

US EPA ARCHIVE DOCUMENT



January 31, 2013

US Environmental Protection Agency – Region VII
Air and Waste Management Division
11201 Renner Boulevard
Lenexa, Kansas 66219

Attn: Mr. Bruce A. Morrison

Re: Former Chamberlain Manufacturing Site
550 Esther Street
Waterloo, Iowa
Terracon Project No. 07107020

We are transmitting herewith under separate cover

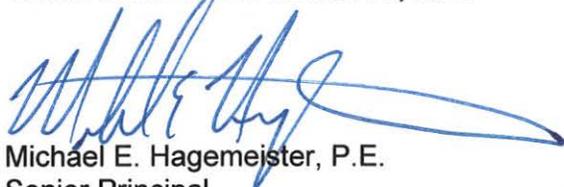
Item	Date	Description
1	1/31/2013	Vapor Intrusion Interim Measures Quarterly Report No. 6

Remarks:

If you have any questions or we may be of further assistance, please do not hesitate to contact this office.

Sincerely,

TERRACON CONSULTANTS, INC.



Michael E. Hagemeister, P.E.
Senior Principal

Distribution: Addressee (2)
 Mr. Eric Reeves, Chamberlain Manufacturing, Duchossois Industries, Inc., 845 Larch Avenue, Elmhurst, IL 60126 (1)
 Mr. Chris Western, City of Waterloo, City Hall, 715 Mulberry Street, Waterloo, IA 50703 (1)
 Mr. Dan Cook, Iowa Department of Natural Resources, Wallace State Office Building, 900 East Grand Avenue, Des Moines, IA 50319 (1)
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Terracon Consultants, Inc. 15080 A Circle Omaha, NE 68144
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US EPA ARCHIVE DOCUMENT

Vapor Intrusion Interim Measures Quarterly Report No. 6

Chamberlain Manufacturing Corporation

Former Facility at

550 Esther Street

Waterloo Iowa

EPA Docket Nos.

RCRA-07-2010-002

CERCLA-07-2010-0005

January 31, 2013

Terracon Project No. 07107020

Prepared for:

Chamberlain Manufacturing Corporation

Elmhurst, Illinois

Prepared by:

Terracon Consultants, Inc.

Omaha, Nebraska

US EPA ARCHIVE DOCUMENT

Offices Nationwide
Employee-Owned

Established in 1965
terracon.com

Terracon

January 31, 2013

United States Environmental Protection Agency
Region 7 - Air and Waste Management Division
11201 Renner Blvd
Lenexa, Kansas 66219

Attn: Mr. Bruce Morrison

Re: Vapor Intrusion Interim Measures Quarterly Report No. 6
Chamberlain Manufacturing Corporation
Former Facility at 550 Esther Street
Waterloo, Iowa
EPA Docket Nos. RCRA-07-2010-002 and CERCLA-07-2010-0005

Dear Mr. Morrison:

Terracon Consultants, Inc. (Terracon) is pleased to submit this Vapor Intrusion Interim Measures (VIIM) Quarterly Report for activities completed between October 1, 2012 and December 31, 2012 in conjunction with the site referenced above. The VIIM Quarterly Report presents a summary of activities related to the installation, operation, and monitoring of vapor mitigation systems in residential structures as requested by the EPA.

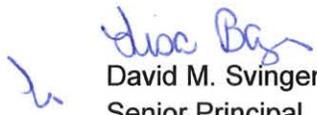
Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,

Terracon Consultants, Inc.



Michael E. Hagemeister
Senior Principal



David M. Svingen, P.E., P.G.
Senior Principal

MEH/JRB/DMS

Distribution: Addressee (1 bound)

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Exhibit 1 – Site Location Topographic Map

Exhibit 2 – Site Plan

ACRONYMS & ABBREVIATIONS

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
 City City of Waterloo
 COC.....Chain of Custody
 EPA Environmental Protection Agency
 Facility Chamberlain Manufacturing facility
 HASP.....Health and Safety Plan
 NELAC.....National Environmental Laboratory Accreditation Conference
 PCETetrachloroethene (or Perchloroethene)
 PID..... Photoionization Detector
 ppm.....parts per million
 QA Quality Assurance
 QAM Quality Assurance Manual
 QAPP..... Quality Assurance Project Plan
 QC Quality Control
 RCRAResource Conservation and Recovery Act
 RSL..... Regional Screening Level
 SOPStandard Operating Procedure
 SOW Statement of Work
 TCE Trichloroethene
 TestAmerica..... TestAmerica, Inc.
 TSOP Terracon Standard Operating Procedure
 UAO.....Unilateral Administrative Order
 USEPA United States Environmental Protection Agency
 VIC..... Vapor Intrusion Characterization
 VIIM Vapor Intrusion Interim Measures
 VMS..... Vapor Mitigation System
 VOC..... Volatile Organic Compound

**VAPOR INTRUSION INTERIM MEASURES
QUARTERLY REPORT NO. 6
CHAMBERLAIN MANUFACTURING CORPORATION
FORMER FACILITY AT
550 ESTHER STREET
WATERLOO, IOWA**

**Terracon Project No. 07107020
January 31, 2013**

1.0 INTRODUCTION

Terracon has developed this VIIM Quarterly Report to identify interim remedial measures completed in residential structures in which vapor concentrations related to shallow groundwater contamination from the former Chamberlain Manufacturing Facility (Facility) exceed indoor air screening levels for the period of October 1, 2012 through December 31, 2012. This VIIM Quarterly Report is submitted in accordance with the requirements of the UAO, Docket Nos. RCRA 07-2010-002 and CERCLA 07-2010-005 dated April 20, 2010 and Task IA of the SOW attached to the UAO. Capitalized terms not defined herein have the definitions set forth in the UAO or the SOW.

When required per agreement with the USEPA, the VIIM Quarterly Report also provides a summary of indoor analytical results that have been obtained from the residences sampled for the above-referenced report period. Residences did not require sampling this period so determinations related to the installation of vapor mitigation based on concentrations were not applicable.

1.1 Site Conditions

The Facility is an irregularly shaped parcel containing approximately 22.8 acres and located at 550 Esther Street in Waterloo, Iowa. A Topographic Vicinity Map is included as Exhibit 1 in Appendix A. A Site Diagram is included as Exhibit 2.

The Facility manufactured metal washer wringers and projectile metal parts from approximately 1919 until 1996 when it was sold to Atlas Warehouse L.C. for use as a storage facility. The Facility was subsequently abandoned and is currently vacant. The City of Waterloo (City) acquired the Facility from Atlas Warehouse L.C in 2005 in an effort to facilitate redevelopment and has demolished a significant portion of the Facility.

The Facility is zoned Heavy Industrial (M-2) by the City. The Facility is adjoined by park land to the north and south, single family residential housing to the west, and Virden Creek followed by a golf course to the east. Virden Creek is within approximately 100 feet of the Facility at its closest point. Gates Park adjoins the Facility to the north across Louise Street, to the east across Virden Creek, and to the south across the railroad tracks. Single family residences are located across East 4th Street to the west of the Facility. Single family residences are also located along the east side of East 4th between Anita and Louise Streets.

1.2 Previous Assessment Activities

Beginning in 2004, the City conducted an environmental assessment of the site using a USEPA Brownfields Grant. Results of assessment activities identified impacts to soil and groundwater at the site including a chlorinated solvent plume that extends offsite to the south and west. Site assessment activities were not completed due to funding restrictions of the Brownfields Grant program.

Subsequently, environmental assessment activities of onsite soil and groundwater conditions and the offsite chlorinated solvent plume were completed by Chamberlain. The lateral extent of the chlorinated solvent plume has been determined to extend south and west from the Facility into an area of residential development. USEPA's preliminary evaluation of the vapor intrusion to indoor air pathway resulting from the groundwater plume identified the potential for vapor intrusion into residential structures.

To further evaluate the vapor intrusion pathway, the USEPA conducted subslab vapor sampling of selected residences in November 2008. Due to problems with the sampling and analysis equipment, the sampling activities were repeated in April/May 2009. Subslab vapor samples were collected from ten homes located along and near East 4th Street and analyzed for VOCs. In addition, one indoor air sample was collected from one of the ten homes. The results of sampling activities identified PCE and TCE in excess of subslab vapor screening levels. The elevated concentrations were generally located within the 2200, 2300, and 2400 block of East 4th Street.

In accordance with the approved VIC Work Plan, Terracon initially conducted vapor intrusion characterization at 22 residences that responded with completed Sampling Request Forms and Access Agreements from both the property owner and current renter. Initial subslab, indoor air, and ambient air sampling was conducted between April 25, 2011 and May 3, 2011. Additional indoor air samples were collected from four residences on June 16, 2011 and from one residence on September 14, 2011. Based on the analytical results, the reported concentrations of indoor air samples in seven residences were greater than the indoor air screening level. Subslab and indoor air sample results were presented in the VIC Report dated July 5, 2011.

In accordance with the approved VIC Report, Terracon offered vapor sampling to 14 additional residences located on the west side of the 300 block of Boston Avenue and the east side of the 400 block of Boston Avenue. Terracon also reoffered vapor sampling to those residences that did not respond to previous submittals and contacted residences that requested sampling through the USEPA or that had previously authorized sampling, but could not be reached to schedule an appointment. Supplemental subslab, indoor air, and ambient air sampling was conducted at nine residences between December 12, and December 14, 2011. Analytical results for subslab samples collected from two residences exceeded subslab screening levels and as such, additional indoor air samples were collected at these locations on March 23, 2012. Analytical results for supplemental sampling activities were submitted to the USEPA on April 19, 2012. During the second quarter 2012, indoor air samples were collected at Residences 48 and 73 and were reported in Terracon's July 19, 2012 VIIM Quarterly Report No. 4.

Terracon's October 29, 2012 VIIM Quarterly Report No. 5 summarized analytical results of a semi-annual air monitoring event that included eight homes. This report also included results of a routine annual interim mitigation system inspection.

1.3 Project Objectives

The objective of this VIIM Quarterly Report is to present the information required by Section 4.0 of the approved VIIM Work Plan dated October 14, 2010, revised on August 1, 2011, and amended July 19, 2011. This information includes system design "as-builts," information on the expected operational life of the system, a recommendation for the frequency for monitoring and maintaining the system, criteria for determining its effectiveness, a schedule for system replacement in whole or in part (as appropriate), the frequency of system inspection by the Respondent, the results of post-installation system monitoring and any approved deviations from the approved VIIM Work Plan.

2.0 SCOPE OF SERVICES

2.1 Mitigation Determination

During the fourth quarter 2012, sampling services were not required. As such, mitigation determinations were not made in the fourth quarter 2012 period.

The September 21, 2012 indoor air analytical results for basement sample at Residence No. 73 was below applicable screening levels. However, a duplicate sample was collected at this location and the duplicate sample indicated TCE at a concentration above the screening level concentration. Both of the September 21, 2012 air samples were analyzed for PCE, TCE, vinyl chloride, trans-1,2-dichloroethene (trans-DCE), cis-1,2-dichloroethene (cis-DCE), 1,1-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane (TCA), and 1,1,2-trichloroethane,

using EPA Method TO-15. In a letter dated October 31, 2012 and based on the September 21, 2012 analytical results, the USEPA offered the homeowner the option of semi-annual monitoring or the installation of an interim mitigation system. Based on email correspondence from Mr. Morrison to Mr. Hagemeister dated October 31, 2012, the homeowner of Residence No. 73 elected to have semi-annual sampling conducted instead of the installation of an interim mitigation system. As such, Residence No. 73 has been added to the routine semi-annual indoor air sampling program. The next event is scheduled for March 2013.

2.2 Site Access Protocol

When sampling is required, residences are contacted at least 48 hours in advance of system shut-down, sampling, or system inspection to arrange a time and date for proposed activities. Sampling activities were not required during this report period.

3.0 PROCEDURES FOR SYSTEM DESIGN, INSTALLATION AND COMMISSIONING

Vapor mitigation systems were not designed, installed, commissioned or decommissioned during the fourth calendar quarter of 2012.

4.0 COMPLETED SYSTEM INSTALLATIONS

Interim mitigation systems were previously offered to, accepted by, and installed at eight Residences. Interim mitigation systems were subsequently shut off at three Residences. Residences 4, 22, 28, 45, and 46 have active interim mitigation systems. System installations were not completed during the fourth calendar quarter of 2012.

5.0 COMPLETED SYSTEM INSPECTION AND REPAIR

In accordance with the approved VIIM Work Plan, system inspections are to occur on an annual basis following installation through the period of required operation. The purpose of the site inspection is to check each operating system for general condition using visual observation. The inspection includes checking for: proper operation of the blower, possible cracks or disconnections in visible piping, piping attachments, and checking manometer to confirm system

vacuum. The most recent inspection period occurred in September 2012 so the next scheduled inspection period will be August or September 2013.

The system at Residence 4 was also scheduled to be checked in September 2012. However, the former homeowner indicated that she had sold the home during our request for access. She indicated that she would locate and then provide the new owner contact information to Terracon. As of the date of this report, this new ownership information has not been provided.

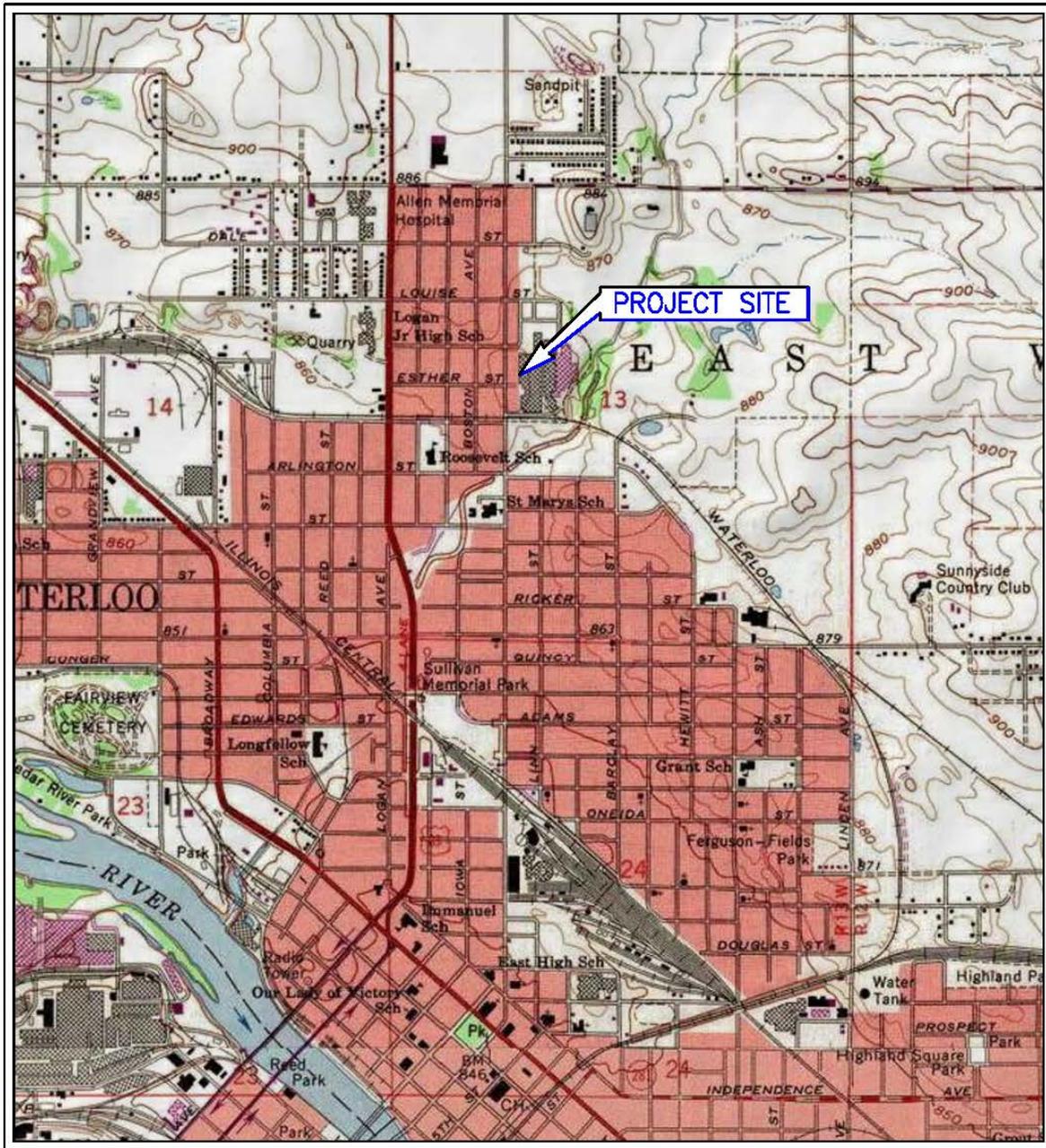
6.0 INDOOR AIR MONITORING RESULTS

During the fourth quarter 2012, sampling services were not required. As such, a discussion of analytical results is not required. The next sampling event is scheduled to occur in March 2013.

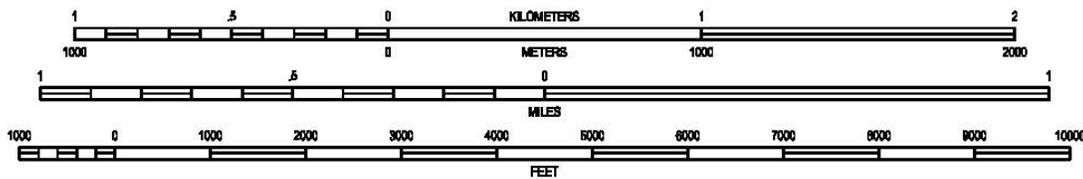
Appendix A – Exhibits

Exhibit 1 – Site Location Topographic Map

Exhibit 2 – Site Plan



SCALE 1:24,000



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

**WATERLOO NORTH, IOWA
QUADRANGLE
1972
7.5 MINUTE SERIES (TOPOGRAPHIC)**



US EPA ARCHIVE DOCUMENT

Project Mng:	MEH	Project No.	07107020
Drawn By:	PAI	Scale:	AS SHOWN
Checked By:	MEH	File No.	07107020C03
Approved By:	DMS	Date:	1/25/13

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SITE LOCATION TOPOGRAPHIC MAP
VIIM QUARTERLY REPORT NO. 6
FORMER CHAMBERLAIN MANUFACTURING FACILITY
550 ESTER STREET
WATERLOO IOWA

EXHIBIT
1

