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October 15, 2012

Mr. Joseph Kelly  
Project Manager  
USEPA, Region 5  
77 West Jackson Boulevard  
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Chicago, IL 60604-3590

Subject: **RCRA 3008(h) Administrative Order on Consent (RCRA-05-2010-0012) –  
Tecumseh Products Company  
Third Quarter 2012 Progress Report – MID 005-049-440**

Dear Mr. Kelly:

Pursuant to Section VI of the above referenced Administrative Order on Consent (Consent Order) effective March 29, 2010, TRC Environmental Corporation (TRC), on behalf of the Respondent Tecumseh Products Company (TPC), submits this Third Quarter 2012 Progress Report. This report describes activities related to the Consent Order completed by TPC during the third quarter 2012 and planned for completion in the near future. The organization of this document includes, as major headings, the items required under Sections V through VIII of the Consent Order.

## V. Project Manager

- n The TPC Project Manager is Graham Crockford of TRC.
- n A new USEPA Project Manager was assigned during the third quarter 2012. The USEPA Project Manager is Joseph Kelly.

## VI. Work to be Performed – Remedial Investigation Report and Environmental Indicators Reports

1. A Description of activities related to the completion of the Remedial Investigation (RI) Report and the Environmental Indicator (EI) Reports:
  - n **Investigation Activities**
    - **Characterize Releases at or from the Facility** – The findings of all source area investigation activities, including remedial investigation activities completed in July and

August 2012 are documented in the September 2012 Remedial Investigation and Groundwater Environmental Indicator Report (RI Report).

- **Define Appropriate Screening Criteria** – As described in the September 2009 Current Conditions Report (CCR), the September 2011 Current Human Exposures Under Control Environmental Indicator Report (EI Report), and the RI Report, the Michigan Department of Environmental Quality (MDEQ) Part 201 Criteria are typically be used to assess risk related to the ingestion of, or direct contact with, affected media. Part 201 groundwater/surface water interface (GSI) criteria and MDEQ Rule 57 Surface Water Quality Values were used to assess both human and environmental risk to surface water. Currently, groundwater data indicate that groundwater in a well upgradient of the River Raisin (MW-31) has concentrations above generic GSI criteria. A request for mixing zone-based GSI criteria has been submitted to MDEQ for review and determination. Screening levels for the volatilization to indoor air migration pathway were developed in accordance with both current regulation and state and federal guidance. These screening levels were updated in February 2012 to reflect recent changes in toxicity values. Revised calculation sheets were included in Appendix H of the RI Report. At the request of USEPA, a site-specific groundwater contact criterion was calculated for trichloroethene (TCE) to reflect recently updated TCE toxicity data. Calculation sheets are included in Appendix G of the RI Report.
- **Define Any Unacceptable Risks to Human Health** – Current human exposure to affected media is described in the September 2011 EI Report.
  - § **Groundwater** – A Groundwater Use Ordinance was passed in June 2011. This ordinance prohibits new private water wells within the area of affected groundwater and vicinity. As of November 2011, all properties within the area of affected groundwater were connected to the municipal water supply system; and as of June 2012, all private wells within the restricted area had been decommissioned.
  - § **Surface Water** – In March 2011, USEPA notified TPC that a “spring or artesian well that residents commonly drink from is located on the west bank of the River Raisin, on the north side of the old Blood Road Bridge.” In December 2011, USEPA reiterated concerns regarding human exposures to affected surface water in a comment letter regarding the September 2011 EI Report. Investigation activities to address USEPA concerns were originally documented in the Second Quarter 2011 Progress Report, and were reiterated in the December 19, 2011 response to USEPA comments. In April 2011, TRC communicated with a local resident for help locating the spring and conducted site reconnaissance to locate and identify the alleged spring. The resident stated that persons may have drunk from the spring years ago, when he was a child, but that he was unaware of continued use. During site

reconnaissance near the old Blood Road Bridge, no well, fountain, or other device to facilitate collection of seeping groundwater was identified, and the groundwater seep was of insufficient volume to reasonably fill a water bottle or cupped hands. As documented in the September 2011 EI Report, current human exposure to affected surface water is under control; however to facilitate a favorable environmental indicators-groundwater stabilized determination in September 2012, TPC did agree, during the March 2012 project meeting with USEPA, to collect a sample for analysis of volatile organic compounds (VOCs) at this groundwater seep. This sample was collected in conjunction with the regular second quarter 2012 groundwater sample event, and a confirmation sample was collected with the third quarter 2012 groundwater sample event. No VOCs were detected. Sample results are documented in the RI Report.

- § **Volatilization to Indoor Air** – An evaluation of the potential for off-site vapor intrusion at the site was provided in the September 2011 EI Report. This evaluation was supplemented with crawlspace and indoor air sample data collected in October and November 2011. These data were documented in the December 19, 2011 response to USEPA comments on the September 2011 EI Report. Recent changes in TCE toxicity data have resulted in a reduction in TCE soil gas screening levels (SGSLs). With these reductions, several locations north of the site have exceeded the most-conservative residential SGSL for TCE during one or more sample event. During the March 2012 project meeting, TPC and USEPA agreed to an investigation/mitigation strategy to address these exceedences in 2012. Construction and installation activities associated with this investigation/mitigation strategy (*i.e.* soil vapor extraction system and additional soil gas sample points) were largely completed during the second quarter 2012. A soil gas sample event was conducted in October 2012. Laboratory results are pending, and will be reported in a technical memorandum once they are available.
- **Define Any Unacceptable Risks to the Environment** – The potential for unacceptable risk to the environment related to the discharge of affected groundwater to nearby surface water and wetlands was evaluated in the September 2012 RI Report. Groundwater data indicate that groundwater in a well upgradient of the River Raisin (MW-31) has concentrations of TCE above generic Part 201 GSI criteria. A request for mixing zone-based GSI criteria has been submitted to MDEQ for review and determination. Mixing zone based GSI criteria typically range between ten times the generic GSI criterion (2,000 ug/L for TCE) and the MDEQ final acute value (3,500 ug/L for TCE). Therefore, the site-specific mixing zone based GSI criterion for TCE at the former TPC site is expected to be well above groundwater concentrations near the River Raisin (up to 340 ug/L at MW-31). Furthermore, groundwater concentrations at all wells

adjacent to the River Raisin and associated wetlands are well below MDEQ Rule 57 Aquatic Maximum Values. Therefore, exposure of ecological receptors to affected surface water is not a relevant exposure pathway, and the potential for groundwater discharge to the River Raisin and adjoining wetland is acceptable from an environmental risk perspective.

- **Determine the Stability of Contaminated Groundwater** – A quarterly groundwater monitoring program is underway to assess the stability of contaminated groundwater. Concentrations of chlorinated volatile organic compounds (CVOCs) at previously sampled locations are generally consistent with historic data. In June 2012, a report titled “Statistical Evaluation of Groundwater Stability; Former Tecumseh Products Company Site; Tecumseh, Michigan; RCRA-05-2010-0012” was submitted to USEPA for review and comment. This evaluation indicates that the plume is stable. A copy of this evaluation was included in the RI Report.

n **Response and Mitigation Measures**

- **Local Groundwater Ordinance and Decommissioning of Private Wells** – A Groundwater Use Ordinance was passed in June 2011. This ordinance prohibits new private water wells within the area of affected groundwater and vicinity. As of November 2011, all properties within the area of affected groundwater were connected to the municipal water supply system; and as of June 2012, all private wells within the restricted area had been decommissioned.
- **Declaration of Restrictive Covenant** – As part of the Purchase Agreement between TPC and Tecumseh Bakery, LLC, a Declaration of Restrictive Covenant for the facility was recorded with the Lenawee County Resister of Deeds. This Restrictive Covenant restricts the installation and use of on-site wells (excluding monitoring wells or other wells installed as part of the environmental work) and restricts Residential and Commercial I land use as defined by the MDEQ at the facility. The License Agreement Regarding Environmental Work provides provisions for additional restrictions to be placed on the property as needed.
- **Mitigation of Indoor Air (On-Site)** – In February 2012, the site was purchased by Tecumseh Food Machinery & Engineering, LLC (TFME). TFME has dismissed on-site security. Currently the site is occupied by the new TFME site manager who works out of an office located in the old security area (S-Building), and several temporary TFME employees who are in the process of scrapping the equipment TFME has stored on site. A sub-slab depressurization/ventilation (SSDV) system was installed in S-Building in October 2011. TPC employees, who occupied the engineering area (Area H and Area J) under a lease with the new owners since December 2009, completed their relocation to

the new TPC facility during the second quarter of 2012, and no longer occupy the former TPC site.

Currently TFME plans to separate P-Building and S-Building from the remainder of the plant, so that P-building can be leased or sold as a separate parcel, and to demolish the remainder of the facility. A soil vapor extraction (SVE) system to mitigate the volatilization to indoor air migration pathway in P-Building was installed during the second quarter 2012.

- **Mitigation of Indoor Air (Off-Site)** – SSDV system installation and/or crawlspace sampling activities were conducted in October 2011 and again in May 2012 at the five residential properties east of the site. In addition, a permeable reactive barrier (PRB) was installed downgradient of the southern source area, along the former TPC site property line in May 2011. This PRB is an interim, proactive, corrective measure designed to address the potential off-site vapor intrusion pathway, by treating shallow CVOC-affected groundwater before the groundwater migrates off-site.
- **Control Unacceptable Risks to the Environment** – No unacceptable risks to the environment have been identified.
- **Stabilize Migration of Contaminated Groundwater** – In June 2012, a report titled “Statistical Evaluation of Groundwater Stability; Former Tecumseh Products Company Site; Tecumseh, Michigan; RCRA-05-2010-0012” was submitted to USEPA for review and comment. For 322 of the 328 parameter-well combinations evaluated, the trend was downward or stable. This evaluation indicates that the plume is stable. Regular groundwater sampling at compliance monitoring well locations will continue to ensure that the groundwater plume remains stable.

n **Reporting**

- **Environmental Indicators Report: Current Human Exposures under Control** – TRC submitted the Current Human Exposures Under Control Environmental Indicators Report (September 2011 EI Report) to USEPA for review on September 29, 2011. USEPA provided TPC with comments regarding the EI Report on December 5, 2011. TPC responded to the USEPA comments on December 19, 2011. On December 28, 2011, USEPA proposed an extension for USEPA to complete the CA-725 Form until December 12, 2012, so that confirmation indoor air/crawlspace sampling data from the residential properties east of the site (610 Mohawk, 704 Mohawk, 502 Mohawk, 505 South Maumee Street and 507 South Maumee Street) can be evaluated by USEPA. TPC will continue provide supplemental information as it becomes available to support USEPA completion of the CA-725 Form.

- **Environmental Indicators Report: Groundwater Stabilized** – TRC submitted the Remedial Investigation and Groundwater Environmental Indicators Report (September 2012 RI Report) to USEPA for review on September 28, 2012.
- **Remedial Investigation Report** – TRC submitted the Remedial Investigation and Groundwater Environmental Indicators Report (September 2012 RI Report) to USEPA for review on September 28, 2012.

## 2. Estimate of Percentage of Work Completed

- n Work related to Remedial Investigation Report: 100% complete
- n Work related to the Environmental Indicators Report – Current Human Exposures Under Control: 100% complete. TPC is performing confirmation sampling in 2012. USEPA has elected to review confirmation sampling prior to completing the CA-725 Form.
- n Work related to the Environmental Indicators Report – Groundwater Stabilized: 100% complete

## 3. A Summary of Activities during the Reporting Period

- n July 2012 – The “Workplan for Proposed Source Area Remedial Investigation Activities” (RI Workplan) was submitted to USEPA.
- n July 2012 – The third quarter groundwater sample event was conducted, including collection of a confirmation sample at the seep near the abandoned Blood Road bridge.
- n July 2012 – Groundwater samples were collected at PRB monitoring locations.
- n July 2012 – Operation and maintenance of the P-Building SVE system continued, including collection of an exhaust sample.
- n July-August 2012 – Remedial investigation activities as outlined in the RI Workplan were completed.
- n August 2012 – One additional upgradient PRB monitoring well (PRB-16s) was installed and sampled.
- n August 2012 – A technical memorandum documenting the location of subsurface utilities in the vicinity of the site, the protectiveness of the clay layer northeast of the site, and second quarter 2012 soil gas results was submitted to USEPA.
- n August 2012 – Gas concentrations were measured at methane vent locations.
- n August 2012 – The third quarter SSDV system inspection was completed at 704 Mohawk.

- n August 2012 – Operation and maintenance of the P-Building SVE system continued, including collection of a composite (Line 1 and Line 2) exhaust sample, as well as samples from each SVE header pipe (Line 1 and Line 2).
- n September 2012 – A letter report documenting well decommissioning activities was sent to each affected property owner.
- n September 2012 – A technical memorandum documenting the completion of well decommissioning activities was sent to the City of Tecumseh.
- n September 2012 – A Performance Monitoring Report for the Permeable Reactive Barrier Downgradient of the Southern Source Area was submitted to USEPA.
- n September 2012 – Operation and maintenance of the P-Building SVE system continued.
- n September 2012 – The third quarter soil gas sample event was delayed until the first week of October due to weather.
- n September 2012 – The Remedial Investigation and Groundwater Environmental Indicator Report and the Documentation of Environmental Indicator Determination Form CA-750 were submitted to USEPA.

4. A Summary of Contacts with Representatives of Local Community, Public Interest Groups, or State Government during the Reporting Period

- n At the request of one property owner, TRC provided that owner with a copy of the Second Quarter 2012 Progress Report.
- n TRC communicated with the Tecumseh District Library personnel in order to update the public repository at the Tecumseh District Library in July 2012.
- n In August 2012, TRC communicated with the owner of a residential property east of the site regarding the regular quarterly SSDV system inspection.
- n In August 2012, TRC communicated with MDEQ regarding the status of the Application for Mixing Zone-Based GSI Criteria. Supplemental electronic data files were provided at MDEQ's request.
- n In September 2012, TPC sent letter reports documenting well decommissioning activities to affected property owners.
- n In September 2012, TRC submitted a technical memorandum to the City of Tecumseh documenting the completion of well decommissioning activities within the area restricted by the groundwater use ordinance.





**5. A Summary of Problems and Potential Problems Encountered During the Reporting Period**

- n No problems were noted during the third quarter 2012.

**6. Action Taken to Rectify Problems Identified Above**

- n No problems were noted during the third quarter 2012.

**7. Changes in Personnel during Reporting Period**

- n No TPC/TRC project personnel have changed.

**8. Projected Work for the Next Reporting Period**

- n Meet with USEPA to discuss current project status and future activities.
- n Install the permanent blower for the full-scale soil vapor extraction system in P-Building and re-balance the system;
- n Prepare a construction documentation report for the full-scale SVE system;
- n Collect the fourth quarter PRB groundwater samples;
- n Conduct and evaluate the fourth quarter groundwater sampling event;
- n Conduct a quarterly SSDV system performance evaluation at S-Building;
- n Conduct a quarterly SSDV system performance evaluation at the residential property located at 704 Mohawk;
- n Collect the third (final) round of crawlspace samples at the four residential properties east of the site where a SSDV system has not been installed;
- n Collect and analyze another round of off-site soil gas samples; and
- n Collect gas composition readings at vents installed along the length of the PRB.

**VI. Work to be Performed – Final Corrective Measures Proposal**

Preparation of the Final Corrective Measures Proposal will be initiated during the fourth quarter 2012.

**VI. Work to be Performed – Final Corrective Measures Implementation**

Work related to the Final Corrective Measures Implementation will be initiated following USEPA's Final Decision.

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## VI. Work to be Performed – Establish Public Repository of Information

TPC established a public repository in the City Clerk's office at City Hall in August 2010. To address USEPA comments, the public repository was relocated to the Tecumseh District Library in November 2011. A notice sheet has been posted on the bulletin board at the Tecumseh District Library which lists and briefly describes the documents included in the public repository. TPC updates the public repository as appropriate.

## VII. Access

No new access agreements were obtained during the third quarter 2012.

## VIII. Cost Estimates and Assurances of Financial Responsibility

In accordance with the Consent Order, TPC submitted an annually updated cost estimate on January 30, 2012 and updated Financial Assurance documents on March 20, 2012.

If you have any questions regarding this progress report, or the attachments, please contact me at (734) 585-7813, or [gcrockford@trcsolutions.com](mailto:gcrockford@trcsolutions.com).

Sincerely,

TRC Environmental Corporation



Graham Crockford, C.P.G.  
Project Manager

cc: Susan Perdomo, USEPA  
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Douglas McClure, Conlin, McKenney & Philbrick, PC  
Stacy Metz, TRC Environmental  
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Tecumseh District Library – Public Repository  
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