Project Description (version 0, December 14, 2020)
Verona Well Field Superfund Site
Battle Creek, Michigan

Period of Performance: Date of Award – End of the period of performance.

SITE DESCRIPTION

The Verona Well Field Site is located in the northeast corner of the City of Battle Creek, Calhoun County, Michigan. The Site area and surrounding vicinity includes property used for industrial, commercial, and residential purposes. The Site includes three source areas: Thomas Solvent Raymond Road Area (TSRR), Annex, and Paint Shop, and the aquifer areas impacted by contamination from these source areas. In 1981-1982, one-third of the City of Battle Creek's water production wells and 80 private residential wells were found to be contaminated with volatile organic compounds (VOCs) including benzene, dichloroethanes, dichloroethylenes (DCE), methylene chloride, trichloroethylene (TCE), tetratchloroethylene (PCE), and vinyl chloride. Up to 356 µg/l of total VOCs were detected in some City production wells while nearly 1000 µg/l of total VOCs were detected in some residential wells. In the TSRR source area, contamination of the soil and groundwater resulted from leaks in the underground storage tanks, leaking drums, spills, and direct dumping onto the ground during drum and tank cleaning. Primary contaminants at the TSRR property were PCE, TCE, 1,1,1-trichloroethane, methylene chloride, acetone, methylethylketone, methylisobutyl-ketone, toluene, ethylbenzene, and xylenes. In the Annex source area, contamination of the soil and groundwater resulted from leaking drums, surface spills, and direct dumping during drum and tank cleaning. The primary groundwater contaminants were vinyl chloride, 1,2-DCE, TCE, PCE, toluene, ethylbenzene, and xylenes. Soil was contaminated primarily with PCE and TCE. In the Paint Shop source area, contamination resulted from dumping waste thinner and solvents onto the ground or into a drum pit for disposal. The primary contaminants were 1,2-DCE, 1,1,1-trichloroethane, PCE, 1,1,2,2-tetrachloroethane, ethylbenzene, and xylenes. Soil was primarily contaminated with PCE. Among the three identified source areas, TSRR had the most highly contaminated soil and groundwater.

The Site is divided into two operable units (OUs):

OU #1 includes the cleanup remedy for the TSRR area. Michigan Department of Environment, Great Lakes, and Energy (EGLE) performs State-lead, Fund-financed remedial activities in the TSRR source area.

OU #2 includes the remedy for the remainder of the Site including the Paint Shop and Annex source areas. The Potentially Responsible Parties (PRPs), collectively identified as the Verona Well Field Group (VWFG), conduct activities at the Annex and the well field. Grand Trunk Western Railroad is also part of the Verona Well Field Group and is the PRP conducting activities at the Paint Shop.

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The U.S. Environmental Protection Agency (EPA) has issued three Records of Decision (ROD) for this Site. On May 1, 1984, EPA signed an interim ROD for the Site. On August 12, 1985, EPA issued a second ROD for the Site to address the contamination at the TSRR property. On June 28, 1991, EPA issued the third ROD for the Site to address the contamination at the Paint Shop and Annex properties. EPA's selected remedy for the Site includes: two lines of blocking wells (northern and southern) to protect the City of Battle Creek water supply from contamination; cleanup of soil in the three source areas by air sparging systems; cleanup of groundwater in the three source areas and in downgradient areas by pump-and-treat; and, at the TSRR area, a soil vapor extraction system. The Site achieved construction completion with the signing of the Preliminary Close Out Report on June 26, 1997.

On February 19, 1992 and May 5, 1992, EPA issued Unilateral Administrative Orders (UAOs) to the Verona Well Field Group to implement the selected remedy. EPA subsequently issued three Explanations of Significant Difference (ESD) on September 9, 2003, September 29, 2008, and December 11, 2013. On January 26, 2006, the EPA and the Verona Well Field Group entered into a Consent Decree (CD) to replace the UAOs. In February 2006, the Verona Well Field Group, Grand Trunk Western Railroad, and the State also entered into a CD. Some of the remedial action required by the Michigan Department of Environmental Quality (MDEQ) exceeded the EPA ROD requirements. In addition, the City of Battle Creek entered into a CD with the Verona Well Field Group in 2006.

On June 15, 2016, based on site data, the air sparging and soil vapor extraction (AS/SVE) system was turned off at the TSRR source area to begin the assessment process for achievement of remediation goals. Verification of soil remediation sampling was completed in April 2018 to evaluate if vadose soil cleanup objections had been met at the TSRR property. Incremental sampling was selected to collect the verification of remediation soil samples. A conceptual site model was developed using historical data to identify appropriate Decision Units (DUs). The DUs included horizontal and vertical components to fully characterize the vadose zone soils on the TSRR property. Incremental soil samples were collected from a total of fifteen individual DUs to evaluate the effectiveness of remedial efforts. The results of the incremental soil sampling indicate that seven of the fifteen DUs had concentrations of contaminants of concern below clean-up objectives (CUOs) and no further remedial actions are necessary in those areas. The AS/SVE System was designed to treat soils at depths below 5-feet bgs. Consistent with the design, the effectiveness of AS/SVE System operation to remediate the soils 0 to 5 feet bgs has been minimal. The results of the soil sampling indicate that the upper 5 feet of soil across the entire sampled area contains PCE and/or TCE at levels exceeding 2013 source area CUOs (SCOUs). Of the ten DU's at depths greater than 5-feet bgs, incremental sampling results from 7 of the DUs do not exceed of 2013 SCUOs. As such, no further actions are necessary for these seven DU's. Incremental soil sample results from the remaining three deeper DUs indicate the operation of the AS/SVE System was not successful in remediating these soils to below 2013 SCUO values.

EPA is currently conducting a Focused Feasibility Study (FFS) for the TSRR source area. The objective of the selected remedy is the reduction of chlorinated volatile organic compound (CVOC) contamination in the source area soils to SCUOs at the TSRR property. EPA management is currently reviewing a draft FFS.

EPA anticipates issuing a ROD Amendment in September 2021 that addresses contaminants in soil at the TSRR property.

A Five-Year Review is due on September 13, 2022.

GENERAL REQUIREMENTS

EPA will provide the contractor with site documents prepared by the Verona Well Field Group (VWFG) (plans, data, reports, technical memoranda, etc.) related to the site activities for its review and comment in accordance with the requirements below and the Task Order level SOW requirements for each task. In addition to requirements listed under each task, when requested by EPA, the contractor shall evaluate related comments and recommendations made by other site stakeholders, and identified by EPA for evaluation, and integrate them into a unified set of comments. This shall typically be part of another technical memorandum or other written deliverable listed in the table at the end of this Project Description.

As requested, the contractor shall participate in and provide technical support during site status conference calls, as well as participate in meetings and/or conference calls related to the site activities described under the following tasks. For planning/estimating purposes, contractor may assume a realistic effort under each task for calls/meetings.

2.1 Mapping Hydraulic Gradients

When requested by EPA, the contractor shall perform mapping of the hydraulic gradient. The contractor's initial mapping under this Task shall integrate new data acquired since the 2017 Five Year Review (FYR), including results from five (5) annual groundwater monitoring reports. The contractor shall present its mapping results in a web-based GIS tool to facilitate visualization.

There are currently eight (8) southern blocking wells and one (1) active northern blocking well. The northern blocking well was restarted in 2016 due to a detection of cis-1,2-DCE. The following scenarios are expected:

- PRPs request to shut down the active northern blocking well.
- PRPs request to shut down one or more of the southern blocking wells.

When requested by EPA, the contractor shall prepare updates to its mapping of the hydraulic gradient. The web-based GIS mapping tool shall show the expected changes to the plume as a result of proposed changes to the extraction well network. For planning and estimating purposes the contractor may assume an update shall be required, based on the above two (2) scenarios, three (3) times during the period of performance.

With the initial mapping effort under this Task, and each time an update to the mapping is performed, an explanation of the results with any comments and recommendations shall be provided to EPA in the form of a technical memorandum.

2.2 Optimizing Groundwater Monitoring Networks

When requested by EPA, the contractor shall review and comment on remedy modification proposals made by the VWFG to EPA. Such PRP remedy modification proposals are anticipated to concern modifications to the groundwater monitoring network, such as changes to the groundwater monitoring well network, monitoring well decommission, or additional monitoring well installation. The contractor shall review each PRP proposal as per the Task Order level SOW for this Task and provide its findings and recommendations to EPA in a technical memorandum. For planning and estimating purposes, the contractor may assume its support shall be required for review of three (3) PRP remedy modification proposals during the period of performance.

2.3 Evaluating Remedy Effectiveness and Remedial Progress

The contractor shall evaluate the remedy effectiveness and remedial progress, analyze remedy effectiveness, and produce updated model simulation results as per the Task Order level SOW for this Task.

Contractor shall review existing site reports including five (5) groundwater monitoring reports and other PRP and EGLE site data, such as additional water quality or hydraulic data. Evaluation shall include:

- Data review of available groundwater monitoring sampling results, with a focus on a review of data trends since the 2017 FYR.
- Detailed evaluation of the effectiveness of the current remedies and recommendations to improve efficacy of the current remedies.

The contractor shall present findings and recommendations to EPA in a Remedy Effectiveness Report.

When requested by EPA, the contractor shall provide technical support in addressing questions or comments, such as from EGLE or the public related to the review of the draft proposed plan and draft ROD Amendment. For planning and estimating purposes, the contractor may assume this type of technical support shall be required six (6) times during the period of performance.

2.4 Optimizing Remedial Actions

N/A

2.5 Review and Comment on Site Reports

The contractor shall review and comment on draft and revised forms of each year's annual monitoring reports. When reviewing each report iteration (draft and final), written comments shall be provided to the RPM via email and a conference call of up to 30 minutes per report to discuss issues on each report.

When requested, the contractor shall review quarterly progress reports and flag issues, which shall be provided as list of comments via email to EPA.

For planning and estimating purposes, the contractor may assume one (1) annual monitoring report each year and one quarterly progress report per quarter (4 per year), during the period of performance.

The contractor shall review and provide comments on other site reports such as PRP plans/proposals/reports when requested by EPA. Comments shall be provided in the form of a technical memorandum. For planning and estimating purposes, assume 40 hours for review of other site reports.

2.6 Developing Standard Methods of Determining EVS/MVS Parameters

N/A

2.7 Data Management, Methods, Procedures

N/A

2.8 Data Entry/Data Quality Control

N/A

2.9 Data System Reporting, Development or Maintenance

N/A, Note: For budgeting/estimating purposes, nothing under this Task. All of the mapping effort including web-based GIS tool shall be accounted for under Task 2.1.

3 Status Reporting

Provide monthly status and progress reporting consistent with Task Order level work statement requirements.

Costs incurred under this Project shall be allocated as follows for purposes of tracking and recording in each month's Site Specific Detail Report:

SSID: 0551
(for all costs under this Project)

Action Code:
TA (for all costs under this project)

Operable Unit:
OU00 (Sitewide)
N/A

OU01 TSRR Source Area:

100% of costs where support effort pertains only to OU01.
50% of costs where support effort pertains to entire site.

OU02:

100% of costs where support effort pertains only to OU02.
50% of costs where support effort pertains to entire site.

MAJOR DELIVERABLES

All written deliverables shall be provided via email or as electronic copies attached to email, except if otherwise requested by EPA for a hard copy/paper copy, or impractical, such as due to format/file size.

Results of reviews or analysis may be combined into a single document or separated into more than one document depending on the most effective and efficient approach to documenting the findings/results/explanations.

A summary of the major tasks and deliverables is included below.

Days are defined as calendar days.

WORK ITEM #	DELIVERABLE DESCRIPTION	PLANNED DELIVERY DATE
2.1	**Mapping Hydraulic Gradients**	
	Mapping presented in web-based GIS tool, updates to mapping	90 days from EPA request for initial mapping; 60 days from EPA request for updates.
	Technical memos on mapping results, and each update	90 days from EPA request for initial mapping; 60 days from EPA request for updates.
2.2	**Optimizing Groundwater Monitoring Network**	
	Technical Memoranda on reviews of PRP Proposals	Within 30 days of EPA request and receipt of PRP document

WORK ITEM #	DELIVERABLE DESCRIPTION	PLANNED DELIVERY DATE
2.3	**Evaluating Remedy Effectiveness and Remedial Progress** Email with answers, comments, or recommendations Remedy Effectiveness Report	 Within 7 days of EPA request January 31, 2021. (Eight (8) months prior to EPA's due date for Five Year Review Report)
2.5	**Review and Comment on Site Reports** Technical memoranda on draft and revised Site Reports/PRP documents	 Within 30 days of receipt of Site Report or PRP document and EPA request
3	**Status Reporting (Monthly)**	15th of the month