dry Chemical, Foam

#### UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

# SECTION 6 — ACCIDENTAL RELEASE MEASURES

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- · Remove all sources of ignition. Ventilate the area.
- · Remove with inert absorbent.

## **SECTION 7 — HANDLING AND STORAGE**

#### STORAGE CATEGORY

DOL Storage Class IB

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

## SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

## PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

## **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

## **PROTECTIVE GLOVES**

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

#### **OTHER PRECAUTIONS**

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

# **SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

**PRODUCT WEIGHT** 7.39 lb/gal 885 g/l **SPECIFIC GRAVITY** 0.89

**BOILING POINT** 174 - 302° F 78 - 150° C

MELTING POINT Not Available

**VOLATILE VOLUME** 100%

**EVAPORATION RATE** Slower than ether **VAPOR DENSITY** Heavier than air

SOLUBILITY IN WATER N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

7.38lb/gal 885g/l Less Water and Federally Exempt Solvents

7.38lb/gal 885g/l Emitted VOC

# **SECTION 10 — STABILITY AND REACTIVITY**

STABILITY — Stable CONDITIONS TO AVOID

None known.

**INCOMPATIBILITY** 

None known.

**HAZARDOUS DECOMPOSITION PRODUCTS** 

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION** 

Will not occur

## **SECTION 11 — TOXICOLOGICAL INFORMATION**

#### **CHRONIC HEALTH HAZARDS**

Methyl Ethyl Ketone may increase the nervous system effects of other solvents.

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name			
108-88-3	Toluene			
	LC50 RAT	4HR	4000 ppm	
	LD50 RAT		5000 mg/kg	
100-41-4	Ethylbenzene			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		3500 mg/kg	
1330-20-7	Xylene		-	
	LC50 RAT	4HR	5000 ppm	
	LD50 RAT		4300 mg/kg	
78-93-3	Methyl Ethyl Ketone			
	LC50 RAT	4HR	Not Available	
	LD50 RAT		2740 mg/kg	
123-86-4	n-Butyl Acetate			
	LC50 RAT	4HR	2000 ppm	
	LD50 RAT		13100 mg/kg	
108-65-6	1-Methoxy-2-Propanol Acetate		-	
	LC50 RAT	4HR	Not Available	
	LD50 RAT		8500 mg/kg	

#### **SECTION 12 — ECOLOGICAL INFORMATION**

## **ECOTOXICOLOGICAL INFORMATION**

No data available.

#### **SECTION 13 — DISPOSAL CONSIDERATIONS**

#### **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

# **SECTION 14 — TRANSPORT INFORMATION**

#### **US Ground (DOT)**

1 Gallon and Less may be Classed as CONSUMER COMMODITY, ORM-D

Larger Containers are Regulated as:

UN1263, PAINT RELATED MATERIAL, 3, PG II, (ERG#128)

#### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Ethyl methyl ketone 5000 lb RQ

Toluene 1000 lb RQ

Xylenes (isomers and mixture) 100 lb RQ

#### Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1263, PAINT RELATED MATERIAL, 3, PG II, (XYLENES (ISOMERS AND

MIXTURE)), (ERG#128)

#### Canada (TDG)

UN1263, PAINT RELATED MATERIAL, CLASS 3, PG II, (ERG#128)

IMO

UN1263, PAINT RELATED MATERIAL, CLASS 3, PG II, (-4 C c.c.), EmS

F-E, S-E

#### **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
108-88-3	Toluene	10	
100-41-4	Ethylbenzene	0.9	
1330-20-7	Xylene	6	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

#### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

## **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# BRENNTAG GREAT LAKES, LLC P.O. BOX 444 BUTLER, WI 53007 262-252-3550

## SECTION I - PRODUCT

PRODUCT NAME: 481 LT-R THINNER

DATE OF PREPARATION: 07/05/05 HMIS RATING: HEALTH 2

> FLAMMABILITY 3 REACTIVITY 0

EMERGENCY PHONE NUMBER: CHEMTREC (800) 424-9300

## SECTION II - HAZARDOUS INGREDIENTS

PRODUCT NAME	CAS # VAPOR	PRESSURE	TLV	UNITS
CHEMICAL NAME	PI	ERCENT	PEL	UNITS
N-HEPTANE N-HEPTANE	142-82-5	53.0 <9%		
ETHYL BENZENE ETHYL BENZENE	100-41-4	.1 <9%	100 100	
XYLENE (MIXED ISOMERS) XYLENE (MIXED ISOMERS)	1330-20-7	9.0 >9%	100 100	
HEPTANE, BRANCHED, CYCLIC AND LINEA HEPTANE, BRANCHED, CYCLIC AND LINEAR	426260-76-6	N.E. <9%		PPM PPM
ISOPROPANOL 99% 2-PROPANOL	67-63-0	33.0 <9%		PPM PPM
TOLUENE	108-88-3	26.0 >9%		
METHYL ISOBUTYL KETONE 2-PENTANONE, 4-METHYL	108-10-1	15.0 <9%		
ETHYL ACETATE 99% URETHANE GRD ACETIC ACID, ETHYL ESTER	141-78-6	72.8 <9%	400 400	PPM PPM
METHANOL METHYL ALCOHOL	67-56-1	96.0 <9%		PPM PPM
N-BUTYL ALCOHOL 1-BUTANOL	71-36-3	4.0 <9%		PPM PPM
ALCOHOL MIXTURE ETHANOL	64-17-5	43.9 <9%		PPM PPM

N-BUTYL ACETATE URETHANE GRADE	123-86-4	8.0	150	PPM
ACETIC ACID, BUTYL ESTER		<9%	150	PPM
METHYL ETHYL KETONE	78-93-3	71.0	200	PPM
2-BUTANONE		<9%	200	PPM
ACETONE	67-64-1	184.0	750	PPM
2-PROPANONE		>9%	1000	PPM

#### SECTION III - PHYSICAL DATA

BOILING RANGE: 133 - 290 DEG F VAPOR DENSITY: HEAVIER THAN AIR EVAPORATION RATE: SLOWER THAN ETHER PERCENT VOLATILE BY VOLUME: 99% WEIGHT/GALLON: 6.60000 LBS/GAL

# SECTION IV - FIRE AND EXPLOSION HAZARD DATA

HAZARD CLASSIFICATION OSHA: FLAMMABLE LIQUID-CLASS IB

DOT: 3

FLASH POINT (TCC): > 0 DEG F

LOWER EXPLOSION LIMIT % BY VOLUME (IN AIR): > 1.0

EXTINGUISHING MEDIA:

Carbon dioxide. Dry chemical. Alcohol-type foam. Water spray.

Universal-type foam.

SPECIAL FIREFIGHTING PROCEDURES:

Use self-contained breathing apparatus. Wear full protective clothing.

Use water spray to cool fire-exposed containers and structures.

A solid stream of water directed into hot, burning liquid would cause frothing and scattering of burning material.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Vapors form from this product and may settle in low places, travel along the ground, or move by air currents to be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharges, or other ignition sources at locations distant from handling point.

Product may accumulate a static electric charge under certain conditions. The charge can be large enough to cause a fire or explosion if discharged in

a vapor-air mixture that is within flammable limits.

Can react vigorously with strong oxidizing agents.

#### SECTION V - HEALTH HAZARD DATA

## EFFECTS OF OVEREXPOSURE

INGESTION:

Nausea. Vomiting. Diarrhea. Drowsiness. Headache. Dizziness. Stupor. Abdominal discomfort. Cramps. Incoordination. Loss of consciousness.

Difficulty with speech. Central nervous system depression. Death.

Pulmonary aspiration hazard if vomiting occurs. Blindness.

SKIN ABSORPTION:

Possible systemic effects.

INHALATION:

Weakness. Headache. Narcosis. Dizziness. Vomiting. Possible kidney damage.

PRODUCT NAME: 481 LT-R THINNER

FECUMSEH Monday, March 23, 2009

Possible liver damage. Nausea. Drowsiness. Loss of coordination.

Loss of appetite. Visual impairment. Difficulty in breathing. Irritation.

Loss of balance. Unconsciousness. Coma. Respiratory failure.

Olfactory fatique.

SKIN CONTACT:

Irritation. Defatting. Chapping. Cracking. Dermatitis. Erythema. Scaling.

EYE CONTACT:

Severe irritation. Corneal injury. Redness. Pain.

CHRONIC EFFECTS OF OVEREXPOSURE:

There is evidence that long-term repeated exposure to n-Butanol vapor concentrations greater than 50 ppm may result in some loss of hearing. Long-term repeated exposures to high concentrations of Methyl Ethyl Ketone vapor may result in central nervous system depression and narcosis. Toxic effects of methanol are accumulative and affect the nervous system, especially the optic nerve. These symptoms may linger for several days after

OTHER HEALTH HAZARDS:

overexposures.

None currently known.

PRIMARY ROUTE(S) OF ENTRY:

Ingestion. Skin absorption. Inhalation. Eye contact.

EMERGENCY AND FIRST AID PROCEDURES

INGESTION:

Do not induce vomiting. Call a physician. Never give anything by mouth to an unconscious person.

Do not give liquids.

Small amounts which may accidentally enter the mouth should be rinsed out until no taste of this product remains.

Immediately wash skin with soap and plenty of water.

Remove and wash contaminated clothing promptly. Call a physician.

INHALATION:

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician. EYES:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. NOTES TO PHYSICIAN:

Aspirated material may cause severe lung damage and may present a significant hazard. Stomach contents should be evacuated quickly in a manner which avoids aspiration.

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition.

## SECTION VI - REACTIVITY DATA

STABILITY:

Stable.

CONDITIONS TO AVOID:

Heat. Ignition sources. Fire.

INCOMPATABILITY:

Strong mineral acids. Strong bases. Strong oxidizing agents. Aldehydes.

Halogens. Halogen compounds.

Forms combustible and explosive mixtures with air and/or oxygen. Nitrates.

Perchlorates.

HAZARDOUS DECOMPOSITION PRODUCTS:

TECUMSEH Monday, March 23, 2009

Carbon monoxide. Carbon dioxide. Asphyxiants. Toxic vapors. Formaldehyde. HAZARDOUS POLYMERIZATION:

.\_\_\_\_\_\_\_

Will not occur.

CONDITIONS TO AVOID:

Alkali can cause condensation reactions to occur, but the reactions are not expected to be violent.

## SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Contact local authorities.

Extinguish and do not turn on any ignition source until area is determined to be free from explosion or fire hazards.

Flush small spills with water.

WASTE DISPOSAL:

Reclamation in accordance with all federal, state, and local regulations. Incineration in accordance with all federal, state, and local regulations.

## SECTION VIII - SAFE HANDLING AND USE INFORMATION

# RESPIRATORY PROTECTION:

If vapors are present, use a MESA or NIOSH approved respirator for organic vapors, fresh air breathing apparatus, or a self contained breathing apparatus.

## VENTILATION:

Keep this product in closed equipment.

Special, local ventilation is needed at points where vapors or mists are expected to escape to the workplace air.

Use in well-ventilated areas.

## PROTECTIVE GLOVES:

Consult the glove manufacturer for the most appropriate glove material.

EYE PROTECTION:

Chemical safety goggles.

OTHER PROTECTIVE EQUIPMENT:

Eye bath and safety shower.

Wear protective clothing to prevent repeated or prolonged contact.

## SECTION IX - SPECIAL PRECAUTIONS

## PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

DANGER! May be fatal if swallowed. Cannot be made nonpoisonous.

Harmful, if absorbed through skin. Harmful if inhaled.

Causes eye and skin irritation. Extremely flammable.

Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Keep away from heat, sparks, and flame.

Wash thoroughly after handling. Keep container closed.

Avoid prolonged or repeated contact with skin.

Store in cool, dry, ventilated area.

Equipment and containers should be bonded and grounded when transferring or using material.

Empty containers should not be exposed to fire, sparks, or flame as residual vapors may be explosive.

FOR INDUSTRY USE ONLY.

Avoid splash loading, agitating, or pumping at high velocities. Allow ample

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relaxation time after filtering.

Separate from oxidizing materials. May cause blindness if swallowed. Since emptied packages retain product residue, follow label warnings even after package is emptied.

Use explosion-proof electrical fixtures. Use only non-sparking tools. OTHER PRECAUTIONS:

A large spill could be toxic to aquatic life, avoid drainage to natural waters.

This product has a low solubility in water and will float on the surface. Large spills should not be allowed to drain into natural waterways. Contact lenses should not be worn.

# Section 313 Supplier Notification

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

CAS#	Chemical Name	Percent by Weight
100-41-4	ETHYL BENZENE	2.7%
1330-20-7	XYLENE (MIXED ISOMERS)	13.2%
108-88-3	TOLUENE	25.9%
108-10-1	2-PENTANONE, 4-METHYL	2.6%
67-56-1	METHYL ALCOHOL	6.2%
71-36-3	1-BUTANOL	1.0%
78-93-3	2-BUTANONE	5.1%

This information must be included in all MSDSs that are copied and distributed for this material.

# The Valspar Corporation Material Safety Data Sheet

# 1. PRODUCT AND COMPANY IDENTIFICATION

**Material Identification** 

Product ID: 456.0100606.076

Product Name: AB606 FORD DARK BLUE 6U

Product Use: Paint or Coatings Related Product

Print date: 22/Feb/2008 Revision Date: 20/Feb/2008

**Company Identification** 

The Valspar Corporation - Architectural Coatings Division

1000 Lake Road Medina, OH 44256

Manufacturer's Phone: 1-330-725-4511

**24-Hour Medical Emergency** 1-888-345-5732

Phone:

## 2. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Common Name	Approx.	Chemical name
CAS-No.	Weight %	
DIMETHYL KETONE	40 - 45	ACETONE
67-64-1		
PROPANE	15 - 20	Propane
74-98-6		
XYLENE (W/ ANTI-STATIC)	5 - 10	Xylenes (o-, m-, p- isomers)
1330-20-7		
BUTANE	5 - 10	Butane
106-97-8		
ETHYL 3-	1 - 5	Ethyl 3-ethoxypropionate
ETHOXYPROPIONATE		
763-69-9		
ETHYL ACETATE	1 - 5	Ethylacetate
141-78-6		
ETHYLBENZENE	1 - 5	Ethyl benzene
100-41-4		
METHYL ETHYL KETONE	1 - 5	Methyl ethyl ketone
78-93-3		
PROPRIETARY RESIN	1 - 5	PROPRIETARY RESIN
TITANIUM DIOXIDE	.1 - 1	Titanium dioxide
13463-67-7		

If this section is blank there are no hazardous components per OSHA guidelines.

## 3. HAZARDS IDENTIFICATION

## **Primary Routes of Exposure:**

Inhalation Ingestion Skin absorption

## **Emergency Overview:**

This section not in use.

## This product contains ingredients that may contribute to the following potential acute health effects:

#### Inhalation Effects:

Harmful if inhaled. May affect the brain, nervous system, or respiratory system, causing dizziness, headache, nausea or respiratory irritation.

## **Eye Contact:**

Causes eye irritation.

#### **Skin Contact:**

May cause moderate skin irritation.

#### **Acute Ingestion:**

None known

#### Other Effects:

May cause kidney damage. May cause liver damage.

# This product contains ingredients that may contribute to the following potential chronic health effects:

Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Prolonged and/or repeated contact can result in skin irritation. May cause skin drying with prolonged exposure.

See Section 11 for toxicological information about Mutagens, Teratogens and Carcinogens.

If this section is blank, no information is available.

#### 4. FIRST AID MEASURES

#### Inhalation:

If affected by inhalation, move victim to fresh air. If symptoms persist, seek medical attention.

## **Eye Contact:**

In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

#### **Skin Contact:**

In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. If irritation persists get medical attention. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean contaminated shoes.

#### Ingestion:

If swallowed, contact medical personnel immediately to determine best course of action.

Medical conditions aggravated by exposure: Any respiratory or skin condition.

#### 5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):

Lower explosive limit:

Upper explosive limit:

-31° F ( -35° C) TCC/PM

1 %

13 %

Autoignition temperature: Not available. ° F ( ° C)

Sensitivity to impact:

Sensitivity to static discharge: Subject to static discharge hazards. Please see bonding and

grounding information in Section 7.

Hazardous combustion products: See Section 10.

## Unusual fire and explosion hazards:

Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers or in approved self-closing containers designed to prevent spontaneous combustion until disposed of in compliance with applicable regulations. Contains oxidizable materials.

## **Extinguishing media:**

Carbon dioxide, dry chemical, foam and/or water fog.

## Fire fighting procedures:

Use water spray to cool nearby containers and structures exposed to fire. Firefighters should be equipped with self-contained breathing apparatus and turn out gear.

#### 6. ACCIDENTAL RELEASE MEASURES

## Action to be taken if material is released or spilled:

Ventilate area. Avoid breathing of vapors. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 5, "Unusual Fire and Explosion Hazards", for proper container and storage procedures. Remove sources of ignition. Remove with inert absorbent and non sparking tools. Avoid contact with eyes.

#### 7. HANDLING AND STORAGE

## Precautions to be taken in handling and storage:

Keep away from heat, sparks, and flames. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

## 8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

## **Personal Protective Equipment**

## Eye and face protection:

Avoid contact with eyes. Wear chemical goggles if there is the possibility of contact or splashing in the eye.

## Skin protection:

Appropriate chemical resistant gloves should be worn. To prevent skin contact wear protective clothing covering all exposed areas.

## Respiratory protection:

If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

#### Ventilation

Required when spraying or applying in confined area. Ventilation equipment should be explosion proof. Eliminate ignition sources.

## **Exposure Guidelines**

#### OSHA Permissible Exposure Limits (PEL's)

Common Nome	Annrox	TMA (final)	Cailings limits (final)	Ckin decianations
Common Name	Approx.	TWA (final)	Ceilings limits (final)	Skin designations
CACAL	14/2:21-4-0/		` '	_
CAS-No.	Weight %			

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DIMETHYL KETONE	40 - 45	2400 mg/m <sup>3</sup> 1000 ppm	
67-64-1			
PROPANE	15 - 20	1800 mg/m <sup>3</sup> 1000 ppm	
74-98-6			
XYLENE (W/ ANTI-STATIC)	5 - 10	435 mg/m³ 100 ppm	
1330-20-7			
ETHYL ACETATE	1 - 5	1400 mg/m <sup>3</sup> 400 ppm	
141-78-6			
ETHYLBENZENE	1 - 5	435 mg/m³ 100 ppm	
100-41-4			
METHYL ETHYL KETONE	1 - 5	590 mg/m³ 200 ppm	
78-93-3			
TITANIUM DIOXIDE	.1 - 1	15 mg/m³ Total dust.	
13463-67-7			

# **ACGIH Threshold Limit Value (TLV's)**

Common Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE	40 - 45	500 ppm	750 ppm		
67-64-1					
PROPANE	15 - 20	1000 ppm			
74-98-6					
XYLENE (W/ ANTI-STATIC)	5 - 10	100 ppm	150 ppm		
1330-20-7					
BUTANE	5 - 10	1000 ppm			
106-97-8					
ETHYL ACETATE	1 - 5	400 ppm			
141-78-6					
ETHYLBENZENE	1 - 5	100 ppm	125 ppm		
100-41-4					
METHYL ETHYL KETONE	1 - 5	200 ppm	300 ppm		
78-93-3					
TITANIUM DIOXIDE	.1 - 1	10 mg/m³			
13463-67-7					

If this section is blank, no information is available.

# 9. PHYSICAL PROPERTIES

Odor: Normal for this product type.

Physical State: Liquid

Not determined. pH:

Vapor pressure: NOT DETERMINED mmHG @ 68° F ( 20° C)

Vapor density (air = 1.0):

Boiling point: -42° F ( -41° C) Solubility in water: Not determined.

Coefficient of water/oil distribution: Not determined.

Density (lbs per US gallon): 6.4 Specific Gravity: .77 Evaporation rate (butyl acetate = 1.0): 5.6

# 10. STABILITY AND REACTIVITY

Stability: Stable Conditions to Avoid: None known.

# EPA ARCHIVE DOCUMENT

#### 10. STABILITY AND REACTIVITY

Incompatibility:

Hazardous Polymerization:

Hazardous Decomposition Products:

Strong oxidizers. None anticipated.

Carbon monoxide and carbon dioxide.

Sensitivity to static discharge:

Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

#### 11. TOXICOLOGICAL INFORMATION

Mutagens:

None known.

**Teratogens:** 

None known.

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. Contains TIO2 which is listed by IARC as a possible human carcinogen (Group 2B) based on animal data. Neither long term animal studies, nor human epidemiology studies of workers exposed to TIO2 provide an adequate basis to conclude TIO2 is carcinogenic. TIO2 is not classified as a carcinogen by NTP, U.S. OSHA, or the U.S. EPA.

Common Name	Approx.	IARC Group 1 - Human	IARC Group 2A - Limited	IARC Group 2B -
CAS-No.	Weight %	Evidence	Human Data	Sufficient Animal Data
ETHYLBENZENE	1 - 5			Monograph 77, 2000
100-41-4				
TITANIUM DIOXIDE	.1 - 1			2B Possible Carcinogen
13463-67-7				

Common Name	Approx.	NTP Known	NTP Suspect	NTP Evidence of
CAS-No.	Weight %	Carcinogens	Carcinogens	Carcinogenicity
ETHYLBENZENE	1 - 5			male rat-clear evidence;
100-41-4				female rat-some
				evidence; male mice-
				some evidence; female
				mice-some evidence

Common Name CAS-No.	Approx. Weight %	OSHA Select Carcinogens	OSHA Possible Select Carcinogens	ACGIH Carcinogens
ETHYLBENZENE 100-41-4	1 - 5			Group A3 Confirmed animal carcinogen with unknown relevance to
				humans.

## 12. ECOLOGICAL DATA

Not available at this time.

# 13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

## 14. TRANSPORTATION INFORMATION

#### **U.S. Department of Transportation**

#### 14. TRANSPORTATION INFORMATION

Proper Shipping Name: CONSUMER COMMODITY ORM-D

UN ID Number: CONCOM

## U.S. Highway & Rail Shipments

The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

## **International Air Transport Association:**

Proper Shipping Name: AEROSOLS, FLAMMABLE

Hazard Class: 2.1 UN ID Number: UN1950

## **International Maritime Organization:**

Proper Shipping Name: AEROSOLS

Hazard Class: 2

Non-Bulk UN ID Number: UN1950

Marine Pollutant Ingredient 1 Dibutyl phthalate

## 15. REGULATORY INFORMATION

## **U.S. FEDERAL REGULATIONS:**

Common Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE 67-64-1	40 - 45			5000
XYLENE (W/ ANTI-STATIC) 1330-20-7	5 - 10		form R reporting required for 1.0% de minimis concentration	100
ETHYL ACETATE 141-78-6	1 - 5			5000
ETHYLBENZENE 100-41-4	1 - 5		form R reporting required for 1.0% de minimis concentration	1000
METHYL ETHYL KETONE 78-93-3	1 - 5			5000

#### SARA 311/312 Hazard Class:

Acute: Yes
Chronic: Yes
Flammability: Yes
Reactivity: No
Sudden Pressure: Yes

## **U.S. STATE REGULATIONS:**

#### Pennsylvania Right To Know:

METHYL ETHYL KETONE 78-93-3 DIMETHYL KETONE 67-64-1 PROPANE 74-98-6 ETHYL 3-ETHOXYPROPIONATE 763-69-9 PROPRIETARY RESIN Trade Secret XYLENE (W/ ANTI-STATIC) 1330-20-7 ETHYL ACETATE 141-78-6 ETHYLBENZENE 100-41-4 BUTANE 106-97-8

#### Additional Non-Hazardous Materials

PROPRIETARY RESIN Trade Secret
PROPRIETARY RESIN Trade Secret

## California Proposition 65:

WARNING: This product contains a chemical known to the State of California to cause cancer.

Rule 66 status of product Photochemically reactive.

#### **INTERNATIONAL REGULATIONS - Chemical Inventories**

**TSCA Inventory:** All components of this product are in compliance with U.S.

TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:

All components of this product are listed on the Domestic

Substances List.

## 16. OTHER INFORMATION

**HMIS Codes** 

Health: 2 Flammability: 4 Reactivity: 1

PPE: X - See Section 8 for Personal Protective Equipment (PPE).

## Abbreviations:

OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

#### Disclaimer:

The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Issued to . . . . . . . . : Tecumseh Products Company

100 E. Patterson

MI 49286 Tecumseh

Attention: . . . . . . . . Material Safety Data Sheet Coordinator

The attached Material Safety Data Sheet relates potential hazards and recommended practices for safe handling of the product that you purchased from Raabe Company.

We urge you and your employees to review the entire MSDS prior to handling, use or disposal of the product.

You are required to keep this MSDS on file for reference by company employees or government regulatory officials.

If you resell or distribute this product, you must furnish a copy of the MSDS to your customer.

# SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHEMICAL PRODUCT IDENTIFICATION:

PRODUCT CODE. . . . : 04205 661633 604 PRODUCT NAME . . . : MASTERFLUX PURPLE PRODUCT CLASS . . . : Aerosol Touch Up

MSDS PREPARATION DATE: 03/20/2009

MANUFACTURER IDENTIFICATION: CUSTOMER IDENTIFICATION: RAABE COMPANY Tecumseh Products Company

PO BOX 1090 100 E. Patterson

MENOMONEE FALLS WI 53052-1090 Tecumseh MI 49286

**EMERGENCY TELEPHONE NUMBERS:** 

24 HOURS A DAY - CALL CHEMTREC : 800-424-9300 INTERNATIONAL CALLS TO CHEMTREC : 703-527-3887 8 AM TO 4:30 PM CENTRAL TIME : 262-255-9500

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

1 ETHYLBENZENE

CAS# 100-41-4

**ETHYLBENZENE** 

PCT BY WT: .1760 VAPOR PRESSURE: 19.000 MMHG @ 68F LEL 1.20

EXPOSURE LIMIT:

ACGIH TLV-TWA 100 ppm 125 ppm ACGIH TLV-STEL OSHA PEL-TWA 100 ppm 125 ppm OSHA PEL-STEL

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```
RZ661633
                           IARC (2B), CALIFORNIA PROP 65 (Cancer 6/11/2004)
   OTHER
                           3500 mg/kg (rat)
20574 mg/kg (rabbit)
17623 mg/m3 (rat)
   LD50(ORAL)
   LD50(DERMAL)
   LC50
OTHER LIMITS:
 PROP 65-Cancer, listed 6/11/04 EINECS 202-849-4
  2 N-BUTANE
 CAS# 106-97-8
N-BUTANE
 PCT BY WT: 6.0000 VAPOR PRESSURE: 879.100 MMHG @ 68F LEL 1.80
EXPOSURE LIMIT:
   ACGIH TLV-TWA
                           800 ppm
                           NO INFO
800 ppm
   ACGIH TLV-STEL
   OSHA PEL-TWA
   COMPANY
                           N.E.
   LD50(ORAL)
                           N.A.
   LD50(DERMAL)
                           N.A.
                           658000 mg/m3 (rat)
   LC50
OTHER LIMITS:
                                       EINECS 203-448-7
  3 PROPANE
 CAS# 74-98-6
PROPANE
 PCT BY WT: 18.0000 VAPOR PRESSURE: 5585.200 MMHG @ 68F LEL 2.20
EXPOSURE LIMIT:
   ACGIH TLV-TWA

ACGIH TLV-STEL

LD50(ORAL)

LD50(DERMAL)

LD50(DERMAL)

NOT APPLICABLE

NO INFORMATION
OTHER LIMITS:
                                       EINECS 200-827-9
  4 TITANIUM DIOXIDE
 CAS# 13463-67-7
TITANIUM DIOXIDE
 PCT BY WT: 2.0000
EXPOSURE LIMIT:
   ACGIH TLV-TWA
                           10 \text{ mg/m}3
   ACGIH TLV-STEL
                           NO INFO
                           10 mg/m3
   OSHA PEL-TWA
   COMPANY
                           N.E.
                           > 24000 mg/kg (rat)
   LD50(ORAL)
                           > 6820 \text{ mg/m}^3 \text{ (rat)}
   LC50
OTHER LIMITS:
                                     EINECS 236-675-5
  5 ACETONE
 CAS# 67-64-1
ACETONE
 PCT BY WT: 37.0000 VAPOR PRESSURE: 231.000 MMHG @ 68F LEL 2.60
EXPOSURE LIMIT:
                           750 ppm
1000 ppm
   ACGIH TLV-TWA
   ACGIH TLV-STEL
                           750 ppm
1000 ppm
   OSHA PEL-TWA
   OSHA PEL-STEL
   COMPANY
LD50(ORAL)
LD50(DERMAL)
   COMPANY
                           N.E.
                           5340 mg/kg (rabbit)
                           20000 mg/kg (rabbit)
70852 mg/m3 (rat)
   LC50
OTHER LIMITS:
```

Page 2

#### RZ661633 EINECS 200-662-2

```
6 METHYL ETHYL KETONE
CAS# 78-93-3
METHYL ETHYL KETONE
PCT BY WT: 7.0000 VAPOR PRESSURE: 85.000 MMHG @ 68F LEL 1.80
EXPOSURE LIMIT:
                     200 ppm
300 ppm
200 ppm
  ACGIH TLV-TWA
  ACGIH TLV-STEL
  OSHA PEL-TWA
                     N.E.
2737 mg/kg (rat)
  COMPANY
  LD50(ORAL)
                      6480 mg/kg (rat)
23500 mg/m3 (rat)
  LD50(DERMAL)
  LC50
OTHER LIMITS:
                               EINECS 201-159-0
 7 GLYCOL ETHER PM ACETATE
CAS# 108-65-6
PROPYLENE GLYCOL METHYL ETHER ACETATE
PCT BY WT: 9.0000 VAPOR PRESSURE:
                                      3.700 MMHG @ 68F LEL
EXPOSURE LIMIT:
  ACGIH TLV-TWA
                      NOT ESTABLISHED
  LD50(ORAL)
LD50(DERMAL)
  ACGIH TLV-STEL
                      NOT ESTABLISHED
                      8500 mg/kg (rat)
5000 mg/kg (rat)
                      5321 mg/m3 (rat)
  LC50
OTHER LIMITS:
                               EINECS 203-603-9
 8 TOLUENE
CAS# 108-88-3
TOLUENE
                                    38.000 MMHG @ 68F LEL
PCT BY WT: 11.0000 VAPOR PRESSURE:
EXPOSURE LIMIT:
                      20 ppm
NO INFO
  ACGIH TLV-TWA
  ACGIH TLV-STEL
                      50 ppm
  OSHA PEL-TWA
  COMPANY
                      N.E.
                      636 mg/kg (rat)
14124 mg/kg (rabbit)
7523 mg/m3 (mouse)
  LD50(ORAL)
  LD50(DERMAL)
  LC50
OTHER LIMITS:
Prop 65-Developmental-01/01/91
                               EINECS 203-625-9
*******************
    This product contains one or more reported carcinogens or suspected
carcinogens which are noted NTP, IARC, or OSHA-Z in the other limits
recommended column.
************
******************
    This substance is classified as a hazardous air pollutant.
*******************
                 SECTION 3 - HAZARDS IDENTIFICATION
EMERGENCY OVERVIEW:
 Harmful if swallowed.
Harmful if inhaled.
 Causes eye irritation.
 Causes skin irritation.
 Vapors irritating to eyes and respiratory tract.
                                 Page 3
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Extremely flammable liquid and vapor.
  Vapors may cause flash fire or explosion. Extremely flammable aerosol.
  Contents under pressure.
  May cause eye burns.
SKIN:
  May cause skin irritation.
  Prolonged contact with the skin can cause chemical burns.
  Product contains a component which can be absorbed through the skin.
  Excessive exposure may cause hemolysis (red blood cell damage) which can impair the blood's ability to transport oxygen.
  Material may aggravate an existing dermatitis.
INHALATION:
  Exposure to high concentrations of vapors may cause dizziness, breathing
  difficulty, headaches or respiratory irritation.
  Extremely high concentrations may cause drowsiness, staggering,
  confusion, unconsciousness, coma or death.
  Excessive inhalation of vapors can cause nasal and respiratory
  irritation.
  Liquid or vapor may be irritating to skin, eyes, throat or lungs. Intentional misuse by deliberately concentrating and inhaling the contents of this product can be harmful or fatal.
INGESTION:
  Moderately toxic. May cause stomach discomfort, nausea, vomiting,
  diarrhea, and narcosis.
  Aspiration of material into the lungs if swallowed or if vomiting occurs
  can cause chemical pneumonitis which can be fatal.
  May cause nausea, vomiting and diarrhea.
CHRONIC EFFECTS:
  Chronic overexposure to a component or components in this material has
  been found to cause the following effects in laboratory animals:
        Kidney damage
        Eye damage
        Lung damage
        Liver damage
        Spleen damage
        Anemia
        Brain damage
  Chronic overexposure to a component or components is this product has
  been suggested as a cause of the following effects in humans:
        Liver damage
        Cardiac abnormalities
  Reports have associated repeated and prolonged overexposure to solvents
  with permanent brain and nervous system damage.
  Repeated breathing or skin contact of methyl ethyl ketone may increase the potency of neurotoxins such as hexane if exposures occur at the same
  time.
  Central nervous system depression, shock, coma, visual disturbances, and death. Onset of symptoms may be delayed as long as 30 hours. Rats exposed to titanium dioxide dust at 250 mg/m3 developed lung cancer,
  however, such exposure levels are not attainable in the workplace with
  this material.
  Product contains toluene which may be harmful to the fetus based on
  animal studies.
  Repeated exposure to toluene has been associated with high frequency
  hearing loss in laboratory animals. The human consequences of this finding is uncertain.
  In February 2000 the International Agency for Research on Cancer (IARC)
  classified ethylbenzene as possibly carcinogenic to humans (Group 2B) on
  the basis of sufficient evidence for carcinogenicity in experimental animals but inadequate evidence for cancer in humans.
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RZ661633

tools.

# RZ661633 SECTION 4 - FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.
Flush with large quantities of water for 15 minutes. SKIN CONTACT: Wash with soap and water. Get medical attention if irritation develops Wash thoroughly with soap and water and seek medical attention if irritation persists. Remove contaminated clothing. Launder contaminated clothing before reuse. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. breathing is difficult, give oxygen. Get immediate medical attention. For inhalation overexposure move person to fresh air. If breathing stops, apply artificial respiration and seek medical attention. INGESTION: Since this product may contain materials which can cause lung damage if aspirated into the lungs, the decision whether to induce vomiting or not must be made by a physician after careful consideration of all materials Ingestion of large quantities of this material will result in methanol poisoning. In this case treatment should include hemodialysis; the administration of ethanol to interfere with the metabolism of methanol and the administration of sodium carbonate to correct acidosis. SECTION 5 - FIRE FIGHTING MEASURES \_\_\_\_\_\_ FIRE AND EXPLOSIVE PROPERTIES OF THE PRODUCT: Flashpoint . . . . . . . . . . : Less Than -25 ØF Explosion Level . . . . . . . . . : Low (LEL) - 1. High (UEL)- 13. EXTINGUISHING MEDIA: Use Dry Chemical, Carbon Dioxide or Chemical Foam. FIRE-FIGHTING PROCÉDURES AND EQUIPMENT: Keep containers tightly closed. Isolate from heat, sparks, and open flame. Closed containers may explode when exposed to extreme heat. Contents under pressure. Do not use or store near sources of heat, sparks or open flame. Keep away from any source of heat such as sunlight, heaters or stoves that could cause the container to burst. Do not puncture or incinerate. Do not crush or place in a garbage compactor. Do not store above 120 degrees F. Aerosol containers may explode when exposed to extreme heat. Product vapors are heavier than air and may travel a long distance to a source of ignition and flash back. Full protective equipment including self-contained breathing apparatus to avoid inhalation of vapors should be used. Water spray should not be used except to keep down vapors or cool closed containers to prevent build-up of pressure. If water is used, fog nozzles are preferred. SECTION 6 - ACCIDENTAL RELEASE MEASURES CLEAN-UP AND CONTAINMENT: Remove all sources of ignition. Avoid heat, sparks, flames and anything which could cause fire.

Ventilate area of spill and adjacent low lying areas. Avoid breathing

solvent vapors. Remove with inert absorbent materials and non-sparking

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HANDLING:
  wash hands thoroughly after handling.
  This product contains chemical(s) which are listed on California's
  proposition 65 list. If the product is to be sold or used in California a clear and reasonable warning must be provided such as:
  Warning! This product contains a chemical or chemicals known to the State
  of California to cause cancer.
STORAGE:
  Store in a cool dry area with ventilation suitable for storing materials
  shown in section 2.
  Keep away from heat, sparks and flame.
  Store in a cool place away from direct sunlight or any source of
  ignition. Do not store at temperatures above 120 degrees F.
             SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION
ENGINEERING CONTROLS:
  Sufficient ventilation, in volume and pattern, should be provided to keep
  air contamination below current applicable OSHA permissible exposure
  limit or ACGIH's TLV limit.
RESPIRATORY PROTECTION:
  If workplace exposure limits are exceeded for any component(see section
  2 for hazardous components and exposure limits), a NIOSH/OSHA approved
  respirator suitable for components listed is recommended.
SKIN PROTECTION:
  Chemical resistant plastic or rubber gloves recommended for prolonged or
  repeated contact.
EYE PROTECTION:
Chemical goggles with side shields or face shield recommended if contact with the eyes is likely.

OTHER PROTECTIVE EQUIPMENT:
  Appropriate impervious clothing is recommended if prolonged or repeated contact is likely.
HYGIENIC PRACTICES:
  wash hands before eating or smoking. Smoke in designated areas only.
              SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES
  mm Hg @ 20 C
  1.0
                                                            øF
                                          Higher - 302.0
  Specific Gravity . . . . . . . . :
  Formula Weight per Volume . . . . . :
                                                  6.2653 LB/GL
                                             4.934
  VOC (Calculated, LB/GAL)
  VOC (Calculated, GM/L)....:
                                           591.24
  Percent Volatile by Weight. . . . . : Percent Volatile by Volume . . . . :
                                           87.9433
                                           92.9693
 7.700 (n-Butyl Acetate = 1)
                   SECTION 10 - STABILITY AND REACTIVITY
CONDITIONS TO AVOID:
  Avoid contact with heat, sparks, and open flame.
Product may explode if heated. Keep cool, avoid exposure to heat. INCOMPATIBILITIES:
  Strong oxidizing agents.
DECOMPOSITION:
  Thermal decomposition may produce carbon dioxide, carbon monoxide, and
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Page 6

unidentifiable organic materials.

**POLYMERIZATION:** 

#### RZ661633

No hazardous polymerization will occur under normal conditions. STABILITY: The product is stable under normal storage conditions. SECTION 11 - TOXICOLOGICAL INFORMATION No specific information is available. Please refer to Section 2 and 3 for available information on exposure limits and hazards identification. SECTION 12 - ECOLOGICAL INFORMATION No specific ecological information is available for this product. SECTION 13 - DISPOSAL CONSIDERATIONS Place in closed containers. Dispose of product in accordance with local, county, state, and federal regulations. SECTION 14 - TRANSPORT INFORMATION Ground shipment of limited or excepted quantities of aerosols or liquid paint in containers of 1 quart or less:

CONSUMER COMMODITY, ORM-D Ground shipment of liquid paint in containers more than 1 quart: PAINT, FLAMMABLE LIQUID, UN1263, CLASS 3, GROUP II (Regulatory sources: DOT 49CFR 172.101) Air shipment of limited or excepted quantities of aerosols or liquid paint in containers of 1 quart or less:

CONSUMER COMMODITY, ID 8000, CLASS 9 MISCELLANEOUS LABEL
(Regulatory sources: IATA Quantity Exemptions - Table 2.8.4, 2.7.A, 2.7.5, Packaging Instruction: 910) OR AEROSOLS, FLAMMABLE, UN1950, CLASS 2.1 LABEL (Regulatory sources: IATA Quantity Exemptions - Table 2.8.1, 2.8.4, Packaging Instruction: Y203) SECTION 15 - REGULATORY INFORMATION SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372: ETHYLBENZENE CAS# 100-41-4 PCT BY WT: .1760 TOLUENE CAS# 108-88-3 PCT BY WT: 10.5200 FEDERAL REGULATIONS: TOXIC SUBSTANCES CONTROL ACT: The chemical substances in this product are listed on the TSCA Section 8 inventory. STATE REGULATIONS: This product contains chemical(s) which are listed on California's proposition 65 list. If the product is to be sold or used in California a clear and reasonable warning must be provided such as: Warning! This product contains a chemical or chemicals known to the State of California to cause cancer. Warning! This product contains a chemical or chemicals known to the Page 7

#### RZ661633

State of California to cause birth defects or other reproductive harm. NEW JERSEY RIGHT-TO-KNOW

No non-hazardous ingredients are among the top five ingredients

PENNSYLVANIA RIGHT-TO-KNOW

The following non-hazardous ingredients are present in the product at greater than 3 %

\_\_\_\_\_\_CAS NUMBER

INTERNATIONAL REGULATIONS:

CANADA: The chemical substances in this product are listed on the Canadian Domestic Substances List.

SECTION 16 - OTHER INFORMATION

The information contained on this MSDS is believed to be reliable and accurate. Due to the changing nature of government information, it is impossible to guarantee the accuracy of the information contained herein. Since the conditions of handling and use are beyond our control, we make no guarantee of results and assume no liability for damages incurred by the use of this material. This information should not be regarded as legal advice or regulation. It is the responsibility of the user to comply with all Federal, State, and Local laws and regulations. For questions relating to specific aspects of the requirements and regulations consult the proper regulatory agency.

HMIS RATINGS:

HEALTH: 2\* FLAMMABILITY: 4 REACTIVITY: 0 PERSONAL PROTECTION: G

Q

## **MATERIAL SAFETY DATA SHEET**

**B67V5 12 00**DATE OF PREPARATION
Jan 20, 2009

#### SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT NUMBER

B67V5

#### PRODUCT NAME

Recoatable Epoxy Primer (Part H), Hardener

#### **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

Product Information	www.sherwin-williams.com		
Regulatory Information	(216) 566-2902		
	www.paintdocs.com		
Medical Emergency	(216) 566-2917		
Transportation Emergency*	(800) 424-9300		
*for Chemical Emergency ONLY (spill, leak, fire, exposure, or acciden			

#### SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
2	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
9	1330-20-7	Xylene		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
7	110-43-0	Methyl n-Amyl Ketone		
		ACGIH TLV	50 PPM	3.855 mm
		OSHA PEL	100 PPM	
17	Proprietary	Epoxy Polymer		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
53	14808-60-7	Quartz		
		ACGIH TLV	0.025 mg/m3 as Resp. Dust	
		OSHA PEL	0.1 mg/m3 as Resp. Dust	

## **SECTION 3 — HAZARDS IDENTIFICATION**

# **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

 $\ensuremath{\mathsf{EYE}}$  or SKIN contact with the product, vapor or spray mist.

## **EFFECTS OF OVEREXPOSURE**

**EYES:** Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary and reproductive systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

May cause allergic skin reaction in susceptible persons or skin sensitization.

HMIS C	odes
Health	2*
Flammability	3
Reactivity	0

#### CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

# **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

If irritation persists or occurs later, get medical attention. Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

INGESTION: Do not induce vomiting. Get medical attention immediately.

## **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL FLAMMABILITY CLASSIFICATION

80° F PMCC 1.0 7.9 RED LABEL -- Flammable, Flash below 100° F (38 °C)

**EXTINGUISHING MEDIA** 

Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

#### **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

#### **SECTION 7 — HANDLING AND STORAGE**

## STORAGE CATEGORY

DOL Storage Class IC

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

#### SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

#### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

## RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

#### PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

#### OTHER PROTECTIVE EQUIPMENT

Use of barrier cream on exposed skin is recommended.

#### **OTHER PRECAUTIONS**

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT 12.70 lb/gal

jal 1521 g/l

SPECIFIC GRAVITY 1.53 BOILING POINT 277 - 308° F

308° F 136 - 153° C

MELTING POINT Not Available

**VOLATILE VOLUME** 31%

EVAPORATION RATE Slower than ether VAPOR DENSITY Heavier than air

SOLUBILITY IN WATER N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

2.19lb/gal 262g/l Less Water and Federally Exempt Solvents

2.19lb/gal 262g/l Emitted VOC

#### SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable CONDITIONS TO AVOID

None known.

**INCOMPATIBILITY** 

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

#### **SECTION 11 — TOXICOLOGICAL INFORMATION**

#### **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Crystalline Silica (Quartz, Cristobalite) is listed by IARC and NTP. Long term exposure to high levels of silica dust, which can occur only when sanding or abrading the dry film, may cause lung damage (silicosis) and possibly cancer.

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name				
100-41-4	Ethylbenzene				
	•	LC50 RAT	4HR	Not Available	
		LD50 RAT		3500 mg/kg	
1330-20-7	Xylene				
	•	LC50 RAT	4HR	5000 ppm	
		LD50 RAT		4300 mg/kg	
110-43-0	Methyl n-Amyl Ketone				
	, ,	LC50 RAT	4HR	Not Available	
		LD50 RAT		1670 mg/kg	
Proprietary	Epoxy Polymer				
	. , ,	LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
14808-60-7	Quartz				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	

# **SECTION 12 — ECOLOGICAL INFORMATION**

#### **ECOTOXICOLOGICAL INFORMATION**

No data available.

#### **SECTION 13 — DISPOSAL CONSIDERATIONS**

#### **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## **SECTION 14 — TRANSPORT INFORMATION**

#### **US Ground (DOT)**

1 Gallon and Less may be Classed as CONSUMER COMMODITY, ORM-D

Larger Containers are Regulated as:

UN1263, PAINT, 3, PG III, (ERG#128)

#### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

#### Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1263, PAINT, 3, PG III, (XYLENES (ISOMERS AND MIXTURE)),

(ERG#128)

#### Canada (TDG)

UN1263, PAINT, CLASS 3, PG III, LIMITED QUANTITY, (ERG#128)

IMO

UN1263, PAINT, CLASS 3, PG III, (27 C c.c.), EmS F-E, S-E

## **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	2	
1330-20-7	Xylene	9	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

#### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

## **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# Material Safety Data Sheet

24 Hour Assistance: 1-847-367-7700 Rust-Oleum Corp. www.rustoleum.com

# Section 1 - Chemical Product / Company Information

Rust-Oleum High Performance Industrial

Product Name: Enamel Aerosol Topcoats (Hard Hat) Revision Date: 04/05/2006

Identification V2183838, V2184838, V2188838, V2184838, V2125838, V2133838, V2137838, V2137838, V2143838, V2143838, V2148838, V2163838, V2164838, V2163838, V2164838, V2164848, V2164848, V2164884, V

V2177838, V2187838, V2190838, V2192838, V2196838, 209567

Product Use/Class: Topcoats/Aerosol

Supplier: Rust-Oleum Corporation Manufacturer: Rust-Oleum Corporation

11 Hawthorn Parkway
Vernon Hills, IL 60061

11 Hawthorn Parkway
Vernon Hills, IL 60061

USA USA

Preparer: Regulatory Department

# Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Tha	n ACGIH TLV-TWA	<b>ACGIH TLV-STEL</b>	OSHA PEL-TWA	OSHA PEL-CEILING
Acetone	67-64-1	30.0	500 PPM	750 PPM	750 PPM	N.E.
Liquefied Petroleum Gas	68476-86-8	30.0	1000 PPM	N.E.	1000 PPM	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	10 mg/m3	N.E.
Magnesium Silicate	14807-96-6	15.0	10 mg/m3	N.E.	15 mg/m3	N.E.
N-Butyl Acetate	123-86-4	10.0	150 PPM	200 PPM	150 PPM	N.E.
Xylene	1330 -20-7	10.0	100 PPM	150 PPM	100 PPM	N.E.
Methyl Ethyl Ketone	78-93-3	10.0	200 PPM	300 PPM	200 PPM	N.E.
Stoddard Solvents	8052 -41 -3	5.0	100 PPM	N.E.	500 PPM	N.E.
Ethylene Glycol Monobutyl Ethe	r 111-76 <i>-</i> 2	5.0	20 PPM	N.E.	50 PPM	N.E.
Toluene	108-88-3	5.0	50 PPM	150 PPM	200 PPM	300 PPM
Ethylbenzene	100-41 -4	5.0	100 PPM	125 PPM	100 PPM	N.E.
Aromatic Hydrocarbon	64742-95-6	5.0	N.E.	N.E.	N.E.	N.E.
1,2,4-Trimethylbenzene	95-63-6	5.0	25 PPM	N.E.	N.E.	N.E.
Pigment Black 7	1333 -86-4	5.0	3.5 mg/m3	N.E.	3.5 mg/m3	N.E.
Pigment Yellow 17	4531 -49-1	5.0	2 mg/m3	N.E.	5 mg/m3	N.E.
Pigment Violet 32	12225-08-0	1.0	N.E.	N.E.	N.E.	N.E.
Pigment Red 122	980-26-7	1.0	15mg/m3	N.E.	5mg/m3	N.E.

# Section 3 - Hazards Identification

\*\*\* Emergency Overview \*\*\*: Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Vapors may cause flash fire or explosion. Extremely flammable liquid and vapor. Contents Under Pressure. Harmful if swallowed.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: May be harmful if absorbed through skin. Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). May cause central nervous system disorder (e,g.,narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. Overexposure to toluene in laboratory animals has been associated with liver abnormalities, kidney, lung and spleen damage. Effects in humans have included liver and cardiac abnormalities. Overexposure to methyl ethyl ketone in laboratory animals has been associated with liver abnormalities, kidney and lung damage. Fetotoxic/embryotoxic effects from inhalation have been seen in rats exposed to >1000ppm during gestation.

Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hampster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

# Section 4 - First Aid Measures

First Aid - Eye Contact: Hold eyelids apart and flush with plenty of water for at least 15 minutes. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

# Section 5 - Fire Fighting Measures

Flash Point: -156 F LOWER EXPLOSIVE LIMIT: 0.7 % (Setaflash) UPPER EXPLOSIVE LIMIT: 32.5 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID

AND VAPOR! Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

# Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

# Section 7 - Handling And Storage

Handling: Use only in a well-ventilated area. Avoid breathing vapor or mist. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Wash thoroughly after handling. Wash hands before eating.

Storage: Contents under pressure. Do not expose to heat or store above 120 ° F. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

# Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use explosion-proof ventilation equipment.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

# **Section 9 - Physical And Chemical Properties**

Boiling Range: -34 - 900 F Vapor Density: Heavier than Air

Odor: Solvent-like Odor Threshold: ND

Appearance: Liquid Evaporation Rate: Faster than Ether

Solubility in H2O: Slight

Freeze Point: ND Specific Gravity: 0.8660 Vapor Pressure: ND PH: ND

Physical State: Liquid

(See section 16 for abbreviation legend)

# Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

# Section 11 - Toxicological Information

Product LD50: ND Product LC50: ND

 Chemical Name
 LD50
 LC50

 Acetone
 N.D.
 N.D.

 Liquefied Petroleum Gas
 N.D.
 N.D.

 Titanium Dioxide
 >7500 mg/kg (ORAL, RAT)
 N.D.

Magnesium Silicate

N.D.

TCLo:11mg/m3 inh.

N-Butyl Acetate

13100 mg/kg (ORAL, RAT)

2000 PPM (INH 4 Hr, RAT)

Xylene N.D. N.D.

Methyl Ethyl Ketone N.D. N.D.

Stoddard Solvents N.D. N.D.

Ethylene Glycol Monobutyl Ether 1519 mg/kg (ORAL, MOUSE)700 PPM (INH 7 Hr, RAT)

Toluene N.D. N.D. Ethylbenzene 3500 mg/kg (ORAL, RAT) N.D. Aromatic Hydrocarbon N.D. N.D. N.D.

1,2,4-Trimethylbenzene N.D. 18000 mg/m3 (RAT, 4 HR)

Pigment Black 7 >8000 mg/kg (ORAL, RAT) N.D.
Pigment Violet 32 >10000 mg/kg (ORAL, RAT) N.D.
Pigment Red 122 N.D.
N.D.

# Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

# Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do

# Section 14 - Transportation Information

DOT Proper Shipping Name: Aerosol Packing Group: --DOT Technical Name: --DOT Hazard Class: 2.1 Resp. Guide Page: 126

DOT UN/NA Number: UN1950

# Section 15 - Regulatory Information

#### **CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

#### SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<u>Chemical Name</u>	<u>CAS Number</u>
Xylene	1330-20-7
Methyl Ethyl Ketone	78-93-3
Ethylene Glycol Monobutyl Ether	111-76-2
Toluene	108-88-3
Ethylbenzene	100-41-4
1,2,4-Trimethylbenzene	95-63-6

#### **Toxic Substances Control Act:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None known

# U.S. State Regulations: As follows -

#### **New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

Chemical NameCAS NumberAlkyd ResinMIXTURE

## Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name
Alkyd Resin
Barium Sulfate
Calcium Carbonate
Yellow Iron Oxide

#### **California Proposition 65:**

WARNING! This product contains a chemical(s) known by the State of California to cause cancer.

WARNING! This product contains a chemical(s) known to the state of California to cause birth defects or other reproductive harm.

**CAS Number** 

MIXTURE

7727-43-7

1317-65-3

51274-00-1

International Regulations: As follows -

## **CANADIAN WHMIS:**

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5, D2A, D2B

# Section 16 - Other Information

**HMIS Ratings:** 

Health: 2 Flammability: 4 Reactivity: 0 Personal Protection: X

## **VOLATILE ORGANIC COMPOUNDS, g/I:**

## **REASON FOR REVISION:**

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

S	Section 1 -	- PRODUCT AND	COMPANY	IDENTIFICATION		
PRODUCT NUM	MBER	DATE OF	PREPARA	ATION	HMIS CODES	
				Не	ealth	2*
17006		01	-SEP-07	F]	lammability	3
				R€	eactivity	1

PRODUCT NAME

ACE® Premium Enamel, Chrome Aluminum

MANUFACTURER'S NAME

Mfd. for:

ACE HARDWARE COPORATION

Oak Brook, IL 60521

TELEPHONE NUMBERS and WEBSITES

Regulatory Information

(216) 566-2902 www.paintdocs.com

Medical Emergency (216) 566-2917

Transportation Emergency

for Chemical Emergency ONLY (spill, leak,

(800) 424-9300 fire, exposure, or accident)

% by WT	Section 2 CAS No.	COMPOSITION/INFO INGREDIENT	RMATIO	N ON INGRED UNITS		PRESSI	URE
16	74-98-6	Propane					
		ACGIH TLV	2500	ppm		760	mm
		OSHA PEL	1000	ppm			
16	106-97-8	Butane					
		ACGIH TLV	800	ppm		760	mm
		OSHA PEL	800	ppm			
1	64742-88-7	Mineral Spirits					
		ACGIH TLV	100	ppm		2	mm
	100 00 0	OSHA PEL	100	ppm			
34	108-88-3	Toluene	0.0			0.0	
		ACGIH TLV	20	ppm		22	mm
		OSHA PEL	100	ppm (Skin)			
0 4	100 41 4	OSHA PEL	150	ppm (Skin)	STEL		
0.4	100-41-4	Ethylbenzene	1.00			<b>1</b> 7 1	
		ACGIH TLV ACGIH TLV	100 125	ppm		7.1	шш
		OSHA PEL	100	ppm STEL			
		OSHA PEL	125	ppm ppm STEL			
2	1330-20-7	Xylene	123	ppm sign			
2	1330 20 7	ACGIH TLV	100	ppm		5.9	mm
		ACGIH TLV	150	ppm STEL		3.7	
		OSHA PEL	100	ppm			
		OSHA PEL	150	ppm STEL			
10	67-64-1	Acetone		FF SILL			
— <del>-</del>	- · · ·	ACGIH TLV	500	ppm		180	mm
		ACGIH TLV	750	ppm STEL			
		OSHA PEL	1000	ppm			

Continued on page 2

#### Section 3 -- HAZARDS IDENTIFICATION

## ROUTES OF EXPOSURE

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

#### EFFECTS OF OVEREXPOSURE

EYES: Irritation.

SKIN: Prolonged or repeated exposure may cause irritation.

INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

#### Section 4 -- FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes.

Get medical attention.

SKIN: Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing.

Keep warm and quiet.

INGESTION: Do not induce vomiting.

Get medical attention immediately.

#### Section 5 -- FIRE FIGHTING MEASURES

FLASH POINT	LEL	$\mathtt{UEL}$
Propellant < 0 F	1.0	12.8

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam UNUSUAL FIRE AND EXPLOSION HAZARDS

Containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

#### Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Remove all sources of ignition. Ventilate the area. Remove with inert absorbent.

## Section 7 -- HANDLING AND STORAGE

STORAGE CATEGORY

Not Available

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep away from heat, sparks, and open flame. Vapors will accumulate readily and may ignite explosively.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120F. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children.

#### Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist. Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority. VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108. RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

#### PROTECTIVE GLOVES

None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemical resistant gloves.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields. OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

## Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT 6.24  $747 \, q/1$ lb/qal SPECIFIC GRAVITY 0.75 BOILING POINT <0 - 395 F <-18 - 201 C MELTING POINT Not Available VOLATILE VOLUME 87 Faster than ether EVAPORATION RATE VAPOR DENSITY Heavier than air SOLUBILITY IN WATER N.A. 7.0 рН VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged) Volatile Weight 69.51% Less Water and Federally Exempt Solvents

#### Section 10 -- STABILITY AND REACTIVITY

STABILITY -- Stable CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

#### Section 11 -- TOXICOLOGICAL INFORMATION

#### CHRONIC HEALTH HAZARDS

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary, cardiovascular and reproductive systems.

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

TOXICOLOGY DATA

Continued on page 5

CAS No.	Ingredient	Name			
74-98-6	Propane				
		LC50	RAT	4HR	Not Available
		LD50	RAT		Not Available
106-97-8	Butane			_	
		LC50	RAT	4HR	Not Available
64540 00 5		LD50	RAT		Not Available
64742-88-7	Mineral Sp				
		LC50	RAT	4HR	Not Available
		LD50	RAT		Not Available
108-88-3	Toluene				
		LC50	RAT	4HR	4000 ppm
		LD50	RAT		5000 mg/kg
100-41-4	Ethylbenze	ne			
		LC50	RAT	4HR	Not Available
		LD50	RAT		3500 mg/kg
1330-20-7	Xylene				
		LC50	RAT	4HR	5000 ppm
		LD50	RAT		4300 mg/kg
67-64-1	Acetone				
		LC50	RAT	4HR	Not Available
		LD50	RAT		5800 mg/kg

#### Section 12 -- ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

## Section 13 -- DISPOSAL CONSIDERATIONS

## WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Do not incinerate. Depressurize container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

# Section 14 -- TRANSPORT INFORMATION

## US Ground (DOT)

May be classed as Consumer Commodity, ORM-D UN1950, AEROSOLS, 2.1, LIMITED QUANTITY, (ERG#126)

#### Canada (TDG)

May be classed as Consumer Commodity, ORM-D UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, (ERG#126)

## IMO

May be shipped as Limited Quantity UN1950, AEROSOLS, CLASS 2, LIMITED QUANTITY, EmS F-D, S-U

Continued on page 6

#### Section 15 -- REGULATORY INFORMATION

SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by	WT % Element
108-88-3	Toluene	34	
100-41-4	Ethylbenzene	0.3	
1330-20-7	Xylene	2	

#### CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

## Section 16 -- OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

## **MATERIAL SAFETY DATA SHEET**

**DATE OF PREPARATION 02 00**Feb 28, 2009

## **SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION**

## **PRODUCT NUMBER**

1929

#### **PRODUCT NAME**

KRYLON® OSHA Colors, Safety Purple

#### **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY KRYLON Products Group Cleveland, OH 44115

**Telephone Numbers and Websites** 

Product Information	(800) 832-2541		
Regulatory Information	(216) 566-2902		
	www.paintdocs.com		
Medical Emergency	(216) 566-2917		
Transportation Emergency*	(800) 424-9300		
*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)			

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
14	74-98-6	Propane		
		ACGIH TLV	2500 PPM	760 mm
		OSHA PEL	1000 PPM	
6	106-97-8	Butane		
		ACGIH TLV	800 PPM	760 mm
		OSHA PEL	800 PPM	
2	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
10	1330-20-7			
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
39	67-64-1	Acetone		
		ACGIH TLV	500 PPM	180 mm
		ACGIH TLV	750 PPM STEL	
		OSHA PEL	1000 PPM	
8	78-93-3	Methyl Ethyl Ketone		
		ACGIH TLV	200 PPM	70 mm
		ACGIH TLV	300 PPM STEL	
		OSHA PEL	200 PPM	
		OSHA PEL	300 PPM STEL	
8	108-65-6	1-Methoxy-2-Propanol Acetate		
		ACGIH TLV	Not Available	1.8 mm
		OSHA PEL	Not Available	
0.8	13463-67-7	Titanium Dioxide		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

## **SECTION 3 — HAZARDS IDENTIFICATION**

#### **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

#### **EFFECTS OF OVEREXPOSURE**

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary, blood forming and reproductive systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

## **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

SKIN: Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and guiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

# FLASH POINT LEL UEL EXTINGUISHING MEDIA

Propellant < 0° F 1.0 13.1 Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

#### SECTION 6 — ACCIDENTAL RELEASE MEASURES

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

#### **SECTION 7 — HANDLING AND STORAGE**

#### STORAGE CATEGORY

Not Available

## PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep away from heat, sparks, and open flame. Vapors will accumulate readily and may ignite explosively.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120F. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children.

## SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

**HMIS Codes** 

2\*

Health

Flammability

Reactivity

#### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

## PROTECTIVE GLOVES

None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemical resistant gloves.

766 g/l

#### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

#### **OTHER PRECAUTIONS**

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

#### SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT 6.40 lb/gal

SPECIFIC GRAVITY 0.77

<0 - 302° F <-18 - 150° C

BOILING POINT <0 - 302° F
MELTING POINT Not Available

**VOLATILE VOLUME** 92%

EVAPORATION RATE Faster than ether

VAPOR DENSITY Heavier than air

SOLUBILITY IN WATER N.A.

**pH** 7.0

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

Volatile Weight 48.81% Less Water and Federally Exempt Solvents

## **SECTION 10 — STABILITY AND REACTIVITY**

STABILITY — Stable CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

## **SECTION 11 — TOXICOLOGICAL INFORMATION**

## **CHRONIC HEALTH HAZARDS**

Methyl Ethyl Ketone may increase the nervous system effects of other solvents.

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

#### **TOXICOLOGY DATA**

Ingredient Name				
Propane				
•	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
Butane				
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
Ethylbenzene				
•	LC50 RAT	4HR	Not Available	
	LD50 RAT		3500 mg/kg	
Xylene				
•	LC50 RAT	4HR	5000 ppm	
	LD50 RAT		4300 mg/kg	
Acetone				
	LC50 RAT	4HR	Not Available	
	LD50 RAT		5800 mg/kg	
Methyl Ethyl Ketone				
	LC50 RAT	4HR	Not Available	
	LD50 RAT		2740 mg/kg	
1-Methoxy-2-Propand	ol Acetate			
, ,	LC50 RAT	4HR	Not Available	
	LD50 RAT		8500 mg/kg	
Titanium Dioxide				
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
	Propane  Butane  Ethylbenzene  Xylene  Acetone  Methyl Ethyl Ketone  1-Methoxy-2-Propane	C50 RAT	Propane	Propane

# SECTION 12 — ECOLOGICAL INFORMATION

## **ECOTOXICOLOGICAL INFORMATION**

No data available.

#### **SECTION 13 — DISPOSAL CONSIDERATIONS**

## WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Do not incinerate. Depressurize container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## **SECTION 14 — TRANSPORT INFORMATION**

## **US Ground (DOT)**

May be classed as Consumer Commodity, ORM-D

UN1950, AEROSOLS, 2.1, LIMITED QUANTITY, (ERG#126)

#### Canada (TDG)

May be classed as Consumer Commodity, ORM-D

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, (ERG#126)

#### IMO

May be shipped as Limited Quantity

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, EmS F-D, S-U

# **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	2	
1330-20-7	Xylene	10	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

#### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

## **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# Material Safety Data Sheet

24 Hour Assistance: 1-847-367-7700 Rust-Oleum Corp. www.rustoleum.com

# Section 1 - Chemical Product / Company Information

Product Name: Rust-Oleum Professional Oil Based

Enamels - Topcoats

7738402, 7765402, 7775402, 7727402,

Identification 7748402, 7770402, 7776402, 7779300, 7779402, 7781402, 7786402, 7790402, 7792300, 7792402, 7771402, 239076,

239094, 239078

Product Use/Class: Topcoat/Alkyd

Supplier: Rust-Oleum Corporation Manufacturer: Rust-Oleum Corporation

11 Hawthorn Parkway
Vernon Hills, IL 60061

11 Hawthorn Parkway
Vernon Hills, IL 60061

Revision Date: 11/13/2007

USA

USA
Preparer: Regulatory Department

# Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Tha	n ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING
Stoddard Solvents	8052 -41 -3	50.0	100 PPM	N.E.	500 PPM	N.E.
Titanium Dioxide	13463-67-7	25.0	10 mg/m3	N.E.	10 mg/m3	N.E.
Calcined Aluminum Silicate	1332 -58-7	20.0	2 mg/m3	N.E.	5 mg/m3	N.E.
Magnesium Silicate	14807-96-6	15.0	10 mg/m3	N.E.	15 mg/m3	N.E.
Pigment Black 7	1333 -86-4	5.0	3.5 mg/m3	N.E.	3.5 mg/m3	N.E.
Microcrystalline Silica	14808-60-7	1.0	0.025 mg/m3	N.E.	0.10 mg/m3	N.E.
Ethylbenzene	100-41 -4	1.0	100 PPM	125 PPM	100 PPM	N.E.

# Section 3 - Hazards Identification

\*\*\* Emergency Overview \*\*\*: Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Harmful if swallowed. Causes eye irritation. Vapors irritating to eyes and respiratory tract. Combustible liquid and vapor.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: May cause skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. May cause headaches and dizziness. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of Titanium Dioxide in the formula.

IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hampster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula. Contains crystalline silica as silicon dioxide. Excessive inhalation of respirable crystalline silica dust may cause lung disease, silicosis or lung cancer. Significant exposure is not anticipated during brush or trowel application or drying. Risk of overexposure depends on the duration and level of exposure to dust from repeated sanding of surfaces, mechanical abrasion or spray mist and actual concentration of crystalline silica in the formula. Crystalline silica is listed as Group 1 "carcinogenic to humans" by the International Agency for Research on Cancer (IARC,) and Group 2, "reasonably anticipated to be a carcinogen" by the National Toxicology Program (NTP)

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

# Section 4 - First Aid Measures

First Aid - Eye Contact: Hold eyelids apart and flush with plenty of water for at least 15 minutes. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

# Section 5 - Fire Fighting Measures

Flash Point: 104 F LOWER EXPLOSIVE LIMIT: 0.7 % (Setaflash) UPPER EXPLOSIVE LIMIT : 22.0 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: Keep containers tightly closed.

Special Firefighting Procedures: Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. Evacuate area and fight fire from a safe distance.

# Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

11/13/2007

# Section 7 - Handling And Storage

Handling: Wash hands before eating. Wash thoroughly after handling. Avoid breathing vapor or mist. Avoid contact with eyes. Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

Storage: Keep container closed when not in use. Keep away from heat, sparks, flame and sources of ignition. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

# Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

# **Section 9 - Physical And Chemical Properties**

Boiling Range: 176 - 900 F Vapor Density: Heavier than air

Odor: Solvent Like Odor Threshold: NE

Appearance: Liquid Evaporation Rate: Slower than Ether

Solubility in H2O: Slight

Freeze Point: ND Specific Gravity: 1.2100
Vapor Pressure: ND PH: NE

Physical State: Liquid

(See section 16 for abbreviation legend)

# Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. By open flame, carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

# **Section 11 - Toxicological Information**

Product LD50: ND Product LC50: ND

**Chemical Name** LD50 LC50 Stoddard Solvents N.D. N.D. Titanium Dioxide >7500 mg/kg (ORAL, RAT)N.D. Calcined Aluminum Silicate 5000 mg/kg (ORAL RAT) N.D. Magnesium Silicate TCLo:11mg/m3 inh. >8000 mg/kg (ORAL, RAT)N.D. Pigment Black 7 Microcrystalline Silica N.D. N.D. Ethylbenzene 3500 mg/kg (ORAL, RAT) N.D.

# Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

# Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

# Section 14 - Transportation Information

DOT Proper Shipping Name: Paint Packing Group: III

DOT Technical Name: --- Hazard Subclass: --
DOT Hazard Class: 3 Resp. Guide Page: 128

DOT UN/NA Number: UN1263

# Section 15 - Regulatory Information

#### **CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

## **SARA Section 313:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical NameCAS NumberEthylbenzene100-41-4

#### **Toxic Substances Control Act:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None known

# U.S. State Regulations: As follows -

#### **New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

Chemical NameCAS NumberCalcium Carbonate1317-65-3Alkyd ResinPROPRIETARYAlkyd ResinPROPRIETARY

#### Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

 Chemical Name
 CAS Number

 Calcium Carbonate
 1317-65-3

 Alkyd Resin
 PROPRIETARY

 Alkyd Resin
 PROPRIETARY

 Pigment Yellow 74
 6358-31-2

 Yellow Iron Oxide
 51274-00-1

## **California Proposition 65:**

WARNING! This product contains a chemical(s) known by the State of California to cause cancer.

WARNING! This product contains a chemical(s) known to the state of California to cause birth defects or other reproductive harm.

International Regulations: As follows -

#### **CANADIAN WHMIS:**

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: B3 D2A D2B

# Section 16 - Other Information

**HMIS Ratings:** 

Health: 2\* Flammability: 2 Reactivity: 0 Personal Protection: X

VOLATILE ORGANIC COMPOUNDS, g/I: <450

**REASON FOR REVISION:** Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

# Material Safety Data Sheet

24 Hour Assistance: 1-847-367-7700 Rust-Oleum Corp. www.rustoleum.com

# Section 1 - Chemical Product / Company Information

HARDHT LSPR 6PK GLOSS SAFETY

11 Hawthorn Parkway

Vernon Hills, IL 60061

Product Name: ORANGE Revision Date: 04/16/2008

Identification V2155838

Number:

Product Use/Class: Topcoat/Aerosols

Supplier: Rust-Oleum Corporation Manufacturer: Rust-Oleum Corporation

11 Hawthorn Parkway Vernon Hills, IL 60061

USA

USA

Preparer: Regulatory Department

# Section 2 - Composition / Information On Ingredients

		<u>weight % Less</u>				
Chemical Name	CAS Number	<u>Than</u>	<b>ACGIH TLV-TWA</b>	ACGHI TLV-STEL	OSHA PEL-TWA	OSHA PEL CEILING
Liquefied Petroleum Gas	68476-86-8	30.0	1000 PPM	N.E.	1000 PPM	N.E.
Acetone	67-64-1	25.0	500 PPM	750 PPM	750 PPM	N.E.
Xylene	1330-20-7	10.0	100 PPM	150 PPM	100 PPM	N.E.
N-Butyl Acetate	123-86-4	10.0	150 PPM	200 PPM	150 PPM	N.E.
Methyl Ethyl Ketone	78-93-3	5.0	200 PPM	300 PPM	200 PPM	N.E.
Ethylbenzene	100-41 -4	5.0	100 PPM	125 PPM	100 PPM	N.E.
Ethylene Glycol Monobutyl Ether	111-76-2	5.0	20 PPM	N.E.	50 PPM	N.E.

## Section 3 - Hazards Identification

\*\*\* Emergency Overview \*\*\*: Contains Aromatic Distillate, which may cause cancer. Contents Under Pressure. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Harmful if swallowed. Extremely flammable liquid and vapor. Vapors may cause flash fire or explosion.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: May be harmful if absorbed through skin. Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing vapors or mists.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). May cause central nervous system disorder (e,g.,narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged

occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. Overexposure to methyl ethyl ketone in laboratory animals has been associated with liver abnormalities, kidney and lung damage. Fetotoxic/embryotoxic effects from inhalation have been seen in rats exposed to >1000ppm during gestation.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Ingestion, Eye Contact

# Section 4 - First Aid Measures

First Aid - Eye Contact: Hold eyelids apart and flush with plenty of water for at least 15 minutes. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

# Section 5 - Fire Fighting Measures

Flash Point: -156 F LOWER EXPLOSIVE LIMIT: 0.7 % (Setaflash) UPPER EXPLOSIVE LIMIT : 12.8 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: Water spray may be ineffective. FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

# Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

# Section 7 - Handling And Storage

Handling: Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing vapor or mist. Wash thoroughly after handling. Use only in a well-ventilated area. Wash hands before eating.

Storage: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I

flammable liquids. Contents under pressure. Do not expose to heat or store above 120 ° F.

## Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

## **Section 9 - Physical And Chemical Properties**

Boiling Range: -34 - 415 F Vapor Density: Heavier than Air

Odor: Solvent Like Odor Threshold: ND

Appearance: Liquid Evaporation Rate: Faster than Ether

Solubility in H2O: Slight

Freeze Point: ND Specific Gravity: 0.782 Vapor Pressure: ND PH: NE

Physical State: Liquid

(See section 16 for abbreviation legend)

## **Section 10 - Stability And Reactivity**

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. By open flame, carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

# **Section 11 - Toxicological Information**

Product LD50: ND Product LC50: ND

 Chemical Name
 LD50
 LC50

 Liquefied Petroleum Gas
 N.D.
 N.D.

 Acetone
 N.D.
 N.D.

Xylene 4300, mg/kg (Oral Rat) 5000 ppm/4hr (Inhalation, Rat) N-Butyl Acetate 13100 mg/kg (ORAL, RAT) 2000 PPM (INH 4 Hr, RAT)

Methyl Ethyl Ketone N.D. N.D. Ethylbenzene 3500 mg/kg (ORAL, RAT) N.D.

Ethylene Glycol Monobutyl Ether 1519 mg/kg (ORAL, MOUSE)700 PPM (INH 7 Hr, RAT)

## Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

## Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

## Section 14 - Transportation Information

DOT Proper Shipping Name: Aerosols Packing Group: --DOT Technical Name: --DOT Hazard Class: 2.1 Hazard Subclass: --Resp. Guide Page: 126

DOT UN/NA Number: UN1950

# Section 15 - Regulatory Information

## **CERCLA - SARA Hazard Category**

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

#### SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number
Xylene	1330-20-7
Methyl Ethyl Ketone	78-93-3
Ethylbenzene	100-41-4
Ethylene Glycol Monobutyl Ether	111-76-2

#### **Toxic Substances Control Act:**

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

## U.S. State Regulations: As follows -

## **New Jersey Right-to-Know:**

The following materials are non-hazardous, but are among the top five components in this product.

Chemical NameCAS NumberAlkyd ResinPROPRIETRY

## Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical NameCAS NumberAlkyd ResinPROPRIETRY

## **California Proposition 65:**

WARNING! This product contains a chemical(s) known by the State of California to cause cancer.

WARNING! This product contains a chemical(s) known to the state of California to cause birth defects or other reproductive harm.

International Regulations: As follows -

## **CANADIAN WHMIS:**

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5 D2A D2B

## Section 16 - Other Information

**HMIS Ratings:** 

Health: 2\* Flammability: 4 Reactivity: 0 Personal Protection: X

**REASON FOR REVISION:** Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.



# **Material Safety Data Sheet**

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identification** 

Product ID: 410.0064010.076

Product Name: VAL64010 GLOSS GREY 6U

Product Use: Paint product.
Print date: 23/Feb/2009
Revision Date: 14/Jan/2009

**Company Identification** 

The Valspar Corporation - Architectural Coatings Division

1000 Lake Road Medina, OH 44256

**Manufacturer's Phone:** 1-330-725-4511

**24-Hour Medical Emergency** 1-888-345-5732

Phone:

## 2. HAZARDS IDENTIFICATION

## **Primary Routes of Exposure:**

Inhalation Ingestion Skin absorption

## **Eye Contact:**

- · Severe eye irritation
- · Risk of serious damage to eyes.

## **Skin Contact:**

- · Causes skin irritation.
- · May cause defatting of the skin.
- · Dermatitis

## Ingestion:

- · Irritation of the mouth, throat, and stomach.
- · Harmful if swallowed.
- · Aspiration hazard if swallowed can enter lungs and cause damage.

### Inhalation:

- · Causes respiratory tract irritation.
- Harmful by inhalation.

## **Target Organ and Other Health Effects:**

- · Kidney injury may occur.
- · Liver injury may occur.
- Causes headache, drowsiness or other effects to the central nervous system.
- · Blood disorders

## This product contains ingredients that may contribute to the following potential chronic health effects:

 Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

## Carcinogens:

· Possible cancer hazard. Contains material which may cause cancer based on animal data.

## 3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	25 - 30	Acetone
PROPANE 74-98-6	20 - 25	Propane
BUTANE 106-97-8	5 - 10	Butane
NAPHTHA 64742-89-8	5 - 10	SOLVENT NAPHTHA, PETROLEUM, LIGHT ALIPH
ISOBUTYL ACETATE 110-19-0	5 - 10	Isobutyl acetate
EXEMPT MINERAL SPIRITS 8052-41-3	5 - 10	Stoddard solvent
TITANIUM DIOXIDE 13463-67-7	1 - 5	Titanium dioxide
ISOPROPYL ALCOHOL 67-63-0	1 - 5	Isopropyl alcohol
ETHYLBENZENE 100-41-4	.1 - 1	Ethyl benzene

If this section is blank there are no hazardous components per OSHA guidelines.

## 4. FIRST AID MEASURES

## **Eye Contact:**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

## **Skin Contact:**

Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

## Ingestion:

Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

#### Inhalation:

Move injured person into fresh air and keep person calm under observation. Get medical attention immediately.

## Medical conditions aggravated by exposure:

Any respiratory or skin condition.

## 5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit): -31°F (-35°C)

Lower explosive limit: 0.9 % Upper explosive limit: 13 %

Autoignition temperature: not determined -°F (°C)

Sensitivity to impact:

Sensitivity to static discharge: Subject to static discharge hazards. Please see bonding

and grounding information in Section 7.

Hazardous combustion products: See Section 10.

#### Unusual fire and explosion hazards:

None known.

## Extinguishing media:

Carbon dioxide, dry chemical, foam and/or water fog.

## Fire fighting procedures:

Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

## 6. ACCIDENTAL RELEASE MEASURES

## Action to be taken if material is released or spilled:

Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

#### 7. HANDLING AND STORAGE

#### Precautions to be taken in handling and storage:

Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

## 8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

## **Personal Protective Equipment**

## Eye and face protection:

Wear chemical goggles with splash shields or face shield. Contact lenses should not be worn when working with chemicals because contact lenses may contribute to the severity of an eye injury in case of exposure.

## Skin protection:

Appropriate chemical resistant gloves should be worn.

#### **Other Personel Protection Data:**

Ensure that eyewash stations and safety showers are close to the workstation location. To prevent skin contact wear protective clothing covering all exposed areas.

## Respiratory protection:

If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

#### Ventilation

Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

## **Exposure Guidelines**

## **OSHA Permissible Exposure Limits (PEL's)**

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	25 - 30	2400 mg/m³ 1000 ppm		
PROPANE 74-98-6	20 - 25	1800 mg/m³ 1000 ppm		
ISOBUTYL ACETATE 110-19-0	5 - 10	700 mg/m³ 150 ppm		
EXEMPT MINERAL SPIRITS 8052-41-3	5 - 10	2900 mg/m³ 500 ppm		
TITANIUM DIOXIDE 13463-67-7	1 - 5	15 mg/m³ Total dust.		
ISOPROPYL ALCOHOL 67-63-0	1 - 5	980 mg/m³ 400 ppm		
ETHYLBENZENE 100-41-4	.1 - 1	435 mg/m³ 100 ppm		

## **ACGIH Threshold Limit Value (TLV's)**

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
	25 - 30	500 ppm	750 ppm		
EXEMPT SOLVENT					
67-64-1					
PROPANE	20 - 25	1000 ppm			
74-98-6					
BUTANE	5 - 10	1000 ppm			
106-97-8					
ISOBUTYL ACETATE	5 - 10	150 ppm			
110-19-0					
EXEMPT MINERAL SPIRITS	5 - 10	100 ppm			
8052-41-3					
TITANIUM DIOXIDE	1 - 5	10 mg/m³			
13463-67-7					
ISOPROPYL ALCOHOL	1 - 5	200 ppm	400 ppm		
67-63-0					
ETHYLBENZENE	.1 - 1	100 ppm	125 ppm		
100-41-4					

## 9. PHYSICAL PROPERTIES

Odor: Normal for this product type.

Physical State: Aerosol

pH: not determined

Vapor pressure: NOT DETERMINED mmHg @ 68°F (20°C)

Vapor density (air = 1.0): Boiling point:

Boiling point:

Solubility in water:

Coefficient of water/oil distribution:

not determined
not determined

Density (lbs per US gallon):

Specific Gravity:

Evaporation rate (butyl acetate = 1.0):

6.12

5.6

Flash point (Fahrenheit): -31°F (-35°C)

Lower explosive limit: 0.9 % Upper explosive limit: 13 %

Autoignition temperature: not determined -°F (°C)

## 10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to Avoid: Heat.

Incompatibility: Strong oxidizing agents Hazardous Polymerization: None anticipated.

Hazardous Decomposition Products: Carbon monoxide and carbon dioxide. This product

contains diarylide pigments. While they are not dangerous, they are, however, susceptible to decomposition to monoazoics and dichlorobenzidine at temperatures above 200 C. Consequently, use at temperatures above 200 C

should be avoided.

Sensitivity to static discharge: Subject to static discharge hazards. Please see bonding

and grounding information in Section 7.

## 11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s
DIMETHYL KETONE-	25 - 30	Inhalation LC50 Rat : 50100 mg/m³/8H
EXEMPT SOLVENT		Inhalation LC50 Mouse : 44 gm/m³/4H
67-64-1		Oral LD50 Rat: 5800 mg/kg
		Oral LD50 Mouse : 3 gm/kg
BUTANE	5 - 10	Inhalation LC50 Rat: 658 gm/m³/4H
106-97-8		Inhalation LC50 Mouse: 680 gm/m³/2H
ISOBUTYL ACETATE	5 - 10	Oral LD50 Rat: 13400 mg/kg
110-19-0		Dermal LD50 Rabbit : >17400 mg/kg
ISOPROPYL ALCOHOL	1 - 5	Inhalation LC50 Rat : 16000 ppm/8H
67-63-0		Oral LD50 Rat: 5045 mg/kg
		Oral LD50 Mouse : 3600 mg/kg
		Dermal LD50 Rabbit : 12800 mg/kg
ETHYLBENZENE	.1 - 1	Oral LD50 Rat: 3500 mg/kg
100-41-4		Dermal LD50 Rabbit : 17800 uL/kg

## Mutagens/Teratogens/Carcinogens:

Possible cancer hazard. Contains material which may cause cancer based on animal data.

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. Contains TIO2 which is listed by IARC as a possible human carcinogen (Group 2B) based on animal data. Neither long term animal studies, nor human epidemiology studies of workers exposed to TIO2 provide an adequate basis to conclude TIO2 is carcinogenic. TIO2 is not classified as a carcinogen by NTP, U.S. OSHA, or the U.S. EPA.

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Reproductive (Female)	California Prop 65 -	Carcinogen
ETHYLBENZENE	.1 - 1		Listed: June 11, 2004	Carcinogenic.
100-41-4				-

Ingredient Name	Approx.	IARC Group 1 - Human	IARC Group 2A - Limited	IARC Group 2B -
CAS-No.	Weight %	Evidence	Human Data	Sufficient Animal Data
TITANIUM DIOXIDE	1 - 5			2B Possible Carcinogen
13463-67-7				_
ETHYLBENZENE	.1 - 1			Monograph 77, 2000
100-41-4				

Ingredient Name	Approx.	NTP Known	NTP Suspect	NTP Evidence of
CAS-No.	Weight %	Carcinogens	Carcinogens	Carcinogenicity
ETHYLBENZENE 100-41-4	.1 - 1			male rat-clear evidence; female rat-some evidence; male mice- some evidence; female mice-some evidence

Ingredient Name CAS-No.		OSHA Select Carcinogens	OSHA Possible Select Carcinogens	ACGIH Carcinogens
ETHYLBENZENE 100-41-4	.1 - 1			Group A3 Confirmed animal carcinogen with unknown relevance to humans.

## 12. ECOLOGICAL DATA

No information on ecology is available.

#### 13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

## 14. TRANSPORTATION INFORMATION

## **U.S. Department of Transportation**

Proper Shipping Name: CONSUMER COMMODITY ORM-D

UN ID Number: CONCOM

## U.S. Highway & Rail Shipments

The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

## **Reportable Quantity Description:**

International Air Transport Association (IATA):

Proper Shipping Name: AEROSOLS, FLAMMABLE

Hazard Class: 2.1 UN ID Number: UN1950

International Maritime Organization (IMO):

Proper Shipping Name: AEROSOLS Hazard Class: 2.1

Hazard Class: 2.1
Non-Bulk UN ID Number: UN1950

#### 15. REGULATORY INFORMATION

#### **U.S. FEDERAL REGULATIONS:**

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	25 - 30			5000
ISOBUTYL ACETATE 110-19-0	5 - 10			5000
ETHYLBENZENE 100-41-4	.1 - 1		form R reporting required for 1.0% de minimis concentration	1000

#### SARA 311/312 Hazard Class:

Acute: yes
Chronic: yes
Flammability: yes
Reactivity: no
Sudden Pressure: yes

## **U.S. STATE REGULATIONS:**

## Right to Know:

The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

#### Pennsylvania Right To Know:

NAPHTHA	64742-89-8
EXEMPT MINERAL SPIRITS	8052-41-3
TITANIUM DIOXIDE	13463-67-7
ISOPROPYL ALCOHOL	67-63-0
ISOBUTYL ACETATE	110-19-0
DIMETHYL KETONE- EXEMPT SOLVENT	67-64-1
PROPANE	74-98-6
BUTANE	106-97-8

## Additional Non-Hazardous Materials

VT ALKYD RESIN UNKNOWN

## **California Proposition 65:**

WARNING! This product contains a chemical known in the State of California to cause cancer.

## Rule 66 status of product Not photochemically reactive.

## **INTERNATIONAL REGULATIONS - Chemical Inventories**

#### **US TSCA Inventory:**

All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

## **Canada Domestic Substances List:**

All components of this product are listed on the Domestic Substances List.

## 16. OTHER INFORMATION

**HMIS Codes** 

Health: 2\* Flammability: 4 Reactivity: 1

**PPE:** X - See Section 8 for Personal Protective Equipment (PPE).

#### Abbreviations:

OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

#### Disclaimer:

The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

## **Preparation Information:**

Prepared By: Regulatory Affairs Department

Print date: 23/Feb/2009 Revision Date: 14/Jan/2009

Section 1 PRODU	JCT AND COMPANY IDENTIFICATION	
PRODUCT NUMBER	HMIS CODES	
	Health 2	*
17140	Flammability 4	:
	Reactivity 0	i
PRODUCT NAME		
ACE® RUST STOP Machine &	Implement Enamel, International Blue	
MANUFACTURER'S NAME	Medical Emergency Phone No.	
Mfd. for:	(216) 566-2917	
ACE HARDWARE COPORATION	Transportation Emergency	
Oak Brook, IL 60521	(800) 424-9300	
DATE OF PREPARATION	Regulatory Information	
19-AUG-07	(216) 566-2902	

% by WT	Section 2 CAS No.	COMPOSITION/INFORMATION INGREDIENT U	ON INGREDIENTS NITS VAPOR PRESSURE
14	74-98-6	Propane	
	, = , 5 0		pm 760 mm
		<del>-</del> -	- ppm
13	106-97-8	Butane	
			pm 760 mm
0.0	64740 00 0		ppm
22	64742-89-8	V. M. & P. Naphtha ACGIH TLV 300 p	opm 12 mm
		<u> </u>	opm 12 mm opm
			opm STEL
2	100-41-4	Ethylbenzene	F 2
		=	pm 7.1 mm
			pm STEL
		= :	ppm
•	1000 00 0	= :	pm STEL
9	1330-20-7	Xylene	F 0
		= :	opm 5.9 mm
		<u> </u>	opm STEL opm
			opm STEL
23	67-64-1	Acetone	F 5122
			pm 180 mm
			pm STEL
			ppm
0.8	13463-67-7	Titanium Dioxide	
			ng/m3 as Dust
			g/m3 Total Dust g/m3 Respirable Fraction
		ODUA LET 2 III	ia/iiis veshiranie traccioii

## Section 3 -- HAZARDS IDENTIFICATION

#### ROUTES OF EXPOSURE

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

## EFFECTS OF OVEREXPOSURE

EYES: Irritation.

SKIN: Prolonged or repeated exposure may cause irritation.

INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

## Section 4 -- FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes.

Get medical attention.

SKIN: Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing.

Keep warm and quiet.

INGESTION: Do not induce vomiting.

Get medical attention immediately.

## Section 5 -- FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL
Propellant < 0 F	0.9	12.8
THE THE COLUMN AND THE		

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam UNUSUAL FIRE AND EXPLOSION HAZARDS

Containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

## Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Remove all sources of ignition. Ventilate the area. Remove with inert absorbent.

## Section 7 -- HANDLING AND STORAGE

STORAGE CATEGORY

Not Available

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep away from heat, sparks, and open flame. Vapors will accumulate readily and may ignite explosively.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120F. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children.

### Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist. Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority. VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108. RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

#### PROTECTIVE GLOVES

None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemical resistant gloves.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields. OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

## Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT 6.14  $735 \, q/1$ lb/qal SPECIFIC GRAVITY 0.74 BOILING POINT <0 - 325 F <-18 - 162 C MELTING POINT Not Available VOLATILE VOLUME 90 Faster than ether EVAPORATION RATE VAPOR DENSITY Heavier than air SOLUBILITY IN WATER N.A. 7.0 рН VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged) Volatile Weight 60.16% Less Water and Federally Exempt Solvents

## Section 10 -- STABILITY AND REACTIVITY

STABILITY -- Stable CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

#### Section 11 -- TOXICOLOGICAL INFORMATION

## CHRONIC HEALTH HAZARDS

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary and reproductive systems.

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

TOXICOLOGY DATA

CAS No.	Ingredient	Name			
74-98-6	Propane				
		LC50	RAT	4HR	Not Available
		LD50	RAT		Not Available
106-97-8	Butane				
		LC50	RAT	4HR	Not Available
		LD50	RAT		Not Available
64742-89-8	V. M. & P.	_			
		LC50	RAT	4HR	Not Available
		LD50	RAT		Not Available
100-41-4	Ethylbenzen				
		LC50	RAT	4HR	Not Available
	_	LD50	RAT		3500 mg/kg
1330-20-7	Xylene			_	
		LC50	RAT	4HR	5000 ppm
		LD50	RAT		4300 mg/kg
67-64-1	Acetone				
		LC50	RAT	4HR	Not Available
12462 65 5		LD50	RAT		5800 mg/kg
13463-67-7	Titanium Di			4	
		LC50	RAT	4HR	Not Available
		LD50	RAT		Not Available

## Section 12 -- ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

## Section 13 -- DISPOSAL CONSIDERATIONS

## WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Do not incinerate. Depressurize container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## Section 14 -- TRANSPORT INFORMATION

## US Ground (DOT)

May be classed as Consumer Commodity, ORM-D UN1950, AEROSOLS, 2.1, LIMITED QUANTITY, (ERG#126)

#### Canada (TDG)

May be classed as Consumer Commodity, ORM-D UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, (ERG#126)

## IMO

May be shipped as Limited Quantity UN1950, AEROSOLS, CLASS 2, LIMITED QUANTITY, EmS F-D, S-U

Continued on page 6

Section	15	 REGULATORY	INFORMATION

SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by	WT % Element
100-41-4	Ethylbenzene	2	
1330-20-7	Xylene	9	

## CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

## Section 16 -- OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

## **MATERIAL SAFETY DATA SHEET**

**1401 03 00 DATE OF PREPARATION**Feb 28, 2009

## **SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION**

## **PRODUCT NUMBER**

1401

#### **PRODUCT NAME**

KRYLON® Interior/Exterior Paint, Bright Silver

#### **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY KRYLON Products Group Cleveland, OH 44115

**Telephone Numbers and Websites** 

Product Information	(800) 832-2541
Regulatory Information	(216) 566-2902
	www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
*for Chemical Emergency ONLY (spill, lea	ak, fire, exposure, or accident)

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
18	74-98-6	Propane		
		ACGIH TLV	2500 PPM	760 mm
		OSHA PEL	1000 PPM	
13	64742-89-8	Lt. Aliphatic Hydrocarb	on Solvent	
		ACGIH TLV	100 PPM	53 mm
		OSHA PEL	100 PPM	
4	64742-89-8	V. M. & P. Naphtha		
		ACGIH TLV	300 PPM	12 mm
		OSHA PEL	300 PPM	
		OSHA PEL	400 PPM STEL	
1	64742-88-7	Mineral Spirits		
		ACGIH TLV	100 PPM	2 mm
		OSHA PEL	100 PPM	
4	108-88-3	Toluene		
		ACGIH TLV	20 PPM	22 mm
		OSHA PEL	100 PPM (Skin)	
		OSHA PEL	150 PPM (Skin) STEL	
0.7	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
4	1330-20-7	Xylene		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
47	67-64-1	Acetone		
		ACGIH TLV	500 PPM	180 mm
		ACGIH TLV	750 PPM STEL	
		OSHA PEL	1000 PPM	

## **SECTION 3 — HAZARDS IDENTIFICATION**

## **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist. EYE or SKIN contact with the product, vapor or spray mist.

#### **EFFECTS OF OVEREXPOSURE**

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

HMIS Codes
Health 2\*
Flammability 4
Reactivity 1

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary, cardiovascular and reproductive systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

#### **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

SKIN: Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL EXTINGUISHING MEDIA
Propellant < 0° F 0.9 12.8 Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### **SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

## **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

## STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

## **SECTION 7 — HANDLING AND STORAGE**

## STORAGE CATEGORY

Not Available

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep away from heat, sparks, and open flame. Vapors will accumulate readily and may ignite explosively.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120F. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children.

## SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

#### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

#### **PROTECTIVE GLOVES**

None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemical resistant gloves.

#### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

#### **OTHER PRECAUTIONS**

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

**PRODUCT WEIGHT** 6.16 lb/gal 737 g/l

SPECIFIC GRAVITY 0.74

**BOILING POINT** <0 - 395° F <-18 - 201° C

MELTING POINT Not Available

**VOLATILE VOLUME** 96%

**EVAPORATION RATE** Faster than ether **VAPOR DENSITY** Heavier than air

SOLUBILITY IN WATER N.A.

**pH** 7.0

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

Volatile Weight 45.25% Less Water and Federally Exempt Solvents

## SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable CONDITIONS TO AVOID

None known.

**INCOMPATIBILITY** 

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

## **SECTION 11 — TOXICOLOGICAL INFORMATION**

#### **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name			
74-98-6	Propane			
	. LC	50 RAT	4HR	Not Available
	LD	50 RAT		Not Available
64742-89-8	Lt. Aliphatic Hydrocarbon So	olvent		
	LC	50 RAT	4HR	Not Available
	LD	50 RAT		Not Available
64742-89-8	V. M. & P. Naphtha			
	LC	50 RAT	4HR	Not Available
	LD	50 RAT		Not Available
64742-88-7	Mineral Spirits			
	LC	50 RAT	4HR	Not Available
	LD	50 RAT		Not Available
108-88-3	Toluene			
	LC	50 RAT	4HR	4000 ppm
	LD	50 RAT		5000 mg/kg
100-41-4	Ethylbenzene			-
	LC	50 RAT	4HR	Not Available
	LD	50 RAT		3500 mg/kg
1330-20-7	Xylene			
	LC	50 RAT	4HR	5000 ppm
	LD	50 RAT		4300 mg/kg
67-64-1	Acetone			
	LC	50 RAT	4HR	Not Available
	LD	50 RAT		5800 mg/kg

## **SECTION 12 — ECOLOGICAL INFORMATION**

#### **ECOTOXICOLOGICAL INFORMATION**

No data available.

#### **SECTION 13 — DISPOSAL CONSIDERATIONS**

## **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Do not incinerate. Depressurize container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

## **SECTION 14 — TRANSPORT INFORMATION**

#### **US Ground (DOT)**

May be classed as Consumer Commodity, ORM-D

UN1950, AEROSOLS, 2.1, LIMITED QUANTITY, (ERG#126)

## Canada (TDG)

May be classed as Consumer Commodity, ORM-D

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, (ERG#126)

#### IMO

May be shipped as Limited Quantity

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, EmS F-D, S-U

## **SECTION 15 — REGULATORY INFORMATION**

## SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
108-88-3	Toluene	4	
100-41-4	Ethylbenzene	0.6	
1330-20-7	Xylene	4	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **TSCA CERTIFICATION** 

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

## **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

COMPANY IDENTITY: CSD/STARTEX DATE: 02/22/03 PAGE 1 OF 7

PRODUCT IDENTITY: LIQUID SANDER DEGLOSSER

NEW MSDS DATE: 02/22/2003

F:\CDSMSDS\LIQUID SANDER DEGLOSSER 22203

#### MATERIAL SAFETY DATA SHEET

This Material Safety Data Sheet conforms to the requirements of ANSI Z400.1. THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD) IMPORTANT: Read this MSDS before handling & disposing of this product. Pass this information on to employees, customers, & users of this product.

#### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

PRODUCT IDENTITY: LIQUID SANDER DEGLOSSER

COMPANY IDENTITY: CSD/STARTEX COMPANY ADDRESS: P O BOX 3087 COMPANY CITY: CONROE, TX 77305 COMPANY PHONE: 1-936-756-1065 CHEMTREC PHONE: 1-800-424-9300

#### SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

CONTAINS: 35-45% XYLENES (1330-20-7)[215-535-7],

35-40% MEDIUM ALIPHATIC SOLVENT NAPHTHA (\*8052-41-3),

5-15% ETHYLBENZENE (100-41-4)[202-849-4], 5-10% ISOPROPANOL (67-63-0)[200-661-7]

Number in parentheses is CAS #, number in brackets is European EC #.

#### SECTION 3. HAZARDS IDENTIFICATION

## RISK STATEMENTS:

R11 Highly Flammable.

R65 Harmful: may cause lung damage if swallowed. R36/37/38 Irritating to eyes, respiratory system and skin.

R20/65 Harmful by inhalation, may cause lung damage if swallowed.

## **SAFETY STATEMENTS:**

s7	Keen	container	tightly	closed
ום	reep	Container	LIGHTLY	CIUSEU.

Keep away from sources of ignition. No smoking. S16

S29 Do not empty into drains.

S45 In case of accident, or if you feel unwell, seek medical advice

immediately. (Show the label where possible).

S53 Avoid exposure - Obtain special instructions before use.

S24/25 Avoid contact with skin and eyes. COMPANY IDENTITY: CSD/STARTEX DATE: 02/22/03

PRODUCT IDENTITY: LIQUID SANDER DEGLOSSER PAGE 2 OF 7

NEW MSDS DATE: 02/22/2003

#### SECTION 4. FIRST AID MEASURES

#### EYE CONTACT:

For eyes, flush with plenty of water for 15 minutes & get medical attention.

#### SKIN CONTACT:

In case of contact with skin immediately remove contaminated clothing. Wash thoroughly with soap & water. Wash contaminated clothing before reuse.

#### INHALATION:

After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped give artificial respiration.

#### SWALLOWING:

If swallowed, get immediate medical advice. Inducing vomiting may cause aspiration into the lungs.

#### SECTION 5. FIRE FIGHTING MEASURES

#### EXTINGUISHING MEDIA

NFPA Class B extinguishers(Carbon Dioxide or foam) for Class I B liquid fires.

#### SPECIAL FIRE FIGHTING PROCEDURES

Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used.

Do not enter confined fire-space without full bunker gear.

(Helmet with face shield, bunker coats, gloves & rubber boots).

Use NIOSH approved positive-pressure self-contained breathing apparatus.

## UNUSUAL EXPLOSION AND FIRE PROCEDURES

HIGHLY FLAMMABLE!! VAPORS CAN CAUSE FLASH FIRE

Keep container tightly closed.

Isolate from oxidizers, heat, sparks, electric equipment & open flame. Closed containers may explode if exposed to extreme heat. Applying to hot surfaces requires special precautions.

Empty container very hazardous! Continue all label precautions!

## SECTION 6. ACCIDENTAL RELEASE MEASURES

#### CONTAINMENT TECHNIQUES

Stop spill at source. Dike area & contain.

## CLEAN-UP PROCEDURES:

Clean up remainder with absorbent materials. Mop up & dispose of. Persons without proper protection should be kept from area until cleaned up.

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PRODUCT IDENTITY: LIQUID SANDER DEGLOSSER PAGE 3 OF 7

NEW MSDS DATE: 02/22/2003

#### SECTION 7. HANDLING AND STORAGE

#### HANDLING

Isolate from oxidizers, heat, sparks, electric equipment & open flame. Use only with adequate ventilation. Avoid breathing of vapor or spray mist. Avoid contact with skin & eyes.

Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier. Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.

Avoid free fall of liquid. Ground containers when transferring. Do not flame cut, saw, drill, braze, or weld. Empty container very hazardous! Continue all label precautions!

#### STORAGE

Do not store above 49 C/120 F. Store large amounts in structures made for OSHA Class I B liquids

Keep container tightly closed

& upright when not in use to prevent leakage.

#### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

#### EXPOSURE CONTROLS

Ventilate to keep vapors of this material below 55 ppm.

If over TLV, in accordance with 29 CFR 1910.134,

use NIOSH approved positive-pressure self-contained breathing apparatus. Consult Safety Equipment Supplier. Use explosion-proof equipment.

#### VENTILATION

LOCAL EXHAUST : Necessary
MECHANICAL (GENERAL) : Acceptable
SPECIAL : None

SPECIAL : None
OTHER : None

## PERSONAL PROTECTIONS:

Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier. Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.

#### WORK & HYGIENIC PRACTICES:

Provide readily accessible eye wash stations & safety showers. Wash at end of each workshift & before eating, smoking or using the toilet. Promptly remove clothing that becomes contaminated. Destroy contaminated leather articles. Launder or discard contaminated clothing.

COMPANY IDENTITY: CSD/STARTEX DATE: 02/22/03 PRODUCT IDENTITY: LIQUID SANDER DEGLOSSER PAGE 4 OF 7

NEW MSDS DATE: 02/22/2003

#### SECTION 9. PHYSICAL DATA

APPEARANCE : Liquid, Water-White ODOR: Alcohol **BOILING RANGE:** 91 116 196\* C / 197 241 385\* F (\*=End Point) AUTO IGNITION TEMPERATURE: 276 C / 530 F (Lowest Component) LOWER FLAMMABLE LIMIT IN AIR (% by vol): 1.1 FLASH POINT (TEST METHOD): 13 C / 56 F (TCC) (Lowest Component) FLAMMABILITY CLASSIFICATION: Class I B GRAVITY @ 60 F : 39.5 API: SPECIFIC GRAVITY (Water=1): .828 POUNDS/GALLON: 6.894 VOC'S (>0.44 Lbs/Sq In): 62.1 Vol. % / 514.3 g/L / 4.284 Lbs/Gal TOTAL VOC'S (TVOC) : 99.2 Vol. % / 821.0 g/L / 6.839 Lbs/Gal NONEXEMPT VOC'S (CVOC) : 99.2 Vol. % / 821.0 g/L / 6.839 Lbs/Gal 435.0 g/L / 3.623 Lbs/Gal HAZARDOUS AIR POLLUTANTS (HAPS) : 52.6 Wt. % / VAPOR PRESSURE (mm of Hg)@20 C 9.5 9.5 NONEXEMPT VOC PARTIAL PRESSURE (mm of Hg @ 20 C) VAPOR DENSITY (air=1): 3.7 WATER ABSORPTION: Appreciable REFRACTIVE INDEX: 1.461 MIXED ANILINE POINT (Acid Insol): 34 C / 94 F

#### SECTION 10. STABILITY & REACTIVITY

STABILITY Stable

CONDITIONS TO AVOID

Isolate from oxidizers, heat, sparks, electric equipment & open flame.

MATERIALS TO AVOID

Isolate from strong oxidizers such as permanganates, chromates & peroxides.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon Monoxide, Carbon Dioxide from burning.

HAZARDOUS POLYMERIZATION

Will not occur.

### SECTION 11. TOXICOLOGICAL INFORMATION

MATERIAL TLV (ACGIH) CAS # TWA (OSHA) 1330-20-7 100 ppm 100 ppm A4 Yes Xylenes Medium Aliphatic Solvent Naphtha \*8052-41-3 500 ppm 100 ppm No Ethylbenzene 100-41-4 100 ppm 100 ppm A3 Yes Isopropanol 67-63-0 400 ppm 200 ppm A4 No In addition to EPA Hazardous Air Pollutants showing `Yes' under "HAP" above, using manufacturers' data, based on EPA Method 311, the following EPA Hazardous Air Pollutants may be present in trace amounts (less than 0.1%): Benzene, Toluene, Cumene, Polycyclic Aromatics

COMPANY IDENTITY: CSD/STARTEX DATE: 02/22/03 PRODUCT IDENTITY: LIQUID SANDER DEGLOSSER PAGE 5 OF 7

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#### SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

MATERIAL	CAS #	CEILING	STEL (OSHA/ACGIH)
Xylenes	1330-20-7	None Known	150 ppm
Ethylbenzene	100-41-4	None Known	125 ppm
Isopropanol	67-63-0	None Known	400 ppm

#### ACUTE HAZARDS

#### EYE & SKIN CONTACT:

Primary irritation to skin, defatting, dermatitis.

Absorption thru skin increases exposure.

Primary irritation to eyes, redness, tearing, blurred vision.

Liquid can cause eye irritation. Wash thoroughly after handling.

#### **INHALATION:**

Anesthetic. Irritates respiratory tract. Acute overexposure

can cause serious nervous system depression. Vapor harmful.

Breathing vapor can cause irritation.

Acute overexposure can cause damage to kidneys, blood, nerves, liver & lungs.

#### SWALLOWING:

Harmful or fatal if swallowed.

Swallowing can cause abdominal irritation, nausea, vomiting & diarrhea.

#### SUBCHRONIC HAZARDS/CONDITIONS AGGREVATED

#### CONDITIONS AGGREVATED

Chronic overexposure can cause damage to kidneys, blood, nerves, liver & lungs. Persons with severe skin, liver or kidney problems should avoid use.

#### CHRONIC HAZARDS

## CANCER, REPRODUCTIVE & OTHER CHRONIC HAZARDS:

Potential Cancer Hazard based on tests with laboratory animals using Ethylbenzene.

Overexposure may create cancer risk.

Leukemia been reported in humans from Benzene.

This product contains less than 52 ppm of Benzene.

Not considered hazardous in such low concentrations.

Absorption thru skin may be harmful. Studies with laboratory animals indicate this product can cause damage to fetus.

COMPANY IDENTITY: CSD/STARTEX DATE: 02/22/03 PAGE 6 OF 7

PRODUCT IDENTITY: LIQUID SANDER DEGLOSSER

NEW MSDS DATE: 02/22/2003

#### SECTION 12. ECOLOGICAL INFORMATION

MAMMALIAN INFORMATION:

MATERIAL CAS # LOWEST KNOWN LETHAL DOSE DATA

LOWEST KNOWN LD50 (ORAL)

Xylene 1330-20-7 4000.0 mg/kg(Rats)

AQUATIC ANIMAL INFORMATION:

The most sensitive known aquatic group to any component of this product is: Chub 1000 ppm or mg/L (24 hour exposure).

Keep out of sewers and natural water supplies.

MOBILITY

This material is a mobile liquid.

**DEGRADABILITY** 

This product is partially biodegradable.

ACCUMULATION

This product does not accumulate or biomagnify in the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Recycle / dispose of observing national, regional, state, provincial and local health, safety & pollution laws.

If questions exist, contact the appropriate agencies.

SECTION 14. TRANSPORT INFORMATION

DOT SHIPPING NAME: RQ, Paint Related Material

(Contains: Xylene, Ethylbenzene), 3, UN1263, PG-II

(FLAMMABLE LIQUID) DRUM LABEL:

IATA / ICAO: RQ, Paint Related Material

(Contains: Xylene, Ethylbenzene), 3, UN1263, PG-II

RQ, Paint Related Material IMO / IMDG:

(Contains: Xylene, Ethylbenzene), 3, UN1263, PG-II

EMERGENCY RESPONSE GUIDEBOOK NUMBER: 128

SECTION 15. REGULATORY INFORMATION

**EPA REGULATION:** 

SARA SECTION 311/312 HAZARDS: Acute Health, Fire

All components of this product are on the TSCA list.

SARA Title III Section 313 Supplier Notification This product contains the indicated <\*> toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning & Community Right-To-Know Act of 1986 & of 40 CFR 372. This information must be included in all MSDSs that are copied and distributed for this material.

COMPANY IDENTITY: CSD/STARTEX DATE: 02/22/03 PAGE 7 OF 7

PRODUCT IDENTITY: LIQUID SANDER DEGLOSSER

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#### SECTION 15. REGULATORY INFORMATION (CONTINUED)

SARA TITLE III INGREDIENTS	CAS#	WT. % (REG. SECTION)	RQ(LBS)
*Xylenes	1330-20-7	42 (311,312,313,RCRA)	100
Medium Aliphatic Solvent Naphtha	*8052-41-3	39 (311,312)	None
*Ethylbenzene	100-41-4	10 (311,312,313,RCRA)	1000
Isopropanol	67-63-0	9 (311,312)	None

IF > 237 POUNDS OF THIS PRODUCT IS IN ONE CONTAINER THE "RQ" OF XYLENE IS EXCEEDED.

#### STATE REGULATIONS:

CALIFORNIA PROPOSITION 65: This product contains the following chemical known to the State of California to cause cancer: Ethylbenzene

#### INTERNATIONAL REGULATIONS

The components of this product are listed on the chemical inventories of the following countries: Australia, Canada, Europe (EINECS), Japan, Korea, United Kingdom.

SECTION 16. OTHER INFORMATION

HAZARD RATINGS: HEALTH (NFPA): 2 HEALTH (HMIS): 2 FLAMMABILITY: **REACTIVITY:** 

This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.

## EMPLOYEE TRAINING

Employees should be made aware of all hazards of this material (as stated in this MSDS) before handling it.

#### NOTICE

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications.

All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency.

Conditions of use are beyond our control, and therefore users are responsible verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume risks of their use, handling, and disposal of the product. assume all risks in regards to the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.

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SECTION 1: PRODUCT IDENTIFICATION

Product Name: Triumph Primer/Splice Wash 9705

Chemical Name / Synonym: Primer Solution

Chemical Family: Mixture

24-Hour Emergency Phone: (800) 424-9300 CHEMTREC

Manufacturer's Name: Firestone Building Products Company

Manufacturer's Address: 310 East 96th Street, Indianapolis, IN 46240

NFPA Hazard Rating: Health 2, Flammability 3, Reactivity 0
HMIS Hazard Rating: Health 2, Flammability 3, Reactivity 0

SECTION 2: CHEMICAL COMPOSITION						
Chemical Name:	Common Name:	CAS #:	% (by wt)	Exposure Limits:		
Toluene	Toluol	108-88-3	57	PEL 200 ppm OSHA Ceiling 300 ppm TLV 20 ppm ACGIH SKIN		
Xylene	Dimethylbenzene	1330-20-7	19	PEL 100 ppm TLV 100 ppm ACGIH STEL 150 ppm		
Aliphatic Petroleum Distillates	None	64742-89-8	< 21	TLV 300 ppm (VM&P Naphtha)		
n-Hexane	Hexane	110-54-3	< 7	PEL 500 ppm TLV 50 ppm ACGIH SKIN		
Ethyl Benzene	Ethylbenzol	100-41-4	< 4	PEL 100 ppm TLV 100 ppm ACGIH STEL 125 ppm		

## **SECTION 3: HAZARD IDENTIFICATION**

Primary Route of Exposure:

Signs and Symptoms of

Exposure:

Skin Absorption, Inhalation

Eye contact may cause severe eye irritation, redness, tearing and blurred vision. Prolonged or repeated skin contact may cause irritation, dermatitis and drying of the skin. Absorption through intact skin may contribute to an individual's overall exposure. Inhalation may cause respiratory system irritation and central nervous system depression (narcosis) characterized by headache, dizziness, muscular weakness and fatigue. Cardiac sensitization may occur. Impairment of coordination and increased reaction time may be noted at high levels. Gastrointestinal disturbances (e.g., nausea, anorexia) may occur. Excessive toluene vapors may result in a bad (metallic) taste in the mouth (effects increasing with increased exposure levels). May cause unconsciousness if exposure is excessive.

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> Toluene LC<sub>50</sub>: 8,000 ppm/4hr, rat; Toluene LD<sub>50</sub>: 2.6-7.5 g/kg, rat; Xylene LC<sub>50</sub>: 6,700 ppm/4hr, rat; Xylene LD<sub>50</sub>: 3.5-8.6 g/kg, rat; Ethyl benzene LD<sub>50</sub>: 3.5 g/kg, rat; Ethyl benzene LCLo: 4000 ppm/4hr, rat.

Medical Conditions Aggravated by Exposure:

Exposure to this product may aggravate pre-existing skin, respiratory, cardiovascular, kidney, liver and neurological diseases.

Individuals who are sensitized to isocyanates and those with preexisting lung diseases or conditions, including non-specific bronchial hyperactivity or asthma, must avoid all exposure to isocvanates.

Toluene exposures have caused birth defects in laboratory animals when exposures were at concentrations that harmed the pregnant animal. The relevance of these findings to humans is uncertain.

May cause kidney, liver, spleen, central nervous system and/or peripheral nerve damage. May cause brain cell and

neuromuscular damage based upon animal studies. May cause cardiac sensitization to epinephrine. Hearing loss associated with chronic toluene exposure has been observed. Acute or chronic overexposure to isocyanates may cause sensitization in some individuals, resulting in allergic symptoms of the lower

respiratory tract (asthma-like), including wheezing, shortness of

breath and difficulty breathing.

Carcinogenicity: Ethyl benzene, a component of this product, has been shown to

cause cancer in laboratory animals. While the relevance of this finding to humans is uncertain, the International Agency for Research on Cancer (IARC) has classified ethyl benzene as

possibly carcinogenic to humans (2B).

## SECTION 4: FIRST AID MEASURES

First Aid Procedures:

Chronic Effects:

If this material contacts the eyes, hold eyelids open and flush immediately with a gentle stream of water for at least 15 minutes, preferably at an eyewash fountain. Get medical attention. In case of skin contact, clean with rubbing alcohol first, followed immediately by washing affected area with soap and water. In case of inhalation, remove to fresh uncontaminated air. Administer oxygen if breathing is labored. Give artificial respiration if breathing has stopped. Get medical attention immediately if oxygen or artificial respiration are administered. In case of accidental ingestion, do not induce vomiting. Get medical attention and advise the physician of the nature of the

material.

## SECTION 5: FIRE FIGHTING PROCEDURES

Suitable Extinguishing Media:

Foam, water spray (fog), carbon dioxide, and dry chemical type extinguishing agents may all be suitable for extinguishing fires involving this product. Water may be ineffective, but should be used to keep fire exposed containers cool. Water spray may be used to flush spills away from exposures.

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Hazardous Combustion Products: Carbon dioxide, carbon monoxide, halogenated hydrocarbons,

nitrogen oxides and various hydrocarbons.

Recommended Fire Fighting

Procedures:

Wear impermeable protective clothing and self-contained breathing apparatus. Toxic fumes and vapors may be evolved.

Minimize the breathing of gases, vapors, fumes or

decomposition products. Use supplied-air breathing equipment

for enclosed or confined spaces or as otherwise needed.

Unusual Fire and Explosion

Hazards:

This product is volatile and gives off invisible vapors that may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

#### SECTION 6: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to Be Taken in Case Material is Released or Spilled:

Shut off and eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Ventilate confined spaces. Open all windows and doors. Keep product clear of sewers, water, or extensive land areas. Assure conformity with applicable government regulations. Continue to observe precautions for volatile, flammable vapors from absorbed material.

Precautions to Be Taken in Handling and Storing:

Keep away from heat, sparks, and open flames. Keep containers closed. Vapors of this material are heavier than air and will collect in low or confined areas. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations near containers. Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond and ground all transfer containers and equipment.

#### SECTION 7: EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Use with ventilation sufficient to prevent exceeding

recommended exposure limits or build up of explosive

concentrations of vapor in air.

Respiratory Protection: If personal exposure concentrations cannot be maintained below

the appropriate exposure limits using engineering controls, a NIOSH approved organic vapor air purifying respirator may be appropriate based on employer-determined exposure levels. Air supplied or SCBA respirators may be required when the measured chemical concentration exceeds the capacity of the air purifying respirator or when personal exposure levels are

unknown.

Safety glasses with side shields are recommended when Eye Protection:

pouring or applying this product.

Skin Protection: Wearing of polyvinyl alcohol, nitrile rubber, or neoprene gloves is

recommended when handling this product to avoid prolonged

skin contact.

Other: No additional recommendations.

June 12, 2007 Page: 4

Work / Hygienic Practices:

Wash exposed skin prior to eating, drinking or smoking and at the end of each shift. Wash contaminated clothing prior to

reuse.

SECTION 8: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear liquid / solvent odor

Flash Point: < -1° F Lower Explosive Limit (for 1%

component):

Method Used: Setaflash closed tester Upper Explosive Limit (for 7.0%

component):

**Evaporation Rate:** <1 (Ethyl Ether=1) Boiling Point (for 140 - 220° F

component):

Percent Volatile:

pH (undiluted product): Unknown Melting Point: Not Applicable

Solubility in Water: Insoluble Specific Gravity: .829

(Water=1) 93 - 97%

Vapor Pressure: (for

component)

Vapor Density:

227 mm Hg @ 100 °F

>1 (Air=1)

SECTION 9: STABILITY AND REACTIVITY

Thermal Stability: Stable

Hazardous Polymerization: Will not occur

Conditions to Avoid: Avoid flames, sparks or other sources of ignition. Incompatible

with strong alkalis, strong mineral acids, and strong oxidizing

agents.

**SECTION 10: TRANSPORTATION** 

Regulatory Agency: U.S.A., DOT, IMO

Proper Shipping Name: Adhesives

Hazard Classification: 3

UN1133 **Identification Number:** 

Packaging Group:

Labels Required: Flammable Liquid

SECTION 11: MISCELLANEOUS INFORMATION

**Additional Comments:** None

Date of Previous MSDS: December 1, 2005

Changes Since Previous MSDS: Update to toluene TLV in section 2.

Telephone Number for Additional

Information:

(317) 575-7190

June 12, 2007 Page: 5

## DISCLAIMER

The information contained herein is based on data considered accurate which has been obtained from other companies and organizations. However, no warranty or representation is expressed or implied that the information, is accurate, complete or representative. Firestone Building Products Company, a subsidiary of Bridgestone Americas Holding, Inc., assumes no responsibility for injury to the buyer, the buyer's employees, or any third persons, if reasonable safety procedures are not followed. Additionally, Firestone Building Products Company assumes no responsibility for injury to buyer, the buyer's employees, or any third persons caused by abnormal use of this material, even if reasonable safety procedures are followed.

October 24, 2007 Page: 1

**SECTION 1: PRODUCT IDENTIFICATION** 

Product Name: Triumph Splice Adhesive 9053

Chemical Name / Synonym: Butyl Rubber Adhesive

Chemical Family: Mixture

24-Hour Emergency Phone: (800) 424-9300 CHEMTREC

Manufacturer's Name: Firestone Building Products Company

Manufacturer's Address: 310 East 96th Street, Indianapolis, IN 46240

NFPA Hazard Rating: Health 2, Flammability 3, Reactivity 0
HMIS Hazard Rating: Health 2, Flammability 3, Reactivity 0

SECTION 2: CHEMICAL COMPOSITION							
Chemical Name:	Common Name:	CAS #:	% (by wt)	Exposure Limits:			
Toluene	Toluol	108-88-3	56	PEL 200 ppm OSHA Ceiling 300 ppm TLV 20 ppm ACGIH SKIN			
Aliphatic Petroleum Distillates	None	64742-89-8	15 - 19	TLV 300 ppm (VM&P Naphtha)			
n-Hexane	Hexane	110-54-3	5	PEL 500 ppm TLV 50 ppm ACGIH SKIN			
Xylene	Dimethylbenzene	1330-20-7	5	PEL 100 ppm TLV 100 ppm ACGIH STEL 150 ppm			
Nonhazardous as per 29 CFR 1910.1200.	None	None	>15	None Established			

## **SECTION 3: HAZARD IDENTIFICATION**

Primary Route of Exposure:

Signs and Symptoms of

Exposure:

Skin Absorption, Inhalation

Eye contact may cause severe eye irritation, redness, tearing and blurred vision. Prolonged or repeated skin contact may cause irritation, dermatitis and drying of the skin. Absorption through intact skin may contribute to an individual's overall exposure. Inhalation may cause respiratory system irritation and central nervous system depression (narcosis) characterized by headache, dizziness, muscular weakness and fatigue. Cardiac sensitization may occur. Impairment of coordination and increased reaction time may be noted at high levels. Gastrointestinal disturbances (e.g., nausea, anorexia) may occur. Excessive toluene vapors may result in a bad (metallic) taste in the mouth (effects increasing with increased exposure levels). May cause unconsciousness if exposure is excessive. Toluene  $LC_{50}$ : 8,000 ppm/4hr, rat; Toluene  $LD_{50}$ : 2.6-7.5 g/kg,

October 24, 2007 Page: 2

rat; Xylene  $LC_{50}$ : 6,700 ppm/4hr, rat; Xylene  $LD_{50}$ : 3.5-8.6 g/kg,

rat; n-Hexane LD<sub>50</sub>: 29 g/kg, rat.

Medical Conditions Aggravated

by Exposure:

Exposure to this product may aggravate pre-existing skin, respiratory, cardiovascular and neurological diseases.

Toluene exposures have caused birth defects in laboratory animals when exposures were at concentrations that harmed the pregnant animal. The relevance of these findings to humans

is uncertain.

Chronic Effects: May cause kidney, liver, spleen, central nervous system and/or

peripheral nerve damage. May cause brain cell and

neuromuscular damage based upon animal studies. May cause cardiac sensitization to epinephrine. Hearing loss associated

with chronic toluene exposure has been observed.

Carcinogenicity: None

#### SECTION 4: FIRST AID MEASURES

First Aid Procedures:

If this material contacts the eyes, hold eyelids open and flush immediately with a gentle stream of water for at least 15 minutes, preferably at an eyewash fountain. Get medical attention. In case of skin contact, clean with rubbing alcohol first, followed immediately by washing affected area with soap and water. In case of inhalation, remove to fresh uncontaminated air. Administer oxygen if breathing is labored. Give artificial respiration if breathing has stopped. Get medical attention immediately if oxygen or artificial respiration are administered. In case of accidental ingestion, do not induce vomiting. Get medical attention and advise the physician of the nature of the material.

## SECTION 5: FIRE FIGHTING PROCEDURES

Suitable Extinguishing Media:

Foam, water spray (fog), carbon dioxide, and dry chemical type extinguishing agents may all be suitable for extinguishing fires involving this product. Water may be ineffective, but should be used to keep fire exposed containers cool. Water spray may be used to flush spills away from exposures.

Hazardous Combustion Products:

Recommended Fire Fighting

Procedures:

Carbon dioxide, carbon monoxide, and various hydrocarbons.

Wear impermeable protective clothing and self-contained breathing apparatus. Toxic fumes and vapors may be evolved.

Minimize the breathing of gases, vapors, fumes or

decomposition products. Use supplied-air breathing equipment

for enclosed or confined spaces or as otherwise needed.

Unusual Fire and Explosion

Hazards:

This product is volatile and gives off invisible vapors that may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

#### SECTION 6: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to Be Taken in Case Material is Released or Spilled: Shut off and eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize

# Firestone Building Products Company Material Safety Data Sheet

October 24, 2007 Page: 3

skin contact. Ventilate confined spaces. Open all windows and doors. Keep product clear of sewers, water, or extensive land areas. Assure conformity with applicable government

regulations. Continue to observe precautions for volatile,

flammable vapors from absorbed material.

Precautions to Be Taken in Handling and Storing:

Keep away from heat, sparks, and open flames. Keep containers closed. Vapors of this material are heavier than air and will collect in low or confined areas. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations near containers. Static electricity may accumulate and greate a fire

containers. Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond and ground all transfer

containers and equipment.

# SECTION 7: EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Use with ventilation sufficient to prevent exceeding

recommended exposure limits or build up of explosive

concentrations of vapor in air.

Respiratory Protection: If personal exposure concentrations cannot be maintained below

the appropriate exposure limits using engineering controls, a NIOSH approved respirator may be appropriate based on

employer-determined exposure levels.

Eye Protection: The use of safety glasses with side shields when pouring or

applying this product may be warranted.

Skin Protection: The use of polyvinyl alcohol, nitrile rubber, or neoprene gloves

when handling this product to avoid prolonged skin contact may

be warranted.

Other: No additional recommendations.

Work / Hygienic Practices: Wash exposed skin prior to eating, drinking or smoking and at

the end of each shift. Wash contaminated clothing prior to

reuse.

#### SECTION 8: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Black, liquid / solvent odor

Flash Point: <0°F Lower Explosive Limit (for 1%

component):

Method Used: Setaflash closed tester Upper Explosive Limit (for 7.0%

component):

Evaporation Rate: <1 (Ether=1) Boiling Point (for 140 - 220° F

component):

pH (undiluted product): Unknown Melting Point: Not Applicable

Solubility in Water: Insoluble Specific Gravity: .849

(Water=1)

Vapor Density: >1 (Air=1) Percent Volatile: 18 - 20%

Vapor Pressure: (for

component)

<227 mm Hg @ 25℃

# Firestone Building Products Company Material Safety Data Sheet

October 24, 2007 Page: 4

SECTION 9: STABILITY AND REACTIVITY

Thermal Stability: Stable

Hazardous Polymerization: Will not occur

Conditions to Avoid: Avoid flames, sparks or other sources of ignition. Incompatible

with strong oxidizing agents.

**SECTION 10: TRANSPORTATION** 

Regulatory Agency: U.S.A., DOT, IMO

Proper Shipping Name: Adhesives

Hazard Classification: 3

Identification Number: UN1133

Packing Group:

Labels Required: Flammable Liquid

Other Requirements: 49 CFR 172.101 Adhesives, UN1133, IMDG Class 3.2, Pg.

3174, Flash Point -18° C

SECTION 11: MISCELLANEOUS INFORMATION

Additional Comments: None

Date of Previous MSDS: December 9, 2005

Changes Since Previous MSDS: TLV for toluene in section 2.

Telephone Number for Additional

Information:

(317) 575-7190

#### **DISCLAIMER**

The information contained herein is based on data considered accurate which has been obtained from other companies and organizations. However, no warranty or representation is expressed or implied that the information, is accurate, complete or representative. Firestone Building Products Company, a subsidiary of Bridgestone Americas Holding, Inc., assumes no responsibility for injury to the buyer, the buyer's employees, or any third persons, if reasonable safety procedures are not followed. Additionally, Firestone Building Products Company assumes no responsibility for injury to buyer, the buyer's employees, or any third persons caused by abnormal use of this material, even if reasonable safety procedures are followed.

# **MATERIAL SAFETY DATA SHEET**

**B60VZ70 02 00 DATE OF PREPARATION**Mar 2, 2009

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT NUMBER

B60VZ70

#### **PRODUCT NAME**

TILE-CLAD® High Solids Enamel (Part B), Hardener

#### **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

Product Information	www.sherwin-williams.com		
Regulatory Information (216) 566-2902			
	www.paintdocs.com		
Medical Emergency	(216) 566-2917		
Transportation Emergency*	(800) 424-9300		
*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident,			

# SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
3	100-41-4	Ethylbenzene		•
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
19	1330-20-7	Xylene		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
3	64742-95-6	Light Aromatic Hydrocarl	bons	
		ACGIH TLV	Not Available	3.8 mm
		OSHA PEL	Not Available	
4	108-67-8	1,3,5-Trimethylbenzene		
		ACGIH TLV	25 PPM	2 mm
		OSHA PEL	25 PPM	
5	95-63-6	1,2,4-Trimethylbenzene		
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
65	Proprietary	Epoxy Polymer	·	·
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	

# **SECTION 3 — HAZARDS IDENTIFICATION**

# **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE** 

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary and reproductive systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

HMIS Codes		
Health	2*	
Flammability	3	

Reactivity

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

May cause allergic skin reaction in susceptible persons or skin sensitization.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

#### **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

Wash affected area thoroughly with soap and water.

If irritation persists or occurs later, get medical attention.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and guiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

**FLASH POINT LEL UEL** FLAMMABILITY CLASSIFICATION

RED LABEL -- Flammable, Flash below 100° F (38 °C) 82° F PMCC 0.7 7.0

**EXTINGUISHING MEDIA** 

Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### **SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

#### SECTION 6 — ACCIDENTAL RELEASE MEASURES

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- · Remove with inert absorbent.

#### SECTION 7 — HANDLING AND STORAGE

#### STORAGE CATEGORY

DOL Storage Class IC

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

#### SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

# PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

# **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

#### **PROTECTIVE GLOVES**

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

#### OTHER PROTECTIVE EQUIPMENT

Use of barrier cream on exposed skin is recommended.

#### **OTHER PRECAUTIONS**

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

1048 g/l

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

# SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT 8.75 lb/gal

SPECIFIC GRAVITY 1.05

277 - 360° F **BOILING POINT** 136 - 182° C

MELTING POINT Not Available **VOLATILE VOLUME** 

42%

**EVAPORATION RATE** Slower than ether

VAPOR DENSITY Heavier than air

**SOLUBILITY IN WATER** N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

3.06lb/gal 366g/l Less Water and Federally Exempt Solvents

**Emitted VOC** 3.06lb/gal 366g/l

#### SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable **CONDITIONS TO AVOID** 

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION** 

Will not occur

# **SECTION 11 — TOXICOLOGICAL INFORMATION**

#### **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name				
100-41-4	Ethylbenzene				
	LC50 RAT	4HR	Not Available		
	LD50 RAT		3500 mg/kg		
1330-20-7	Xylene				
	LC50 RAT	4HR	5000 ppm		
	LD50 RAT		4300 mg/kg		
64742-95-6	Light Aromatic Hydrocarbons				
	LC50 RAT	4HR	Not Available		
	LD50 RAT		Not Available		
108-67-8	1,3,5-Trimethylbenzene				
	LC50 RAT	4HR	Not Available		
	LD50 RAT		Not Available		
95-63-6	1,2,4-Trimethylbenzene				
	LC50 RAT	4HR	Not Available		
	LD50 RAT		Not Available		
Proprietary	Epoxy Polymer				
	LC50 RAT	4HR	Not Available		
	LD50 RAT		Not Available		

# **SECTION 12 — ECOLOGICAL INFORMATION**

#### **ECOTOXICOLOGICAL INFORMATION**

No data available.

#### **SECTION 13 — DISPOSAL CONSIDERATIONS**

#### **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

# **SECTION 14 — TRANSPORT INFORMATION**

#### **US Ground (DOT)**

1 Gallon and Less may be Classed as CONSUMER COMMODITY, ORM-D

Larger Containers are Regulated as:

UN1263, PAINT RELATED MATERIAL, 3, PG III, (ERG#128)

#### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Ethyl benzene 1000 lb RQ

Xylenes (isomers and mixture) 100 lb RQ

#### Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1263, PAINT RELATED MATERIAL, 3, PG III, (XYLENES (ISOMERS AND MIXTURE)), (ERG#128)

#### Canada (TDG)

UN1263, PAINT RELATED MATERIAL, CLASS 3, PG III, LIMITED QUANTITY, (ERG#128)

#### IMO

UN1263, PAINT RELATED MATERIAL, CLASS 3, PG III, (28 C c.c.), EmS F-E, S-E

#### **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	3	
1330-20-7	Xylene	19	
95-63-6	1,2,4-Trimethylbenzene	5	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

#### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

# **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# **MATERIAL SAFETY DATA SHEET**

XYLENE/SW DATE OF PREPARATION 07 00 Sep 9, 2008

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT NUMBER

XYLENE/SW

# **PRODUCT NAME**

Xylene (Xylol)

### **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

relephone Humbers and Websites	
Regulatory Information	(216) 566-2902
	www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
*for Chemical Emergency ONLY (spill, lea	ak, fire, exposure, or accident)

#### SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
15	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
85	1330-20-7	Xylene		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	

#### **SECTION 3 — HAZARDS IDENTIFICATION**

#### **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

#### **EFFECTS OF OVEREXPOSURE**

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary and reproductive systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

# **SECTION 4 — FIRST AID MEASURES**

**EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

page 1 of 4

**HMIS Codes** 

3

Health 2\*

Reactivity 0

Flammability

#### **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL FLAMMABILITY CLASSIFICATION

80° F PMCC 1.0 7.0 RED LABEL -- Flammable, Flash below 100° F (38 °C)

**EXTINGUISHING MEDIA** 

Carbon Dioxide, Dry Chemical, Foam

# **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### **SPECIAL FIRE FIGHTING PROCEDURES**

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

#### SECTION 6 — ACCIDENTAL RELEASE MEASURES

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- · Remove with inert absorbent.

# **SECTION 7 — HANDLING AND STORAGE**

#### STORAGE CATEGORY

DOL Storage Class IC

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

# SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

#### **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

#### PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

# **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

# OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

# SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

**PRODUCT WEIGHT** 7.17 lb/gal 859 g/l

SPECIFIC GRAVITY 0.86

**BOILING POINT** 277 - 292° F 136 - 144° C

MELTING POINT Not Available

**VOLATILE VOLUME** 100%

**EVAPORATION RATE** Slower than ether

VAPOR DENSITY Heavier than air

SOLUBILITY IN WATER N.A.

#### **VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)**

7.17lb/gal 859g/l Less Water and Federally Exempt Solvents

7.17lb/gal 859g/l Emitted VOC

#### **SECTION 10 — STABILITY AND REACTIVITY**

STABILITY — Stable CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

#### HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

#### **HAZARDOUS POLYMERIZATION**

Will not occur

# **SECTION 11 — TOXICOLOGICAL INFORMATION**

#### **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name				
100-41-4	Ethylbenzene				
	·	LC50 RAT	4HR	Not Available	
		LD50 RAT		3500 mg/kg	
1330-20-7	Xylene				
	•	LC50 RAT	4HR	5000 ppm	
		LD50 RAT		4300 mg/kg	

# **SECTION 12 — ECOLOGICAL INFORMATION**

#### **ECOTOXICOLOGICAL INFORMATION**

No data available.

# **SECTION 13 — DISPOSAL CONSIDERATIONS**

#### WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

#### **SECTION 14 — TRANSPORT INFORMATION**

#### **US Ground (DOT)**

1 Gallon and Less may be Classed as CONSUMER COMMODITY, ORM-D

Larger Containers are Regulated as:

UN1307, XYLENES, 3, PG III, (ERG#130)

# DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Ethyl benzene 1000 lb RQ

Xylenes (isomers and mixture) 100 lb RQ

#### Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1307, XYLENES, 3, PG III, (XYLENES (ISOMERS AND MIXTURE)), (ERG#130)

#### Canada (TDG)

UN1307, XYLENES, CLASS 3, PG III, LIMITED QUANTITY, (ERG#130)

IMO

UN1307, XYLENES, CLASS 3, PG III, (27 C c.c.), EmS F-E, S-D

#### **SECTION 15 — REGULATORY INFORMATION**

# SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	15	
1330-20-7	Xylene	85	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

# **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

#### **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# **MATERIAL SAFETY DATA SHEET**

B50W100 **DATE OF PREPARATION** 05 00 Feb 21, 2009

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT NUMBER

B50W100

#### **PRODUCT NAME**

OPTI-BOND™ Multi-Surface Coating, White

#### **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

Product Information	www.sherwin-williams.com	
Regulatory Information	(216) 566-2902	
	www.paintdocs.com	
Medical Emergency	(216) 566-2917	
Transportation Emergency*	(800) 424-9300	
*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accided		

# SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
19	64742-88-7	Mineral Spirits		
		ACGIH TLV	100 PPM	2 mm
		OSHA PEL	100 PPM	
0.2	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
13	14807-96-6	Talc		
		ACGIH TLV	2 mg/m3 as Resp. Dust	
		OSHA PEL	2 mg/m3 as Resp. Dust	
18	65997-15-1	Portland Cement		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	
12	471-34-1	Calcium Carbonate		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	15 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	
17	13463-67-7	Titanium Dioxide		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

# **SECTION 3 — HAZARDS IDENTIFICATION**

# **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE** 

EYES: Causes burns. SKIN: Causes burns.

**INHALATION:** Irritation of the upper respiratory system.

**HMIS Codes** Health 2\* Flammability Reactivity

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death. Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver and urinary systems.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

# **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention IMMEDIATELY.

**SKIN:** Wash affected area thoroughly with soap and water.

If irritation persists or occurs later, get medical attention. Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

**FLASH POINT**104° F PMCC
1.0

LEL
UEL
FLAMMABILITY CLASSIFICATION
Combustible, Flash above 99 and below 200° F

#### **EXTINGUISHING MEDIA**

Carbon Dioxide, Dry Chemical, Foam

# **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

#### **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- · Remove all sources of ignition. Ventilate the area.
- · Remove with inert absorbent.

#### **SECTION 7 — HANDLING AND STORAGE**

#### STORAGE CATEGORY

DOL Storage Class II

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

#### SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Do not get in eyes or on skin. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

# **VENTILATION**

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

#### PROTECTIVE GLOVES

To prevent skin contact, wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### **EYE PROTECTION**

To prevent eye contact, wear safety spectacles with unperforated sideshields.

#### OTHER PROTECTIVE EQUIPMENT

Use barrier cream on exposed skin.

#### **OTHER PRECAUTIONS**

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

# **SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

PRODUCT WEIGHT 13.15 lb/gal

SPECIFIC GRAVITY 1.58 **BOILING POINT** 300 - 395° F

1575 g/l 148 - 201° C

**MELTING POINT** Not Available

**VOLATILE VOLUME** 41%

**EVAPORATION RATE** Slower than ether **VAPOR DENSITY** Heavier than air

SOLUBILITY IN WATER N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

2.66lb/gal 319g/l Less Water and Federally Exempt Solvents

2.66lb/gal 319g/l **Emitted VOC** 

#### SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable **CONDITIONS TO AVOID** 

None known.

**INCOMPATIBILITY** 

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

**HAZARDOUS POLYMERIZATION** 

Will not occur

# **SECTION 11 — TOXICOLOGICAL INFORMATION**

# **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint.'

## **TOXICOLOGY DATA**

Ingredient Name				
Mineral Spirits				
•	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
Ethylbenzene				
•	LC50 RAT	4HR	Not Available	
	LD50 RAT		3500 mg/kg	
Talc				
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
Portland Cement				
	LC50 RAT	4HR	Not Available	
	LD50 RAT		599.9 mg/kg	
Calcium Carbonate				
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
Titanium Dioxide				
	LC50 RAT	4HR	Not Available	
	LD50 RAT		Not Available	
	Mineral Spirits  Ethylbenzene  Talc  Portland Cement  Calcium Carbonate	Mineral Spirits	Mineral Spirits	LC50 RAT

#### **SECTION 12 — ECOLOGICAL INFORMATION**

#### **ECOTOXICOLOGICAL INFORMATION**

No data available.

#### **SECTION 13 — DISPOSAL CONSIDERATIONS**

#### **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

#### **SECTION 14 — TRANSPORT INFORMATION**

#### **US Ground (DOT)**

May be Classed as a Combustible Liquid for U.S. Ground.

UN1263, PAINT, 3, PG III, (ERG#128)

#### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

## Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT, COMBUSTIBLE LIQUID, PG III, (ERG#128)

#### Canada (TDG)

May be Classed as a Combustible Liquid for Canadian Ground.

UN1263, PAINT, CLASS 3, PG III, (ERG#128)

#### IMC

UN1263, PAINT, CLASS 3, PG III, (40 C c.c.), EmS F-E, S-E

#### **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.1	

# **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

# **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

#### **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# **MATERIAL SAFETY DATA SHEET**

**B54E39 14 00**DATE OF PREPARATION
Feb 21, 2009

## SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT NUMBER

B54E39

#### PRODUCT NAME

Industrial Enamel, Safety Orange

#### **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

Product Information	www.sherwin-williams.com	
Regulatory Information	(216) 566-2902	
	www.paintdocs.com	
Medical Emergency	(216) 566-2917	
Transportation Emergency*	(800) 424-9300	
*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)		

#### SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
42	64742-88-7	Mineral Spirits		
		ACGIH TLV	100 PPM	2 mm
		OSHA PEL	100 PPM	
0.1	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
10	13463-67-7	Titanium Dioxide		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

#### **SECTION 3 — HAZARDS IDENTIFICATION**

# **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

#### **EFFECTS OF OVEREXPOSURE**

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver and urinary systems.

# SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists. Redness and itching or burning sensation may indicate eye or excessive skin exposure.

# MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

#### **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

HMIS Codes

Health 2\*
Flammability 2
Reactivity 0

#### **SECTION 4 — FIRST AID MEASURES**

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

**INHALATION:** If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL FLAMMABILITY CLASSIFICATION

101° F PMCC 1.0 6.0 Combustible, Flash above 99 and below 200° F

**EXTINGUISHING MEDIA** 

Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

# **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- · Remove with inert absorbent.

#### SECTION 7 — HANDLING AND STORAGE

# STORAGE CATEGORY

DOL Storage Class II

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

# SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

#### PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

# VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

#### RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

# PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

#### **OTHER PRECAUTIONS**

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

#### **SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

 PRODUCT WEIGHT
 8.39 lb/gal
 1004 g/l

 SPECIFIC GRAVITY
 1.01

 BOILING POINT
 300 - 395° F
 148 - 201° C

MELTING POINT Not Available

**VOLATILE VOLUME** 56%

**EVAPORATION RATE** Slower than ether **VAPOR DENSITY** Heavier than air

SOLUBILITY IN WATER N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

3.64lb/gal 436g/l Less Water and Federally Exempt Solvents

3.64lb/gal 436g/l Emitted VOC

# **SECTION 10 — STABILITY AND REACTIVITY**

STABILITY — Stable CONDITIONS TO AVOID

None known.

**INCOMPATIBILITY** 

None known.

**HAZARDOUS DECOMPOSITION PRODUCTS** 

By fire: Carbon Dioxide, Carbon Monoxide, Oxides of Nitrogen, possibility of Hydrogen Cyanide

**HAZARDOUS POLYMERIZATION** 

Will not occur

#### **SECTION 11 — TOXICOLOGICAL INFORMATION**

#### **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name				
64742-88-7	Mineral Spirits				
	•	LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	
100-41-4	Ethylbenzene				
	•	LC50 RAT	4HR	Not Available	
		LD50 RAT		3500 mg/kg	
13463-67-7	Titanium Dioxide				
		LC50 RAT	4HR	Not Available	
		LD50 RAT		Not Available	

#### **SECTION 12 — ECOLOGICAL INFORMATION**

# **ECOTOXICOLOGICAL INFORMATION**

No data available.

# **SECTION 13 — DISPOSAL CONSIDERATIONS**

# **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

#### **SECTION 14 — TRANSPORT INFORMATION**

#### **US Ground (DOT)**

May be Classed as a Combustible Liquid for U.S. Ground.

UN1263, PAINT, 3, PG III, (ERG#128)

#### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

#### Bulk Containers may be Shipped as (check reportable quantities):

UN1263, PAINT, COMBUSTIBLE LIQUID, PG III, (ERG#128)

#### Canada (TDG)

May be Classed as a Combustible Liquid for Canadian Ground.

UN1263, PAINT, CLASS 3, PG III, (ERG#128)

MΩ

UN1263, PAINT, CLASS 3, PG III, (38 C c.c.), EmS F-E, S-E

# **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	0.1	

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

#### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

# **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# **MATERIAL SAFETY DATA SHEET**

**B50NZ6 26 00 DATE OF PREPARATION**Mar 20, 2009

# SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

# **PRODUCT NUMBER**

B50NZ6

#### PRODUCT NAME

KEM KROMIK® Universal Metal Primer (VOC Comp.), Brown

#### **MANUFACTURER'S NAME**

THE SHERWIN-WILLIAMS COMPANY 101 Prospect Avenue N.W. Cleveland, OH 44115

**Telephone Numbers and Websites** 

relephone numbers and websites	
Product Information	www.sherwin-williams.com
Regulatory Information	(216) 566-2902
	www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
*for Chemical Emergency ONLY (sp.	ill, leak, fire, exposure, or accident)

# **SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS**

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
5	108-88-3	Toluene		
		ACGIH TLV	20 PPM	22 mm
		OSHA PEL	100 PPM (Skin)	
		OSHA PEL	150 PPM (Skin) STEL	
2	100-41-4	Ethylbenzene		
		ACGIH TLV	100 PPM	7.1 mm
		ACGIH TLV	125 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
10	1330-20-7	Xylene		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
1	64742-95-6	Light Aromatic Hydro	ocarbons	
		ACGIH TLV	Not Available	3.8 mm
		OSHA PEL	Not Available	
2	95-63-6	1,2,4-Trimethylbenze	ene	
		ACGIH TLV	25 PPM	2.03 mm
		OSHA PEL	25 PPM	
4	108-94-1	Cyclohexanone		
		ACGIH TLV	25 PPM (Skin)	2 mm
		OSHA PEL	25 PPM (Skin)	
0.2	14808-60-7	Quartz	,	
		ACGIH TLV	0.025 mg/m3 as Resp. Dust	
		OSHA PEL	0.1 mg/m3 as Resp. Dust	
4	14807-96-6	Talc		
		ACGIH TLV	2 mg/m3 as Resp. Dust	
		OSHA PEL	2 mg/m3 as Resp. Dust	
42	471-34-1	Calcium Carbonate	3	
· <del>-</del>		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	15 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	
1	13463-67-7	Titanium Dioxide	g	
•	10-100 01-1	ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	
0.1	1333-86-4	Carbon Black	5g, mo recophable r radion	
0.1	1333-00-4	ACGIH TLV	3.5 MG/M3	
		OSHA PEL	3.5 MG/M3	
		OSHAFEL	3.3 IVIO/IVI3	

#### **SECTION 3 — HAZARDS IDENTIFICATION**

#### **ROUTES OF EXPOSURE**

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

#### **EFFECTS OF OVEREXPOSURE**

EYES: Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary, cardiovascular and reproductive systems.

# SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists. Redness and itching or burning sensation may indicate eye or excessive skin exposure.

# MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

# **CANCER INFORMATION**

For complete discussion of toxicology data refer to Section 11.

HMIS Codes

Health 2\*
Flammability 3
Reactivity 0

#### SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water.

Remove contaminated clothing and launder before re-use.

INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

#### **SECTION 5 — FIRE FIGHTING MEASURES**

FLASH POINT LEL UEL FLAMMABILITY CLASSIFICATION

80 °F PMCC 0.7 8.1 RED LABEL -- Flammable, Flash below 100 °F (38 °C)

**EXTINGUISHING MEDIA** 

Carbon Dioxide, Dry Chemical, Foam

#### **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

#### SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

#### **SECTION 6 — ACCIDENTAL RELEASE MEASURES**

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

- Remove all sources of ignition. Ventilate the area.
- Remove with inert absorbent.

#### SECTION 7 — HANDLING AND STORAGE

# STORAGE CATEGORY

DOL Storage Class IC

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

# SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

# PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

#### VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

# RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

# PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

#### **EYE PROTECTION**

Wear safety spectacles with unperforated sideshields.

# OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

#### **SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

PRODUCT WEIGHT 12.64 lb/gal 1514 g/l

SPECIFIC GRAVITY 1.52

**BOILING POINT** 222 - 360 °F

**MELTING POINT** Not Available

**VOLATILE VOLUME** 47%

**EVAPORATION RATE** Slower than ether VAPOR DENSITY Heavier than air

SOLUBILITY IN WATER N.A.

**VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)** 

414g/l 3.46lb/gal Less Water and Federally Exempt Solvents

105 - 182 °C

3.46lb/gal 414g/l **Emitted VOC** 

# SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable **CONDITIONS TO AVOID** 

None known.

**INCOMPATIBILITY** 

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

#### **SECTION 11 — TOXICOLOGICAL INFORMATION**

#### **CHRONIC HEALTH HAZARDS**

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Crystalline Silica (Quartz, Cristobalite) is listed by IARC and NTP. Long term exposure to high levels of silica dust, which can occur only when sanding or abrading the dry film, may cause lung damage (silicosis) and possibly cancer.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as

Carbon Black is classified by IARC as possibly carcinogenic to humans (group 2B) based on experimental animal data, however, there is insufficient evidence in humans for its carcinogenicity.

#### **TOXICOLOGY DATA**

CAS No.	Ingredient Name	·		
108-88-3	Toluene			
		LC50 RAT	4HR	4000 ppm
		LD50 RAT		5000 mg/kg
100-41-4	Ethylbenzene			
		LC50 RAT	4HR	Not Available
		LD50 RAT		3500 mg/kg
1330-20-7	Xylene			
		LC50 RAT	4HR	5000 ppm
		LD50 RAT		4300 mg/kg
64742-95-6	Light Aromatic Hydrocar	bons		
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
95-63-6	1,2,4-Trimethylbenzene			
	•	LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
108-94-1	Cyclohexanone			
	•	LC50 RAT	4HR	8000 ppm
		LD50 RAT		1535 mg/kg
14808-60-7	Quartz			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
14807-96-6	Talc			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
471-34-1	Calcium Carbonate			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
13463-67-7	Titanium Dioxide			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
1333-86-4	Carbon Black			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

# **SECTION 12 — ECOLOGICAL INFORMATION**

## **ECOTOXICOLOGICAL INFORMATION**

No data available.

# **SECTION 13 — DISPOSAL CONSIDERATIONS**

# **WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

# **SECTION 14 — TRANSPORT INFORMATION**

# **US Ground (DOT)**

1 Gallon and Less may be Classed as CONSUMER COMMODITY, ORM-D

Larger Containers are Regulated as:

UN1263, PAINT, 3, PG III, (ERG#128)

#### DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Toluene 1000 lb RQ

Xylenes (isomers and mixture) 100 lb RQ

#### Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1263, PAIŃT, 3, PĠ III, (XYLENES (ISOMERS AND MIXTURE)), (ERG#128)

# Canada (TDG)

UN1263, PAINT, CLASS 3, PG III, LIMITED QUANTITY, (ERG#128)

#### IMC

UN1263, PAINT, CLASS 3, PG III, (27 C c.c.), EmS F-E, S-E

# **SECTION 15 — REGULATORY INFORMATION**

#### SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
108-88-3	Toluene	5	
100-41-4	Ethylbenzene	2	
1330-20-7	Xylene	10	
95-63-6	1,2,4-Trimethylbenzene	2	
	Zinc Compound	3	1.6

#### **CALIFORNIA PROPOSITION 65**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

#### **TSCA CERTIFICATION**

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

# **SECTION 16 — OTHER INFORMATION**

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

# **Polymer Technologies**

View MSDS: <u>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16</u> SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name: AS-150/NS-100 YELLOW

AS104R

MSDS Manufacturer

Number:

Manufacturer Name: ITW Polymer Technologies
Address: 130 Commerce Drive
Montgomeryville, PA 18936

General Phone Number:

Emergency Phone

Number:

CHEMTREC: For emergencies in the US, call CHEMTREC: 800-424-9300
Canutec: In Canada, call CANUTEC: (613) 996-6666 (call collect)

MSDS Revision Date: 12/15/2006



\* Chronic Health Effects:

# SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

(215) 855-8450

(215) 855-8450

Chemical Name	CAS#	Ingredient Percent
Xylene	1330-20-7	5 - 10 by weight
1-methoxy-2-propanol	107-98-2	5 - 10 by weight
Natural wollastonite	13983-17-0	1 - 5 by weight
Aluminum oxide	1344-28-1	5 - 10 by weight
Silicon carbide	409-21-2	5 - 10 by weight
Nepheline syenite	37244-96-5	10 - 30 by weight
Glass oxide	65997-17-3	1 - 5 by weight
Silica, crystalline (quartz)	14808-60-7	10 - 30 by weight
Ethylbenzene	100-41-4	1 - 5 by weight
Sulfur	7704-34-9	1 - 5 by weight
Titanium dioxide	13463-67-7	1 - 5 by weight
Amorphous Silica, Fused	60676-86-0	1 - 5 by weight
Nickel Oxide (Nickel Compound as NiO)	1313-99-1	0.1 - 1 by weight

# SECTION 3 - HAZARDS IDENTIFICATION

Potential Health Effects:

Emergency Overview: DANGER! Flammable. Irritant.
Route of Exposure: Eyes. Skin. Inhalation. Ingestion.

Eye: May cause irritation. Skin: May cause irritation.

Inhalation: Prolonged or excessive inhalation may cause respiratory tract irritation.

EPA ARCHIVE DOCUMENT

Ingestion: May be harmful if swallowed. May cause vomiting. Chronic Health Effects: Prolonged or repeated contact may cause skin irritation.

Overexposure may cause headaches and dizziness. Signs/Symptoms: **Target Organs:** 

Eyes. Skin. Respiratory system. Digestive system. Central nervous system.

None generally recognized.

Aggravation of Pre-Existing

Conditions:

#### SECTION 4 - FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water for at least 15 to 20 minutes.

Ensure adequate flushing of the eyes by separating the eyelids with fingers.

Get immediate medical attention.

Skin Contact: Immediately wash skin with plenty of soap and water for 15 to 20 minutes,

> while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration or

give oxygen by trained personnel. Seek immediate medical attention.

Ingestion: If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

Other First Aid: Due to possible aspiration into the lungs, DO NOT induce vomiting if

ingested. Provide a glass of water to dilute the material in the stomach. If vomiting occurs naturally, have the person lean forward to reduce the risk of

aspiration.

#### SECTION 5 - FIRE FIGHTING MEASURES

Flammable Properties: Flammable. Flash Point: >81 °F

Auto Ignition Temperature: Not determined. Lower Flammable/Explosive Not determined.

Upper Flammable/Explosive

Not determined. Limit:

Evacuate area of unprotected personnel. Use cold water spray to cool fire Fire Fighting Instructions: exposed containers to minimize risk of rupture. Do not enter confined fire space without full protective gear. If possible, contain fire run-off water.

Extinguishing Media: Use carbon dioxide (CO2) or dry chemical when fighting fires involving this

**Protective Equipment:** As in any fire, wear Self-Contained Breathing Apparatus (SCBA),

MSHA/NIOSH (approved or equivalent) and full protective gear.

Sealed containers at elevated temperatures may rupture explosively and Unusual Fire Hazards:

spread fire due to polymerization. Heating above 300 deg F in the presence of air may cause slow oxidative decomposition and above 500 deg F may

cause polymerization.

#### SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personnel Precautions: Evacuate area and keep unnecessary and unprotected personnel from

entering the spill area.

**Environmental Precautions:** Avoid runoff into storm sewers, ditches, and waterways.

Spill Cleanup Measures: Absorb spill with inert material (e,g., dry sand or earth), then place in a

chemical waste container. Provide ventilation. Collect spill with a

non-sparking tool. Place into a suitable container for disposal. Clean up spills immediately observing precautions in the protective equipment section. After

removal, flush spill area with soap and water to remove trace residue. Flammable, eliminate ignition sources. Vapors can form an ignitable mixture with air. . Vapors can flow along surfaces to distant ignition sources and flash back. Ventilate area. Use proper personal protective equipment as listed in

section 8.

Other Precautions: Pump or shovel to storage/salvage vessels.

#### SECTION 7 - HANDLING and STORAGE

Handling: Use with adequate ventilation. Avoid breathing vapor, aerosol or mist.

Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper grounding procedures. Do not reuse containers

without proper cleaning or reconditioning.

Storage: Store in a cool, dry, well ventilated area away from sources of heat,

combustible materials, direct sunlight, and incompatible substances. Keep

container tightly closed when not in use.

Special Handling Procedures: Hazardous liquid or vapor residue may remain in emptied container. Do not

reuse, heat, burn, pressurize, cut, weld, braze, solder, drill, grind, expose to sparks, flame, or ignition sources of empty containers without proper

commercial cleaning or reconditioning.

Hygiene Practices: Wash thoroughly after handling.

#### SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION - EXPOSURE GUIDELINES

Engineering Controls: Use appropriate engineering control such as process enclosures, local

exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation should be sufficient to control airborne levels. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local

procedures for selection, training, inspection and maintenance of the personal

protective equipment.

Eye/Face Protection: Wear appropriate protective glasses or splash goggles as described by 29

CFR 1910.133, OSHA eye and face protection regulation, or the European

standard EN 166.

Skin Protection Description: Wear appropriate protective gloves and other protective apparel to prevent

skin contact. Consult manufacturer's data for permeability data.

Respiratory Protection: A NIOSH approved air-purifying respirator with an organic vapor cartridge or

canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying

respirators may not provide adequate protection.

Other Protective: Facilities storing or utilizing this material should be equipped with an

eyewash and a deluge shower safety station.

#### EXPOSURE GUIDELINES

Xylene:

Guideline ACGIH: ACGIH TLV-TWA 100 ppm

<u>1-methoxy-2-propanol</u>:

Guideline ACGIH: ACGIH TLV-TWA 100 ppm

<u>Aluminum oxide</u>:

Guideline ACGIH: ACGIH TLV-TWA 10 mg/m3
Guideline OSHA: OSHA PEL-TWA 5 mg/m3

<u>Silicon carbide</u>:

Guideline ACGIH: ACGIH TLV-TWA 0.1 f/cc (fiberous form)

Guideline OSHA: OSHA PEL-TWA 15 mg/m3

Silica, crystalline (quartz):

Guideline ACGIH: ACGIH TLV-TWA 0.025 mg/m3

Guideline OSHA: OSHA PEL-TWA [10 mg/m3]/[{ % SiO2} + 2]

Ethylbenzene:

Guideline ACGIH: ACGIH TLV-TWA 100 ppm
Guideline OSHA: OSHA PEL-TWA 100 ppm

<u>Titanium dioxide</u>:

Guideline ACGIH: ACGIH TLV-TWA 10 mg/m3

#### SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

Physical State Appearance: Paste.

Color: Yellow

Boiling Point: > 240 ° F

Melting Point: Not determined.

Vapor Density: 3.7
Vapor Pressure: 8 mmHg
Evaporation Rate: 0.7

pH: Not determined.

Molecular Formula: Mixture
Molecular Weight: Mixture
Flash Point: >81 °F

Auto Ignition Temperature: Not determined.

VOC Content: 2.8 lbs/gal (340 g/l)

Percent Solids by Weight

#### SECTION 10 - STABILITY and REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures.

Hazardous Polymerization: Not reported.

Conditions to Avoid: Extreme heat, sparks, and open flame. Incompatible materials, oxidizers and

oxidizing conditions.

Incompatible Materials: Oxidizing agents. Strong acids and alkalis.

#### SECTION 11 - TOXICOLOGICAL INFORMATION

Xylene:

Eye: Eye - Rabbit Standard Draize Test.: 5 mg/24H (RTECS)
Skin: Rabbit Standard Draize Test.: 500 mg/24H (RTECS)

Rabbit LD50: >1700 mg/kg [Details of toxic effects not reported other than

lethal dose value.](RTECS)

Rat TDLo: 920 uL/kg/1H [Skin and Appendages - primary irritation (after

topical exposure)](RTECS)

Inhalation: Inhalation. - Rat LC50: 5000 ppm/4H [Details of toxic effects not reported

other than lethal dose value.] (RTECS)

Ingestion: Oral - Rat LD50: 4300 mg/kg [Liver - other changes; Kidney/Ureter/Bladder -

other changes] (RTECS)

Oral - Mouse LD50: 2119 mg/kg [Details of toxic effects not reported other

than lethal dose value.] (RTECS)

1-methoxy-2-propanol:

Eye: Eye - Rabbit Standard Draize Test.: 500 mg/24H - [mild] (RTECS)

Skin: Rabbit Open irritation test -: 500 mg - [mild] (RTECS)

Rabbit LD50: 13 gm/kg - [Details of toxic effects not reported other than

lethal dose value.](RTECS)

Inhalation: Inhalation. - Rat LC50: 10000 ppm/5H - [Details of toxic effects not reported

other than lethal dose value.] (RTECS)

Ingestion: Oral - Rat LD50: 6600 mg/kg - [Brain and Coverings - other rat changes oral

- general anesthetic Lungs, Thorax, or rat - dyspnea] (RTECS)

Oral - Mouse LD50: 11700 mg/kg - [oral - convulsions or effect on seizure threshold oral - ataxia Lungs, Thorax, or rat - dyspnea] (RTECS)

Cities and the County of the C

Silica, crystalline (quartz) :

Inhalation: Inhalation. - Rat TCLo - Lowest published toxic concentration: 1 mg/kg -

[Lungs, Thorax, or Respiration - other changes Biochemical - Metabolism (Intermediary) - effect on inflammation or mediation of inflammation ]

(RTECS)

Ingestion: Oral - Rat TDLo - Lowest published toxic dose: 120 gm/kg - [Gastrointestinal

- hypermotility, diarrhea Gastrointestinal - other changes ] (RTECS)

Carcinogenicity: IARC: Group 1: Carcinogenic to humans.

NTP: Reasonably anticipated to be a human carcinogen.

Ethylbenzene:

Eye: Eye - Rabbit Standard Draize Test.: 500 mg (RTECS)
Skin: Rabbit Open irritation test -: 15 mg/24H (RTECS)

Rabbit LD50: 17800 uL/kg [Details of toxic effects not reported other than

lethal dose value.](RTECS)

Inhalation: Inhalation. - Rat LC50: 55000 mg/m3/2H [Details of toxic effects not

reported other than lethal dose value.] (RTECS)

Inhalation. - Mouse LC50: 35500 mg/m3/2H [Details of toxic effects not

reported other than lethal dose value.] (RTECS)

Ingestion: Oral - Rat LD50: 3500 mg/kg [Details of toxic effects not reported other than

lethal dose value.] (RTECS)

Carcinogenicity: IARC: Group 2B: Possibly carcinogenic to humans.

Sulfur:

Eye: Eye - Human Standard Draize Test. : 8 ppm (RTECS)

Inhalation: Inhalation. - Mammal species unspecified LC50: 1660 mg/m3 - [Details of

toxic effects not reported other than lethal dose value. (RTECS)

Ingestion: Oral - Human LDLo: 0.17 gm/kg - [Details of toxic effects not reported other

than lethal dose value. (RTECS)

<u>Titanium dioxide</u>:

Skin: Administration onto the skin - Human Standard Draize Test.: 300 ug/3D

(intermittent) (RTECS)

Inhalation: Inhalation. - Rat TCLo - Lowest published toxic concentration: 1 mg/kg -

[Lungs, Thorax, or Respiration - other changes Biochemical - Metabolism (Intermediary) - effect on inflammation or mediation of inflammation ]

(RTECS)

Ingestion: Oral - Rat TDLo - Lowest published toxic dose: 60 gm/kg - [Gastrointestinal -

hypermotility, diarrhea Gastrointestinal - other changes ] (RTECS)

Carcinogenicity: IARC: Group 2B: Possibly carcinogenic to humans.

NTP: Reasonably anticipated to be a human carcinogen.

Nickel Oxide (Nickel Compound as NiO):

Ingestion: Oral - Rat LDLo: 5 gm/kg [Details of toxic effects not reported other than

lethal dose value.] (RTECS)

Carcinogenicity: NTP: Reasonably anticipated to be a human carcinogen.

#### SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: No ecotoxicity data was found for the product.

Environmental Fate: No environmental information found for this product.

# SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal: Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the

classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local

guidelines.

RCRA Number: D001

Important Disposal Information: DANGER! Rags, steel wool and waste soaked with this product may

spontaneously catch fire if improperly discarded or stored. To avoid a

spontaneous combustion fire, immediately after use, place rags, steel wool or

waste in a sealed, water-filled, metal container.

DOT Shipping Name: Paint
DOT UN Number: UN1263
DOT Hazard Class: 3
DOT Packing Group: III

#### SECTION 15 - REGULATORY INFORMATION

<u>Xylene</u>:

TSCA Inventory Status: Listed

SARA: EPCRA - 40 CFR Part 372 - (SARA Title III) Section 313 Listed Chemical.

State Regulations: Listed in the State of Massachusetts Hazardous Substance List.

Listed in the New Jersey State Right to Know List.

Listed in the Pennsylvania State Hazardous Substances List.

1-methoxy-2-propanol:

TSCA Inventory Status: Listed

State Regulations: Listed in the State of Massachusetts Hazardous Substance List.

Listed in the Pennsylvania State Hazardous Substances List.

Aluminum oxide

TSCA Inventory Status: Listed

SARA: EPCRA - 40 CFR Part 372 - (SARA Title III) Section 313 Listed Chemical.

State Regulations: Listed in the State of Massachusetts Hazardous Substance List.

Listed in the New Jersey State Right to Know List.

Listed in the Pennsylvania State Hazardous Substances List.

Silicon carbide :

TSCA Inventory Status: Listed

State Regulations: Listed in the State of Massachusetts Hazardous Substance List.

Listed in the Pennsylvania State Hazardous Substances List.

Glass oxide:

TSCA Inventory Status: Listed

Silica, crystalline (quartz):

TSCA Inventory Status: Listed

State Regulations: Listed in the State of Massachusetts Hazardous Substance List.

Listed in the Pennsylvania State Hazardous Substances List.

Ethylbenzene:

TSCA Inventory Status: Listed

SARA: EPCRA - 40 CFR Part 372 - (SARA Title III) Section 313 Listed Chemical.

State Regulations: Listed in the State of Massachusetts Hazardous Substance List.

Listed in the New Jersey State Right to Know List.

Listed in the Pennsylvania State Hazardous Substances List.

Sulfur:

State Regulations: Listed in the State of Massachusetts Hazardous Substance List.

Listed in the Pennsylvania State Hazardous Substances List.

<u>Titanium dioxide</u>:

TSCA Inventory Status: Listed

State Regulations: Listed in the State of Massachusetts Hazardous Substance List.

Listed in the Pennsylvania State Hazardous Substances List.

Amorphous Silica, Fused:

TSCA Inventory Status: Listed

State Regulations: Listed in the State of Massachusetts Hazardous Substance List.

Nickel Oxide (Nickel Compound as NiO):

State Regulations: Listed in the State of Massachusetts Hazardous Substance List.

Listed in the Pennsylvania State Hazardous Substances List.

Canadian Regulations. WHMIS Hazard Class(es): B2

All components of this product are on the Canadian Domestic Substances List.

WHMIS Pictograms



# SECTION 16 - ADDITIONAL INFORMATION

HMIS Fire Hazard: 3
HMIS Health Hazard: 1
HMIS Reactivity: 1
HMIS Personal Protection: X

MSDS Revision Date: 12/15/2006
MSDS Author: Actio Corporation

Disclaimer: This Health and Safety Information is correct to the best of our knowledge

and belief at the date of its publication but we cannot accept liability for any loss, injury or damage which may result from its use. The information given in the Data Sheet is designed only as a guidance for safe handling, storage and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent

personnel, within a controlled environment.

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# ITEM: 5U705 - Spray Primer Flat Gray 15 Oz

PICK REO: 1078142790

# **MATERIAL SAFETY DATA SHEET (MSDS)**

Associated Grainger Item: 5U705 - Spray Primer Flat Gray 15 Oz

MATERIAL SAFETY DATA SHEET

24 HOUR ASSISTANCE: 1-847-367-7700

RUST-OLEUM CORP

WWW RUSTOLEUM COM

SECTION 1 - CHEMICAL PRODUCT / COMPANY INFORMATION

PRODUCT NAME:

RUST-OLEUM HIGH PERFORMANCE INDUSTRIAL ENAMEL AEROSOL - PRIMERS (HARD HAT)

IDENIIFICATION NUMBER: 209566, V2169838, V2182838

PRODUCI USE/CLASS: PRIMER/AEROSOL

SUPPLIER: RUST-OLEUM CORPORATION 11 HAWIHORN PARKWAY VERNON HILLS, IL 60061

PREPARER: REGULATORY DEPARTMENT

REVISION DATE: 11/21/2006

MANUFACTURER: RUST-OLEUM CORPORATION 11 HAWIHORN PARKWAY VERNON HILLS, IL 60061

WEIGHT % LESS THAN ACGIH TLV-TWA CHEMICAL NAME CAS MUMBER TLV-SIEL. PEL-TWA PEI. CEILING 1000 PPM N.E 1000 PPM N E LICURFIED 30.0 68476-86-8 PETROLEUM GAS ACETONE 67-64-1. 25.0 500 PPM 750 PPM 750 PPM N E MACINESTEM 14807-96-6 10.0 10 MG/MB N.E. 15 MG/M3 N.E SILICATE 1330-20-7 10 0 XYLENE 100 PPM 150 PPM 100 PPM N.E. 13463-67-7 10 0 10 MG/MB N.E 10 MG/M3 N.E DIOXIDE STODDARD SOLVENTS 8052~41-3 10 0 100 PPM NE 500 PPM N-BUTYL 123-86-4 5 0 150 PPM 200 PPM 150 PPM N E ACETATE 100 PPM ELHYLBENZENE 100-41-4 5.0 125 PPM 100 PPM N.E ZINC PHOSPHATE 7779 -90-0 5 0 N.E N.E N.E. 10 MG/M3 N.E BASIC ZINC 61583-60-6 5 0 10 MG/MB N.E. MOLYBDATE

- SECTION 2 - COMPOSITION / INFORMATION ON INFREDIENTS

SECTION 3 - HAZARDS IDENTIFICATION -

EMERGENCY OVERVIEW: CONTENTS UNDER PRESSURE. HARMFUL IF INHALED, MAY AFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. VAPORS MAY CAUSE FLASH FIRE OR EXPLOSION EXTREMELY FLAMMABLE LIQUID AND VAPOR HARMFUL IF SWALLOWED

EFFECTS OF OVEREXPOSURE - BYE CONTACT: CAUSES BYE TRRITATION

EFFECTS OF OVEREXPOSURE - SKIN CONTACT:
PROLONGED OR REPEATED CONTACT MAY CAUSE SKIN IRRITATION SUBSTANCE MAY CAUSE
SLIGHT SKIN IRRITATION

EFFECTS OF OVEREXPOSURE - INHALATION; HIGH VAPOR CONCEMPRATIONS ARE IRRITATING TO THE EYES, NOSE, THROAT AND LUNGS. AVOID BREATHING VAPORS OR MISTS. HIGH GAS, VAPOR, MIST OR DUST CONCENTRATIONS MAY BE HARMFUL IF INHALED HARMFUL IF INHALED.

EFFECTS OF OVEREXPOSURE - INGESTION: ASPTRATION HAZARD IF SWALLOWED; CAN ENTER LUNGS AND CAUSE DAMAGE SUBSTANCE MAY BE HARMFUL IF SWALLOWED

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: LARC LISTS ETHYLBENZENE AS A POSSIBLE HUMAN CARCINOGEN (GROUP 2B)

MAY CAUSE CENTRAL NERVOUS SYSTEM DISCRDER (E.G., NARCOSIS INVOLVING A LOSS OF COORDINATION, WEAKNESS, FATTGUE, MENTAL CONFUSION, AND SHURRED VISION) AND/OR DAMAGE. REFORMS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREKEOSURE TO SOLVENIS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. CVEREKEOSURE TO XYLENE IN LABORATORY ANIMALS HAS BEEN ASSOCIATED WITH LIVER ABNORMALITIES, KIDNEY, LUNG, SPLEEN, EYE AND BLOOD DAMAGE AS WELL AS REPRODUCTIVE DISCRDERS. EFFECTS IN HUMANS, DUE TO CHRONIC OVEREXPOSURE, HAVE INCLUDED LIVER, CARDIAC ABNORMALITIES AND NERVOUS SYSTEM DAMAGE.

PRIMARY ROUTE(S) OF ENTRY: SKIN CONTACT, INHALATION, EYE CONTACT

ETEST ATD - EYE CONTACT: HOLD EYELIDS APART AND FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION.

MSDS: B0793

FIRST ALD - SKIN CONTACT:
WASH WITH SOAP AND WATER. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR
PERSISTS.

FIRST AID - INHALATION: IF YOU EXPERIENCE DIFFICULTY IN BREATHING, LEAVE THE AREA TO OBTAIN FRESH AIR. IF CONTINUED DIFFICULTY IS EXPERIENCED, GET MEDICAL ASSISTANCE TIMEDIATELY

FIRST AID - INGESTION:

ASPIRATION HAZARD: DO NOT INDUCE VONTTING OR GIVE ANYTHING BY MOUTH BECAUSE THIS MATERIAL CAN ENTER THE LUNGS AND CAUSE SEVERE LUNG DAMAGE GET IMMEDIATE MEDICAL

- SECTION 5 - FIRE FIGHTING MEASURES -

FLASH POINT (SETAFLASH): -156 F

LOWER EXPLOSIVE LIMIT: 0.9 % UPPER EXPLOSIVE LIMIT: 22 0 %

EXILINGUISHING MEDIA: DRY CHEMICAL, FOAM, WATER FOG

Unusual fire and explosion hazards: perforation of the pressurized container may cause bursting of the Can. water seray may be ineffective. Closed containers may explode when exposed to extreme heat flash point is less than 20 deg f.

EXTREMELY FLAMMABLE LIQUID AND VAPOR!

VAPORS MAY FORM EXPLOSIVE MIXTURES WITH AIR. VAPORS CAN TRAVEL TO A SOURCE OF IGNITION AND FLASH BACK, KEEP CONTAINERS TIGHTLY CLOSED, ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME.

SPECIAL FIREFICHTING PROCEDURES: EVACUATE AREA AND FIGHT FIRE FROM A SAFE DISTANCE

- SECTION 6 - ACCIDENTAL RELEASE MEASURES -

STEPS IO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
REMOVE ALL SOURCES OF IGNITION, VENTILATE AREA AND REMOVE WITH INERT
ABSORBENT AND NON-SPARKING TOOLS CONTAIN SPILLED LIQUID WITH SAND OR EARTH.
ONT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST. DISPOSE OF ACCORDING TO
LOCAL, STATE (PROVINCIAL) AND FEDERAL REGULATIONS DO NOT INCINERATE CLOSED
CONTAINERS.

- SECTION 7 - HANDLING AND STORAGE -

HANDLING:

MASH HANDS BEFORE EATING, USE ONLY IN A WELL-VENTILATED AREA, WASH THOROUGHLY AFTER HANDLING, AVOID BREATHING VAPOR OR MIST, FOLLOW ALL MSDS/LABEL PRECAUTIONS EVEN AFTER CONTAINER IS EMPTIED BECAUSE IT MAY RETAIN PRODUCT RESIDUES

DO NOT STORE ABOVE 120 DBG. F. STORE LARGE QUANTITIES IN BUILDINGS DESIGNED AND PROTECTED FOR STORAGE OF NEPA CLASS I FLAMMABLE LIQUIDS. KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPACES AND OPEN FLAME. CONTENTS UNDER PRESSURE DO NOT EXPOSE TO HEAT OR STORE ABOVE 120

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION -

ENGINEERING CONTROLS:

PREVENT EUILD-UP OF VAPORS BY OPENING ALL DOORS AND WINDOWS TO ACHIEVE CROSS-VENTILATION USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTROLS TO CONTROL ATREON LEXTES BELOW RECOMMENDED EXPOSURE LIMITS. USE EXPLOSION-PROOF VENTILATION EQUIPMENT

RESPIRATORY PROTECTION: A NIOSH/MSHA APPROVED AIR PURIFYING RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE OR CANISTER MAY BE PERMISSIBLE UNDER CERTAIN CIRCLMSTANCES WHERE AIRBORNE CONCENTRATIONS ARE EXPECTED TO EXCEED EXPOSURE LIMITS.

PROTECTION PROVIDED BY AIR PURIFYING RESPIRATORS IS LIMITED. USE A POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR IF THERE IS ANY POTENTIAL FOR AN UNCONTROLLED RELEASE, EXPOSURE LEVELS ARE NOT KNOWN, OR ANY OTHER CIRCUMSTANCES WHERE AIR PURIFYING RESPIRATORS MAY NOT PROVIDE ADEQUATE PROTECTION. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA 1910.134 AND ANSI ZEE, 2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

SKIN PROTECTION: NITRILE OR NEOPRENE GLOVES MAY AFFORD ADEQUATE SKIN PROTECTION, USE IMPERVIOUS GLOVES TO PREVENI SKIN CONTACT AND ABSORPTION OF THIS MATERIAL

EYE PROTECTION:

USE SAFETY EYEWEAR DESIGNED TO PROTECT AGAINST SPLASH OF LIQUIDS

OTHER PROTECTIVE EQUIPMENT: REFER TO SAFETY SUPERVISOR OR INDUSTRIAL HYGIENIST FOR FURTHER INFORMATION RECARDING PERSONAL PROTECTIVE EQUIPMENT AND ITS APPLICATION

HYGIENIC PRACTICES:

WASH THOROUGHLY WITH SOAP AND WATER BEFORE FAILING, DRINKING OR SMOKING.

- SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES -

BOILING RANGE: -34 - 900 F

ODOR: SOLVENI LIKE APPEARANCE: LIQUID

SOLUBILITY IN H2O: SLIGHT

FREEZE POINT: ND VAPOR PRESSURE:

PHYSICAL STATE: LIQUID

VAPOR DENSITY: HEAVIER THAN AIR

ODOR THRESHOLD: ND

EVAPORATION RATE: FASTER THAN ETHER

SPECIFIC GRAVIIY: 0.8600

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

- SECTION 10 - STABILITY AND REACTIVITY -

CONDITIONS TO AVOID: AVOID TEMPERATURES ABOVE 120 DBG F. AVOID ALL POSSIBLE SOURCES OF IGNITION.

 $\begin{array}{ll} \hbox{INCOMPATIBILITY:} \\ \hbox{INCOMPATIBLE WITH STRONG OXIDIZING AGENIS, STRONG ACIDS AND STRONG ALKALIES.} \end{array}$ 

HAZARDOUS DECOMPOSITION:

WHEN HEATED TO DECOMPOSITION, IT EMITS ACRID SMOKE AND IRRIGATING FUMES. BY OPEN FLAME, CARBON MONOXIDE AND CARBON DIOXIDE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR UNDER NORMAL CONDITIONS

STABILITY: THIS PRODUCT IS STABLE UNDER NORMAL STORAGE CONDITIONS.

#### - SECTION 11 - TOXICOLOGICAL INFORMATION

PRODUCT LD50: ND PRODUCT LC50: ND

CHEMICAL NAME

LD50

LC50

LIQUIFTED PETROLEUM GAS

N..D

ACETONE

N.D

N.D

MAGNESIUM SILICATE

N.D.

TCLO: 11 MG/M3 INH

XALENE

N.D.

N.D.

ND

IIIANIUM DIOXIDE SIODDARD SOLVENIS

N D

>7500 MG/KG (ORAL, RAT) N.D

N-BUIYL ACETATE

13100 MG/KG (ORAL, RAT) 2000 PPM (INH 4 HR, RAT)

ETHYLBENZENE

3500 MG/KG (ORAL, RAI)

ZINC PHOSPHATE

N.D.

BASIC ZINC MOLYBDATE

N.D.

N D

#### SECTION 12 - ECOLOGICAL INFORMATION -

ECOLOGICAL INFORMATION: PRODUCT IS A MIXTURE OF LISTED COMPONENTS.

- SECTION 13 - DISPOSAL INFORMATION

DISPOSAL INFORMATION:
DISPOSE OF MATERIAL IN ACCORDANCE TO LOCAL, STATE AND FEDERAL REGULATIONS AND ORDINANCES DO NOT ALLOW TO ENTER STORM DRAINS OR SEMER SYSTEMS.

#### - SECTION 14 - TRANSPORTATION INFORMATION

DOI PROPER SHIPPING NAME: AEROSOL

DOT IECHNICAL NAME:

DOI HAZARD CLASS: 2.1

DOT UN/NA NUMBER: UN1950

PACKING GROUP:

HAZARD SUBCLASS:

RESP. GUIDE PAGE: 126

#### - SECTION 15 - REGULATORY INFORMATION

CERCLA - SARA HAZARD CATEGORY:
THIS PRODUCT HAS BEEN REVIEWED ACCORDING TO THE EPA "HAZARD CATEGORIES"
PROMILGATED UNDER SECTIONS 311 LAND 312 OF THE SUPERFUND AMENIMENT AND
REAUTHORIZATION ACT OF 1986 (SARA TITLE 111) AND 1S CONSIDERED, UNDER
APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES:
IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

SARA SECTION 313:

LISTED BELOW ARE THE SUBSTANCES (IF ANY) CONTAINED IN THIS PRODUCT THAT ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENUMENT AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372:

CHEMICAL NAME

CAS NUMBER

XYLENE

1330-20-7

ETHYLBENZENE

100-41-4

ZINC PHOSPHATE

7779-90-0 61583-60-6

BASIC ZINC MOLYBDATE TOXIC SUBSTANCES CONTROL ACI:

LISTED BELOW ARE THE SUBSTANCES (IF ANY) CONTAINED IN THIS PRODUCT THAT ARE SUBJECT TO THE REPORTING REQUIREMENTS OF TSCA 12(B) IF EXPORTED FROM THE UNITED STATES: NONE KNOWN

U.S. STATE REGULATIONS: AS FOLLOWS

NEW JERSEY RICHT-TO-KNOW: THE FOLLOWING MATERIALS ARE NON-HAZARDOUS, BUT ARE AMONG THE TOP FIVE COMPONENTS IN THIS PRODUCT

CHEMICAL NAME

CAS NUMBER

MODIFIED ALKYD RESIN

PROPRIETARY

PENNSYLVANIA RIGHT-TO-KNOW: THE FOLLOWING NON-HAZARDOUS INCREDIENTS ARE PRESENT IN THE PRODUCT AT GREATER THAN 3%

CHEMICAL NAME

CAS NUMBER

MODIFIED ALKYD RESIN

PROPRIETARY 1317-65-3

CALCIUM CARBONATE RED IRON OXIDE

1332-37-2

ACRYLIC RESIN

NOI AVAILABLE

CALIFORNIA PROPOSITION 65:

WARNING!

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN BY THE STATE OF CALIFORNIA TO CAUSE CANCER.

THESE PRODUCTS CONTAIN NO KNOWN CHEMICALS KNOWN BY THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

INTERNATIONAL REGULATIONS: AS FOLLOWS

CANADIAN WHMIS:

THIS MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CONTROLLED PRODUCT REGULATIONS EXCEPT FOR THE USE OF THE 16 HEADINGS.

CANADIAN WHMIS CLASS: AB5, D2A, D2B

- SECTION 16 - OTHER INFORMATION

HMIS RATINGS: HEALITH FLAMMABILITY REACTIVITY

PERSONAL PROTECTION X

VOLATILE ORGANIC COMPOUNDS, G/L: N A

REASON FOR REVISION:

LEGEND:

N A - NOT APPLICABLE
N.E. - NOT ESTABLISHED
N.D. - NOT DETERMINED

THE INFORMATION CONTAINED ON THIS MSDS HAS BEEN CHECKED AND SHOULD BE ACCURATE. HOWEVER, IT IS THE RESPONSIBILITY OF THE USER TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.



# DOW CORNING CORPORATION Material Safety Data Sheet

Page: 1 of 9

# **DOW CORNING(R) 1250 SURFACTANT**

#### 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Dow Corning Corporation South Saginaw Road Midland, Michigan 48686 24 Hour Emergency Telephone: (989) 496-5900

Customer Service: (989) 496-6000 Product Disposal Information: (989) 496-6315

CHEMTREC: (800) 424-9300

MSDS No: 01225294

Revision Date: 2002/04/03

Generic Description: Silicone resin solution.

Physical Form: Liquid

Color: Colorless to pale yellow

Odor: Solvent odor.

NFPA Profile: Health 2 Flammability 3 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

# 2. OSHA HAZARDOUS COMPONENTS

CAS Number	<u>Wt %</u>	Component Name
1330-20-7	30.0 - 60 0	Xylene
100-41-4	10 0 - 30 0	Ethylbenzene
3555-47-3	1.0 - 5.0	Tetra(trimethylsiloxy) silane
108-88-3	<1.0	Toluene

The above components are hazardous as defined in 29 CFR 1910 1200

# 3. EFFECTS OF OVEREXPOSURE

#### Acute Effects

Eye:

Direct contact may cause severe irritation. Vapor may cause eye irritation.

Skin:

May cause moderate irritation.

Inhalation:

Vapor may irritate nose and throat. Overexposure by inhalation may cause drowsiness,

dizziness, confusion or loss of coordination.

Oral:

Aspiration of liquid while vomiting may injure lungs seriously. May cause vomiting.

# Prolonged/Repeated Exposure Effects

Skin:

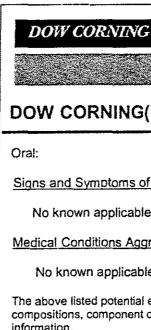
Repeated or prolonged contact may cause defatting and drying of skin which may result

in skin irritation and dermatitis. Overexposure may injure internally if absorbed.

inhalation:

Overexposure by inhalation may injure the following organ(s):Blood: Lungs: Liver.

Kidneys. Bone marrow. Nervous system.



# DOW CORNING CORPORATION **Material Safety Data Sheet**

Page: 2 of 9

# DOW CORNING(R) 1250 SURFACTANT

Repeated ingestion or swallowing large amounts may injure internally.

Signs and Symptoms of Overexposure

No known applicable information.

Medical Conditions Aggravated by Exposure

No known applicable information.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

# 4. FIRST AID MEASURES

Eye:

Immediately flush with water for 15 minutes. Get medical attention.

Skin:

Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get

medical attention if irritation or other ill effects develop or persist.

Inhalation:

Remove to fresh air. Get medical attention if ill effects persist.

Oral:

Get immediate medical attention. Only induce vomiting at the instructions of a physician.

Never give anything by mouth to an unconscious person.

Comments:

Treat according to person's condition and specifics of exposure.

# 5. FIRE FIGHTING MEASURES

Flash Point:

81 °F / 27.2 °C (Pensky-Martens Closed Cup)

Autoignition

Temperature:

Not determined

Flammability Limits in Air: Not determined.

Extinguishing Media:

On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO2), dry chemical or water spray Water can be used to cool fire exposed containers.

Fire Fighting Measures:

Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers

Unusual Fire Hazards:

Vapors are heavier than air and may travel to a source of ignition and flash back. Static

electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by

bonding and grounding or inert gas purge.

#### Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide.



# DOW CORNING CORPORATION Material Safety Data Sheet

Page: 3 of 9

# **DOW CORNING(R) 1250 SURFACTANT**

Chlorine compounds. Metal oxides. Formaldehyde.

# 6. ACCIDENTAL RELEASE MEASURES

Containment/Clean up:

Remove possible ignition sources. Determine whether to evacuate or isolate the area according to your local emergency plan. Observe all personal protection equipment recommendations described in Sections 5 and 8. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbant. Clean area as appropriate since some silicone materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

Note: See section 8 for Personal Protective Equipment for Spills. Call Dow Corning Corporation, (989) 496-5900, if additional information is required.

#### 7. HANDLING AND STORAGE

Use with adequate ventilation. Traces of benzene (carcinogen) may form if heated in air above 300 F (149 C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures Review the OSHA benzene regulation for detailed information on safe handling requirements. Avoid eye exposure Avoid skin contact. Avoid breathing vapor, mist, dust, or fumes. Keep container closed. Do not take internally

Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge. Keep container closed and away from heat, sparks, and flame.

# 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

# Component Exposure Limits

CAS Number Component Name

Exposure Limits

1330-20-7 Xylene

Observe xylene limits. OSHA PEL (final rule) and ACGIH TLV: TWA 100 ppm, STEL 150 ppm.

100-41-4 Ethylbenzene

OSHA PEL (final rule): TWA 100 ppm, 435 mg/m3. ACGIH TLV: TWA 100 ppm, STEL 125 ppm.

# **Engineering Controls**

Local Ventilation: General Ventilation: Recommended. Recommended.

# Personal Protective Equipment for Routine Handling

Eyes:

Use chemical worker's goggles.





Page: 4 of 9

### **DOW CORNING(R) 1250 SURFACTANT**

Skin:

Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves

are recommended.

Suitable Gloves:

Teffon(R). Polyvinylalcohol. Silver Shield(R). Viton(R). 4H(R).

Inhalation:

Use respiratory protection unless adequate local exhaust ventilation is provided or air sampling data show exposures are within recommended exposure guidelines. Industrial Hygiene Personnel can assist in judging the adequacy of existing engineering controls.

Suitable Respirator:

General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits as determined by air sampling or are unknown, appropriate respiratory protection should be worn. Follow OSHA Respirator Regulations (29 CFR 1910 134) and use NIOSH/MSHA approved respirators.

#### Personal Protective Equipment for Spills

Eyes:

Use full face respirator.

Skin:

Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.

Inhalation/Suitable Respirator:

Respiratory protection recommended. Follow OSHA Respirator Regulations (29 CFR 1910 134) and use NIOSH/MHSA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Precautionary Measures: Avoid eye exposure Avoid skin contact. Avoid breathing vapor, mist, dust, or fumes. Keep container closed. Do not take internally. Use reasonable care

Comments:

Traces of benzene (carcinogen) may form if heated in air above 300 F (149 C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures Review the OSHA benzene regulation for detailed information on safe handling requirements

When heated to temperatures above 150 degrees C in the presence of air, product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose, throat, skin, and digestive system. Safe handling conditions may be maintained by keeping vapor concentrations within the

OSHA Permissible Exposure Limit for formaldehyde.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid

Color: Colorless to pale yellow





Page: 5 of 9

## **DOW CORNING(R) 1250 SURFACTANT**

Odor: Solvent odor.

Specific Gravity @ 25°C: 1.00

Viscosity: 5 cSt

Freezing/Melting Point: Not determined.

Boiling Point: > 35C/95F

Vapor Pressure @ 25°C: Not determined.

Vapor Density: Not determined.

Solubility in Water: Not determined

pH: Not determined.

Volatile Content: Not determined

Note: The above information is not intended for use in preparing product specifications. Contact Dow Corning before writing specifications.

#### 10. STABILITY AND REACTIVITY

Chemical Stability:

Stable.

Hazardous

Hazardous polymerization will not occur.

Polymerization:

Conditions to Avoid:

None.

Materials to Avoid:

Oxidizing material can cause a reaction.

#### 11. TOXICOLOGICAL INFORMATION

#### **Special Hazard Information on Components**

#### Carcinogens

CAS Number

Wt %

Component Name

100-41-4

10.0 - 30.0

Ethylbenzene

IARC Group 2B - Possibly Carcinogenic to Humans

**Teratogens** 

CAS Number

Wt %

Component Name

100-41-4

10.0 - 30.0

Ethylbenzene

Evidence of teratogenicity (birth defects) in laboratory animals

Mutagens

**CAS Number** 

Wt %

Component Name

100-41-4

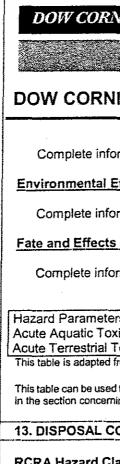
10.0 - 30.0 E

Ethylbenzene

Genetically active in IN VIVO assay(s)

#### 12. ECOLOGICAL INFORMATION

#### **Environmental Fate and Distribution**





Page: 6 of 9

## **DOW CORNING(R) 1250 SURFACTANT**

Complete information is not yet available

#### **Environmental Effects**

Complete information is not yet available

#### Fate and Effects in Waste Water Treatment Plants

Complete information is not yet available.

**Ecotoxicity Classification Criteria** 

Hazard Parameters (LC50 or EC50) High Medium Low Acute Aquatic Toxicity (mg/L) <=1 >1 and <=100 >100 **Acute Terrestrial Toxicity** <=100 >100 and <= 2000 >2000

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material

#### 13. DISPOSAL CONSIDERATIONS

#### RCRA Hazard Class (40 CFR 261)

When a decision is made to discard this material, as received, is it classified as a hazardous waste? Yes

Characteristic Waste:

Ignitable:

D001

D018

TCLP:

State or local laws may impose additional regulatory requirements regarding disposal

Call Dow Corning Corporate Environmental Management, (989) 496-6315, if additional information is required.

#### 14. TRANSPORT INFORMATION

#### DOT Road Shipment Information (49 CFR 172.101)

Proper Shipping Name:

XYLENE SOLUTION

Hazard Class:

UN/NA Number:

UN1307

Packing Group:

111

#### Ocean Shipment (IMDG)

Proper Shipping Name:

XYLENE SOLUTION

Hazard Class:



Page: 7 of 9

### **DOW CORNING(R) 1250 SURFACTANT**

UN Number:

1307

Packing Group:

111

Hazard Label(s):

FLAMMABLE LIQUID

Marine Pollutant:

Not Applicable

Air Shipment (IATA)

Proper Shipping Name:

XYLENE SOLUTION

Hazard Class:

3

UN Number:

1307

Packing Group:

111

Call Dow Corning Transportation, (989) 496-8577, if additional information is required.

15. REGULATORY INFORMATION

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910 1200

TSCA Status:

All chemical substances in this material are included on or exempted from listing on the TSCA

Inventory of Chemical Substances.

#### **EPA SARA Title III Chemical Listings**

#### Section 302 Extremely Hazardous Substances:

None

#### Section 304 CERCLA Hazardous Substances:

 CAS Number
 Wt %
 Component Name

 1330-20-7
 37.0
 Xylene

 100-41-4
 11.0
 Ethylbenzene

 108-88-3
 0.2
 Toluene

#### Section 312 Hazard Class:

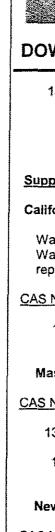
Acute: Yes Chronic: Yes Fire: Yes Pressure: No Reactive: No

**Section 313 Toxic Chemicals:** 

CAS Number

Wt %

Component Name





Page: 8 of 9

## **DOW CORNING(R) 1250 SURFACTANT**

1330-20-7

37.0

**Xylene** 

100-41-4

11.0

Ethylbenzene

#### Supplemental State Compliance Information

#### California

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.

**CAS Number** 

Wt %

Component Name

108-88-3

<1.0

Toluene

Developmental toxin.

#### Massachusetts

CAS	Nι	m	bei
-----	----	---	-----

Wt %

Component Name

1330-20-7

30.0 - 60.0 **Xylene** 

100-41-4

10.0 - 30.0 Ethylbenzene

#### **New Jersey**

CAS	NUI	<u>mber</u>

Wt %

Component Name

68988-56-7

40 0 - 70 0

Trimethylated silica

1330-20-7

30.0 - 60.0

100-41-4

100-300

Ethylbenzene

**Xylene** 

3555-47-3

10 - 5.0

Tetra(trimethylsiloxy) silane

#### Pennsylvania

CAS Number

Wt %

Component Name

68988-56-7

400-700

Trimethylated silica

1330-20-7

30 0 - 60 0

**Xylene** 

100-41-4

100-300

Ethylbenzene



Page: 9 of 9

## **DOW CORNING(R) 1250 SURFACTANT**

#### 16. OTHER INFORMATION

Prepared by: Dow Corning Corporation

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

(R) Indicates Registered Trademark

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Page: 1 of 8

## **DOW CORNING(R) 1252 SURFACTANT**

#### 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Dow Corning Corporation South Saginaw Road Midland, Michigan 48686 24 Hour Emergency Telephone: (989) 496-5900

Customer Service: (989) 496-6000

Product Disposal Information: (989) 496-6315

CHEMTREC: (800) 424-9300

MSDS No: 01221604

Revision Date: 2002/02/22

Generic Description: Silicone resin solution.

Physical Form: Liquid

Color: Colorless to pale yellow

Odor: Not available

NFPA Profile: Health 2 Flammability 2 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

#### 2. OSHA HAZARDOUS COMPONENTS

CAS Number	<u>Wt %</u>	Component Name
6846-50-0	40 0 - 70 0	Trimethylpentanediol isobutyrate
3555-47-3	10 - 50	Tetra(trimethylsiloxy) silane
1330-20-7	<1.0	Xylene
107-46-0	<1.0	Hexamethyldisiloxane
100-41-4	<1.0	Ethylbenzene
108-88-3	<10	Toluene

The above components are hazardous as defined in 29 CFR 1910.1200.

#### 3. EFFECTS OF OVEREXPOSURE

#### **Acute Effects**

Eye:

Direct contact may cause mild imitation.

Skin:

May cause moderate irritation.

Inhalation:

Mist may irritate nose and throat.

Oral:

Low ingestion hazard in normal use.

Prolonged/Repeated Exposure Effects

Skin:

No known applicable information.



Page: 2 of 8

### DOW CORNING(R) 1252 SURFACTANT

Inhalation:

No known applicable information.

Oral:

Repeated ingestion or swallowing large amounts may injure internally

Signs and Symptoms of Overexposure

No known applicable information.

Medical Conditions Aggravated by Exposure

No known applicable information

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

#### 4. FIRST AID MEASURES

Eye:

Immediately flush with water for 15 minutes

Skin:

Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get

medical attention if irritation or other ill effects develop or persist.

Inhalation:

Remove to fresh air.

Oral:

No first aid should be needed.

Comments:

Treat according to person's condition and specifics of exposure.

#### 5. FIRE FIGHTING MEASURES

Flash Point:

149.9 °F / 65.5 °C (Pensky-Martens Closed Cup)

Autoignition

Not determined.

Temperature:

Flammability Limits in Air: Not determined.

Extinguishing Media:

On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO2), dry chemical or water spray. Water can be used to cool fire exposed containers.

Fire Fighting Measures:

Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers

cool.

Unusual Fire Hazards:

None.

Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide Chlorine compounds. Metal oxides. Formaldehyde...





Page: 3 of 8

## **DOW CORNING(R) 1252 SURFACTANT**

#### 6. ACCIDENTAL RELEASE MEASURES

Containment/Clean up:

Determine whether to evacuate or isolate the area according to your local emergency plan. Observe all personal protection equipment recommendations described in Sections 5 and 8. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbant. Clean area as appropriate since some silicone materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

Note: See section 8 for Personal Protective Equipment for Spills. Call Dow Corning Corporation, (989) 496-5900, if additional information is required.

#### 7. HANDLING AND STORAGE

Use with adequate ventilation. Traces of benzene (carcinogen) may form if heated in air above 300 F (149 C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures. Review the OSHA benzene regulation for detailed information on safe handling requirements. Avoid eye contact. Avoid skin contact. Avoid breathing mist. Keep container closed.

Static electricity will accumulate and may ignite vapors. Prevent a possible fire hazard by bonding and grounding or inert gas purge. Keep container closed and away from heat, sparks, and flame.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### **Component Exposure Limits**

CAS Number Component Name

Exposure Limits

100-41-4

Ethylbenzene

OSHA PEL (final rule): TWA 100 ppm, 435 mg/m3. ACGIH TLV: TWA 100 ppm, STEL 125 ppm.

#### **Engineering Controls**

Local Ventilation: General Ventilation: Recommended. Recommended.

#### Personal Protective Equipment for Routine Handling

Eyes:

Use proper protection - safety glasses as a minimum.

Skin:

Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves

are recommended.



Page: 4 of 8

### **DOW CORNING(R) 1252 SURFACTANT**

Suitable Gloves:

Neoprene Rubber(R).

Inhalation:

Use respiratory protection unless adequate local exhaust ventilation is provided or air sampling data show exposures are within recommended exposure guidelines Industrial Hygiene Personnel can assist in judging the adequacy of existing engineering controls.

Suitable Respirator:

General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits as determined by air sampling or are unknown, appropriate respiratory protection should be worn. Follow OSHA Respirator Regulations (29 CFR 1910 134) and use NIOSH/MSHA

approved respirators.

#### Personal Protective Equipment for Spills

Eyes:

Use full face respirator.

Skin:

Wash at mealtime and end of shift Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended

Inhalation/Suitable

Respirator:

Respiratory protection recommended. Follow OSHA Respirator Regulations (29 CFR 1910 134) and use NIOSH/MHSA approved respirators Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Precautionary Measures: Avoid eye contact. Avoid skin contact. Avoid breathing mist. Keep container closed Use reasonable care.

Comments:

Traces of benzene (carcinogen) may form if heated in air above 300 F (149 C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures. Review the OSHA benzene regulation for detailed information on safe handling requirements.

When heated to temperatures above 150 degrees C in the presence of air, product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose, throat, skin, and digestive system. Safe handling conditions may be maintained by keeping vapor concentrations within the OSHA Permissible Exposure Limit for formaldehyde.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid

Color: Colorless to pale yellow

Odor: Not available

Specific Gravity @ 25°C: 1.055

Viscosity: 100 cSt

Freezing/Melting Point: Not determined.



Page: 5 of 8

## **DOW CORNING(R) 1252 SURFACTANT**

Boiling Point: > 35C/95F

Vapor Pressure @ 25°C: Not determined.

Vapor Density: Not determined. Solubility in Water: Not determined.

pH: Not determined

Volatile Content: Not determined

Note: The above information is not intended for use in preparing product specifications. Contact Dow Coming before writing

specifications

#### 10. STABILITY AND REACTIVITY

Chemical Stability:

Stable.

Hazardous

Hazardous polymerization will not occur

Polymerization:

Conditions to Avoid:

None

Materials to Avoid:

Oxidizing material can cause a reaction.

#### 11. TOXICOLOGICAL INFORMATION

#### Special Hazard Information on Components

#### Carcinogens

CAS Number

W<u>t %</u>

Component Name

100-41-4

<1.0

Ethylbenzene

IARC Group 2B - Possibly Carcinogenic to Humans

#### 12. ECOLOGICAL INFORMATION

#### **Environmental Fate and Distribution**

Complete information is not yet available

#### **Environmental Effects**

Complete information is not yet available.

#### Fate and Effects in Waste Water Treatment Plants

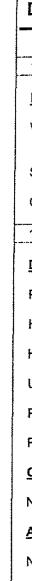
Complete information is not yet available.

#### **Ecotoxicity Classification Criteria**

į	Hazard Parameters (LC50 or EC50)	High	Medium	Low
	Acute Aquatic Toxicity (mg/L)	<=1	>1 and <=100	>100
	Acute Terrestrial Toxicity	<=100	>100 and <= 2000	>2000

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179 p.34, 1993

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.





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## **DOW CORNING(R) 1252 SURFACTANT**

#### 13. DISPOSAL CONSIDERATIONS

#### RCRA Hazard Class (40 CFR 261)

When a decision is made to discard this material, as received, is it classified as a hazardous waste? No

State or local laws may impose additional regulatory requirements regarding disposal.

Call Dow Corning Corporate Environmental Management, (989) 496-6315, if additional information is required.

#### 14. TRANSPORT INFORMATION

#### **DOT Road Shipment Information (49 CFR 172.101)**

Proper Shipping Name: COMBUSTIBLE LIQUID, NOS

Hazard Technical Name: XYLENE/HEXAMETHYLDISILOXANE

Hazard Class:

**COMBUSTIBLE LIQUID** 

UN/NA Number:

NA1993

Packing Group:

Ш

Remarks:

Above applies only to containers over 119 gallons or 450 liters.

#### Ocean Shipment (IMDG)

Not subject to IMDG code.

#### Air Shipment (IATA)

Not subject to IATA regulations.

Call Dow Corning Transportation, (989) 496-8577, if additional information is required.

#### 15. REGULATORY INFORMATION

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status:

All chemical substances in this material are included on or exempted from listing on the TSCA

Inventory of Chemical Substances.

#### **EPA SARA Title III Chemical Listings**

#### Section 302 Extremely Hazardous Substances:

None.

Section 304 CERCLA Hazardous Substances:

CAS Number

Wt %

Component Name



Page: 7 of 8

## **DOW CORNING(R) 1252 SURFACTANT**

1330-20-7

0.7

**Xylene** 

100-41-4

0.3

Ethylbenzene

#### Section 312 Hazard Class:

Acute: Yes

Chronic: Yes

noino, ic

Fire: Yes

Pressure: No

Reactive: No

#### Section 313 Toxic Chemicals:

None present or none present in regulated quantities.

#### Supplemental State Compliance Information

#### California

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.

CAS Number

Wt %

Component Name

Component Name

108 88-3

<1.0

Toluene

Developmental toxin.

#### Massachusetts

No ingredient regulated by MA Right-to-Know Law present

#### **New Jersey**

CAS Number

CAS Number	<u>Wt %</u>	Component Name
6846-50-0	400 - 700	Trimethylpentanediol isobutyrate
68988-56-7	40.0 - 70.0	Trimethylated silica
3555-47-3	1.0 - 5.0	Tetra(trimethylsiloxy) silane
100-41-4	<10	Ethylbenzene
Pennsylvania	÷	

Wt %



Page: 8 of 8

## **DOW CORNING(R) 1252 SURFACTANT**

6846-50-0

40.0 - 70.0

Trimethylpentanediol isobutyrate

68988-56-7

40.0 - 70.0

Trimethylated silica

#### 16. OTHER INFORMATION

Prepared by: Dow Corning Corporation

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate

(R) indicates Registered Trademark

Category "S" Baseline Environmental Assessment Former Tecumseh Products Plant 100 and 101 East Patterson Street, Tecumseh, Michigan 49286 January 21, 2010

APPENDIX I

**BORING LOGS** 



Associates Inc.

SAMPLE

TYPE

HA

HA

GP

10

16

18

20

22

24

26

28 30 SAMPLE

INTERVAL

(BGS)

0-2'

2-4'

4-6'

6-8'

8-10'

10-12'

12-14'

14-16'

16-18'

18-20'

20-22'

22-24'

24-26'

26-28'

28-30'

SAMPLE

1

2

3

8

9

10

11

12

13

14

15

Rec.

12"

12"

24"

24"

24"

24"

24"

24"

24"

24"

24"

24"

24"

24"

24"

24"

46555 Humboldt Drive, Ste. 100 Novi, MI 48377

Phone: (248) 669-5140 Fax: (248) 669-5147

FEET

(BGS) - 0

Project Number: 039.02922.8N01
Project Name: Lot 14
Site Location: Various Parcels

City: Tecumseh, MI
Casing: NA
Screen-Slot Size: NA

Boring Number: **GP-1**Start Date: 12/15/08
Diameter: NA

Diameter: NA Borehole LITHOLOGY DESCRIPTION PID Construction PPM Asphalt SAND with some gravel, moist (fill material) 0.1 SAND with some gravel, rocks and dry brick ◆ Bentonite 0.6 Coarse SAND with some gravel and rocks 0.4 Coarse SAND, dry and brown 0.5 Coarse SAND, moist 0.6

0.3

EOB

Coarse SAND, saturated.

	(HA) = HAND AUGER	(DS) = DISTURBED SAMPLI	Bore	hole Observations After Drill	ling	(Rec.) = RECOVERY	(EOB) = END OF BORING
	(AK) = AIR KNIFE	(GP) = GeoProbe	<b>Immediately</b>	after:		(BGS) = Below Ground Surface	(SAA) = Same As Above
	(SS) = SPLIT SPOON	bpf = blows per foot	Hrs	s. after:		(NR) = NO RECOVERY	
	(qP) = Penetrometer Uncon	fined Compressive Strength	Backfill:	Well Materials		(NA) = NOT APPLICABLE	
	Logged by: Andy Raus	<u>ser</u> Dri	lling Co.: Fibertec		Driller:	Ryan	
	Drawn by: Nate Kelle	r Drill F	Rig Type: 6620 DT		Assistant:		
$\sim$	booked by:						



Associates Inc.

Project Number: 039.02922.8N01
Project Name: Tecumseh Products
Site Location: Lot 24

46555 Humboldt Drive, Ste. 100 Novi, MI 48377

Phone: (248) 669-5140 Fax: (248) 669-5147 City: Tecumseh, MI
Casing: NA
Screen-Slot Size: NA

Boring Number: **GP-2**Start Date: 12/15/08
Diameter: NA
Diameter: NA

			SAMPLE	SAMPLE	Rec.				В	orehole
	FEET	SAMPLE	INTERVAL	NUMBER			LITHOLOGY DESCRIPTION	PID	Con	struction
	(BGS) - 0	TYPE	(BGS)					PPM		
	2	НА	0-2'	1	12" 12"		Concrete SAND, dark gray, with some clay and gravel (suspected fill)	1.5		
	4	HA	2-4'	2	24"	=:	CLAY, brown with some gravel and sand SAND with some gravel, brown	6.8	•	<ul><li>Bentonite</li></ul>
	6	GP	4-6'	3	24"		3	0.0		
	8	GP	6-8'	4	24"					
	10	GP	8-10'	5	24"		SAA	5.4		
	12	GP	10-12'	6	24"					
	14	GP	12-14'	7	24"			6.5		
	16	GP	14-16'	8	24"			0.5		
	18	GP	16-18'	9	24"					
	20	GP	18-20'	10	24"		SAA	16.8		
	22	GP	20-22'	11	24"	_				
	24	GP	22-24'	12	24"	<b>,</b>				
1							505			

EOB

**Borehole Observations After Drilling** (HA) = HAND AUGER (DS) = DISTURBED SAMPLE (Rec.) = RECOVERY (EOB) = END OF BORING (AK) = AIR KNIFE (GP) = GeoProbe Immediately after: (BGS) = Below Ground Surface (SAA) = Same As Above (SS) = SPLIT SPOON (NR) = NO RECOVERY bpf = blows per foot Hrs. after: Backfill: Well Materials (qP) = Penetrometer Unconfined Compressive Strength (NA) = NOT APPLICABLE Drilling Co.: Fibertec
Drill Rig Type: 6620 DT Logged by: Andy Rauser Driller: Ryan Drawn by: Nate Keller Assistant: Checked by:



Diameter: NA

**Associates Inc.** 

Project Number: 039.02922.8N01 Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24 Novi, MI 48377

City: Tecumseh, MI Phone: (248) 669-5140 Casing: NA Screen-Slot Size: NA (248) 669-5147 Fax:

GP-3 Boring Number: Start Date: 12/15/08 Diameter: NA

		SAMPLE	SAMPLE	Rec.				Borehole
FEET	SAMPLE	INTERVAL	NUMBER			LITHOLOGY DESCRIPTION	PID	Construction
(BGS) - 0	TYPE	(BGS)					PPM	
				12"		Concrete		
2	HA HA	0-2'	1	12"		SAND, dark gray, with some clay and gravel (suspected fill)	2.1	
4	НА	2-4'	2	24"		SAND with some gravel, brown	10.2	■ Bentonite
6	GP	4-6'	3	24"		g g g	10.2	Joinemile
8	GP	6-8'	4	24"				
10	GP	8-10'	5	24"		SAA	9.1	
12	GP	10-12'	6	24"				
14	GP	12-14'	7	24"			0.0	
16	GP	14-16'	8	24"			8.2	
18	GP	16-18'	9	24"				
20	GP	18-20'	10	24"		SAA	9.8	
22	GP	20-22'	11	24"				
24	GP	22-24'	12	24"	•	FOR		

EOB

**Borehole Observations After Drilling** (HA) = HAND AUGER (DS) = DISTURBED SAMPLE (Rec.) = RECOVERY (EOB) = END OF BORING (AK) = AIR KNIFE (GP) = GeoProbe Immediately after: (BGS) = Below Ground Surface (SAA) = Same As Above (SS) = SPLIT SPOON (NR) = NO RECOVERY bpf = blows per foot Hrs. after: Backfill: Well Materials (qP) = Penetrometer Unconfined Compressive Strength (NA) = NOT APPLICABLE Drilling Co.: Fibertec
Drill Rig Type: 6620 DT Logged by: Andy Rauser Driller: Ryan Drawn by: Nate Keller Assistant: Checked by:



Diameter: NA

Associates Inc.

Project Number: 039.02922.8N01
Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24

 Novi, MI
 48377
 City:
 Tecumseh, MI

 Phone: (248) 669-5140
 Casing:
 NA

 Fax: (248) 669-5147
 Screen-Slot Size:
 NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.	LITHOLOGY DESCRIPTION	PID PPM	Borehole Construction
, ,				12"	Concrete		
2	HA	0-2'	1	12"	SAND, dark gray, with some clay and gravel (suspected fill)	4.3	
4	НА	2-4'	2	24"	SAND with some gravel, brown	5.1	■ Bentonite
6	GP	4-6'	3	24"	S. a.t. mar come graver, promi	0.1	Bornorino
8	GP	6-8'	4	24"			
10	GP	8-10'	5	24"			
12	GP						
14	GP				Direct push of Screen Point to collect water sample at 25-29'		
16	GP						
18	GP						
20	GP						
22	GP						
24	GP						
26	GP						
28	GP						
30	GP				FOR		

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Uncor	fined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Driller:	Ryan	
Drawn by: Nate Kelle	er Drill Rig	Type: 6620 DT	Assistant:		
Checked by:					



#### **Associates Inc.**

Project Number: 039.02922.8N01 Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24 City: Tecumseh, MI Novi, MI 48377

Phone: (248) 669-5140 Casing: NA Fax: (248) 669-5147

Screen-Slot Size: NA

GP-5 Boring Number: Start Date: 12/15/08

Diameter: NA Diameter: NA

			SAMPLE	SAMPLE	Rec.					Borehole
	FEET	SAMPLE	INTERVAL	NUMBER			LITHOLOGY DESCRIPTION	PID	Co	nstruction
	(BGS) - 0	TYPE	(BGS)					PPM		
					12"		Concrete			
	2	HA	0-2'	1	12"		SAND, dark gray, with some clay and gravel (suspected fill)	9.5		
	4	НА	2-4'	2	24"		CLAY, brown with some gravel and sand SAND with some gravel, brown		•	- Bentonite
	6	GP	4-6'	3	24"		CLAY with some sand, brown	1.9		
	8	GP	6-8'	4	24"	===	CEAT WILL SOME SAILS, STOWN	1.5		
	10	GP	8-10'	5	24"	<u> </u>	Brown, fine and dry SAND			
	12	GP	10-12'	6	24"		SAA	6.8		
	14	GP	12-14'	7	24"					
	16	GP								
	18	GP					Direct push of Screen Point to collect water sample at 25-29'			
	20	GP								
	22	GP								
	24	GP								
	26	GP								
	28	GP								
Ĭ	30	GP								

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Uncor	nfined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Driller:	Ryan	
Drawn by: Nate Kelle	er Drill Rig	Гуре: 6620 DT	Assistant:		
Checked by:					



Associates Inc.

Phone: (248) 669-5140

Fax: (248) 669-5147

Project Number: 039.02922.8N01
Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: <u>Lot 24</u> Novi, MI 48377 City: <u>Tecum</u>

City: Tecumseh, MI
Casing: NA
Screen-Slot Size: NA

		SAMPLE	SAMPLE	Rec.				Borehole
FEET	SAMPLE	INTERVAL	NUMBER			LITHOLOGY DESCRIPTION	PID	Construction
(BGS) - 0	TYPE	(BGS)		12"		Concrete	PPM	
2	НА	0-2'	1	12"		SAND, dark gray, with some clay and gravel (suspected fill)	16.7	
4	НА	2-4'	2	24"	<u> </u>	CLAY, brown with some gravel and sand SAND with some gravel, brown		
6	GP	4-6'	3	24"		5/112 militonio giavo, promi	19.9	<b>◄</b> Bentonite
8	GP	6-8'	4	24"			10.0	
10	GP	8-10'	5	24"	Middididididididi	SAA		
12	GP	10-12'	6	24"		Coarse, dry, brown SAND	26.1	
14	GP	12-14'	7	24"				
16	GP							
18	GP							
20	GP					Direct push of Screen Point to collect water sample at 25-29'		
22	GP					Direct pash of corect i one to collect water sample at 20-23		
24	GP							
26	GP							
28	GP							
30	GP					EOB		

(HA) = HAND AUGER (DS) = DISTURBED SAMPLE	Borehole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE (GP) = GeoProbe	Immediately after:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON bpf = blows per foot	Hrs. after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Unconfined Compressive Strength	Backfill: Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rauser Drilli	ng Co.: Fibertec D	Oriller: Ryan	
Drawn by: Nate Keller Drill Ri	g Type: 6620 DT Assi	stant:	
Checked by:			



#### **Associates Inc.**

Project Number: 039.02922.8N01 Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24

City: Tecumseh, MI Novi, MI 48377 Phone: (248) 669-5140 Casing: NA Fax: (248) 669-5147 Screen-Slot Size: NA

GP-7 Boring Number: Start Date: 12/16/08 Diameter: NA Diameter: NA

		SAMPLE	SAMPLE	Rec.					Borehole
FEET	SAMPLE	INTERVAL	NUMBER			LITHOLOGY DESCRIPTION	PID	Co	nstruction
(BGS) - 0	TYPE	(BGS)				•	PPM		
		0.01		12"		Concrete  Park brown dry SAND with plan stone	40.0		
2	HA	0-2'	1	12"		Dark brown, dry SAND with slag stone	16.2		
4	НА	2-4'	2	24"	<u></u> -				
			_			dry sandy CLAY	10.8		
6	GP	4-6'	3	24"	=			◀	<ul> <li>Bentonite</li> </ul>
						Coarse, dry SAND with some gravel			
8	GP	6-8'	4	24"			10.2		
10	GP	8-10'	5	24"			22.3		
10	Gr	0-10	3	24			22.5		
12	GP	10-12'	6	24"					
							21.2		
14	GP	12-14'	7	24"					
	0.0					SAA			
16	GP								
18	GP								
	0.								
20	GP					Direct push of Screen Point to collect water sample at 25-29'			
22	GP								
24	GP								
24	GF								
26	GP								
28	GP								
00	CD								
30	GP					EOB			

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Uncor	nfined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Driller:	Ryan	
Drawn by: Nate Kelle	er Drill Rig	Гуре: 6620 DT	Assistant:		
Checked by:					



**Associates Inc.**46555 Humboldt Drive, Ste. 100

Novi, MI 48377

Phone: (248) 669-5140

Fax: (248) 669-5147

Project Nan

Project Number: 039.02922.8N01
Project Name: Tecumseh Products

Site Location: Lot 24
City: Tecumseh, MI

Casing: NA
Screen-Slot Size: NA

Boring Number: GP-8
Start Date: 12/16/08
Diameter: NA
Diameter: NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.		LITHOLOGY DESCRIPTION	PID PPM	Borehole Construction
				12"		Concrete		
2	HA	0-2'	1	12"		Fine, brown SAND (suspected fill material)	2.8	
4	НА	2-4'	2	24"		concrete pieces and gravel to 1' SAND with a little clay	8.8	
6	GP	4-6'	3	24"			2.7	
8	GP	6-8'	4	24"		Coarse, brown, dry SAND	5.5	<b>◄</b> Bentonite
10	GP	8-10'	5	24"		Coarse, brown, dry Chieb	3.3	Bernorine
12	GP	10-12'	6	24"			4.4	
14	GP	12-14'	7	24"			4.4	
16	GP	14-16'	8	24"		SAA	7.5	
18	GP	16-18'	9	24"		JAN .	7.5	
20	GP	18-20'	10	24"				
22	GP	20-22'	11	24"			9.5	
24	GP	22-24'	12	24"				
26	GP	24-26'	13	24"		SAA	5.4	
28	GP	26-28'	14	24"	•	SAA	5.4	
30	GP	28-30'	15	24"		FOR		

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	. after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Uncor	nfined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Driller:	Ryan	
Drawn by: Nate Kelle	er Drill Rig 1	Type: 6620 DT	Assistant:		
Checked by:		<u> </u>			



Associates Inc.

Project Number: 039.02922.8N01
Project Name: Tecumseh Products
Site Location: Lot 24

46555 Humboldt Drive, Ste. 100 Novi, MI 48377

Phone: (248) 669-5140 Fax: (248) 669-5147 City: Tecumseh, Mi
Casing: NA
Screen-Slot Size: NA

Boring Number: **GP-9**Start Date: 12/16/08

Diameter: NA
Diameter: NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.	LITHOLOGY DESCRIPTION	PID PPM	Borehole Construction
				12"	Concrete		
2	HA	0-2'	1	12"	Brown SAND	2.2	
4	НА	2-4'	2	24"	Coarse SAND and gravel (suspected fill material)	2.4 5.3	
6	GP	4-6'	3	24"		0.0	
					Coarse SAND and gravel	5.1	
8	GP	6-8'	4	24"			Pontonito
10	GP	8-10'	5	24"			<b>◆</b> Bentonite
12	GP						
14	GP						
16	GP						
18	GP				Direct push of Screen Point to collect water sample at 25-29'		
20	GP						
22	GP						
24	GP						
26	GP						
28	GP						
30	GP				FOR		

(HA) = H	IAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = A	IR KNIFE	(GP) = GeoProbe	Immediately a	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = S	PLIT SPOON	bpf = blows per foot	Hrs	. after:	(NR) = NO RECOVERY	
(qP) = P	enetrometer Uncon	fined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged	by: Andy Raus	ser Drillin	g Co.: Fibertec	Driller	Ryan	
Drawn	by: Nate Kelle	r Drill Rig	Type: 6620 DT	Assistant	:[	
Checked	l by:		<del></del>			



#### **Associates Inc.**

Project Number: 039.02922.8N01 Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24 Novi, MI 48377

City: Tecumseh, Mi Phone: (248) 669-5140 Casing: NA Screen-Slot Size: NA (248) 669-5147 Fax:

**GP-10** Boring Number: Start Date: 12/16/08 Diameter: NA Diameter: NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.		LITHOLOGY DESCRIPTION	PID PPM		orehole nstruction
2	НА	0-2'	1	12" 12"		Asphalt CLAY with some brick fragments (fill material)	0.3		
6	HA GP	2-4' 4-6'	2	24" 24"		Coarse SAND and gravel Coarse, brown, dry SAND and gravel	0.2		
8	GP GP	6-8' 8-10'	4 5	24" 24"		SAA	1.2	4	- Bentonite
12		10-12'	6	24"		SAA	1.0		
14 16		12-14' 14-16'	7 8	24" 24"					
18	_	16-18'	9	24"	•	200	0.8		
20	GP GP	18-20' 20-22'	10 11	24" 24"		SAA	1.4		
24	GP	22-24'	12	24"		FOR	1.4		

	(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
	(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately a	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
	(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	. after:	(NR) = NO RECOVERY	
	(qP) = Penetrometer Uncon	fined Compressive Strength	Backfill :	Well Materials	(NA) = NOT APPLICABLE	
	Logged by: Andy Raus	ser Drilling	Co.: Fibertec	Driller	Ryan	
	Drawn by: Nate Kelle	r Drill Rig 1	ype: 6620 DT	Assistant	:[	
$\sim$	hocked by:					



#### Associates Inc.

Novi, MI 48377

Phone: (248) 669-5140

Fax: (248) 669-5147

Project Number: 039.02922.8N01 Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24 City: Tecumseh, Mi

Casing: NA

Screen-Slot Size: NA

**GP-11** Boring Number: 12/16/08

Start Date: Diameter: NA

Diameter: NA

Borehole Construction		PID PPM	LITHOLOGY DESCRIPTION			SAMPLE NUMBER	SAMPLE INTERVAL (BGS)	SAMPLE TYPE	FEET (BGS) - 0
			Asphalt		12"		(500)	71112	(500) 0
		0.0	CLAY with some sand and gravel (suspected fill material)		12"	1	0-2'	HA	2
			Coarse, brown, dry SAND		24"	2	2-4'	НА	4
		0.0	Coalse, blown, dry SAND		24"	3	4-6'	GP	6
A David 1					24"	4	6-8'	GP	8
◆ Bentoni	•	2.4	SAA		24"	5	8-10'	GP	10
					24"	6	10-12'	GP	12
		4.0			24"	7	12-14'	GP	14
		1.8			24"	8	14-16'	GP	16
					24"	9	16-18'	GP	18
		0.4	SAA	•	24"	10	18-20'	GP	20
					24"	11	20-22'	GP	22
					2 24"	12	22-24'	GP	24

	(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Borel	nole Observations After Drilling		(Rec.) = RECOVERY	(EOB) = END OF BORING
	(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately a	ifter:		(BGS) = Below Ground Surface	(SAA) = Same As Above
	(SS) = SPLIT SPOON	bpf = blows per foot	Hrs	s. after:		(NR) = NO RECOVERY	
	(qP) = Penetrometer Uncon	fined Compressive Strength	Backfill:	Well Materials		(NA) = NOT APPLICABLE	
	Logged by: Andy Raus	ser Drilling	Co.: Fibertec	<u> </u>	Driller:	Ryan	
	Drawn by: Nate Kelle	r Drill Rig	Гуре: 6620 DT	Ass	sistant:		
$\sim$	hocked by:				_		



**Associates Inc.** 

Project Number: 039.02922.8N01 Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24 Novi, MI 48377

Phone: (248) 669-5140 Fax: (248) 669-5147

City: Tecumseh, Mi Casing: NA Screen-Slot Size: NA

**GP-12** Boring Number: Start Date: 12/16/08

Diameter: NA Diameter: NA

		SAMPLE	SAMPLE	Rec.				Borehole
FEET	SAMPLE	INTERVAL	NUMBER			LITHOLOGY DESCRIPTION	PID	Construction
(BGS) - 0	TYPE	(BGS)					PPM	
2	НА	0-2'	1	12" 12"	<u>=</u> :	Asphalt  CLAY with some gravel, brick fragments and sand (fill material)	0.1	
4	НА	2-4'	2	24"		Coarse, brown SAND	10.5	
6	GP	4-6'	3	24"				
8	GP	6-8'	4	24"			22.5	<b>◄</b> Bentonite
10	GP	8-10'	5	24"				Denionile
12	GP	10-12'	6	24"			10.2	
14	GP	12-14'	7	24"		SAA		
16	GP	14-16'	8	24"		SAA		
18	GP	16-18'	9	24"	_		49.1	
20	GP	18-20'	10	24"	•			
22	GP	20-22'	11	24"		SAA	17.2	
24	GP	22-24'	12	24"				
						FOR		

	(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
	(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
	(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
	(qP) = Penetrometer Uncor	fined Compressive Strength	Backfill :	Well Materials	(NA) = NOT APPLICABLE	
	Logged by: Andy Raus	ser Drilling	Co.: Fibertec	Driller	Ryan	
	Drawn by: Nate Kelle	er Drill Rig T	ype: 6620 DT	Assistan	::	
1	Shocked by:		<u>-</u>		<u> </u>	



Associates Inc.

Project Number: 039.02922.8N01 Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24 Novi, MI 48377

City: Tecumseh, Mi Phone: (248) 669-5140 Casing: NA Fax: (248) 669-5147 Screen-Slot Size: NA

**GP-13** Boring Number: Start Date: 12/16/08

Diameter: NA

Diameter: NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.	LITHOLOGY DESCRIPTION	PID PPM	Borehole Construction
,		, ,		12"	Concrete		
2	HA	0-2'	1	12"	Coarse, brown, dry SAND (suspected fill material)	1	
4	НА	2-4'	2	24"		0.9	
6	GP	4-6'	3	24"		0.1	
8	GP	6-8'	4	24"		0.1	<b>◄</b> Benton
10	GP	8-10'	5	24"	SAA		Denion
12	GP						
14	GP						
16	GP				Direct rush of Career Deint to collect water compile at 95 201		
18	GP				Direct push of Screen Point to collect water sample at 25-29'		
20	GP						
22	GP						
24	GP						
26	GP						
28	GP						
30	GP						

(HA) = HAND AUGER (DS) = DISTURBE	ED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE (GP) = GeoProbe		Immediately a	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON bpf = blows per fo	ot	Hrs.	. after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Unconfined Compressive	Strength	Backfill :	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rauser	Drilling	Co.: Fibertec	Driller:	Ryan	
Drawn by: Nate Keller	Drill Rig T	Type: 6620 DT	Assistant:		
Checked by:					



Diameter: NA

Associates Inc.

Project Number: 039.02922.8N01
Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24

 Novi, MI
 48377
 City:
 Tecumseh, Mi

 Phone:
 (248) 669-5140
 Casing:
 NA

 Fax:
 (248) 669-5147
 Screen-Slot Size:
 NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.	LITHOLOGY DESCRIPTION	PID PPM	Borehole Construction
2	НА	0-2'	1	12" 12"	Concrete SAND, slag stone, gravel, little clay (fill material)		
4	НА	2-4'	2	24"		47.2	
6	GP	4-6'	3	24"			
8	GP	6-8'	4	24"		10.1	<b>◄</b> Bentonite
10	GP	8-10'	5	24"	SAA		Bornorino
12	GP						
14	GP						
16	GP				Direct push of Screen Point to collect water sample at 25-29'		
18	GP						
20	GP						
22	GP						
24	GP						
26	GP						
28	GP						
30	GP				EOR		

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Unco	nfined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	<u>user</u> Drilling	Co.: Fibertec	Drille	r: Ryan	
Drawn by: Andy Rau	iser Drill Rig	Гуре: 6620 DT	Assistan	t:	
Checked by:				· <u> </u>	



Associates Inc.

Project Number: 039.02922.8N01
Project Name: Tecumseh Products
Site Location: Lot 24

46555 Humboldt Drive, Ste. 100 Novi, MI 48377

Phone: (248) 669-5140 Fax: (248) 669-5147 City: Tecumseh, Mi
Casing: NA
Screen-Slot Size: NA

Boring Number: GP-15
Start Date: 12/22/08

Diameter: NA
Diameter: NA

FEET	SAMPLE	SAMPLE INTERVAL	SAMPLE NUMBER	Rec.		LITHOLOGY DESCRIPTION	PID	Borehole Construction
(BGS) - 0	TYPE	(BGS)	NUMBER			EITHOLOGY BEGONII HON	PPM	Constituction
2	НА	0-2'	1	12" 12"		Asphalt SAND, brick fragments, slag stone, gravel (fill material)	1.4	
6	HA GP GP	2-4' 4-6' 6-8'	3 4	24" 24" 24"		CLAY fill, with gravel, sand, and brick fragments	0.9	
10 12	GP GP	8-10' 10-12'	5 6	24" 24"		Coarse SAND and gravel, brown	2.8 1.6	<b> </b>
14 16	GP GP	12-14' 14-16'	7 8	24" 24"		SAA		
18	GP	16-18'	9	24"			1.4	
20 22	GP GP	18-20' 20-22'	10 11	24" 24"	•	SAA	1.1	
24	GP	22-24'	12	24"				

EOB

**Borehole Observations After Drilling** (HA) = HAND AUGER (DS) = DISTURBED SAMPLE (Rec.) = RECOVERY (EOB) = END OF BORING (AK) = AIR KNIFE (GP) = GeoProbe Immediately after: (BGS) = Below Ground Surface (SAA) = Same As Above (SS) = SPLIT SPOON (NR) = NO RECOVERY bpf = blows per foot Hrs. after: Backfill: Well Materials (qP) = Penetrometer Unconfined Compressive Strength (NA) = NOT APPLICABLE Drilling Co.: Fibertec
Drill Rig Type: 6620 DT Logged by: Andy Rauser Driller: Ryan Drawn by: Andy Rauser Assistant: Checked by:



**Associates Inc.** 

Project Number: 039.02922.8N01 Project Name: Tecumseh Products Site Location: Lot 24

46555 Humboldt Drive, Ste. 100 Novi, MI 48377

Phone: (248) 669-5140 Fax: (248) 669-5147

City: Tecumseh, Mi Casing: NA Screen-Slot Size: NA

**GP-16** Boring Number: Start Date: 12/22/08 Diameter: NA Diameter: NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.	LITHOLOGY DESCRIPTION	PID PPM	Borehole Construction
, ,				12"	Concrete		
2	HA	0-2'	1	12"	SAND and gravel, dark brown (fill material)	19.8	
4	НА	2-4'	2	24"	CLAY, brown, silty, with coarse gravel	2.4	
6	GP	4-6'	3	24"			
8	GP	6-8'	4	24"	Coarse SAND and gravel	0.1	Bentonite
10	GP	8-10'	5	24"			
12	GP						
14	GP						
16	GP				Direct push of Screen Point to collect water sample at 25-29'		
18	GP						
20	GP						
22	GP						
24	GP						
26	GP						
28	GP						
30	GP				EOB		

(HA) = HAND AU	JGER (E	OS) = DISTURBED	SAMPLE	Borel	nole Observation	s After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	E (C	GP) = GeoProbe		Immediately a	ıfter:		(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SP	OON b	of = blows per foot		Hrs	after:		(NR) = NO RECOVERY	
(qP) = Penetrome	eter Unconfine	ed Compressive S	trength	Backfill:	Well Materials		(NA) = NOT APPLICABLE	
Logged by: Ar	ndy Rausei	<u>r</u>	Drilling	Co.: Fibertec		Driller:	Ryan	
Drawn by: Ar	ndy Rausei	r	Drill Rig T	Гуре: 6620 DT	·	Assistant:		
Chacked by:				-		-		



#### Associates Inc.

Phone: (248) 669-5140

Fax: (248) 669-5147

Project Number: 039.02922.8N01
Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24
Novi, MI 48377 City: Tecumseh, Mi

Casing: NA
Screen-Slot Size: NA

Boring Number: **GP-17**Start Date: 12/22/08

Diameter: NA

Diameter: NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.	LITHOLOGY DESCRIPTION	PID PPM	Borehole Construction
				12"	Concrete		
2	HA	0-2'	1	12"			
4	НА	2-4'	2	24"	SAND, fine grain, brown, dry	1.6	
6	GP	4-6'	3	24"		6.0	
8	GP	6-8'	4	24"	SAND, with a little slag stone and gravel, dark		<b>◄</b> Bentonite
10	GP	8-10'	5	24"	brown (fill material)	4.2	Bentonite
12	GP						
14	GP						
16	GP				Direct push of Seroon Doint to collect water comple at 25 20'		
18	GP				Direct push of Screen Point to collect water sample at 25-29'		
20	GP						
22	GP						
24	GP						
26	GP						
28	GP						
30	GP				FOR		

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Uncor	fined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Driller:	Ryan	
Drawn by: Andy Rau	ser Drill Rig	Гуре: 6620 DT	Assistant:		
Checked by:					



## **Associates Inc.**46555 Humboldt Drive, Ste. 100

Novi, MI 48377

Phone: (248) 669-5140

Fax: (248) 669-5147

Project Number: 039.02922.8N01
Project Name: Tecumseh Products

Site Location: Lot 24

City: Tecumseh, Mi
Casing: NA

Screen-Slot Size: NA

Boring Number: **GP-18**Start Date: 12/22/08

Diameter: NA

		SAMPLE	SAMPLE	Rec.					orehole
FEET	SAMPLE	INTERVAL	NUMBER			LITHOLOGY DESCRIPTION	PID	Con	struction
(BGS) - 0	TYPE	(BGS)					PPM		
_				12"		Grass			
2	HA	0-2'	1	12"		OLAY with second and heigh for second by heavy (fill sectoric)			
4	НА	2-4'	2	24"		CLAY with gravel and brick fragments, brown (fill material)	1.7		
6	GP	4-6'	3	24"					
8	GP	6-8'	4	24"		Coarse SAND and gravel, brown	1.1	4	- Bentonite
10	GP	8-10'	5	24"					Demonite
12	GP	10-12'	6	24"			0.5		
14	GP	12-14'	7	24"					
16	GP	14-16'	8	24"		SAA	3.4		
18	GP	16-18'	9	24"		5.0.	0.4		
20	GP	18-20'	10	24"					
22	GP	20-22'	11	24"	<b>V</b>		3.5		
24	GP	22-24'	12	24"					

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Unco	nfined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Driller	: Ryan	
Drawn by: Andy Rau	ser Drill Rig	Type: 6620 DT	Assistant	:	
Checked by:			<u></u>		



Diameter: NA

**Associates Inc.** 

Project Number: 039.02922.8N01 Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24 Novi, MI 48377

City: Tecumseh, Mi Phone: (248) 669-5140 Casing: NA Fax: (248) 669-5147 Screen-Slot Size: NA

**GP-19** Boring Number: Start Date: 12/22/08 Diameter: NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.		LITHOLOGY DESCRIPTION	PID PPM		orehole nstruction
(200) 0		(500)		12"		Concrete	1110		
2	HA	0-2'	1	12"	$\equiv$				
4	НА	2-4'	2	24"		CLAY with brick fragments and gravel (fill material)	2.6		
6	GP	4-6'	3	24"		Coarse SAND and gravel, brown	1.4		
8	GP	6-8'	4	24"			2.8	4	- Bentonite
10	GP	8-10'	5	24"					
12	GP								
14	GP								
16	GP					Direct push of Screen Point to collect water sample at 25-29'			
18	GP					Breet pash of Golden's only to collect water sample at 25 25			
20	GP								
22	GP								
24	GP								
26	GP								
28	GP								
30	GP					EOB			

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(AK) = AIR KNIFE (GP) = GeoProbe		fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Uncor	fined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Driller:	Ryan	
Drawn by: Andy Rau	ser Drill Rig	Гуре: 6620 DT	Assistant:		
Checked by:	<u></u>				



**Associates Inc.**46555 Humboldt Drive, Ste. 100

Project Number: 039.02922.8N01
Project Name: Tecumseh Products
Site Location: Lot 24

Novi, MI 48377 Phone: (248) 669-5140 Fax: (248) 669-5147 City: Tecumseh, Mi
Casing: NA
Screen-Slot Size: NA

Boring Number: GP-20
Start Date: 12/22/08
Diameter: NA
Diameter: NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.	LITHOLOGY DESCRIPTION	PID PPM	Borehole Construction
				12"	Concrete		
2	HA	0-2'	1	12"	Coarse SAND, brown (fill material)	1.3	
4	HA	2-4'	2	24"			
6	GP						
8	GP				Paring torminated due to water main at 6'		A Dontonito
10	GP				Boring terminated due to water main at 6'		<b>◄</b> Bentonite
12	GP						
14	GP						
16	GP						
18	GP						
20	GP						
22	GP						
24	GP						
26	GP						
28	GP						
30	GP						

(HA) = HAND AUGER (DS) = DISTURBED SAMPLE	Borehole Observations After Drilling	(Rec.) = RECOVERY (EOB) = END OF BORING
(AK) = AIR KNIFE (GP) = GeoProbe	Immediately after:	(BGS) = Below Ground Surface (SAA) = Same As Above
(SS) = SPLIT SPOON bpf = blows per foot	Hrs. after:	(NR) = NO RECOVERY
(qP) = Penetrometer Unconfined Compressive Strength	Backfill: Well Materials	(NA) = NOT APPLICABLE
Logged by: Andy Rauser Drilling	Co.: Fibertec Driller:	Ryan
Drawn by: Andy Rauser Drill Rig 1	ype: 6620 DT Assistant:	
checked by:	<u></u>	



#### **Associates Inc.**

Project Number: 039.02922.8N01 Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24 Novi, MI 48377

City: Tecumseh, Mi Phone: (248) 669-5140 Casing: NA Fax: (248) 669-5147 Screen-Slot Size: NA

**GP-21** Boring Number: Start Date: 01/14/09 Diameter: NA Diameter: NA

		SAMPLE	SAMPLE	Rec.				Borehole
FEET	SAMPLE	INTERVAL	NUMBER			LITHOLOGY DESCRIPTION	PID	Construction
(BGS) - 0	TYPE	(BGS)		40"		Organista	PPM	
		0.01	_	12"		Concrete		
2	HA	0-2'	1	12"		SAND, brown, little gravel	14.0	
4	HA	2-4'	2	24"	$\equiv$			
6	GP	4-6'	3	24"		CLAY, little sand and gravel, brown (suspected fill material)	21.8	
	Oi	4-0		24	$\equiv$	OLATT, India saila ana graver, brown (Saspected illi Material)	14.8	
8	GP	6-8'	4	24"	$\equiv$		40.4	A Dentenite
10	GP	8-10'	5	24"			12.4	◆ Bentonite
12	GP	10-12'	6	24"		Coarse SAND and gravel, brown	17.7	
14	GP	12-14'	7	24"				
	OD	44.40		0.4"			47.0	
16	GP	14-16'	8	24"		Medium SAND, trace gravel	17.9	
18	GP	16-18'	9	24"		, <b>3</b>		
20	GP	18-20'	10	24"				
20	01	10-20	'0					
22	GP	20-22'	11	24"	_	OAA Osturated	14.6	
24	GP	22-24'	12	24"		SAA, Saturated		
	J.					FOR		

	(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
	(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
	(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
	(qP) = Penetrometer Uncon	fined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
	Logged by: Andy Raus	ser Drilling	Co.: Fibertec	Driller:	Nick	
	Drawn by: Andy Raus	ser Drill Rig	Гуре: 6620 DT	Assistant:	<del></del>	
$\sim$	hecked by:				<u> </u>	



#### Associates Inc.

Project Number: 039.02922.8N01
Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24
Novi, MI 48377 City: Tecumseh, Mi

 Boring Number: **GP-22**Start Date: 01/14/09

Diameter: NA
Diameter: NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER		LITHOLOGY DESCRIPTION	PID PPM		orehole nstruction
(BGG) - 0	11112	(500)		12"	Concrete	11101		
2	HA	0-2'	1	12"	Fine SAND, brown, dry			
4	НА	2-4'	2	24"	Fill SAND, little clay, with gravel and debris (bolts) (fill material)	3.2		
6	GP	4-6'	3	24"	Fill SAND, little clay, with graver and debris (boils) (till material)	1.4		
8	GP	6-8'	4	24"	Medium to Coarse SAND, little gravel, brown		4	- Bentonite
10	GP	8-10'	5	24"		33.3		20011110
12	GP							
14	GP							
16	GP				Direct push of Screen Point to collect water samples			
18	GP				at 26' and 45'			
20	GP							
22	GP							
24	GP							
26	GP							
28	GP							
30	GP				EOB 45'			

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately a	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Uncor	nfined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Driller:	Ryan	
Drawn by: Andy Rau	ser Drill Rig	Гуре: 6620 DT	Assistant:		
Checked by:					



Diameter: NA

#### **Associates Inc.**

Project Number: 039.02922.8N01 Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24 Novi, MI 48377

City: Tecumseh, Mi Phone: (248) 669-5140 Casing: NA Fax: (248) 669-5147 Screen-Slot Size: NA

**GP-23** Boring Number: Start Date: 01/14/09 Diameter: NA

SAMPLE   SAMPLE   NUMBER   Rec.   NUMBER Rec.
BGS  - 0   TYPE   BGS
2 HA 0-2' 1 12"
2 HA 0-2' 1 12" 4 HA 2-4' 2 24" 6 GP 4-6' 3 24" 7 Coarse SAND and gravel 10 GP 8-10' 5 24" 12 GP 14 GP 16 GP 17 GP 18 GP 19 GP 19 GP 10 GP 10 GP 11 GP 11 GP 12 GP 13 GP 14 GP 15 GP 16 GP 17 Direct push of Screen Point to collect water samples at 26' and 35', attempted to collect at 45' but no water available
4 HA 2-4' 2 24" Sand/Clay/Gravel, some slag stone, reddish brown (fill material)  6 GP 4-6' 3 24" Coarse SAND and gravel  10 GP 8-10' 5 24"  12 GP  14 GP  16 GP  16 GP  17 Direct push of Screen Point to collect water samples at 26' and 35', attempted to collect at 45' but no water available
HA   2-4'   2   24"   Sand/Clay/Gravel, some slag stone, reddish brown (fill material)   3.2
Bentonite  GP 6-8' 4 24"  GP 8-10' 5 24"  GP GP GP GP GP GP GP GP GP GP GP GP GP G
Bentonite  GP 8-10' 5 24"  12 GP  14 GP  16 GP  18 GP  19 Direct push of Screen Point to collect water samples at 26' and 35', attempted to collect at 45' but no water available
10 GP 8-10' 5 24"  12 GP  14 GP  16 GP  18 GP  Direct push of Screen Point to collect water samples at 26' and 35', attempted to collect at 45' but no water available
14 GP 16 GP Direct push of Screen Point to collect water samples at 26' and 35', attempted to collect at 45' but no water available
Direct push of Screen Point to collect water samples at 26' and 35', attempted to collect at 45' but no water available  GP  GP
Direct push of Screen Point to collect water samples at 26' and 35', attempted to collect at 45' but no water available  GP  GP
at 26' and 35', attempted to collect at 45' but no water available  GP  GP
22 GP
<b>!</b>
24 GP
26 GP
28 GP
30 GP EOB 45'

EOB 45'

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Uncor	nfined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Driller:	Ryan	
Drawn by: Andy Rau	ser Drill Rig	Гуре: 6620 DT	Assistant:		
Checked by:					



#### Associates Inc.

Project Number: 039.02922.8N01
Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24
Novi, MI 48377 City: Tecumseh, Mi

 Boring Number: **GP-24**Start Date: 01/14/09

Diameter: NA
Diameter: NA

FEET	SAMPLE	SAMPLE INTERVAL	SAMPLE NUMBER	Rec.		LITHOLOGY DESCRIPTION	PID	Borehole Construction
(BGS) - 0	TYPE	(BGS)					PPM	
_				12"		Gravel		
2	HA	0-2'	1	12"	$\equiv$	CLAV with and brick from an and available and (fill and available		
4	НА	2-4'	2	24"		CLAY with sand, brick fragments, and gravel, moist (fill material)	0.3	
6	GP	4-6'	3	24"				
8	GP	6-8'	4	24"	<b>=</b> :		0.0	
10	GP	8-10'	5	24"				<b>◄</b> Bentonite
12	GP	10-12'	6	24"		Medium SAND, saturated	0.0	
14	GP	12-14'	7	24"			0.0	

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately af	ter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Uncon	fined Compressive Strength	Backfill :	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Raus	ser Drilling	Co.: Fibertec	Driller:	Nick	
Drawn by: Andy Raus	ser Drill Rig	Type: 6620 DT	Assistant:		
Checked by:					



Associates Inc.

Project Number: 039.02922.8N01
Project Name: Tecumseh Products
Site Location: Lot 24

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24
Novi, MI 48377 City: Tecumseh, Mi

 Boring Number: **GP-25**Start Date: 01/15/09

Diameter: NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.		LITHOLOGY DESCRIPTION	PID PPM	Borehole Construction
		( /		12"		Concrete		
2	HA	0-2'	1	12"	H			
4	НА	2-4'	2	24"		Silty CLAY, with sand and gravel, moist, dark gray (suspected fill material)	20.6	
6	GP	4-6'	3	24"				
8	GP	6-8'	4	24"		Coarse SAND and gravel, brown	13.5	<b>■</b> Bentonite
10	GP	8-10'	5	24"				Bernomic
12	GP							
14	GP					Direct such of Covery Deint to collect water covery at 25 201		
16	GP					Direct push of Screen Point to collect water sample at 25-29'		
18	GP							
20	GP							
22	GP							
24	GP							
26	GP							
28	GP							
30	GP					500		

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Borehol	le Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately after	er:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs. a	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Unco	nfined Compressive Strength	Backfill: \	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Driller:	Nick	
Drawn by: Andy Rau	ser Drill Rig	Гуре: 6620 DT	Assistant:		
Checked by:					



#### **Associates Inc.**

Project Number: 039.02922.8N01 Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 13 Novi, MI 48377

City: Tecumseh, Mi Phone: (248) 669-5140 Casing: NA Fax: (248) 669-5147 Screen-Slot Size: NA

**GP-26** Boring Number: Start Date: 01/15/09 Diameter: NA Diameter: NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.	LITHOLOGY DESCRIPTION	PID PPM	Borehole Construction
				12"	Asphalt		
2	HA HA	0-2' 2-4'	1 2	12" 24"	SAND with some Clay, brick fragments and gravel, reddish brown (fill material)	1.3	
6	GP	4-6'	3	24"		0.7	
8	GP	6-8'	4	24"			
10	GP	8-10'	5	24"	Coarse SAND and gravel	0.3	◆ Bentonite
12	GP	10-12'	6	24"	coalso of the and graver		
14	GP	12-14'	7	24"		0.1	
16	GP						
18	GP						
20	GP						
22	GP				Direct push of Screen Point to collect water sample at 25-29'		
24	GP						
26	GP						
28	GP						
30	GP				FOR		

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately a	iter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Unco	nfined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Driller:	Nick	
Drawn by: Andy Rau	ser Drill Rig	Type: 6620 DT	Assistant:		
Checked by:					



#### Associates Inc.

Project Number: 039.02922.8N01 Project Name: Tecumseh Products

46555 Humboldt Drive, Ste. 100 Site Location: Lot 24 Novi, MI 48377

Phone: (248) 669-5140 Fax: (248) 669-5147

City: Tecumseh, Mi Casing: NA Screen-Slot Size: NA

**GP-27** Boring Number: Start Date: 01/15/09

Diameter: NA

Diameter: NA

		SAMPLE	SAMPLE	Rec.				E	Borehole
FEET	SAMPLE	INTERVAL	NUMBER			LITHOLOGY DESCRIPTION	PID	Co	nstruction
(BGS) - 0	TYPE	(BGS)					PPM		
` '		, ,		12"		Concrete			
2	HA	0-2'	1	12"		SAND with slag stones and brick fragments	1		
							0.1		
4	HA	2-4'	2	24"	$\equiv$	CLAY with gravel and brick fragments (fill material)			
					=:		1.8		
6	GP	4-6'	3	24"					
8	GP	6-8'	4	24"		Coarse SAND and gravel, brown	0.7		
			_					•	<ul><li>Bentoni</li></ul>
10	GP	8-10'	5	24"					
40	GP								
12	GP								
14	GP								
'-	Gr					Direct push of Screen Point to collect water sample at 25-29'			
16	GP					Direct pacifies corosin resincte concet water cample at 25 25			
	٥.								
18	GP								
20	GP								
22	GP								
24	GP								
26	GP								
6.0	CD								
28	GP								
30	GP								
30	GF	l	1	l		EOB			

(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	ter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
(qP) = Penetrometer Uncor	nfined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Driller:	Nick	
Drawn by: Andy Rau	ser Drill Rig	Гуре: 6620 DT	Assistant:		
Checked by:					



**Associates Inc.**46555 Humboldt Drive, Ste. 100

Project Number: 039.02922.8N01
Project Name: Tecumseh Products
Site Location: Lot 24

Novi, MI 48377 Phone: (248) 669-5140 Fax: (248) 669-5147 City: Tecumseh, Mi
Casing: NA
Screen-Slot Size: NA

| Boring Number: | GP-28 | | Start Date: | 01/15/09 | | Diameter: NA | Diameter: NA | Diameter: NA | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Control | Contr

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER	Rec.		LITHOLOGY DESCRIPTION	PID PPM	Borehole Construction
(===)		(= 0 0)		12"		Concrete		
2	НА	0-2'	1	12"		SAND, with brick fragments, gravel, little Clay, reddish	0.4	
4	HA	2-4'	2	24"		brown (fill material)		
6	GP	4-6'	3	24"			0.7	
8	GP	6-8'	4	24"		Coarse SAND and gravel	1.4	<b>◄</b> Bentonite
10	GP	8-10'	5	24"				
12	GP	10-12'	6	24"			0.6	
14	GP	12-14'	7	24"		SAA		
16	GP	14-16'	8	24"			0.4	
18	GP	16-18'	9	24"				
20	GP	18-20'	10	24"			1.1	
22	GP	20-22'	11	24"	•	Medium SAND, saturated		
24	GP	22-24'	12	24"		,	1.4	

Direct push of Screen Point to collect water samples at 26' and 45'

EOB 45'

L						
I	(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Borel	hole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
	(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately a	after:	(BGS) = Below Ground Surface	(SAA) = Same As Above
	(SS) = SPLIT SPOON	bpf = blows per foot	Hrs	s. after:	(NR) = NO RECOVERY	
	(qP) = Penetrometer Uncor	nfined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
	Logged by: Andy Rau	ser Drilling	Co.: Fibertec	Drille	r: Nick	
	Drawn by: Andy Rau	ser Drill Rig	Гуре: 6620 DT	Assistan	t:	
(	Checked by:					



Associates Inc.

Project Number: 039.02922.8N01
Project Name: Tecumseh Products
Site Location: Lot 24

46555 Humboldt Drive, Ste. 100 Site Location Novi, MI 48377 Ci

Phone: (248) 669-5140 Fax: (248) 669-5147 City: Tecumseh, Mi
Casing: NA
Screen-Slot Size: NA

Boring Number: **GP-29**Start Date: 01/15/09

Diameter: NA

		SAMPLE	SAMPLE	Rec.			Borehole
FEET	SAMPLE	INTERVAL	NUMBER		LITHOLOGY DESCRIPTION	PID	Construction
(BGS) - 0	TYPE	(BGS)			_	PPM	
				12"	Concrete	1	
2	HA	0-2'	1	12"	SAND, with gravel, dark brown, moist	2.8	
4	НА	2-4'	2	24"	SAND, with gravel, reddish brown, moist (suspected fill material)	1.7	
6	GP	4-6'	3	24"		0.9	
8	GP	6-8'	4	24"	Coarse SAND and gravel, brown	4.4	A Donts :: !!:
10	GP	8-10'	5	24"		1.4	<b>◆</b> Bentonite
12	GP	10-12'	6	24"		1.1	
14	GP	12-14'	7	24"			
16	GP	14-16'	8	24"	SAA	1.3	
18	GP	16-18'	9	24"	SAA		
20	GP	18-20'	10	24"		4.4	
22	GP	20-22'	11	24"		1.1	
24	GP	22-24'	12	24"	Medium SAND, trace gravel, brown, Saturated	0.8	

Direct push of Screen Point to collect water samples at 26' and 45'

EOB 45'

	(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
	(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
	(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	after:	(NR) = NO RECOVERY	
	(qP) = Penetrometer Uncon	fined Compressive Strength	Backfill:	Well Materials	(NA) = NOT APPLICABLE	
	Logged by: Andy Raus	ser Drilling	Co.: Fibertec	Driller:	Nick	
	Drawn by: Andy Raus	ser Drill Rig	Type: 6620 DT	Assistant:		
С	checked by:					



#### **Associates Inc.** 46555 Humboldt Drive, Ste. 100

Screen-Slot Size: NA

Novi, MI 48377 Phone: (248) 669-5140 Fax: (248) 669-5147 Project Number: 039.02922.8N01 Project Name: Tecumseh Products Site Location: Lot 24 City: Tecumseh, Mi Casing: NA

**GP-30** Boring Number: Start Date: 01/15/09 Diameter: NA Diameter: NA

		SAMPLE	SAMPLE	Rec.			Borehole
FEET	SAMPLE	INTERVAL	NUMBER		LITHOLOGY DESCRIPTION	PID	Construction
(BGS) - 0	TYPE	(BGS)				PPM	
				12"	Concrete		
2	HA	0-2'	1	12"	SAND, fine grain, light brown	1.2	
					EOB		
4	HA						
					Refusal at 3 locations in room.		
6	GP						
8	0.0						
8	GP						<b>◄</b> Bentonite
10	GP						Denionite
	Gr						
12	GP						
	O.						
14	GP						
16	GP						
18	GP						
20	GP						
22	GP						
24	GP						

_						
ı	(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Boreh	ole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
ı	(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately at	fter:	(BGS) = Below Ground Surface	(SAA) = Same As Above
ı	(SS) = SPLIT SPOON	bpf = blows per foot	Hrs.	. after:	(NR) = NO RECOVERY	
ı	(qP) = Penetrometer Uncor	fined Compressive Strength	Backfill :	Well Materials	(NA) = NOT APPLICABLE	
ı	Logged by: Andy Raus	ser Drilling	Co.: Fibertec	Driller:	Nick	
ı	Drawn by: Andy Rau	ser Drill Rig	Гуре: 6620 DT	Assistant:		
(	Checked by:					



**Associates Inc.** 

Novi, MI 48377

Phone: (248) 669-5140

46555 Humboldt Drive, Ste. 100

Project Number: 039.02922.8N01 Project Name: Tecumseh Products Site Location: Lot 24

City: Tecumseh, Mi

Casing: NA Screen-Slot Size: NA Boring Number: **HB-31** Start Date: 02/02/09 Diameter: NA

Darahala				CAMBLE	CAMPLE		1
Borehole Construction	PID	LITHOLOGY DESCRIPTION	ec.	SAMPLE RE	SAMPLE INTERVAL	SAMPLE	FEET
	PPM	Grass / Topsoil	3"		(BGS)	TYPE	BGS) - 0
		Topodi	3"		0.0"	114	0.5
		Topsoil EOB	3	1 3	0-6"	HA	0.5
<b>◆</b> Bento							
	[						

	(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Borehole Observations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
	(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately after:	(BGS) = Below Ground Surface	(SAA) = Same As Above
	(SS) = SPLIT SPOON	bpf = blows per foot	Hrs. after:	(NR) = NO RECOVERY	
	(qP) = Penetrometer Unconf	ined Compressive Strength	Backfill:	(NA) = NOT APPLICABLE	
	Logged by: Andy Raus	er Drilling	Co.: Driller:		
	Drawn by: Andy Raus	er Drill Rig 1	Type: Assistant		
)	hecked by:				



Diameter: NA

#### Associates Inc.

46555 Humboldt Drive, Ste. 100

Novi, MI 48377 Phone: (248) 669-5140 Fax: (248) 669-5147 Project Number: 039.02922.8N01
Project Name: Tecumseh Products
Site Location: Lot 24

City: Tecumseh, Mi
Casing: NA
Screen-Slot Size: NA

FEET (BGS) - 0	SAMPLE TYPE	SAMPLE INTERVAL (BGS)	SAMPLE NUMBER		LITHOLOGY DESCRIPTION	PID PPM	Borehole Construction
0.5		0-6"	1	3" 3"	Gravel Sand and Gravel EOB		<b>←</b> Bentonite

	(HA) = HAND AUGER	(DS) = DISTURBED SAMPLE	Borehole Observ	ations After Drilling	(Rec.) = RECOVERY	(EOB) = END OF BORING
	(AK) = AIR KNIFE	(GP) = GeoProbe	Immediately after:		(BGS) = Below Ground Surface	(SAA) = Same As Above
	(SS) = SPLIT SPOON	bpf = blows per foot	Hrs. after:		(NR) = NO RECOVERY	
	(qP) = Penetrometer Uncon	fined Compressive Strength	Backfill :		(NA) = NOT APPLICABLE	
	Logged by: Andy Raus	ser Drilling	Co.:	Driller:		
	Drawn by: Andy Raus	ser Drill Rig 7	Гуре:	Assistant:		
)	hecked by:					

Category "S" Baseline Environmental Assessment Former Tecumseh Products Plant 100 and 101 East Patterson Street, Tecumseh, Michigan 49286 January 21, 2010

# APPENDIX J LABORATORY ANALYTICAL SUMMARY TABLES

# **Table 1 - Summary of Soil Analytical Results (Detected Metals) Tecumseh Products 100 East Patterson Street** Tecumseh, Michigan

	Statewide	Residential	Residential						Soil Samp	le Location					
	Default	& Commercial I	& Commercial I	GP-1	GP-3	GP-4	GP-6	GP-7	GP-9	GP-10	GP-12	GP-14	GP-15	GP-16	GP-17
	Background Levels	Drinking Water Protection	Direct Contact Criteria	3-5'	6-8'	4-6'	3-5'	2-4'	5-7'	2-4'	5-7'	1-3'	3-5'	1-3'	3-5'
Analyte	(mg/kg)	Criteria (DWPC) (mg/kg)	(DCC) (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Metals															
Arsenic	5.8	4.6	7.6	5.7	NA	6.6	5.8	2.3	3.8	NA	NA	NA	6.1	14	NA
Barium	75	1,300	37,000	65	NA	43	160	93	70	NA	NA	NA	67	16	NA
Cadmium	1.2	6	550	0.83	0.76	0.53	1.3	0.72	0.93	1	0.44	0.39	0.18	1.5	0.08
Chromium	18	30	2,500	7.1	4.2	6.2	15	7.3	5.6	6.1	3.8	6.8	6.6	7.8	10
Copper	32	5,800	20,000	12	NA	11	89	41	14	NA	NA	NA	11	6.2	NA
Lead	21	700	400	11	6.1	7	55	13	16	15	5.7	19	28	49	8.8
Selenium	0.41	4	2,600	2.8	NA	3.5	3	0.23	0.81	NA	NA	NA	2.8	0.5	NA
Zinc	47	2,400	170,000	18	NA	13	110	100	31	NA	NA	NA	32	18	NA

- Notes: 1. Samples were collected on December 15, 16 and 22, 2008.
  - 2. NA denotes "Not Analyzed". ND denotes the indicated laboratory parameter was not detected above the laboratory reported detection limit (RDL).
  - 3. The cleanup criteria are derived from the MDEQ-RRD, Operational Memorandum No. 1 (Memo No. 1) dated December 10, 2004, as revised.
  - 4. Shaded values are above one or more applicable cleanup criteria and bold font indicates a metal detected above the Default Background Level contained in Memo No. 1.
  - 5. All samples were analyzed at Lakeland Analytical Laboratories, Inc. located in Pinckney, Michigan.
  - 6. NLV = not likely to volatilize, ID= Insufficient data available to establish criteria..
  - 7. mg/kg denotes milligrams per kilogram.

#### **Table 1 - Summary of Soil Analytical Results (Detected Metals)(Continued) Tecumseh Products 100 East Patterson Street** Tecumseh, Michigan

	Statewide	Residential	Residential										
	Default	& Commercial I	& Commercial I	GP-21	GP-22	GP-23	GP-25	GP-26	GP-27	GP-28	GP-29	HB-31	HB-32
	Background Levels	Drinking Water Protection	Direct Contact Criteria	3-5'	8-10'	3-5'	1-2'	3-5'	1-3'	21-23'	3-5'	6"	6"
Analyte	(mg/kg)	Criteria (DWPC) (mg/kg)	(DCC) (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Metals													
Arsenic	5.8	4.6	7.6	NA	NA	NA	5.6	NA	8.3	NA	NA	NA	NA
Barium	75	13,000	37,000	NA	NA	NA	130	NA	260	NA	NA	NA	NA
Cadmium	1.2	6	550	0.47	0.55	0.22	1.8	0.39	6.6	0.34	1	9	NA
Chromium	18	30	2,500	8.8	6.8	16	11	11	16	4.7	11	24	NA
Copper	32	5,800	20,000	NA	NA	NA	100	NA	110	NA	NA	NA	NA
Lead	21	700	400	46	48	50	110	89	170	27	140	110	NA
Mercury	0.13	1.7	160	NA	NA	NA	ND	NA	0.11	NA	NA	NA	NA
Selenium	0.41	4	2,600	NA	NA	NA	1.2	NA	1.8	NA	NA	NA	NA
Zinc	47	2,400	1,700	NA	NA	NA	160	NA	260	NA	NA	NA	NA

- Notes: 1. Samples were collected on December 15, 2008 or January 14 and 15, 2009.
  - 2. NA denotes "Not Analyzed". ND denotes the indicated laboratory parameter was not detected above the laboratory reported detection limit (RDL).
  - 3. The cleanup criteria are derived from the MDEQ-RRD, Operational Memorandum No. 1 (Memo No. 1) dated December 10, 2004, as revised.
  - 4. Shaded values are above one or more applicable cleanup criteria and bold font indicates a metal detected above the Default Background Level contained in Memo No. 1.
  - 5. All samples were analyzed at Lakeland Analytical Laboratories, Inc. located in Pinckney, Michigan.
  - 6. NLV = not likely to volatilize, ID= Insufficient data available to establish criteria..
  - 7. mg/kg denotes milligrams per kilogram.

# **Table 2 - Summary of Soil Analytical Results (VOCs) Tecumseh Products** 100 East Patterson Street Tecumseh, Michigan

	Residential & Commercial I	Residential & Commercial I	Residential & Commercial I					_	Sample	Location	_	_	_	_
	Drinking Water	Direct	Soil Volatilization	GP-1	GP-3	GP-4	GP-6	GP-7	GP-9	GP-10	GP-12	GP-14	GP-15	GP-16
	Protection Criteria	Contact	to Indoor Air Inhalation	3-5'	6-8'	4-6'	3-5'	2-4'	5-7'	2-4'	5-7'	1-3'	3-5'	1-3'
Analyte	(DWPC) (ug/kg)	Criteria (DCC) (ug/kg)	Criteria (SVIAIC) (ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
VOCs														
n-Butylbenzene	1,600	2,500,000	ID	ND	ND	160	ND	ND						
Chloroform	1,600	1,200,000	7,200	ND	ND	120	64	ND						
cis-1-2-Dichloroethene	1,400	640,000	22,000	ND	ND	ND	150	ND	660	ND	ND	230	1,300	410
trans-1-2-Dichloroethene	2,000	1,400,000	23,000	ND	ND	ND	ND	67						
1,1-Dichloroethene	140	200,000	62	ND	ND	ND	ND	ND	240	ND	ND	90	360	ND
Ethylbenzene	1,500	140,000	87,000	ND	ND	ND	ND	ND	92	ND	ND	170	ND	ND
n-Propylbenzene	1,600	2,500,000	ID	ND	ND	300	ND	ND						
Tetrachloroethene	100	88,000	11,000	ND	ND	ND	ND	ND	77	ND	ND	5900	1200	3300
Toluene	16,000	250,000	250,000	ND	ND	ND	ND	ND	120	ND	ND	310	110	78
1,1,1-Trichloroethane	4,000	460,000	250,000	ND	ND	3,800	8,800	ND						
Trichloroethene	100	500,000	7,100	ND	260	ND	4,300	4,100	3,200	500	350	43,000	38,000	7,600
1,2,4-Trimethylbenzene	2,100	110,000	110,000	ND	ND	890	220	ND						
1,3,5-Trimethylbenzene	1,800	94,000	94,000	ND	ND	190	ND	ND						
Xylenes	5,600	150,000	150,000	ND	ND	ND	ND	ND	220	ND	ND	1500	930	310

- Notes: 1. Samples were collected on December 15, 16 and 22, 2008, or January 14 and 15, 2009.
  - 2. NA denotes "Not Analyzed". ND denotes the indicated laboratory parameter was not detected above the laboratory reported detection limit (RDL)
  - 3. The cleanup criteria are derived from the MDEQ-RRD, Operational Memorandum No. 1 (Memo No. 1) dated December 10, 2004, as revised
  - 4. Shaded values are above one or more applicable cleanup criteria contained in Memo No. 1
  - 5. All samples were analyzed at Lakeland Analytical Laboratories, Inc. located in Pinckney, Michigan
  - 6. NLV = not likely to volatilize, ID= Insufficient data available to establish criteria..
    7. Ug/kg denotes micrograms per kilogram.

# **Table 2 - Summary of Soil Analytical Results (VOCs) Tecumseh Products** 100 East Patterson Street Tecumseh, Michigan

	Residential & Commercial I	Residential & Commercial I	Residential & Commercial I											
	Drinking Water	Direct	Soil Volatilization	GP-17	GP-21	GP-22	GP-23	GP-25	GP-26	GP-27	GP-28	GP-29	HB-31	HB-32
	Protection Criteria	Contact	to Indoor Air Inhalation	3-5'	3-5'	8-10'	3-5'	1-2'	3-5'	1-3'	21-23'	3-5'	3-5'	3-5'
Analyte	(DWPC) (ug/kg)	Criteria (DCC) (ug/kg)	Criteria (SVIAIC) (ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
VOCs														
n-Butylbenzene	1,600	2,500,000	ID	ND	NA									
Chloroform	1,600	1,200,000	7,200	ND	NA									
cis-1-2-Dichloroethene	1,400	640,000	22,000	ND	ND	ND	ND	3,400	ND	200	ND	ND	ND	NA
trans-1-2-Dichloroethene	2,000	1,400,000	23,000	ND	NA									
1,1-Dichloroethene	140	200,000	62	ND	NA									
Ethylbenzene	1,500	140,000	87,000	ND	ND	ND	ND	ND	ND	64	ND	ND	ND	NA
n-Propylbenzene	1,600	2,500,000	ID	ND	NA									
Tetrachloroethene	100	88,000	11,000	ND	75	ND	ND	ND	ND	200	230	ND	ND	NA
Toluene	16,000	250,000	250,000	ND	ND	ND	ND	ND	ND	230	ND	ND	ND	NA
1,1,1-Trichloroethane	4,000	460,000	250,000	ND	4,600	4,000	260	ND	ND	540	2,900	ND	ND	NA
Trichloroethene	100	500,000	7,100	1,300	1,600	5,200	1,700	8,600	ND	4,500	940	ND	ND	NA
1,2,4-Trimethylbenzene	2,100	110,000	110,000	ND	NA									
1,3,5-Trimethylbenzene	1,800	94,000	94,000	ND	NA									
Xylenes	5,600	150,000	150,000	ND	ND	ND	ND	ND	ND	440	ND	ND	ND	NA

- Notes: 1. Samples were collected on December 15, 16 and 22, 2008, or January 14 and 15, 2009.
  - 2. NA denotes "Not Analyzed". ND denotes the indicated laboratory parameter was not detected above the laboratory reported detection limit (RDL)
  - 3. The cleanup criteria are derived from the MDEQ-RRD, Operational Memorandum No. 1 (Memo No. 1) dated December 10, 2004, as revised
  - 4. Shaded values are above one or more applicable cleanup criteria contained in Memo No. 1
  - 5. All samples were analyzed at Lakeland Analytical Laboratories, Inc. located in Pinckney, Michigan
  - 6. NLV = not likely to volatilize, ID= Insufficient data available to establish criteria..
    7. Ug/kg denotes micrograms per kilogram.

# Table 3 - Summary of Soil Analytical Results (PNAs/SVOCs) Tecumseh Products 100 East Patterson Street Tecumseh, Michigan

	Residential & Commercial I	Residential & Commercial I	Residential & Commercial I				S	ample Locatio	n			
	Drinking Water	Direct	Soil Volatilization	GP-1	GP-3	GP-6	GP-7	GP-9	GP-10	GP-12	GP-14	GP-15
	Protection Criteria	Contact	to Indoor Air Inhalation	3-5'	6-8'	3-5'	2-4'	5-7'	2-4'	5-7'	1-3'	3-5'
Analyte	(DWPC) (ug/kg)	Criteria (DCC) (ug/kg)	Criteria (SVIAIC) (ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
VOCs												
Anthracene	41,000	1,000,000,000	230,000,000	ND	ND	ND	ND	ND	ND	ND	ND	790
Acenaphthylene	5,900	1,600,000	1,600,000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	NLL	20,000	NLV	ND	ND	ND	ND	ND	ND	ND	ND	1,200
Benzo(b)fluoranthene	NLL	20,000	ID	ND	ND	ND	ND	ND	ND	ND	ND	1,500
Benzo(k)fluoranthene	NLL	200,000	NLV	ND	ND	ND	ND	ND	ND	ND	ND	510
Benzo(ghi)perylene	NLL	2,500,000	NLV	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	NLL	2,000	NLV	ND	ND	ND	ND	ND	ND	ND	ND	1,200
Chrysene	NLL	2,000,000	ID	ND	ND	ND	ND	ND	ND	ND	ND	1,500
Dibenzo(ah)anthrene	NLL	2,000	NLV	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	730,000	46,000,000	1,000,000,000	ND	ND	ND	ND	ND	ND	ND	ND	2,900
Fluorene	390,000	27,000,000	580,000,000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	NLL	20,000	NLV	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	57,000	8,100,000	ID	ND	ND	ND	ND	ND	ND	ND	ND	1,100
Naphthalene	35,000	16,000,000	250,000	ND	ND	ND	ND	ND	ND	ND	ND	1,800
Phenanthrene	56,000	1,600,000	2,800,000	ND	ND	ND	ND	ND	ND	ND	ND	3,200
Pyrene	480,000	29,000,000	1,000,000,000	ND	ND	ND	ND	ND	ND	ND	ND	2,800

Notes: 1. Samples were collected on December 15, 16 and 22, 2008, or January 15, 2009.

- 2. NA denotes "Not Analyzed". ND denotes the indicated laboratory parameter was not detected above the laboratory reported detection limit (RDL).
- 3. The cleanup criteria are derived from the MDEQ-RRD, Operational Memorandum No. 1 (Memo No. 1) dated December 10, 2004, as revised.
- 4. Shaded values are above one or more applicable cleanup criteria and bold font indicates a metal detected above the Default Background Level contained in Memo No. 1.
- 5. All samples were analyzed at Lakeland Analytical Laboratories, Inc. located in Pinckney, Michigan.
- 6. NLV = not likely to volatilize, NLL = not likelyl to leach, and ID= Insufficient data available to establish criteria.
- 7. Ug/kg denotes micrograms per kilogram.

# Table 3 - Summary of Soil Analytical Results (PNAs/SVOCs) Tecumseh Products 100 East Patterson Street Tecumseh, Michigan

	Residential & Commercial I	Residential & Commercial I	Residential & Commercial I											
	Drinking Water	Direct	Soil Volatilization	GP-16	GP-17	GP-21	GP-22	GP-23	GP-25	GP-26	GP-27	GP-28	GP-29	HB-31
	Protection Criteria	Contact	to Indoor Air Inhalation	1-3'	3-5'	3-5'	8-10'	3-5'	1-2'	3-5'	1-3'	21-23'	3-5'	6"
Analyte	(DWPC) (ug/kg)	Criteria (DCC) (ug/kg)	Criteria (SVIAIC) (ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
VOCs														
Anthracene	41,000	1,000,000,000	230,000,000	ND	ND	ND	ND	ND	ND	400	ND	ND	ND	2,000
Acenaphthylene	5,900	1,600,000	1,600,000	ND	790									
Benzo(a)anthracene	NLL	20,000	NLV	ND	3,100									
Benzo(b)fluoranthene	NLL	20,000	ID	ND	ND	ND	ND	ND	ND	500	ND	ND	ND	4,700
Benzo(k)fluoranthene	NLL	200,000	NLV	ND	ND	ND	ND	ND	ND	500	ND	ND	ND	3,500
Benzo(ghi)perylene	NLL	2,500,000	NLV	ND	1,900									
Benzo(a)pyrene	NLL	2,000	NLV	ND	ND	ND	ND	ND	ND	570	ND	ND	ND	1,400
Chrysene	NLL	2,000,000	ID	ND	ND	ND	ND	ND	ND	610	ND	ND	ND	3,900
Dibenzo(ah)anthrene	NLL	2,000	NLV	ND	680									
Fluoranthene	730,000	46,000,000	1,000,000,000	ND	ND	ND	ND	ND	ND	2,300	ND	ND	ND	13,000
Fluorene	390,000	27,000,000	580,000,000	ND	730									
Indeno(1,2,3-cd)pyrene	NLL	20,000	NLV	ND	2,100									
2-Methylnaphthalene	57,000	8,100,000	ID	1,400	ND									
Naphthalene	35,000	16,000,000	250,000	1,500	ND									
Phenanthrene	56,000	1,600,000	2,800,000	1,200	ND	ND	ND	ND	ND	1,500	ND	ND	ND	5,700
Pyrene	480,000	29,000,000	1,000,000,000	ND	ND	ND	ND	ND	ND	1,700	ND	ND	ND	11,000

Notes: 1. Samples were collected on December 15, 16 and 22, 2008, or January 15, 2009.

- 2. NA denotes "Not Analyzed". ND denotes the indicated laboratory parameter was not detected above the laboratory reported detection limit (RDL).
- 3. The cleanup criteria are derived from the MDEQ-RRD, Operational Memorandum No. 1 (Memo No. 1) dated December 10, 2004, as revised.
- 4. Shaded values are above one or more applicable cleanup criteria and bold font indicates a metal detected above the Default Background Level contained in Memo No. 1.
- 5. All samples were analyzed at Lakeland Analytical Laboratories, Inc. located in Pinckney, Michigan.
- 6. NLV = not likely to volatilize, NLL = not likelyl to leach, and ID= Insufficient data available to establish criteria.
- 7. Ug/kg denotes micrograms per kilogram.

#### **Table 4 - Summary of Groundwater Analytical Results (Metals)**

#### **Tecumseh Products**

#### **100 East Patterson Street**

#### Tecumseh, Michigan

	Residential & Commercial I	Residential & Commercial I														
	Drinking Water	Groundwater														
	Criteria	Contact	GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	GP-7	GP-8	GP-9	GP-10	GP-11	GP-12	GP-13	GP-14
Analyte	(DWC) (ug/L)	Criteria (GCC) (ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOCs																
Barium	2000	1400000	110	NA	ND	NA	ND	NA	ND	NA	ND	ND	100	ND	ND	NA
Copper	1000	7400000	ND	NA	6	NA	10	NA	ND	NA	ND	11	ND	6	8	NA
Lead	4	ID	ND	ND	ND	ND	ND	3	ND	ND	ND	5	ND	ND	3	ND

- Notes: 1. Samples were collected on December 15, 16 and 22, 2008, or January 14 and 15, 2009.
  - 2. NA denotes "Not Analyzed". ND denotes the indicated laboratory parameter was not detected above the laboratory reported detection limit (RDL).
  - 3. The cleanup criteria are derived from the MDEQ-RRD, Operational Memorandum No. 1 (Memo No. 1) dated December 10, 2004, as revised.
  - 4. Shaded values are above one or more applicable cleanup criteria and bold font indicates a metal detected above the Default Background Level contained in Memo No. 1.
  - 5. All samples were analyzed at Lakeland Analytical Laboratories, Inc. located in Pinckney, Michigan.
  - 6. NLV = not likely to volatilize, ID= Insufficient data available to establish criteria..
  - 7. Ug/L denotes micrograms per liter.

#### Table 4 - Summary of Groundwater Analytical Results (Metals)(Continued)

#### **Tecumseh Products**

#### 100 East Patterson Street

#### Tecumseh, Michigan

	Residential & Commercial I	Residential & Commercial I															
	Drinking Water	Groundwater															
	Criteria	Contact	GP-15	GP-16	GP-17	GP-18	GP-19	GP-20	GP-21	GP-22	GP-23	GP-24	GP-25	GP-26	GP-27	GP-28	GP-29
Analyte	(DWC) (ug/L)	Criteria (GCC) (ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOCs	-		-														
Barium	2000	14000000	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	NA	ND	NA	NA
Copper	1000	7400000	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	NA	ND	NA	NA
Lead	4	ID	ND	ND	ND	ND	ND	NA	ND								

Notes: 1. Samples were collected on December 15, 16 and 22, 2008, or January 14 and 15, 2009.

- 2. NA denotes "Not Analyzed". ND denotes the indicated laboratory parameter was not detected above the laboratory reported detection limit (RDL).
- 3. The cleanup criteria are derived from the MDEQ-RRD, Operational Memorandum No. 1 (Memo No. 1) dated December 10, 2004, as revised.
- 4. Shaded values are above one or more applicable cleanup criteria and bold font indicates a metal detected above the Default Background Level contained in Memo No. 1.
- 5. All samples were analyzed at Lakeland Analytical Laboratories, Inc. located in Pinckney, Michigan.
- 6. NLV = not likely to volatilize, ID= Insufficient data available to establish criteria..
- 7. Ug/L denotes micrograms per liter.

# Table 5 - Summary of Groundwater Analytical Results (VOCs, PNAs/SVOCs and Cyanide) Tecumseh Products 100 East Patterson Street Tecumseh, Michigan

		Residential & Commercia									Sample	Location							
	Drinking Water	Groundwater	Groundwater Volatilization																
	Criteria	Contact	to Indoor Air Inhalation	GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	GP-7	GP-8	GP-9	GP-10	GP-11	GP-12	GP-13	GP-14	GP-15	GP-16
Analyte	(DWC) (ug/L)	Criteria (GCC) (ug/L)	Criteria (GVIAIC) (ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOCs	1	T	T	1															$ldsymbol{\sqcup}$
Benzene	5	11,000	5,600	ND	ND	ND	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	9
n-Butylbenzene	80	5,900	ID	ND	ND	3	ND	ND	ND	ND	ND								
Chloroethane	430	440,000	5,700,000	ND	ND	43	9	23	11	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	80	150,000	28,000	ND	1	ND	3	ND	ND	ND	ND								
cis-1-2-Dichloroethene	70	200,000	93,000	ND	210	760	240	510	120	4	160	9	36	15	7	1	ND	120	3
1,1-Dichloroethane	880	2,400,000	1,000,000	ND	11	25	18	160	84	ND	9	89	3	ND	3	ND	8	31	30
1,1-Dichloroethene	7	11,000	200	ND	17	2	4	10	70	3	ND	26	76	3	320	6	31	12	2
trans-1,2-Dichloroethene	100	220,000	85,000	ND	4	27	22	12	1	ND	11	2	ND	ND	ND	ND	ND	3	1
Ethylbenzene	74	170,000	110,000	ND	ND	3	ND	ND	ND	ND	3								
n-Propylbenzene	80	15,000	ID	ND	ND	7	ND	ND	ND	ND	ND								
Tetrachloroethene	5	12,000	25,000	ND	2	ND	ND	ND	ND	ND	12	3	ND						
1,1,2-Trichloroethane	5	21,000	17,000	ND	4	ND	ND	ND	1	ND	2								
Toluene	790	530,000	530,000	ND	ND	ND	ND	ND	ND	ND	3								
1,1,1-Trichloroethane	200	1,300,000	660,000	ND	16	ND	ND	ND	60	3	ND	31	34	4	390	6	260	150	16
1,2,4-Trimethylbenzene	63	56,000	56,000	ND	ND	64	ND	ND	ND	ND	4								
1,3,5-Trimethylbenzene	72	61,000	61,000	ND	ND	35	ND	ND	ND	ND	1								
Trichloroethene	5	22,000	15,000	ND	920	510	320	660	550	300	49	540	370	100	530	210	190	450	8
Trichlorofluoromethane	2,600	1,100,000	110,000	ND	ND	ND	ND	ND	ND	ND	ND								
Xylenes	280	190,000	190,000	ND	ND	ND	ND	ND	ND	ND	10								
PNAs/SVOCs																			
2-Methylnaphthalene	260	25,000	ID	ND	7	ND	ND	ND	ND	ND	ND	ND	ND						
Naphthalene	520	31,000	31,000	ND	10	ND	ND	ND	ND	ND	ND	ND	ND						
Cyanide	200	57,000	NLV	NA	ND	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	5

Notes: 1. Samples were collected on December 15, 16 and 22, 2008, or January 14 and 15, 2009.

- 2. NA denotes "Not Analyzed". ND denotes the indicated laboratory parameter was not detected above the laboratory reported detection limit (RDL).
- 3. The cleanup criteria are derived from the MDEQ-RRD, Operational Memorandum No. 1 (Memo No. 1) dated December 10, 2004, as revised.
- 4. Shaded values are above one or more applicable cleanup criteria and bold font indicates a metal detected above the Default Background Level contained in Memo No. 1.
- 5. All samples were analyzed at Lakeland Analytical Laboratories, Inc. located in Pinckney, Michigan.
- 6. NLV = not likely to volatilize, ID= Insufficient data available to establish criteria..
- 7. Ug/L denotes micrograms per liter.

# Table 5 - Summary of Groundwater Analytical Results (VOCs, PNAs/SVOCs and Cyanide)(Continued) Tecumseh Products 100 East Patterson Street Tecumseh, Michigan

		Residential & Commercial	I			1	1	1	ı	1	1	1	1	1	1	1	1	1	1	<del></del>
	Drinking Water	Groundwater	Groundwater Volatilization	GP-17	GP-18	GP-19	GP-20	GP-21	GP-22	GP-22	GP-23	GP-23	GP-24	GP-25	GP-26	GP-27	GP-28	GP-28	GP-29	GP-30
	Criteria	Contact	to Indoor Air Inhalation						@26'	@45'	@26'	@35'					@26'	@45'		
Analyte	(DWC) (ug/L)	Criteria (GCC) (ug/L)	Criteria (GVIAIC) (ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOCs																				
Benzene	5	11,000	5,600	ND	ND	ND	NA	ND	NA											
n-Butylbenzene	80	5,900	ID	ND	ND	ND	NA	ND	NA											
Chloroethane	430	440,000	5,700,000	ND	ND	ND	NA	ND	NA											
Chloroform	80	150,000	28,000	ND	ND	ND	NA	ND	NA											
cis-1-2-Dichloroethene	70	200,000	93,000	ND	1	ND	NA	ND	160	81	430	ND	ND	170	ND	ND	ND	ND	ND	NA
1,1-Dichloroethane	880	2,400,000	1,000,000	47	ND	ND	NA	47	160	6	32	ND	ND	87	ND	ND	23	ND	ND	NA
1,1-Dichloroethene	7	11000	200	18	ND	11	NA	920	210	10	ND	ND	ND	ND	ND	14	36	ND	ND	NA
trans-1,2-Dichloroethene	100	220,000	85,000	ND	ND	ND	NA	ND	ND	21	27	ND	ND	10	ND	ND	ND	ND	ND	NA
Ethylbenzene	74	170,000	110,000	ND	ND	ND	NA	ND	NA											
n-Propylbenzene	80	15,000	ID	ND	ND	ND	NA	ND	NA											
Tetrachloroethene	5	12,000	25,000	1	1	ND	NA	ND	5	ND	ND	NA								
1,1,2-Trichloroethane	5	21,000	17,000	ND	ND	ND	NA	ND	NA											
Toluene	790	530,000	530,000	ND	ND	ND	NA	ND	NA											
1,1,1-Trichloroethane	200	1,300,000	660,000	200	3	71	NA	8,500	3,500	38	ND	ND	ND	ND	ND	120	540	ND	ND	NA
1,2,4-Trimethylbenzene	63	56,000	56,000	ND	ND	ND	NA	ND	NA											
1,3,5-Trimethylbenzene	72	61,000	61,000	ND	ND	ND	NA	ND	NA											
Trichloroethene	5	22,000	15,000	200	190	86	NA	1,700	1600	560	300	ND	48	240	ND	170	110	ND	34	NA
Trichlorofluoromethane	2,600	1,100,000	1,100,000	ND	ND	ND	NA	ND	NA											
Xylenes	280	190,000	190,000	ND	ND	ND	NA	ND	NA											
PNAs/SVOCs			· · · · · · · · · · · · · · · · · · ·																	
2-Methylnaphthalene	260	25,000	ID	ND	ND	ND	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	NA	NA	NA
Naphthalene	520	31,000	31,000	ND	ND	ND	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	NA	NA	NA
Cyanide	200	57,000	NLV	6	NA	NA	NA	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	NA	NA

Notes: 1. Samples were collected on December 15, 16 and 22, 2008, or January 14 and 15, 2009.

- 2. NA denotes "Not Analyzed". ND denotes the indicated laboratory parameter was not detected above the laboratory reported detection limit (RDL).
- 3. The cleanup criteria are derived from the MDEQ-RRD, Operational Memorandum No. 1 (Memo No. 1) dated December 10, 2004, as revised.
- 4. Shaded values are above one or more applicable cleanup criteria and bold font indicates a metal detected above the Default Background Level contained in Memo No. 1.
- 5. All samples were analyzed at Lakeland Analytical Laboratories, Inc. located in Pinckney, Michigan.
- 6. NLV = not likely to volatilize, ID= Insufficient data available to establish criteria..
- 7. Ug/L denotes micrograms per liter.

Table 6 - Summary of Soil Borings, Evaluated Potential Environmental Concerns, Analytical Rationale/Field Screening Results

Tecumseh Products

100 East Patterson Street

Tecumseh, Michigan

Boring/Sample ID*	Purpose of Boring Location** and  Potential Environmental  Concern/s	Soil and Groundwater Sample (where collected) Laboratory Analysis	Rationale for Soil and/or Ground -water (where present) Sample Laboratory Analysis (based on potential environmental concern)	Rationale for Soil and/or Groundwater Sample Selected (based on field screening results) for Laboratory Analysis
GP-1 (3'-5' bgs)	Former foundry area	VOCs, SVOCs, Metals and/or PCBs	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled FILL with debris (i.e. brick fragments) to 6 feet bgs
GP-2 (GW sample only)	Wire stripping and/or paint use	VOCs, Metals and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Sampled groundwater at soil/groundwater interface
GP-3 (6'-8' bgs)	Wire stripping and/or paint use	VOCs, SVOCs/PNAs, Metals and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Possible uncontrolled FILL
GP-4 (4'-6' bgs)	General area coverage	VOCS, PNAs, Metals and/or PCBs	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled FILL with debris (i.e. brick fragments) and PID readings
GP-5 (GW sample only)	General area coverage	VOCs, SVOCs, and/or Metals	Common indicator parameters for commercial/industrial properties and processes.	General site coverage with groundwater sampled at soil/groundwater interface
GP-6 (3'-5' bgs)	Suspected down gradient of former fuel oil tank	VOCs, SVOCs, Metals and/or PCBs	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled FILL with debris (i.e. brick fragments) and PID readings
GP-7 (2'-4' bgs)	Foundry/paint line/oil house	VOCs, SVOCs, Metals, PCBs and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Possible uncontrolled FILL (sand with slag) and PID readings
GP-8 (GW only)	Sump, trench/solvent use	VOCs, SVOCs, Metals, PCBs and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Sampled groundwater at soil/groundwater interface
GP-9 (5'-7' bgs)	Sump, trench/solvent use	VOCs, PNAs, Metals and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Possible uncontrolled FILL and PID readings
GP-10 (2'-4' bgs)	Suspected downgradient of large ASTs/new waste water treatment plant	VOCs, SVOCs, Metals and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled FILL with debris (i.e. brick fragments) and PID readings
GP-11 (GW sample only)	Downgradient of hazardous materials storage building (55-gallon drums, etc.)	VOCs, SVOCs, Metals and Cyanide	Common indicator parameters for commercial/industrial properties and processes.	General site coverage with groundwater sampled at soil/groundwater interface
GP-12 (5'-7' bgs)	Suspected down gradient and general site coverage	VOCs, SVOCs/PNAs, Metals, PCBs and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled FILL with debris (i.e. brick fragments) and PID readings in vadose zone
GP-13 (GW sample only)	Paint lines and/or solvent use	VOCs, PNAs and Metals	Common indicator parameters for commercial/industrial properties and processes.	Possible uncontrolled FILL and general site coverage with groundwater sampled at soil/groundwater interface
GP-14 (1'-3' bgs)	Hormer Houndry Area and machining area	VOCs, SVOCs/PNAs, Metals and/or PCBs		Possible uncontrolled FILL with slag at the surface, PID readings and general site coverage
GP-15 (3'-5' bgs)	Former foundry area and paint line with possible solvent use	VOCs, SVOCs/PNAs, Metals and/or PCBs	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled FILL with debris (i.e brick and slag) at the surface, and PID readings

Notes: If soil samples are collected, the soil sample depths are shown in parentheses next to the sample ID. The groundwater samples were generally collected from the saturated zones immediately below the vadose zone. However in select borings, groundater samples were collected from different depths within the saturated zone. Each of the above borings were located for general site coverage in addition to the purpose listed above.

# Table 6 - Summary of Soil Borings, Evaluated Potential Environmental Concerns, Analytical Rationale/Field Screening Results (continued) Tecumseh Products 100 East Patterson Street Tecumseh, Michigan

Boring/Sample ID*	Purpose of Boring Location** and Potential Environmental Concern/s	Soil and Groundwater Sample (where collected) Laboratory Analysis	Rationale for Soil and/or Ground -water (where present) Sample Laboratory Analysis (based on potential environmental concern)	Rationale for Soil and/or Groundwater Sample Selected (based on field screening results) for Laboratory Analysis
GP-16 (1'-3' bgs)	Old waste water treatment plant with trenching, sump and possible UST	VOCs, SVOCs, Metals, PCBs and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Possible uncontrolled FILL and PID readings
GP-17 (3'-5' bgs)	Suspected down gradient of UST area and boiler room	VOCs, SVOCs/PNAs, Metals and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Possible uncontrolled FILL at the surface, PID readings and site coverage
GP-18 (GW only)	Suspected down gradient of railroad tracks, drum storage and near staining in basement	VOCs, PNAs and/or Metals	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled FILL with debris (i.e. brick fragments) and PID readings
GP-19 (GW sample only)	General coverage and down gradient of railroad tracks	VOCs, PNAs and Metals	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled FILL with debris (i.e. brick fragments) and PID readings
GP-20 (no sample collected)	General coverage	No samples recovered	Common indicator parameters for commercial/industrial properties and processes.	Boring was terminated at a depth of about 6 feet bgs due to the presence of a water main and no sample was collected
GP-21 (3'-5' bgs)	Suspected former solvent use/storage	VOCs, PNAs and/or Metals	Common indicator parameters for commercial/industrial properties and processes.	Possible uncontrolled FILL and PID readings
GP-22 (8'-10' bgs) GW sample at 26' & 45'	Suspected former solvent use/storage and downgradient of solvent use/storage	VOCs, SVOCs/PNAs, Metals and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled FILL with debris (i.e. steel bolts) and PID readings
GP-23 (3'-5' bgs) GW sample at 26' & 35'	Suspected area of former hazardous waste storage area	VOCs, SVOCs/PNAs, Metals and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled FILL with slag and elevated PID readings
GP-24 (GW sample only)	Down gradient of site and at suspected downgradient site boundary	VOCs, SVOCs/PNAs, Metals and Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled fill with debris (i.e. brick fragments) at the surface and shallow water table
GP-25 (1'-2' bgs)	Dumpster/metal shavings storage area	VOCs, SVOCs, Metals, PCBs and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Dark gray color of the soils beneath the surficial concrete and PID readings
GP-26 (3'-5' bgs)	Former foundry	VOCs, SVOCs, Metals and PCBs	Common indicator parameters for commercial/industrial properties and processes.	Possible uncontrolled FILL with debris (i.e. brick fragments) and PID readings
GP-27 (1'-3' bgs)	Former foundry area and machining area	VOCs, SVOCs, Metals and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled FILL with debris (i.e. brick fragments and slag) and PID readings in vadose zone
GP-28 (21'-23' bgs) GW sample at 26' & 45'	Reported former and closed-in-place UST area with suspected UST per GPR Survey	VOCs, PNAs, Metals and/or Cyanide	Common indicator parameters for commercial/industrial properties and processes.	Uncontrolled FILL with debris (i.e. brick fragments) and PID readings
GP-29 (3'-5' bgs)	Used oil and empty drum area and railroad tracks	VOCs, PNAs and Metals	Common indicator parameters for commercial/industrial properties and processes.	Possible uncontrolled FILL and PID readings
GP-30 (boring refusal with no samples)	General coverage. No samples due to auger refusal	No samples collected due to refusal	NA	Boring was terminated at a depth of about 2 feet bgs due to refusaland no sample was collected
GP-31 (6-inches bgs) (soil only)	Missing/stressed vegetation	VOCs, PNAs and Metals	Common indicator parameters for commercial/industrial properties and processes.	Possible uncontrolled FILL and PID readings
GP-32 (6-inches bgs) (soil only)	Stressed vegetation and staining near electrial transformer	PCBs	Common indicator parameter for transformer oil	Possible uncontrolled FILL and PID readings

Notes: If soil samples are collected, the soil sample depths are shown in parentheses next to the sample ID. The groundwater samples were generally collected from the saturated zones immediately below the vadose zone. However in select borings, groundater samples were collected from different depths within the saturated zone. Each of the above borings were located for general site coverage in addition to the purpose listed above.

# Table 7

# **Survey and Gauging Data**

Client: Tecumseh Products Company Location: 100 East Patterson Road, Tecumseh, Michigan

Geologist: Andy Rauser

**Date:** 12/16/2008 (updated for 2/2/09) **Project:** 39.02922.8N01

**Benchmark** = Top step near Shipping 1

Description	Backsight Reading	Instrument Height	Foresight Reading	Top of Casing Elevation	Depth To Water 12/16/08	Depth To Water 2/2/09	Groundwater Elevation 12/16/08	Groundwater Elevation 2/2/09	Comments
BM*	1.53	101.53	rtodding	100.00	VV ator 12/10/00	**************************************	Liovation 12/10/00	210 Vation 2/2/00	Commente
GP-12			3.22	98.31	21.12	20.98	77.19	77.33	
GP-10			2.63	98.90	21.62	21.49	77.28	77.41	
GP-11			2.46	99.07	21.78	21.63	77.29	77.44	

All Measurements in Feet