UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA

UNITED STATES OF AMERICA,

Plaintiff,

v. Case No. 2:23-cv-463

CR-TROY, INC.,

GCSC ENTERPRISES, INC.,

MACHINE TOOL SERVICE, INC.,

and VALVOLINE LLC,

Defendants.

CONSENT DECREE FOR REMEDIAL ACTION/REMEDIAL DESIGN

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INTRODUCTION

WHEREAS, the United States of America ("United States"), on behalf of the Administrator of the United States Environmental Protection Agency ("EPA"), filed a complaint in this matter under Sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA").

WHEREAS, the United States in its complaint seeks, *inter alia*: (1) reimbursement of costs incurred by EPA and the Department of Justice ("DOJ") for response actions at the Terre Haute Groundwater Contamination Superfund Site in Terre Haute, Vigo County, Indiana ("Site"), together with accrued interest; and (2) performance by the defendants of a response action at the Site consistent with the National Contingency Plan, 40 C.F.R. Part 300 ("NCP").

WHEREAS, in accordance with the NCP and Section 121(f)(1)(F) of CERCLA, EPA notified the State of Indiana ("State") on August 22, 2022, of negotiations with potentially responsible parties ("PRPs") regarding the implementation of the remedial design and remedial action ("RD/RA") for the Site, and EPA has provided the State with an opportunity to participate in such negotiations and to be a party to this Consent Decree ("Decree").

WHEREAS, in accordance with Section 122(j)(1) of CERCLA, EPA notified the United States Department of the Interior on August 22, 2022, of negotiations with PRPs regarding the release of hazardous substances that may have resulted in injury to the natural resources under federal trusteeship and encouraged the trustee(s) to participate in the negotiation of this Decree.

WHEREAS, the defendants that have entered into this Decree ("Settling Defendants") do not admit any liability to Plaintiff arising out of the transactions or occurrences alleged in the complaint, nor do they acknowledge that the release or threatened release of hazardous

substance(s) at or from the Site constitutes an imminent and substantial endangerment to the public health or welfare or the environment.

WHEREAS, in accordance with Section 105 of CERCLA, EPA listed the Site on the National Priorities List ("NPL"), set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on March 7, 2007, 72 Fed. Reg. 10,078 (Mar. 7, 2007).

WHEREAS, in response to a release or a substantial threat of a release of hazardous substances at or from the Site, EPA completed a Remedial Investigation for the Site on December 2, 2016, and a Feasibility Study for the Site on July 20, 2017, in accordance with 40 C.F.R. § 300.430.

WHEREAS, in accordance with Section 117 of CERCLA and 40 C.F.R § 300.430(f), EPA published notice of the completion of the Feasibility Study and of the proposed plan for remedial action on August 6, 2017, in a major local newspaper of general circulation. EPA provided an opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy of the transcript of the public meeting and comments received are available to the public as part of the administrative record upon which the Regional Administrator, EPA Region 5, based the selection of the response action.

WHEREAS, EPA selected a remedial action to be implemented at the Site, which is embodied in a final Record of Decision ("Record of Decision"), executed on September 26, 2017. The Record of Decision includes a summary of responses to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA. The State of Indiana has concurred with the Record of Decision.

WHEREAS, Settling Defendants and EPA entered into an Administrative Settlement Agreement and Order on Consent for Remedial Design (the "AOC"), CERCLA Docket No. V-

W-19-C-004, effective February 21, 2019. The AOC provided for the performance of a Remedial Design ("RD") by Settling Defendants at the Site and the payment of Future Response Costs, as that term is defined therein.

WHEREAS, on April 28, 2022, EPA approved the revised Final 100% Remedial Design document ("Approved RD") submitted by Settling Defendants under the AOC.

WHEREAS, the Approved RD includes the final remedial design for the actions described in Section 1.4 of the Record of Decision, excluding the soil vapor extraction remedial action component described in ¶ 1.1(b) of the SOW (the "SVE Remedy"), design and implementation of which is being deferred until further data is collected after soil excavation is performed, and certain triggering conditions in the Approved RD are met. If such triggering conditions for implementation of the SVE Remedy are not met, then EPA will propose a modification of the selected remedy set forth in the ROD, including to potentially no longer require the SVE Remedy.

WHEREAS, by letter dated July 14, 2022, EPA provided notice to Settling Defendants pursuant to Section 3.9 of the AOC that all RD work had been fully performed in accordance with the AOC and the associated Statement of Work.

WHEREAS, based on the information currently available, EPA has determined that the Work will be properly and promptly conducted by Settling Defendants if conducted in accordance with this Decree.

WHEREAS, the Parties recognize, and the Court by entering this Decree finds, that this Decree has been negotiated by the Parties in good faith, that implementation of this Decree will expedite the cleanup of the Site and will avoid prolonged and complicated litigation between the

Parties, and that this Decree is fair, reasonable, in the public interest, and consistent with CERCLA.

NOW, THEREFORE, it is hereby ORDERED and DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action under 28 U.S.C. §§ 1331 and 1345, and Sections 106, 107 and 113(b) of CERCLA, and personal jurisdiction over the Parties. Venue lies in this District under Section 113(b) of CERCLA and 28 U.S.C. §§ 1391(b), and 1395(a), because the Site is located in this judicial district. This Court retains jurisdiction over the subject matter of this action and over the Parties for the purpose of resolving disputes arising under this Decree, entering orders modifying this Decree, or effectuating or enforcing compliance with this Decree. Settling Defendants may not challenge the terms of this Decree or this Court's jurisdiction to enter and enforce this Decree.

II. PARTIES BOUND

2. This Decree is binding upon the United States and upon Settling Defendants and their successors. Unless the United States otherwise consents, (a) any change in ownership or corporate or other legal status of any Settling Defendant, including any transfer of assets, or (b) any Transfer of the Site or any portion thereof, does not alter any of Settling Defendants' obligations under this Decree. Settling Defendants' responsibilities under this Decree cannot be assigned except under a modification executed in accordance with ¶ 68.

3. In any action to enforce this Decree, Settling Defendants may not raise as a defense the failure of any of their officers, directors, employees, agents, contractors, subcontractors, or any person representing Settling Defendants to take any action necessary to comply with this Decree. Settling Defendants shall provide notice of this Decree to each person representing Settling Defendants with respect to the Site or the Work. Settling Defendants shall

provide notice of this Decree to each contractor performing any Work and shall ensure that notice of the Decree is provided to each subcontractor performing any Work.

III. DEFINITIONS

4. Subject to the next sentence, terms used in this Decree that are defined in CERCLA or the regulations promulgated under CERCLA have the meanings assigned to them in CERCLA and the regulations promulgated under CERCLA. Whenever the terms set forth below are used in this Decree, the following definitions apply:

"CERCLA" means the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675.

"Consent Decree" or "Decree" means this consent decree, all appendixes attached hereto (listed in Section XVIII), and all deliverables incorporated into the Decree under ¶¶ 5.8 and 7.7 of the SOW. If there is a conflict between a provision in Sections I through XXIII of the Decree and a provision in any appendix or deliverable, the provision in Sections I through XXIII of the Decree controls.

"Day" or "day" means a calendar day. In computing any period under this Decree, the day of the event that triggers the period is not counted and, where the last day is not a working day, the period runs until the close of business of the next working day. "Working day" means any day other than a Saturday, Sunday, or federal or State holiday.

"DOJ" means the United States Department of Justice.

"Effective Date" means the date upon which the Court's approval of this Decree is recorded on its docket.

"EPA" means the United States Environmental Protection Agency.

"Fund" means the Hazardous Substance Superfund established under Section 9507 of the Internal Revenue Code, 26 I.R.C. § 9507.

"Future Response Costs" means all costs (including direct, indirect, payroll, contractor, travel, and laboratory costs) that the United States: (a) pays between March 1, 2022 and the Effective Date; and (b) pays after the Effective Date in implementing, overseeing, or enforcing this Decree, including: (i) in developing, reviewing and approving deliverables generated under this Decree; (ii) in overseeing Settling Defendants' performance of the Work; (iii) in assisting or taking action to obtain access or use restrictions under ¶ 12.e; (iv) in securing, implementing, monitoring, maintaining, or enforcing Institutional Controls, including any compensation paid; (v) in taking action under ¶ 21 (Access to Financial Assurance); (vi) in taking response action described in ¶ 50 because of Settling Defendants' failure to take emergency action under ¶ 4.4 of the SOW; (vii) in implementing a Work Takeover under ¶ 11; (viii) in implementing community involvement activities including the cost of any technical assistance grant provided under Section 117(e) of CERCLA; (ix) in enforcing this Decree, including all costs paid under Section XI (Dispute Resolution) and all litigation costs; and (x) in conducting periodic reviews in accordance with Section 121(c) of CERCLA. Future Response Costs also includes all Interest accrued after February 28, 2022 on EPA's unreimbursed costs (including Past Response Costs) under Section 107(a) of CERCLA.

"Including" or "including" means "including but not limited to."

"Institutional Controls" means Proprietary Controls (*i.e.*, easements or covenants running with the land that (i) limit land, water, or other resource use, provide access rights, or both and (ii) are created under common law or statutory law by an instrument that is recorded, or for which notice is recorded, in the appropriate land records office) and state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices that: (a) limit land, water, or other resource use to minimize the potential for human exposure to

Waste Material at or in connection with the Site; (b) limit land, water, or other resource use to implement, ensure noninterference with, or ensure the protectiveness of the Remedial Action; (c) provide information intended to modify or guide human behavior at or in connection with the Site; or (d) any combination thereof.

"Interest" means interest at the rate specified for interest on investments of the Fund, as provided under Section 107(a) of CERCLA, compounded annually on October 1 of each year. The applicable rate of interest will be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year. As of the date of lodging of this Decree, rates are available online at https://www.epa.gov/superfund/superfund-interest-rates.

"National Contingency Plan" or "NCP" means the National Oil and Hazardous Substances Pollution Contingency Plan promulgated under Section 105 of CERCLA, codified at 40 C.F.R. Part 300, and any amendments thereto.

"Owner Settling Defendants" means the following Settling Defendants who own or control portions of the Site: GCSC Enterprises, Inc. (f/k/a Gurman Container and Supply Corporation), Valvoline LLC, and Machine Tool Service, Inc.

"Paragraph" or "¶" means a portion of this Decree identified by an Arabic numeral or an upper- or lower-case letter.

"Parties" means the United States and Settling Defendants.

"Past Response Costs" means all costs (including direct, indirect, payroll, contractor, travel, and laboratory costs) that the United States paid in connection with the Site through February 28, 2022, plus all interest on such costs accrued under Section 107(a) of CERCLA through such date.

"Performance Standards" means the cleanup levels and other measures of achievement of the remedial action objectives, as set forth in the Record of Decision.

"Plaintiff" means the United States.

"RCRA" means the Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992k, (also known as the Resource Conservation and Recovery Act).

"Record of Decision" means the EPA decision document that memorializes the selection of the remedial action relating to the Site signed on September 26, 2017, by the Acting Director of the Superfund Division, EPA Region 5, and all attachments thereto. The Record of Decision is attached as Appendix A.

"Remedial Action" means the remedial action selected in the Record of Decision.

"Remedial Design" means those activities to be undertaken by Settling Defendants to develop plans and specifications for implementing the Remedial Action as set forth in the SOW.

"Scope of the Remedy" means the scope of the remedy set forth in ¶ 1.1 of the SOW.

"Section" means a portion of this Decree identified by a Roman numeral.

"Settling Defendants" means CR-Troy, Inc. (f/k/a/ Consolidated Recycling Company, Inc.), GCSC Enterprises, Inc. (f/k/a Gurman Container and Supply Corporation), Machine Tool Service, Inc., and Valvoline LLC. As used in this Decree, this definition means all settling defendants, collectively, and each settling defendant, individually.

"Site" means the Elm Street Groundwater Contamination Superfund Site, comprising approximately 9 acres, located in Terre Haute, Vigo County, Indiana, and depicted generally on the map attached as Appendix C.

"Special Account" means the special account, within the Fund, established for the Site by EPA under Section 122(b)(3) of CERCLA.

"State" means the State of Indiana.

"Statement of Work" or "SOW" means the document attached as Appendix B, which describes the activities Settling Defendants must perform to implement and maintain the effectiveness of the Remedial Action.

"Transfer" means to sell, assign, convey, lease, mortgage, or grant a security interest in, or where used as a noun, a sale, assignment, conveyance, or other disposition of any interest by operation of law or otherwise.

"United States" means the United States of America and each department, agency, and instrumentality of the United States, including EPA.

"Waste Material" means (a) any "hazardous substance" under Section 101(14) of CERCLA; (b) any pollutant or contaminant under Section 101(33) of CERCLA; (c) any "solid waste" under Section 1004(27) of RCRA; and (d) any "hazardous waste" under Ind. Code § 13-11-2-99.

"Work" means all obligations of Settling Defendants under Sections V (Performance of the Work) through VIII (Indemnification and Insurance).

"Work Takeover" means EPA's assumption of the performance of any of the Work in accordance with ¶ 11.

IV. OBJECTIVES

5. The objectives of the Parties in entering into this Decree are to protect public health, welfare, and the environment through the design, implementation and maintenance of a response action at the Site by Settling Defendants, to pay response costs of Plaintiff, and to resolve and settle the claims of Plaintiff against Settling Defendants as provided in this Decree.

V. PERFORMANCE OF THE WORK

6. Settling Defendants shall finance, develop, implement, operate, maintain, and monitor the effectiveness of the Remedial Action all in accordance with the SOW, any modified SOW and all EPA-approved, conditionally approved, or modified deliverables as required by the SOW or modified SOW.

7. Nothing in this Decree and no EPA approval of any deliverable required under this Decree constitutes a warranty or representation by EPA that completion of the Work will achieve the Performance Standards.

8. Settling Defendants' obligations to finance and perform the Work and to pay amounts due under this Decree are joint and several. In the event of the insolvency of any Settling Defendant or the failure by any Settling Defendant to participate in the implementation of the Decree, the remaining Settling Defendants shall complete the Work and make the payments.

9. **Modifications to the Remedial Action and Further Response Actions**

a. Nothing in this Decree limits EPA's authority to modify the Remedial Action or to select further response actions for the Site in accordance with the requirements of CERCLA and the NCP. Nothing in this Decree limits Settling Defendants' rights, under Sections 113(k)(2) or 117 of CERCLA, to comment on any modified or further response actions proposed by EPA.

b. If EPA modifies the Remedial Action in order to achieve or maintain the Performance Standards, or both, or to carry out and maintain the effectiveness of the Remedial Action, and such modification is consistent with the Scope of the Remedy, then Settling Defendants shall implement the modification as provided in ¶ 9.d.

c. If EPA selects a further response action for the Site because a reopener condition in ¶ 48 is satisfied, then, subject to ¶ 68, Settling Defendants shall implement the further response action as provided in ¶ 9.d.

d. Upon receipt of notice from EPA that it has modified the Remedial Action as provided in ¶ 9.b or selected a further response action as provided in ¶ 9.c and requesting that Settling Defendants implement the modified Remedial Action or further response action, Settling Defendants shall implement the modification or further response action, subject to their right to initiate dispute resolution under Section XI within 30 days after receipt of EPA's notice. Settling Defendants shall modify the SOW, or related work plans, or both in accordance with the Remedial Action modification or further response action or, if Settling Defendants invoke dispute resolution, in accordance with the final resolution of the dispute. The Remedial Action modification or further response action, the approved modified SOW, and any related work plans will be deemed to be incorporated into and enforceable under this Decree.

10. **Compliance with Applicable Law**. Nothing in this Decree affects Settling Defendants' obligations to comply with all applicable federal and state laws and regulations. Settling Defendants must also comply with all applicable or relevant and appropriate requirements of all federal and state environmental laws as set forth in the Record of Decision and the SOW. The activities conducted in accordance with this Decree, if approved by EPA, will be deemed to be consistent with the NCP as provided under Section 300.700(c)(3)(ii).

11. **Work Takeover**

a. If EPA determines that Settling Defendants (i) have ceased to perform any of the Work required under this Section; (ii) are seriously or repeatedly deficient or late in performing the Work required under this Section; or (iii) are performing the Work required under

this Section in a manner that may cause an endangerment to human health or the environment, EPA may issue a notice of Work Takeover to Settling Defendants, including a description of the grounds for the notice and a period of time ("Remedy Period") within which Settling Defendants must remedy the circumstances giving rise to the notice. The Remedy Period will be 20 days, unless EPA determines in its unreviewable discretion that there may be an endangerment, in which case the Remedy Period will be 10 days.

b. If, by the end of the Remedy Period, Settling Defendants do not remedy to EPA's satisfaction the circumstances giving rise to the notice of Work Takeover, EPA may notify Settling Defendants and, as it deems necessary, commence a Work Takeover.

c. EPA may conduct the Work Takeover during the pendency of any dispute under Section XI but shall terminate the Work Takeover if and when: (i) Settling Defendants remedy, to EPA's satisfaction, the circumstances giving rise to the notice of Work Takeover; or (ii) upon the issuance of a final determination under Section XI (Dispute Resolution) that EPA is required to terminate the Work Takeover.

VI. PROPERTY REQUIREMENTS

12. **Agreements Regarding Access and Noninterference**

a. As used in this Section, "Affected Property" means any real property, including the Site, where EPA determines, at any time, that access; land, water, or other resource use restrictions; Institutional Controls; or any combination thereof, are needed to implement the Remedial Action.

b. Settling Defendants shall use best efforts to secure from the owner(s), other than an Owner Settling Defendants, of all Affected Property, an agreement, enforceable by Settling Defendants and by Plaintiff, requiring such owner to provide Plaintiff and Settling Defendants, and their respective representatives, contractors, and subcontractors with access at

all reasonable times to such owner's property to conduct any activity regarding the Decree, including the following:

(1) implementing the Work and overseeing compliance with the Decree;

(2) conducting investigations of contamination at or near the Site;

(3) assessing the need for, planning, or implementing additional response actions at or near the Site;

(4) determining whether the Site is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted under the Decree; and

(5) implementing, monitoring, maintaining, reporting on, and enforcing any land, water, or other resource use restrictions and Institutional Controls.

c. Further, each agreement required under ¶ 12.b must commit the owner to refrain from using its property in any manner that EPA determines will pose an unacceptable risk to human health or to the environment as a result of exposure to Waste Material, or will interfere with or adversely affect the implementation, integrity, or protectiveness of the Remedial Action, including the following:

(1) engaging in activities that could interfere with the Remedial Action;

(2) using contaminated groundwater;

(3) engaging in activities that could result in human exposure to contaminants in soils and groundwater;

(4) constructing new structures that may interfere with the Remedial Action; and

(5) constructing new structures that may cause an increased risk of inhalation of contaminants.

d. As used in this Section, "best efforts" means the efforts that a reasonable person in the position of Settling Defendants would use to achieve the goal in a timely manner, including the cost of employing professional assistance and the payment of reasonable sums of money to secure access and/or use restriction agreements.

e. Settling Defendants shall provide to EPA a copy of each agreement required under ¶ 12.b. If Settling Defendants cannot accomplish what is required through best efforts in a timely manner, they shall notify EPA, and include a description of the steps taken to achieve the requirements. If the United States deems it appropriate, it may assist Settling Defendants, or take independent action, to obtain such access or use restrictions.

13. **Access and Noninterference by Owner Settling Defendant**. The Owner Settling Defendants shall: (a) provide Plaintiff and the Settling Defendants, and their representatives, contractors, and subcontractors with access at all reasonable times to the Site to conduct any activity regarding the Decree, including those listed in ¶ 12.b; and (b) refrain from using the Site in any manner that EPA determines will pose an unacceptable risk to human health or to the environment because of exposure to Waste Material, or will interfere with or adversely affect the implementation, integrity, or protectiveness of the Remedial Action, including the restrictions listed in ¶ 12.c.

14. If EPA determines in a decision document prepared in accordance with the NCP that Institutional Controls in the form of state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices are appropriate, Settling Defendants shall cooperate with EPA's efforts to secure and ensure compliance with such Institutional Controls.

15. Notwithstanding any provision of the Decree, EPA retains all of its access authorities and rights, as well as all of its rights to require land, water, or other resource use restrictions and Institutional Controls, including related enforcement authorities, under CERCLA, RCRA, and any other applicable statute or regulations.

VII. FINANCIAL ASSURANCE

16. To ensure completion of the Work required under Section V, Settling Defendants shall secure financial assurance, initially in the amount of $ $1,050,000 ("Estimated Cost of the

Work"), for the benefit of EPA. The financial assurance must: (i) be one or more of the mechanisms listed below, in a form substantially identical to the relevant sample documents available from EPA; and (ii) be satisfactory to EPA. As of the date of lodging of this Decree, the sample documents can be found under the "Financial Assurance - Settlements" category on the Cleanup Enforcement Model Language and Sample Documents Database at https://cfpub.epa.gov/compliance/models/. Settling Defendants may use multiple mechanisms if they are limited to surety bonds guaranteeing payment, letters of credit, trust funds, insurance policies, or some combination thereof. The following are acceptable mechanisms:

a. a surety bond guaranteeing payment, performance of the Work, or both, that is issued by a surety company among those listed as acceptable sureties on federal bonds as set forth in Circular 570 of the U.S. Department of the Treasury;

b. an irrevocable letter of credit, payable to EPA or at the direction of EPA, that is issued by an entity that has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency;

c. a trust fund established for the benefit of EPA that is administered by a trustee that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency;

d. a policy of insurance that provides EPA with acceptable rights as a beneficiary thereof and that is issued by an insurance carrier that has the authority to issue insurance policies in the applicable jurisdiction(s) and whose insurance operations are regulated and examined by a federal or state agency;

e. a demonstration by one or more Settling Defendants that they meet the relevant test criteria of ¶ 17, accompanied by a standby funding commitment that requires the

affected Settling Defendants to pay funds to or at the direction of EPA, up to the amount financially assured through the use of this demonstration in the event of a Work Takeover; or

f. a guarantee to fund or perform the Work executed in favor of EPA by a company: (1) that is a direct or indirect parent company of a Settling Defendant or has a "substantial business relationship" (as defined in 40 C.F.R. § 264.141(h)) with a Settling Defendant; and (2) demonstrates to EPA's satisfaction that it meets the financial test criteria of ¶ 17.

17. Settling Defendants seeking to provide financial assurance by means of a demonstration or guarantee under ¶ 16.e or ¶ 16.f must, within 30 days after the Effective Date:

a. demonstrate that:

(1) the affected Settling Defendant or guarantor has:

i. two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

ii. net working capital and tangible net worth each at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and

iii. tangible net worth of at least $10 million; and

iv. assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; or

(2) the affected Settling Defendant or guarantor has:

i. a current rating for its senior unsecured debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's; and

ii. tangible net worth at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and

iii. tangible net worth of at least $10 million; and

iv. assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and

b. submit to EPA for the affected Settling Defendant or guarantor: (1) a copy of an independent certified public accountant's report of the entity's financial statements for the latest completed fiscal year, which must not express an adverse opinion or disclaimer of opinion; and (2) a letter from its chief financial officer and a report from an independent certified public accountant substantially identical to the sample letter and reports available from EPA. As of the date of lodging of this Decree, a sample letter and report is available under the "Financial Assurance - Settlements" subject list category on the Cleanup Enforcement Model Language and Sample Documents Database at https://cfpub.epa.gov/compliance/models/.

18. Settling Defendants providing financial assurance by means of a demonstration or guarantee under ¶ 16.e or ¶ 16.f must also:

a. annually resubmit the documents described in ¶ 17.b within 90 days after the close of the affected Settling Defendant's or guarantor's fiscal year;

b. notify EPA within 30 days after the affected Settling Defendant or guarantor determines that it no longer satisfies the relevant financial test criteria and requirements set forth in this Section; and

c. provide to EPA, within 30 days of EPA's request, reports of the financial condition of the affected Settling Defendant or guarantor in addition to those specified in ¶ 17.b;

EPA may make such a request at any time based on a belief that the affected Settling Defendant or guarantor may no longer meet the financial test requirements of this Section.

19. Settling Defendants shall, within 30 days after the Effective Date, seek EPA's approval of the form of Settling Defendants' financial assurance. Within 30 days after such approval, Settling Defendants shall secure all executed or otherwise finalized mechanisms or other documents consistent with the EPA-approved form of financial assurance and shall submit such mechanisms and documents to the Regional Financial Management Officer, to DOJ, and to EPA in accordance with ¶ 66.

20. Settling Defendants shall diligently monitor the adequacy of the financial assurance. If any Settling Defendant becomes aware of any information indicating that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, such Settling Defendant shall notify EPA of such information within seven days. If EPA determines that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, EPA will notify the affected Settling Defendant of such determination. Settling Defendants shall, within 30 days after notifying EPA or receiving notice from EPA under this Paragraph, secure and submit to EPA for approval a proposal for a revised or alternative financial assurance mechanism that satisfies the requirements of this Section. EPA may extend this deadline for such time as is reasonably necessary for the affected Settling Defendant, in the exercise of due diligence, to secure and submit to EPA a proposal for a revised or alternative financial assurance mechanism, not to exceed 60 days. Settling Defendants shall follow the procedures of ¶ 22 in seeking approval of, and submitting documentation for, the revised or alternative financial assurance mechanism.

Settling Defendants' inability to secure financial assurance in accordance with this Section does not excuse performance of any other requirement of this Decree.

21. **Access to Financial Assurance**

a. If EPA issues a notice of a Work Takeover under ¶ 11.b, then, in accordance with any applicable financial assurance mechanism including the related standby funding commitment, EPA may require that any funds guaranteed be paid in accordance with ¶ 21.d.

b. If EPA is notified that the issuer of a financial assurance mechanism intends to cancel the mechanism, and the affected Settling Defendant fails to provide an alternative financial assurance mechanism in accordance with this Section at least 30 days prior to the cancellation date, the funds guaranteed under such mechanism must be paid prior to cancellation in accordance with ¶ 21.d.

c. If, upon issuance of a notice of a Work Takeover under ¶ 11.b, either: (1) EPA is unable for any reason to promptly secure the resources guaranteed under any applicable financial assurance mechanism including the related standby funding commitment, whether in cash or in kind, to continue and complete the Work; or (2) the financial assurance is a demonstration or guarantee under ¶ 16.e or 16.f, then EPA is entitled to demand an amount, as determined by EPA, sufficient to cover the cost of the remaining Work to be performed. Settling Defendants shall, within 15 days after such demand, pay the amount demanded as directed by EPA.

d. Any amounts required to be paid under this ¶ 21 must be, as directed by EPA: (i) paid to EPA in order to facilitate the completion of the Work by EPA or by another person; or (ii) deposited into an interest-bearing account, established at a duly chartered bank or

trust company that is insured by the FDIC, in order to facilitate the completion of the Work by another person. If payment is made to EPA, EPA may deposit the payment into the Fund or into the Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the Fund.

22. **Modification of Amount, Form, or Terms of Financial Assurance**. Beginning after the first anniversary of the Effective Date, and no more than once per calendar year, Settling Defendants may submit a request to change the form, terms, or amount of the financial assurance mechanism. Any such request must be submitted to EPA in accordance with ¶ 19, and must include an estimate of the cost of the remaining Work, an explanation of the bases for the cost calculation, and a description of the proposed changes, if any, to the form or terms of the financial assurance. EPA will notify Settling Defendants of its decision regarding the request. Settling Defendants may initiate dispute resolution under Section XI regarding EPA's decision within 30 days after receipt of the decision. Settling Defendants may modify the form, terms, or amount of the financial assurance mechanism only: (a) in accordance with EPA's approval; or (b) in accordance with any resolution of a dispute under Section XI. Settling Defendants shall submit to EPA, within 30 days after receipt of EPA's approval or consistent with the terms of the resolution of the dispute, documentation of the change to the form, terms, or amount of the financial assurance instrument.

23. **Release, Cancellation, or Discontinuation of Financial Assurance**. Settling Defendants may release, cancel, or discontinue any financial assurance provided under this Section only: (a) if EPA issues a Certification of Work Completion under ¶ 4.9 of the SOW; (b) in accordance with EPA's approval of such release, cancellation, or discontinuation; or (c) if there is a dispute regarding the release, cancellation or discontinuance of any financial assurance,

in accordance with the agreement, final administrative decision, or final judicial decision resolving such dispute under Section XI.

VIII. INDEMNIFICATION AND INSURANCE

24. **Indemnification**

a. Plaintiff does not assume any liability by entering into this Decree or by virtue of any designation of Settling Defendants as EPA's authorized representative under Section 104(e)(1) of CERCLA. Settling Defendants shall indemnify and save and hold harmless Plaintiff and its officials, agents, employees, contractors, subcontractors, and representatives for or from any claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Settling Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on Settling Defendants' behalf or under their control, in carrying out activities under this Decree, including any claims arising from any designation of Settling Defendants as EPA's authorized representatives under Section 104(e)(1) of CERCLA. Further, Settling Defendants agree to pay Plaintiff all costs it incurs including attorneys' fees and other expenses of litigation and settlement arising from, or on account of, claims made against Plaintiff based on negligent or other wrongful acts or omissions of Settling Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control in carrying out activities under this Decree. Plaintiff may not be held out as a party to any contract entered into by or on behalf of Settling Defendants in carrying out activities under this Decree. The Settling Defendants and any such contractor may not be considered an agent of Plaintiff.

b. Plaintiff shall give Settling Defendants notice of any claim for which Plaintiff plans to seek indemnification in accordance with this ¶ 24, and shall consult with Settling Defendants prior to settling such claim.

25. Settling Defendants covenant not to sue and shall not assert any claim or cause of action against Plaintiff for damages or reimbursement or for set-off of any payments made or to be made to Plaintiff, arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of Work or other activities on or relating to the Site, including claims on account of construction delays. In addition, Settling Defendants shall indemnify and save and hold Plaintiff harmless with respect to any claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of work at or relating to the Site, including claims on account of construction delays.

26. **Insurance**. Settling Defendants shall secure, by no later than 15 days before commencing any on-site Work, the following insurance: (a) commercial general liability insurance with limits of liability of $1 million per occurrence; (b) automobile liability insurance with limits of liability of $1 million per accident; and (c) umbrella liability insurance with limits of liability of $5 million in excess of the required commercial general liability and automobile liability limits. The insurance policy must name Plaintiff as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Settling Defendants under this Decree. Settling Defendants shall maintain this insurance until the first anniversary after issuance of EPA's Certification of Remedial Action Completion under ¶ 4.7 of the SOW. In addition, for the duration of this Decree, Settling Defendants shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Settling Defendants in furtherance of this Decree. Prior to commencement of the Work, Settling

Defendants shall provide to EPA certificates of such insurance and a copy of each insurance policy. Settling Defendants shall resubmit such certificates each year on the anniversary of the Effective Date, and shall submit copies of policies upon EPA's written request. If Settling Defendants demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Settling Defendants need provide only that portion of the insurance described above that is not maintained by the contractor or subcontractor. Settling Defendants shall ensure that all submittals to EPA under this Paragraph identify the Elm Street Groundwater Contamination Superfund Suite, Terre Haute, Vigo County, Indiana and the civil action number of this case.

IX. PAYMENTS FOR RESPONSE COSTS

27. **Payment for Past Response Costs**. Within 60 days after the Effective Date, Settling Defendants shall pay EPA, in reimbursement of Past Response Costs in connection with the Site, $3,650,000.00. The Financial Litigation Unit ("FLU") of the United States Attorney's Office for the Southern District of Indiana shall provide to Settling Defendants, in accordance with ¶ 66, instructions for making this payment, including a Consolidated Debt Collection System ("CDCS") reference number. Settling Defendants shall make such payment at https://www.pay.gov in accordance with the FLU's instructions, including references to the CDCS Number. Settling Defendants shall send notices of this payment to DOJ and EPA in accordance with ¶ 66. If the payment required under this Paragraph is late, Settling Defendants shall pay, in addition to any stipulated penalties owed under Section XII, an additional amount for Interest accrued from the Effective Date until the date of payment.

28. **Payments by Settling Defendants for Future Response Costs**

a. **Periodic Bills**. On a periodic basis, EPA will send Settling Defendants a bill for Future Response Costs, including an itemized cost summary listing direct and indirect costs paid by EPA, its contractors, subcontractors, and DOJ. Settling Defendants may initiate a dispute under Section XI regarding a Future Response Cost billing, but only if the dispute relates to one or more of the following issues: (i) whether EPA has made an arithmetical error; (ii) whether EPA has included a cost item that is not within the definition of Future Response Costs; or (iii) whether EPA has paid excess costs as a direct result of an EPA action that was inconsistent with a specific provision or provisions of the NCP. Settling Defendants must specify in the Notice of Dispute the contested costs and the basis for the objection.

b. **Payment of Bill**. Settling Defendants shall pay the bill, or if they initiate dispute resolution, the uncontested portion of the bill, if any, within 45 days after receipt of the bill. Settling Defendants shall pay the contested portion of the bill determined to be owed, if any, within 45 days after the determination regarding the dispute. Each payment for: (i) the uncontested bill or portion of bill, if late, and; (ii) the contested portion of the bill determined to be owed, if any, must include an additional amount for Interest accrued from the date of receipt of the bill through the date of payment. Settling Defendants shall make payment at https://www.pay.gov using the "EPA Miscellaneous Payments Cincinnati Finance Center" link, and including references to the Site/Spill ID and DJ numbers listed in ¶ 66 and the purpose of the payment. Settling Defendants shall send notices of this payment to DOJ and EPA in accordance with ¶ 66.

29. EPA may, in its unreviewable discretion, deposit the amounts paid under ¶¶ 27, 28.a. and 28.b. in the Fund, in the Special Account, or both. EPA may, in its unreviewable

discretion, retain and use any amounts deposited in the Special Account to conduct or finance response actions at or in connection with the Site, or transfer those amounts to the Fund.

X. FORCE MAJEURE

30. "Force majeure," for purposes of this Decree, means any event arising from causes beyond the control of Settling Defendants, of any entity controlled by Settling Defendants, or of Settling Defendants' contractors that delays or prevents the performance of any obligation under this Decree despite Settling Defendants' best efforts to fulfill the obligation. Given the need to protect public health and welfare and the environment, the requirement that Settling Defendants exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure and best efforts to address the effects of any potential force majeure (a) as it is occurring and (b) following the potential force majeure such that the delay and any adverse effects of the delay are minimized to the greatest extent possible. "Force majeure" does not include financial inability to complete the Work or a failure to achieve the Performance Standards.

31. If any event occurs for which Settling Defendants will or may claim a force majeure, Settling Defendants shall notify EPA's Project Coordinator by email. The deadline for the initial notice is 15 days after the date Settling Defendants first knew or should have known that the event would likely delay performance. Settling Defendants shall be deemed to know of any circumstance of which any contractor of, subcontractor of, or entity controlled by Settling Defendants knew or should have known. Within 15 days thereafter, Settling Defendants shall send a further notice to EPA that includes: (i) a description of the event and its effect on Settling Defendants' completion of the requirements of the Decree; (ii) a description of all actions taken or to be taken to prevent or minimize the adverse effects or delay; (iii) the proposed extension of time for Settling Defendants to complete the requirements of the Decree; (iv) a statement as to

whether, in the opinion of Settling Defendants, such event may cause or contribute to an endangerment to public health or welfare, or the environment; and (v) all available proof supporting their claim of force majeure. Failure to comply with the notice requirements herein regarding an event precludes Settling Defendants from asserting any claim of force majeure regarding that event, provided, however, that if EPA, despite late or incomplete notice, is able to assess to its satisfaction whether the event is a force majeure under ¶ 30 and whether Settling Defendants have exercised their best efforts under ¶ 30, EPA may, in its unreviewable discretion, excuse in writing Settling Defendants' failure to submit timely or complete notices under this Paragraph.

32. EPA will notify Settling Defendants of its determination whether Settling Defendants are entitled to relief under ¶ 30, and, if so, the duration of the extension of time for performance of the obligations affected by the force majeure. An extension of the time for performance of the obligations affected by the force majeure shall not, of itself, extend the time for performance of any other obligation. Settling Defendants may initiate dispute resolution under Section XI regarding EPA's determination within 15 days after receipt of the determination. In any such proceeding, Settling Defendants have the burden of proving that they are entitled to relief under ¶ 30 and that their proposed extension was or will be warranted under the circumstances.

33. The failure by EPA to timely complete any activity under the Decree or the SOW is not a violation of the Decree, provided, however, that if such failure prevents Settling Defendants from timely completing a requirement of the Decree, Settling Defendants may seek relief under this Section.

XI. DISPUTE RESOLUTION

34. Unless otherwise provided in this Decree, Settling Defendants must use the dispute resolution procedures of this Section to resolve any dispute arising under this Decree. Settling Defendants shall not initiate a dispute challenging the Record of Decision. The United States may enforce any requirement of the Decree that is not the subject of a pending dispute under this Section.

35. A dispute will be considered to have arisen when one or more parties sends a written notice of dispute ("Notice of Dispute") in accordance with ¶ 66. Disputes arising under this Decree must in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations may not exceed 30 days after the dispute arises, unless the parties to the dispute otherwise agree. If the parties cannot resolve the dispute by informal negotiations, the position advanced by EPA is binding unless Settling Defendants initiate formal dispute resolution under ¶ 36. By agreement of the parties, mediation may be used during this informal negotiation period to assist the parties in reaching a voluntary resolution or narrowing of the matters in dispute.

36. **Formal Dispute Resolution**

a. **Statements of Position**. Settling Defendants may initiate formal dispute resolution by serving on the Plaintiff, within 20 days after the conclusion of informal dispute resolution under ¶ 35, an initial Statement of Position regarding the matter in dispute. The Plaintiff's responsive Statement of Position is due within 20 days after receipt of the initial Statement of Position. All Statements of Position must include supporting factual data, analysis, opinion, and other documentation. A reply, if any, is due within 10 days after receipt of the response. If appropriate, EPA may extend the deadlines for filing statements of position for up to 45 days and may allow the submission of supplemental statements of position.

b. **Formal Decision**. The Director of the Superfund & Emergency Management Division, EPA Region 5, will issue a formal decision resolving the dispute ("Formal Decision") based on the statements of position and any replies and supplemental statements of position. The Formal Decision is binding on Settling Defendants unless they timely seek judicial review under ¶ 37.

c. **Compilation of Administrative Record**. EPA shall compile an administrative record regarding the dispute, which must include all statements of position, replies, supplemental statements of position, and the Formal Decision.

37. **Judicial Review**

a. Settling Defendants may obtain judicial review of the Formal Decision by filing, within 20 days after receiving it, a motion with the Court and serving the motion on all Parties. The motion must describe the matter in dispute and the relief requested. The parties to the dispute shall brief the matter in accordance with local court rules.

b. **Review on the Administrative Record**. Judicial review of disputes regarding the following issues must be on the administrative record: (i) the adequacy or appropriateness of deliverables required under the Decree; (ii) the adequacy of the performance of the Remedial Action; (iii) whether a Work Takeover is warranted under ¶ 11; (iv) determinations about financial assurance under Section VII; (v) whether a reopener condition under ¶ 48 is satisfied, including whether the Remedial Action is not protective of human health and the environment; (vi) EPA's selection of modified or further response actions; (vii) any other items requiring EPA approval under the Decree; and (viii) any other disputes that the Court determines should be reviewed on the administrative record. For all of these disputes,

Settling Defendants bear the burden of demonstrating that the Formal Decision was arbitrary and capricious or otherwise not in accordance with law.

c. Judicial review of any dispute not governed by ¶ 37.b shall be governed by applicable principles of law.

38. **Escrow Account**. For disputes regarding a Future Response Cost billing, Settling Defendants shall: (a) establish, in a duly chartered bank or trust company, an interest-bearing escrow account that is insured by the Federal Deposit Insurance Corporation ("FDIC"); (b) remit to that escrow account funds equal to the amount of the contested Future Response Costs; and (c) send to EPA, in accordance with ¶ 66, copies of the correspondence and of the payment documentation (e.g., the check) that established and funded the escrow account, including the name of the bank, the bank account number, and a bank statement showing the initial balance in the account. EPA may, in its unreviewable discretion, waive the requirement to establish the escrow account. Settling Defendants shall cause the escrow agent to pay the amounts due to EPA under ¶ 28, if any, by the deadline for such payment in ¶ 28. Settling Defendants are responsible for any balance due under ¶ 28 after the payment by the escrow agent.

39. The initiation of dispute resolution procedures under this Section does not extend, postpone, or affect in any way any requirement of this Decree, except as EPA agrees, or as determined by the Court. Stipulated penalties with respect to the disputed matter will continue to accrue, but payment is stayed pending resolution of the dispute, as provided in ¶ 42.

XII. STIPULATED PENALTIES

40. Unless the noncompliance is excused under Section X (Force Majeure), Settling Defendants are liable to the United States for the following stipulated penalties:

a. for any failure: (i) to pay any amount due under Section IX; (ii) to establish and maintain financial assurance in accordance with Section VII; and (iii) to submit timely or adequate deliverables under Section 7 of the SOW (Deliverables):

Period of Noncompliance	Penalty Per Noncompliance Per Day
1st through 14th day	$500
15th through 30th day	$1000
31st day and beyond	$4000

b. for any failure to submit timely or adequate deliverables required by this Decree other than those specified in ¶ 40.a:

Period of Noncompliance	Penalty Per Noncompliance Per Day
1st through 14th day	$500
15th through 30th day	$800
31st day and beyond	$2000

41. **Work Takeover Penalty**. If EPA commences a Work Takeover, Settling Defendants are liable for a stipulated penalty in the amount of $400,000. This stipulated penalty is in addition to the remedy available to EPA under ¶ 21 (Access to Financial Assurance) to fund the performance of the Work by EPA.

42. **Accrual of Penalties**. Stipulated penalties accrue from the date performance is due, or the day a noncompliance occurs, whichever is applicable, until the date the requirement is completed or the final day of the correction of the noncompliance. Nothing in this Decree prevents the simultaneous accrual of separate penalties for separate noncompliances with this Decree. Stipulated penalties accrue regardless of whether Settling Defendants have been notified of their noncompliance, and regardless of whether Settling Defendants have initiated dispute resolution under Section XI, provided, however, that no penalties will accrue as follows:

a. with respect to a submission that EPA subsequently determines is deficient under ¶ 7.6 of the SOW, during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Settling Defendants of any deficiency;

b. with respect to a matter that is the subject of dispute resolution under Section XI, during the period, if any, beginning on the 21st day after the later of the date that EPA's Statement of Position is received or the date that Settling Defendants' reply thereto (if any) is received until the date of the Formal Decision under ¶ 36.b; or

c. with respect to a matter that is the subject of judicial review by the Court under ¶ 37, during the period, if any, beginning on the 31st day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute.

43. **Demand and Payment of Stipulated Penalties**. EPA may send Settling Defendants a demand for stipulated penalties. The demand will include a description of the noncompliance and will specify the amount of the stipulated penalties owed. Settling Defendants may initiate dispute resolution under Section XI within 30 days after receipt of the demand. Settling Defendants shall pay the amount demanded or, if they initiate dispute resolution, the uncontested portion of the amount demanded, within 30 days after receipt of the demand. Settling Defendants shall pay the contested portion of the penalties determined to be owed, if any, within 30 days after the resolution of the dispute. Each payment for: (a) the uncontested penalty demand or uncontested portion, if late; and (b) the contested portion of the penalty demand determined to be owed, if any, must include an additional amount for Interest accrued from the date of receipt of the demand through the date of payment. Settling Defendants shall make payment at https://www.pay.gov using the link for "EPA Miscellaneous Payments

Cincinnati Finance Center," including references to the Site/Spill ID and DJ numbers listed in ¶ 66, and the purpose of the payment. Settling Defendants shall send a notice of this payment to DOJ and EPA, in accordance with ¶ 66. The payment of stipulated penalties and Interest, if any, does not alter any obligation by Settling Defendants under the Decree.

44. Nothing in this Decree limits the authority of the United States: (a) to seek any remedy otherwise provided by law for Settling Defendants' failure to pay stipulated penalties or interest; or (b) to seek any other remedies or sanctions available by virtue of Settling Defendants' noncompliances with this Decree or of the statutes and regulations upon which it is based, including penalties under Section 122(*l*) of CERCLA, provided, however, that the United States may not seek civil penalties under Section 122(*l*) of CERCLA for any noncompliance for which a stipulated penalty is provided for in this Decree, except in the case of a willful noncompliance with this Decree.

45. Notwithstanding any other provision of this Section, the United States may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued under this Decree.

XIII. COVENANTS BY PLAINTIFF

46. **Covenants for Settling Defendant**s. Subject to ¶¶ 48 and 49, the United States covenants not to sue or to take administrative action against Settling Defendants under sections 106 and 107(a) of CERCLA regarding the Site.

47. The covenants under ¶ 46 (a) take effect upon the Effective Date, except with respect to future liability, for which these covenants take effect upon Certification of Remedial Action Completion by EPA under ¶ 4.7 of the SOW; (b) are conditioned on the satisfactory performance by Settling Defendants of the requirements of this Decree; (c) extend to the successors of each Settling Defendant but only to the extent that the alleged liability of the

successor of the Settling Defendant is based solely on its status as a successor of the Settling Defendant; and (d) do not extend to any other person.

48. **United States' Pre- and Post-certification Reservations**

a. Notwithstanding any other provision of this Decree, the United States reserves, and this Decree is without prejudice to, the right to issue an administrative order or to institute proceedings in this action or in a new action seeking to compel Settling Defendants to perform further response actions relating to the Site, to pay the United States for additional costs of response, or any combination thereof. The United States may exercise this reservation only if, at any time, conditions at the Site previously unknown to EPA are discovered, or information previously unknown to EPA is received, and EPA determines, based in whole or in part on these previously unknown conditions or information, that the Remedial Action is not protective of human health or the environment.

b. Before certification of Remedial Action Completion, the information and the conditions known to EPA include only that information and those conditions known to EPA as of the date of EPA's approval of the Approved RD on April 28, 2022 and set forth in the Approved RD, Record of Decision for the Site, the administrative record supporting the Record of Decision, and any updates to the administrative record made after the date the Record of Decision was signed and prior to the date of EPA's approval of the Approved RD on April 28, 2022.

c. After certification of Remedial Action Completion, the information and the conditions known to EPA include only that information and those conditions known to EPA as of the date of Certification of Remedial Action Completion and set forth in the Record of Decision, the administrative record supporting the Record of Decision, the post-Record of

Decision administrative record, or in any information received by EPA in accordance with the requirements of this Decree prior to Certification of Remedial Action Completion.

49. **General Reservations**. Notwithstanding any other provision of this Decree, the United States reserves, and this Decree is without prejudice to, all rights against Settling Defendants regarding the following:

a. liability for failure by Settling Defendants to meet a requirement of this Decree;

b. liability arising from the past, present, or future disposal, release, or threat of release of Waste Material outside of the Site;

c. liability based on Settling Defendants' ownership of the Site when such ownership commences after Settling Defendants' signature of this Decree;

d. liability based on Settling Defendants' operation of the Site when such operation commences after Settling Defendants' signature of this Decree and does not arise solely from Settling Defendants' performance of the Work;

e. liability based on Settling Defendants' transportation, treatment, storage, or disposal, or arrangement for transportation, treatment, storage, or disposal of Waste Material at or in connection with the Site, after signature of this Decree by Settling Defendants, other than as provided in the Record of Decision, under this Decree, or ordered by EPA;

f. liability, prior to achievement of Performance Standards, for additional response actions that EPA determines are necessary to achieve and maintain Performance Standards or to carry out and maintain the effectiveness of the Remedial Action, but that are not covered by ¶ 9.b;

g. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments; and

h. criminal liability.

50. Subject to ¶ 46, nothing in this Decree limits any authority of Plaintiff to take, direct, or order all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, or to request a Court to order such action.

XIV. COVENANTS BY SETTLING DEFENDANTS

51. **Covenants by Settling Defendant**s

a. Subject to ¶ 52, Settling Defendants covenant not to sue and shall not assert any claim or cause of action against the United States under CERCLA, Section 7002(a) of RCRA, the United States Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, the State Constitution, State law, or at common law regarding the Site.

b. Subject to ¶ 52, Settling Defendants covenant not to seek reimbursement from the Fund through CERCLA or any other law for costs regarding the Site.

52. **Settling Defendants' Reservation**. The covenants in ¶ 51 do not apply to any claim or cause of action brought, or order issued, after the Effective Date by the United States to the extent such claim, cause of action, or order is within the scope of a reservation under ¶¶ 48, and 49.a through 49.g.

53. ***De Minimis*/Ability to Pay Waiver**. Settling Defendants shall not assert any claims and waive all claims or causes of action (including claims or causes of action under Sections 107(a) and 113 of CERCLA) that they may have against any third party who enters or has entered into a *de minimis* or "ability-to-pay" settlement with EPA to the extent Settling

Defendants' claims and causes of action are within the scope of the matters addressed in the third party's settlement with EPA, provided, however, that this waiver does not apply if the third party asserts a claim or cause of action regarding the Site against the Settling Defendants. Nothing in the Decree limits Settling Defendants' rights under Section 122(d)(2) of CERCLA to comment on any *de minimis* or ability-to-pay settlement proposed by EPA.

54. **De Micromis Waiver**. Settling Defendants shall not assert any claims and waive all claims or causes of action (including claims or causes of action under Sections 107(a) and 113 of CERCLA) that they may have for all matters relating to the Site against any person where the person's liability to Settling Defendants with respect to the Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of hazardous substances at the Site, or having accepted for transport for disposal or treatment of hazardous substances at the Site, if all or part of the disposal, treatment, or transport occurred before April 1, 2001, and the total amount of material containing hazardous substances contributed by such person to the Site was less than 110 gallons of liquid materials or 200 pounds of solid materials. This waiver does not apply to any claim or cause of action against any person otherwise covered by such waiver if EPA determines that: (i) the materials containing hazardous substances contributed to the Site by such person contributed significantly or could contribute significantly, either individually or in the aggregate, to the cost of the response action or natural resource restoration at the Site; or (ii) such person has failed to comply with any information request or administrative subpoena issued under Sections 104(e) or 122(e)(3)(B) of CERCLA or Section 3007 of RCRA, or has impeded or is impeding, through action or inaction, the performance of a response action or natural resource restoration with respect to the Site; or (iii) such person has been convicted of a criminal violation for the conduct to which the waiver

would apply and that conviction has not been vitiated on appeal or otherwise. This waiver does not apply with respect to any defense, claim, or cause of action that a Settling Defendant may have against any person otherwise covered by this waiver if such person asserts a claim or cause of action relating to the Site against such Settling Defendant.

XV. EFFECT OF SETTLEMENT; CONTRIBUTION

55. The Parties agree and the Court finds that: (a) the complaint filed by the United States in this action is a civil action within the meaning of Section 113(f)(1) of CERCLA; (b) this Decree constitutes a judicially approved settlement under which each Settling Defendant has, as of the Effective Date, resolved its liability to the United States within the meaning of Section113(f)(2) and 113(f)(3)(B) of CERCLA; and (c) each Settling Defendant is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Section 113(f)(2) of CERCLA, or as may be otherwise provided by law, for the "matters addressed" in this Decree. The "matters addressed" in this Decree are all response actions taken or to be taken and all response costs incurred or to be incurred, at or in connection with the Site, by the United States or any other person, except for the State, provided, however, that if the United States exercises rights under the reservations in ¶ 48 and ¶ 49.a through 49.g, the "matters addressed" in this Decree will no longer include those response costs or response actions that are within the scope of the exercised reservation.

56. Each Settling Defendant shall, with respect to any suit or claim brought by it for matters related to this Decree, notify DOJ and EPA no later than 60 days prior to the initiation of such suit or claim. Each Settling Defendant shall, with respect to any suit or claim brought against it for matters related to this Decree, notify DOJ and EPA within 10 days after service of the complaint on such Settling Defendant. In addition, each Settling Defendant shall notify DOJ

and EPA within 10 days after service or receipt of any Motion for Summary Judgment and within 10 days after receipt of any order from a court setting a case for trial.

57. **Res Judicata and Other Defenses**. In any subsequent administrative or judicial proceeding initiated against any Settling Defendant by Plaintiff for injunctive relief, recovery of response costs, or other appropriate relief relating to the Site, Settling Defendants shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, claim preclusion (res judicata), issue preclusion (collateral estoppel), claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case.

58. Nothing in this Decree diminishes the right of the United States under Section 113(f)(2) and (3) of CERCLA to pursue any person not a party to this Decree to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

XVI. RECORDS

59. **Settling Defendant Certification**. Each Settling Defendant certifies individually that: (a) to the best of its knowledge and belief, after thorough inquiry it has not altered, mutilated, discarded, destroyed or otherwise disposed of any documents and electronically stored information relating to the Site, including information relating to its potential liability under CERCLA regarding the Site, since the earlier of notification of potential liability by the United States or the State or the filing of suit against it regarding the Site; and (b) it has fully complied with any and all EPA requests for information under Sections 104(e) and 122(e) of CERCLA, and Section 3007 of RCRA.

60. **Retention of Records and Information**

a. Settling Defendants shall retain, and instruct their contractors and agents to retain, the following documents and electronically stored data ("Records") until 10 years after the Certification of Work Completion under the SOW ¶ 4.9 (the "Record Retention Period"):

(1) All records regarding Settling Defendants' liability under CERCLA regarding the Site;

(2) All reports, plans, permits, and documents submitted to EPA in accordance with this Decree, including all underlying research and data; and

(3) All data developed by, or on behalf of, Settling Defendants in the course of performing the Remedial Action.

b. For purposes of this paragraph, "Records" shall not include the following types of inaccessible electronically stored information ("ESI"): (1) deleted, slack, fragmented, or unallocated data on hard drives; (2) random access memory; (3) data in metadata fields that is frequently updated; (4) backup data substantially duplicative of ESI more accessible elsewhere; and (5) data that is not accessible through the operating system installed on a device.

c. Owner Settling Defendants shall retain all Records regarding the liability of any person under CERCLA regarding the Site during the Record Retention Period.

d. At the end of the Record Retention Period, Settling Defendants shall notify EPA that it has 90 days to request the Settling Defendants' Records subject to this Section. Settling Defendants shall retain and preserve their Records subject to this Section until 90 days after EPA's receipt of the notice. These record retention requirements apply regardless of any corporate record retention policy.

61. Settling Defendants shall provide to EPA, upon request, copies of all Records and information required to be retained under this Section, except as provided for in ¶ 62. Settling Defendants shall also make available to EPA, for purposes of investigation, information

gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

62. **Privileged and Protected Claims**

a. Settling Defendants may assert that all or part of a record requested by Plaintiff is privileged or protected as provided under federal law, in lieu of providing the record, provided that Settling Defendants comply with ¶ 62.b, and except as provided in ¶ 62.c.

b. If Settling Defendants assert a claim of privilege or protection, they shall provide Plaintiff with the following information regarding such record: its title; its date; the name, title, affiliation (e.g., company or firm), and address of the author, of each addressee, and of each recipient; a description of the record's contents; and the privilege or protection asserted. If a claim of privilege or protection applies only to a portion of a record, Settling Defendants shall provide the record to Plaintiff in redacted form to mask the privileged or protected portion only. Settling Defendants shall retain all records that they claim to be privileged or protected until Plaintiff has had a reasonable opportunity to dispute the privilege or protection claim and any such dispute has been resolved in Settling Defendants' favor.

c. Settling Defendants shall not make any claim of privilege or protection regarding: (1) any data regarding the Site, including all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological or engineering data, or the portion of any other record that evidences conditions at or around the Site; or (2) the portion of any record that Settling Defendants are required to create or generate in accordance with this Decree.

63. **Confidential Business Information (CBI) Claims**. Settling Defendants may claim that all or part of a record provided to Plaintiff under this Section is CBI to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA and 40 C.F.R. § 2.203(b).

Settling Defendants shall segregate and shall clearly identify all records or parts thereof submitted under this Decree for which they claim is CBI by labeling each page or each electronic file "claimed as confidential business information" or "claimed as CBI." Records that Settling Defendants claim to be CBI will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no CBI claim accompanies records when they are submitted to EPA, or if EPA notifies Settling Defendants that the records are not entitled to confidential treatment under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such records without further notice to Settling Defendants.

64. In any proceeding under this Decree, validated sampling or monitoring data generated in accordance with the SOW and reviewed and approved by EPA, if relevant to the proceeding, is admissible as evidence, without objection.

65. Notwithstanding any provision of this Decree, Plaintiff retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XVII. NOTICES AND SUBMISSIONS

66. All agreements, approvals, consents, deliverables, modifications, notices, notifications, objections, proposals, reports, waivers, and requests specified in this Decree must be in writing unless otherwise specified. Whenever a notice is required to be given or a report or other document is required to be sent by one Party to another under this Decree, it must be sent as specified below. All notices under this Section are effective upon receipt, unless otherwise specified. In the case of emailed notices, there is a rebuttable presumption that such notices are received on the same day that they are sent. Any Party may change the method, person, or address applicable to it by providing notice of such change to all Parties.

As to DOJ:	*via email to*: eescdcopy.enrd@usdoj.gov Re: DJ # 90-11-3-12377
As to EPA:	*via email to*: ballotti.douglas@epa.gov and wysgalla.celine@epa.gov Re: Site/Spill ID # B5BF
As to the Regional Financial Management Officer:	*via email to*: notbusch.mara@epa.gov Re: Site/Spill ID # B5BF
As to Settling Defendants:	*via email to*: reynolds.renshaw@ehs-support.com;kcampbell@mankogold.com; joel.bowers@btlaw.com; mschopmeyer@kddk.com; medwards@kddk.com; and marc@menkveldlaw.com

XVIII. APPENDIXES

67. The following appendixes are attached to and incorporated into this Decree:

"Appendix A" is the Record of Decision.

"Appendix B" is the SOW.

"Appendix C" is the map of the Site.

XIX. MODIFICATIONS TO DECREE

68. Except as provided in ¶ 9 of the Decree and ¶ 7.6 of the SOW (Approval of Deliverables), nonmaterial modifications to Sections I through XXIII and the Appendixes must be in writing and are effective when signed (including electronically signed) by the Parties. Material modifications to Sections I through XXIII and the Appendixes must be in writing, signed (which may include electronically signed) by the Parties, and are effective upon approval by the Court. As to changes to the remedy, a modification to the Decree, including the SOW, to

implement an amendment to the Record of Decision that "fundamentally alters the basic features" of the Remedial Action within the meaning of 40 C.F.R. § 300.435(c)(2)(ii) will be considered a material modification.

XX. SIGNATORIES

69. The undersigned representative of the United States and each undersigned representative of a Settling Defendant certifies that he or she is fully authorized to enter into the terms and conditions of this Decree and to execute and legally bind such Party to this document.

XXI. PRE-ENTRY PROVISIONS

70. If for any reason the Court should decline to approve this Decree in the form presented, this agreement, except for ¶ 71 and ¶ 72, is voidable at the sole discretion of any Party and its terms may not be used as evidence in any litigation between the Parties.

71. This Decree will be lodged with the Court for at least 30 days for public notice and comment in accordance with Section 122(d)(2) of CERCLA and 28 C.F.R. § 50.7. The United States may withdraw or withhold its consent if the comments regarding the Decree disclose facts or considerations that indicate that the Decree is inappropriate, improper, or inadequate.

72. Settling Defendants agree not to oppose or appeal the entry of this Decree.

XXII. INTEGRATION

73. This Decree constitutes the entire agreement among the Parties regarding the subject matter of the Decree and supersedes all prior representations, agreements, and understandings, whether oral or written, regarding the subject matter of the Decree.

XXIII. FINAL JUDGMENT

74. Upon entry of this Decree by the Court, this Decree constitutes a final judgment under Fed. R. Civ. P. 54 and 58 among the Parties.

SO **ORDERED** this ___ day of _____, 20__.

_____

United States District Judge

Signature Page for Consent Decree in *U.S. v. CR-Troy, Inc., et al*

FOR THE UNITED STATES:

TODD KIM
Assistant Attorney General
U.S. Department of Justice
Environment and Natural Resources Division

September 26, 2023
Dated

PEDRO SEGURA
Trial Attorney
U.S. Department of Justice
Environment and Natural Resources Division
Environmental Enforcement Section
(202) 532-3153
pedro.segura@usdoj.gov

ZACHARY A. MYERS
United States Attorney
Southern District of Indiana

J. Taylor Kirklin
Assistant United States Attorney
United States Attorney's Office
10 W Market St, Suite 2100
Indianapolis, IN 46204
taylor.kirklin@usdoj.gov

Signature Page for Consent Decree in *U.S. v. CR-Troy, Inc., et al*

FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY:

RICHARD MURAWSKI
Digitally signed by RICHARD MURAWSKI
Date: 2023.09.14 07:42:30 -05'00'

RICHARD M. MURAWSKI
Associate Regional Counsel
U.S. Environmental Protection Agency
Region 5

DOUGLAS BALLOTTI
Digitally signed by DOUGLAS BALLOTTI
Date: 2023.09.14 10:39:36 -05'00'

DOUG BALLOTTI
Director
Superfund and Emergency Management
U.S. Environmental Protection Agency
Region 5

Signature Page for Consent Decree in *U.S. v. CR-Troy, Inc., et al*

For **VALVOLINE LLC**

Signature: John Pollom

Name: John Pollom

Title: Senior Counsel

Address: 100 Valvoline Way

Lexington, KY 40509

Date: 07/31/2023

If the Decree is not approved by the Court within 60 days after the date of lodging, and the United States requests, this Settling Defendant agrees to accept service of the complaint by mail, and to execute a waiver of service of a summons under Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court. This Settling Defendant hereby designates the agent below to accept service of the complaint by mail and to execute the Rule 4 waiver of service. This Settling Defendant understands that it does not need to file an answer to the complaint until it has executed the waiver of service or otherwise has been served with the complaint.

Name: Kathleen Campbell, Esq.
Title: Partner
Company: Manko, Gold, Katcher & Fox, LLP
Address: 3 Bala Plaza East, Suite 700
Bala Cynwyd, PA 19004
Phone: 484-430-2316
Email: kcampbell@mankogold.com

Signature Page for Consent Decree in *U.S. v. CR-Troy, Inc., et al*

For **CR-TROY, INC, (Formerly CONSOLIDATED RECYCLING COMPANY, INC.)**

Signature: David E Carson

Name: David E. Carson

Title: CEO

Address: 2408 Lynch Road

Evansville, IN 47711

Date: 7-28-23

If the Decree is not approved by the Court within 60 days after the date of lodging, and the United States requests, this Settling Defendant agrees to accept service of the complaint by mail, and to execute a waiver of service of a summons under Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court. This Settling Defendant hereby designates the agent below to accept service of the complaint by mail and to execute the Rule 4 waiver of service. This Settling Defendant understands that it does not need to file an answer to the complaint until it has executed the waiver of service or otherwise has been served with the complaint.

Name: Joel T. Bowers
Title: Attorney for CR-TROY, Inc.
Company: Barnes & Thornburg LLP
Address: 201 S. Main Street, Ste. 400
South Bend, IN 46601
Phone: 574-237-1287
Email: Joel.Bowers@btlaw.com

Signature Page for Consent Decree in *U.S. v. CR-Troy, Inc., et al*

For **GCSC ENTERPRISES, INC.**

Signature: Whitney Gurman Roberts

Name: Whitney Gurman Roberts

Title: President

Address: 6101 Hardwick Drive

Whitestown, IN 46075

Date: 07/31/2023

If the Decree is not approved by the Court within 60 days after the date of lodging, and the United States requests, this Settling Defendant agrees to accept service of the complaint by mail, and to execute a waiver of service of a summons under Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court. This Settling Defendant hereby designates the agent below to accept service of the complaint by mail and to execute the Rule 4 waiver of service. This Settling Defendant understands that it does not need to file an answer to the complaint until it has executed the waiver of service or otherwise has been served with the complaint.

Name: G. Michael Schopmeyer, Esq. and Monica E. Edwards, Esq.
Title: Attorneys for Client
Company: Kahn, Dees, Donovan & Kahn, LLP
Address: P.O. Box 3646
Evansville, Indiana 47735-3646
Phone: 812-423-3183
Email: mschopmeyer@kddk.com; medwards@kddk.com

Signature Page for Consent Decree in *U.S. v. CR-Troy, Inc., et al*

For **MACHINE TOOL SERVICE, INC.**

Signature: Samuel Hoar

Name: SAMUEL HOAR

Title: PRESIDENT

Address: 117 ELM STREET
TERRE HAUTE, IN 47807

Date: 7-28-23

If the Decree is not approved by the Court within 60 days after the date of lodging, and the United States requests, this Settling Defendant agrees to accept service of the complaint by mail, and to execute a waiver of service of a summons under Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court. This Settling Defendant hereby designates the agent below to accept service of the complaint by mail and to execute the Rule 4 waiver of service. This Settling Defendant understands that it does not need to file an answer to the complaint until it has executed the waiver of service or otherwise has been served with the complaint.

Name:	Marc Menkveld
Title:	Attorney for Machine Tool Services, Inc.
Company:	Menkveld Law & Mediation LLC
Address:	16556 W. 94th Dr. Arvada, CO 80007
Phone:	(720) 280-3811
Email:	marc@menkveldlaw.com

APPENDIX A

Record of Decision

US EPA RECORDS CENTER REGION 5
541526

Elm Street Groundwater Contamination Superfund Site

ID: INN 000 509 938

Terre Haute, Vigo County, Indiana

Record of Decision

U.S. Environmental Protection Agency Region 5

77 W Jackson Blvd
Chicago, IL 60604

September 2017

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LIST OF ACRONYMS AND ABBREVIATIONS

AQD	Air Quality Division
ARARs	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
BERA	Baseline Ecological Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
C.F.R.	Code of Federal Regulations
COC	Contaminant of Concern
COPC	Chemicals of Potential Concern
COPEC	Chemicals of Potential Ecological Concern
COI	Chemicals of Interest
CSM	Conceptual Site Model
DCA	Dichloroethane
DCE	Dichloroethene
DO	Dissolved Oxygen
EA	Exposure Area
EPA	U.S. Environmental Protection Agency
ELCR	Excess lifetime cancer risk
ERA	Ecological Risk Assessment
ERD	Enhanced Reductive Dechlorination
ESI	Expanded Site Inspection
ESL	Ecological Screening Level
ESV	Ecological Screening Value
FS	Feasibility Study
GAC	Granulated Activated Carbon
HHRA	Human Health Risk Assessment
HHSL	Human Health Screening Level
HI	Hazard index
HQ	Hazard quotient
IC	Institutional control
IAWC	Indiana American Water Company
IDEM	Indiana Department of Environmental Management
ISCO	In-situ Chemical Oxidation
ISCR	In-situ Chemical Reduction
ISU	Indiana State University
MCL	Maximum Contaminant Level
MDEQ	Michigan Department of Environmental Quality
MNA	Monitored Natural Attenuation
MTG	Media to Groundwater
MTS	Machine Tool Service
MW	Monitoring Well
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
ND	Non-detect

LIST OF ACRONYMS AND ABBREVIATIONS, CONT'D

NOD	Natural Oxidant Demand
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operation and Maintenance
ORP	Oxidation-Reduction Potential
OU	Operable Unit
PAH	Polycyclic Aromatic Hydrocarbon
PCA	Tetrachloroethane
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethene
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RG	Remedial Goal
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RISC	Risk Integrated System Closure
ROD	Record of Decision
ROI	Radius of Influence
RSL	Regional Screening Level
R/T	Release/Transport
SI	Site Investigation
SLERA	Screening Level Ecological Risk Assessment
SSI	Screening Site Investigation
SVE	Soil Vapor Extraction
SVOC	Semi-volatile Organic Compound
TCA	Trichloroethane
TCE	Trichloroethene
TCR	Total Cancer Risk
U.S.C.	United States Code
UST	Underground Storage Tank
UU/UE	Unlimited Use/Unlimited Exposure
VAS	Vertical Aquifer Sample
VOC	Volatile Organic Compound
ZVI	Zero Valent Iron

Part 1 – Declaration

1.1 Site Name and Location

Elm Street Groundwater Contamination
Terre Haute, Vigo County, Indiana
CERCLIS ID: INN 000 509 938

1.2 Statement of Basis and Purpose

This decision document presents the Selected Remedy for the Elm Street Groundwater Contamination ("site" or "Elm Street site") Superfund site in Terre Haute, Vigo County, Indiana. The U.S. Environmental Protection Agency (EPA) chose the Selected Remedy in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 42 U.S.C. § 9601 *et seq.* and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300. This decision is based on the Administrative Record file (see Appendix 1) for the Elm Street site.

The State of Indiana (Indiana Department of Environmental Management (IDEM)) has concurred with the selected remedy. EPA will place the State's concurrence letter (see Appendix 2) into the site Administrative Record.

1.3 Assessment of Site

The response action selected in this Record of Decision (ROD) is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

1.4 Description of Selected Remedy

The Selected Remedy for the Elm Street site is a combination of Alternative S-3: Soil Vapor Extraction (SVE), Soil Excavation with Off-site Disposal, and Institutional Controls and, as an interim measure, Alternative GW-2: Groundwater Monitoring and Institutional Controls. It is estimated to cost $3.8 million and will take about one (1) year to build the SVE system and complete the soil excavations, establish the groundwater monitoring well network, and implement required institutional controls (ICs).

Alternative S-3 will address the site-related contaminants in site soil by:

- Excavating shallow, accessible contaminated soil (not located under a building foundation) containing volatile organic compounds (VOCs), arsenic, polycyclic aromatic hydrocarbons (PAHs), pesticides, and polychlorinated biphenyls (PCBs) for off-site disposal;
- Installing and operating a SVE system at locations where VOCs are present in subsurface soil at depths that would make excavation unfeasible; and

- Recording ICs on properties where SVE is to be installed to prevent interference with the remedy components.

Alternative GW-2, as an interim remedial measure, requires that groundwater monitoring be performed until remediation goals are met in the groundwater and to also demonstrate the effectiveness of the soil remedy. ICs will be recorded to prevent use of groundwater for drinking until cleanup goals are met.

EPA intends that this ROD be the final decision document for the soil contamination at the Elm Street site. A final decision document will be needed to address the site's groundwater since this ROD is addressing groundwater as an interim measure. The selected remedial actions will remove contaminated soil for off-site disposal and treat the deeper VOC-contaminated soil to reduce contaminants leaching to the groundwater. Groundwater monitoring will be performed as an interim measure until it can determine whether remediation goals can be met and to monitor the effectiveness of the soil remedy in meeting the goals for groundwater. Although EPA found potential soil vapor intrusion (VI) issues at the Gurman and Ashland properties, the Agency is not selecting a remedy to address VI because the Gurman facility is currently operating and may be handling or using VOCs during their operations; the Ashland facility has had its buildings razed. EPA will, however, revisit the VI issue at Gurman and Ashland if the land uses change before the cleanup levels are reached. (See Section 2.8 of this ROD for more detailed discussion on this issue.)

EPA did not identify any principal threat waste at the site.

1.5 Statutory Determinations

The Selected Remedy is protective of human health, complies with federal and state requirements that are applicable or relevant and appropriate (ARAR) to the remedial action (unless justified by a waiver), is cost-effective, and utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable. The remedy satisfies the statutory preference for treatment as a principal element of the remedy.

EPA will conduct Five Year Reviews (FYRs) at the Elm Street site until the soil and groundwater remedial goals (RGs) have been met. The remedy will remove accessible contaminated soil off-site and will treat subsurface soil containing VOCs. A final groundwater remedy will be put in place after data has been collected to determine if monitored natural attenuation is a viable remedy or if another alternative is determined to be the final remedy for the site. Groundwater monitoring will continue until the RGs have been met. Once the RGs have been achieved, EPA would consider classifying the site for unlimited use/unlimited exposure (UU/UE). If, at that time, the remedy is protective of human health, the site may be deleted from the National Priorities List (NPL), and EPA may cease conducting FYRs.

1.6 Data Certification Checklist

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record file for this site.

Information Item	Section in Record of Decision
Chemicals of concern and their respective concentrations	2.2 and 2.5
Baseline risk represented by the chemicals of concern	2.2 and 2.7
Cleanup levels established for chemicals of concern and the basis for these levels	2.8
How source materials constituting principal threats are addressed	2.11
Current and reasonably anticipated future land use assumptions and current and potential future beneficial uses of groundwater use in the baseline risk assessment and the ROD	2.6
Potential land use that will be available at the site as a result of the Selected Remedy	2.6
Estimated capital, annual operation and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected	2.9
Key factor(s) that led to selecting the remedy (that is, describe how the Selected Remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decision)	2.10, 2.12, and 2.13

1.7 Authorizing Signature

Margaret M. Guerriero, Acting Director
Superfund Division
U.S. EPA - Region 5

9/26/2017
Date

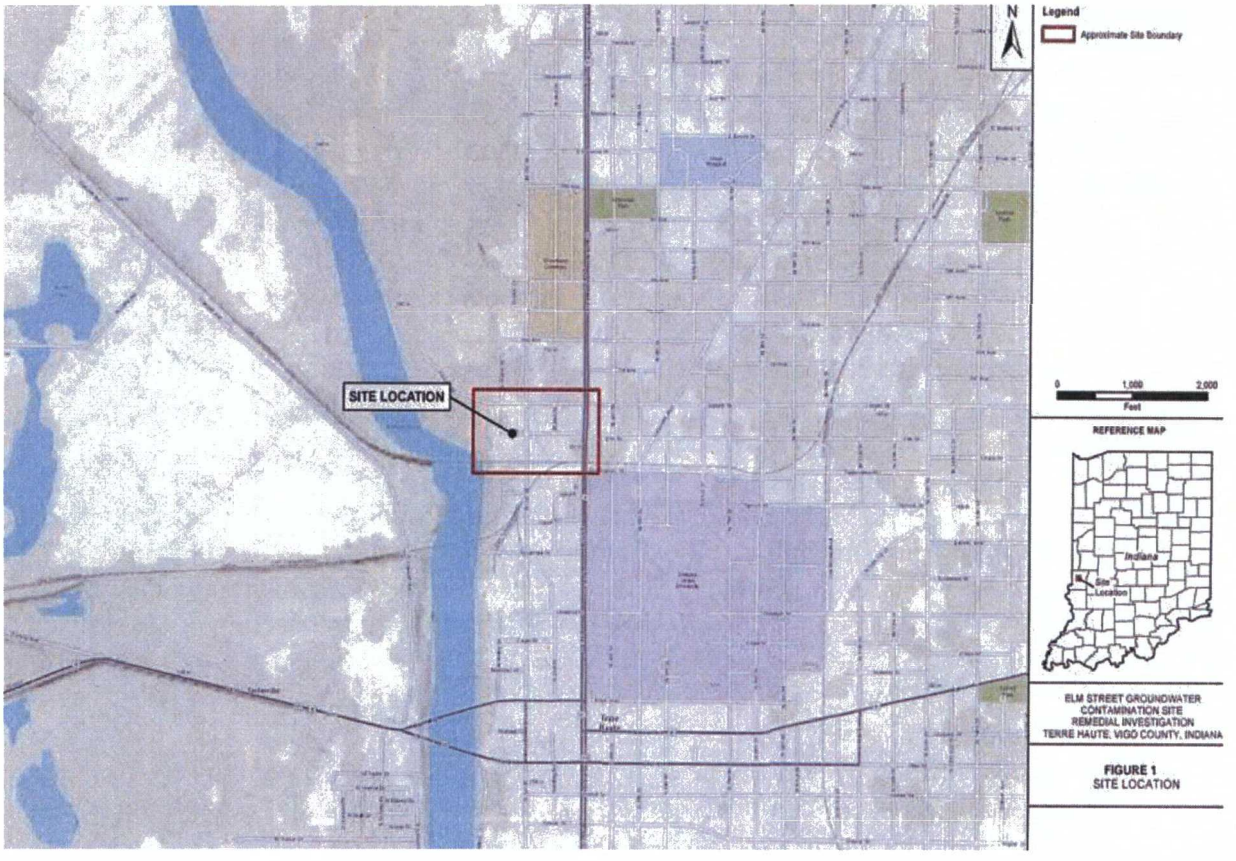
Part 2 – Decision Summary

2.1 Site Name, Location, and Brief Description

The Elm Street Groundwater Contamination Superfund site (CERCLIS ID# INN 000 509 938) is located in the city of Terre Haute in Vigo County, Indiana (see Figure 1). EPA placed the Elm Street site on the NPL in March 2007 and is the lead agency for the site. IDEM is the support agency. All site investigative work to date has been fund-financed.

The Elm Street site is roughly bounded by Locust Street to the north, North 3rd Street (U.S. Highway 41) to the east, railroad tracks to the south, and the Wabash River to the west (see Figure 2). The area surrounding the site includes an apartment complex and open/recreational land to the north, commercial and residential property to the east and south, and the Indiana American Water Company (IAWC) and the Wabash River to the west.

Figure 1: Site Map



IAWC operates Terre Haute's municipal water system, which consists of several municipal wells and a radial collector well located adjacent to the site. The municipal

wells are installed in the deep portion of a surficial sand and gravel aquifer along the east bank of the Wabash River. Since the 1980s, these wells have shown detectable levels of VOCs-including tetrachloroethene (PCE), trichloroethene (TCE), 1,1,1-trichloroethane (TCA), and 1,2-dichloroethene (DCE). The levels of VOCs in the municipal wells have not exceeded federal and state drinking water standards in water delivered to customers. The radial collector well draws from deep riverine deposits about 1,200 feet west-northwest of the site and is now the primary source of drinking water. No VOCs have been detected in this water.

Three potential source areas for VOCs were identified by IDEM through the site assessment process. The potential source areas include the Gurman property located at 800 North 3rd Street, the Ashland (formerly BiState Products) property located at 118 Elm Street, and the Machine Tool Service (MTS) property located at 117 Elm Street. For purposes of the remedial investigation, EPA divided the MTS property into three sub-properties: MTS, North 2nd Street, and Sinclair. Brief descriptions and histories of these areas appear below.

2.2 Site History and Enforcement Activities

Site History

The Gurman facility has been in operation since 1922. The northern one-third of the facility was in residential use prior to the early 1980s. From 1930 to 1980, Gurman mainly reconditioned and sold steel barrels. Since 1980, Gurman primarily has sold paper and plastic containers and reconditioned customer-owned drums. It is believed that Gurman accepted drums containing various types and likely small quantities of product or waste material. The standard practice for most of its operational history from the 1950s to the 1980s was to open the drums and dump their contents onto the ground surface, and then rinse the remaining contents into a local storm sewer prior to refurbishing. During the screening site inspection (SSI) in 1987, IDEM noted that about 1,000 drums were at the Gurman facility.

The Ashland facility served as a local supplier of Texaco products from the 1930s through the 1980s. Petroleum products were stored in bulk and distributed, and solvents were used for parts cleaning at local service stations. In 1980, MTS purchased the property and leased it to BiState, which operated the facility for satellite collection and storage of waste oils. In the late 1980s, the property was purchased by Consolidated Recycling for petroleum recycling. In the early 1990s, the property was transferred to Valvoline Oil Company (Valvoline). From 1990 through 1998, the property was owned and operated by First Recovery, a former division of Valvoline. In 1999, many Valvoline recycling facilities were transferred to Safety Kleen; however, Ashland stated that in 1999, Safety Kleen did not take possession of the facility, but did remove some real property in early 2000. In addition, two underground storage tanks (UST) were removed near the warehouse area in 1986 and 1988. The used oil storage operations that followed may have accepted oils containing solvents; however, the presence of the chlorinated VOCs in the raw municipal water predates the oil recycling operations. Ashland notified

EPA on July 25, 2016 that it planned to separate into two independent, publicly-traded companies with Ashland focusing on specialty chemicals and Valvoline focusing on high-performance lubricants. Future obligations at the Ashland facility in Terre Haute were transferred to Valvoline LLC on August 1, 2016. For consistency, this facility will be referred to as Ashland.

The MTS facility stored petroleum products and solvents on the eastern portion of its property. A review of historical area maps showed that a former locomotive repair and maintenance facility (roundhouse) was previously located on the eastern side of the property. Two maps (dated 1858 and 1874) depicted the roundhouse as sited between 2nd and 3rd Street and south of Elm Street on the parcel currently identified as the former Sinclair facility. Although no evidence exists to substantiate the use of solvents during locomotive repair operations at the roundhouse, the use of solvents is considered common practice during the late 1800s through the mid-1900s.

In the early 1980s, IAWC began seeing chlorinated VOCs in the deep wells during required monitoring of the wellfield and notified IDEM. IDEM began the site discovery process for the Elm Street site in 1987, based on information submitted by IAWC.

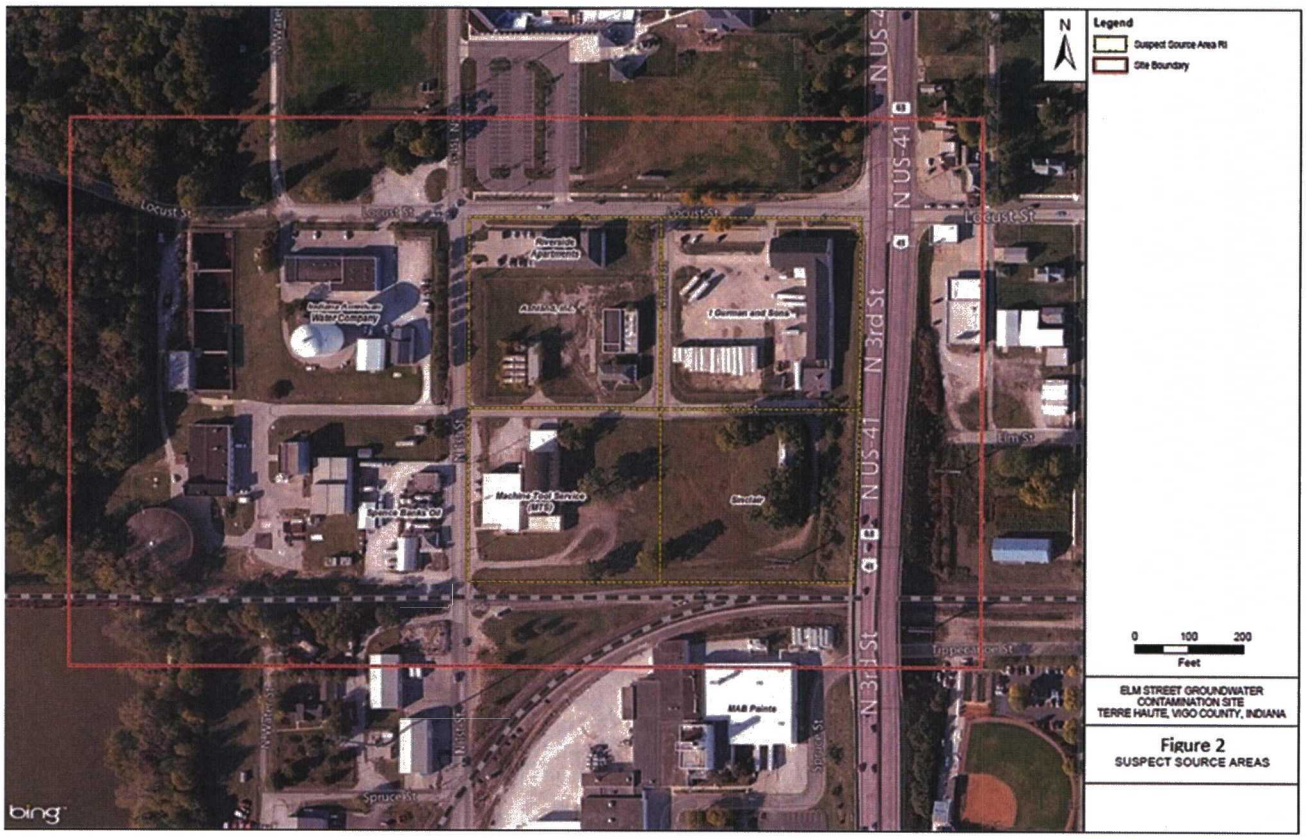
History of Remedial Activities

In 1988 and 1989, IDEM conducted site investigations (SI) at the Gurman, Ashland, and MTS facilities because they were suspected to be potential sources of contamination to groundwater (see Figure 2 for suspected source areas). IDEM collected surface and near-surface soil samples during the SIs. A near-surface soil sample (about 1 foot below ground surface (bgs)) near the Gurman reconditioning building contained PCE, TCE, trans-1,2-DCE, 1,1,1-TCA, and 1,1-DCA. One near surface soil sample collected at the southeast portion of the Ashland facility contained TCE, and another soil sample collected at about 30 inches bgs in the northeast portion of the Ashland property contained toluene, 1,2-DCE, and xylene.

In 1999, IDEM conducted an expanded site investigation (ESI) at the three facilities. During the ESI, IDEM drilled 12 soil borings and collected soil samples at each facility and installed and sampled 22 groundwater monitoring wells (consisting of a shallow and deep well pair at a total of 11 locations). IDEM conducted follow-up sampling of the 22 groundwater monitoring wells in 2000. Analytical results of the IDEM soil and groundwater samples indicated that some of the chemicals detected in the municipal well water were also detected in soil and groundwater beneath the three facilities.

In 1990, Valvoline conducted a limited geotechnical exploration and preliminary petroleum hydrocarbon study as part of a proposed property acquisition of the Ashland facility. Valvoline drilled four test borings and detected slight to moderate petroleum odors in soil samples recovered during the drilling, with low concentrations of VOCs detected using a photoionization detector. Two soil samples were submitted for laboratory analysis for benzene, toluene, xylene, and total petroleum hydrocarbons. Soil boring logs and a location map were included in the subsequent report but laboratory analytical data for the two soil samples were not attached.

Figure 2: Site Suspected Source Areas



In September 2005, Ashland conducted a modified Phase I/Phase II investigation at 118 Elm Street. As part of the investigation, Ashland installed four temporary shallow groundwater monitoring points and collected groundwater samples from each point, as well as from seven monitoring wells installed by IDEM during the ESI. PCE was detected above its maximum contaminant level (MCL) at one existing shallow monitoring well and at two of the temporary monitoring points on the Ashland facility. PCE was also detected above its MCL at an existing shallow monitoring well located east (upgradient) near the western edge of the Gurman facility. In addition, soil samples were collected at each of the four shallow points as they were advanced. No chlorinated VOCs were found in any of the soil samples. Several non-chlorinated organic compounds (including acetone, toluene, cyclohexane, and methyl cyclohexane) were detected at concentrations less than their respective IDEM Risk Integrated System of Closure (RISC) default closure levels for residential exposure near the southeast corner of the office building and near the location of a former underground storage tank (UST).

In the summer of 2013, Ashland conducted voluntary pre-demolition asbestos abatement, building demolition, and excavation of contaminated soil at 118 Elm Street. Buildings and structures demolished included aboveground storage tank (AST) bulk storage tanks, a concrete containment structure, and small warehouse adjacent to the containment area on the western portion of the property. A warehouse located on the eastern portion and a house/office on the southeast corner of the property were also demolished. Building

materials were disposed off-site at a landfill. In addition to building demolition, an inactive railroad spur and seven subsurface pipes were disposed of off-site. Fluids remaining in the pipes were recovered and drummed for disposal. Soil from minor spilling during removal was excavated and stockpiled for characterization and disposal. Over 200 tons of soil was excavated as follows:

- About 62 tons of surface soil and shallow subsurface soil was excavated in the footprint of the warehouse building to a total depth of 2 feet below ground surface (bgs);
- About 44 tons of surface and shallow subsurface soil was excavated outside the southwestern corner of the warehouse building footprint to an average depth of 4 feet bgs to remove soil contaminated with PCE;
- About 79 tons of surface and shallow subsurface soil was excavated west of the former warehouse building footprint to the average depth of 4 feet bgs to remove PCE-contaminated soil; and
- About 26 tons of subsurface and shallow subsurface soil was excavated southwest of the former warehouse building footprint to an average depth of 4 feet bgs to remove soil contaminated by benzene, toluene, ethylbenzene, and xylene.

A subsequent subsurface investigation was done after the voluntary removal action was completed. Analytical results indicated that VOC and SVOC soil contamination was still present at the site at concentrations exceeding the IDEM Migration to Groundwater (MTG) and EPA soil regional screening levels (RSLs). In addition, groundwater samples at the site resulted in concentrations exceeding the maximum contaminant level (MCL) for PCE.

Enforcement Activities

From about 2003 to 2006, EPA issued a series of Information Requests, General Notice Letters, and Special Notice Letters to Ashland, Gurman, and MTS requesting information regarding their operations. Various correspondences were submitted to EPA by each of the parties in response to the information requests.

On September 9, 2006, EPA proposed the Elm Street Groundwater Contamination site for inclusion on the NPL. All potentially responsible parties (PRPs) subsequently declined to participate in an Administrative Settlement and Order on Consent for Remedial Investigation and Feasibility Study (RI/FS) proposed by EPA. In June 2008, EPA began a fund-lead RI/FS at the Elm Street site.

2.3 Community Participation Activities

EPA made the Proposed Plan and other relevant and supporting documents for the Elm Street site, including the RI and FS Reports, available to the public in August 2017. Copies of all the documents supporting the remedy outlined in the Proposed Plan and contained in the Administrative Record file were made available to the public at the Vigo County Public Library, where an information repository has been set up. A notice of the

availability of these documents was published on August 6, 2017 in *The Tribune Star,* a newspaper covering the Terre Haute area. A 30-day public comment period on the Proposed Plan was held from August 7 to September 6, 2017. EPA indicated that it would accept public comments via mail, email, and electronic submissions through its website. EPA's responses to the comments received during the public comment period are provided in the Responsiveness Summary (see Part 3) of this ROD.

2.4 Scope and Role of Operable Unit or Response Action

EPA is addressing the Elm Street site as a single operable unit. This ROD calls for cleanup of all site-related contamination in soil and is intended to be the final response action for this media. A future decision document will be developed to be the final response for groundwater. Although VI is not specifically addressed at the Ashland and Gurman facilities, EPA will revisit the VI issue if the current land uses change before the soil and groundwater remediation goals are reached.

2.5 Site Characteristics

Regional Setting

Vigo County is located in west-central Indiana and is bordered by Vermillion County and Parke County to the north, by Clay County to the east, by Sullivan County to the south, and by the Illinois state line to the west. Its population is about 108,000, based on the most recent census (2010). Terre Haute is its largest city. County-wide land use is mostly rural agricultural with scattered small towns or villages and state-designed recreational and wildlife areas.

Weatherbase.com reports an average annual temperature of approximately 53.1 degrees Fahrenheit for the city of Terre Haute and states that precipitation averages about 41.4 inches per year.

Elm Street Site Setting

The Elm Street site is located in a commercial/industrial area and is comprised of several different properties. The Gurman property encompasses 2.5 acres and is bounded to the north by Locust Street, east by U.S. Highway 41, south by Elm Street, and the west by 2nd Street. The property has several buildings. A concrete parking lot exists on the northern portion of the property along Locust Street. The property is also fenced. Trailers and drums are stored on gravel. The property is currently an active drum recycling facility that accepts used drums for reconditioning and then sells them.

The Ashland property is 1.5 acres and is bounded to the north by the Riverside Apartments, on the east by 2nd Street, on the south by Elm Street, and on the west by 1st Street. As noted above, Ashland demolished facility buildings and excavated contaminated soil in 2013. The Ashland facility is fenced.

The MTS property covers 2.5 acres and is bounded to the north by Elm Street, on the east by the former Sinclair property, on the south by the CSX railroad, and on the west by 1st Street. Several interconnected buildings and a parking lot are present. MTS is currently an active machine tool repair business.

The former Sinclair/roundhouse property is owned by MTS. The property encompasses 2.5 acres of property bounded to the north by Elm Street, on the east by the U.S. 41 overpass, on the south by the CSX railroad, and on the west by the MTS property. Parcels in this area are also owned by the City of Terre Haute. This property is unsecured.

Other properties near the Elm Street site include the Riverside Apartments north of the Ashland property, residential properties across U.S. 41, IAWC to the west, and Spence Oil. Indiana State University owns sport facilities north of the site and the CSX railroad line runs south of the site.

The Wabash River flows west of IAWC, but does not appear to serve as a significant recreational area for swimming or fishing activities, based on site observations.

Regional Geology

The site is located in the physiographic region called the Wabash Lowland. This physiographic region averages about 500 feet above sea level and is more than 350 feet lower in elevation than the crest of the Crawford Upland. Relatively nonresistant siltstone and shale of Pennsylvania age is the dominant rock type. In places, a thin layer of glacial materials blankets the bedrock, but the glacial tills are too thin to have a noticeable effect on the land forms. Rocks that outcrop in the southwestern corner of Indiana comprise the McLeansboro Group. This group can be as thick as 770 feet and consists of mostly sandstone and shale with discontinuous beds of coal and limestone throughout the sequence. Bedrock underlying the area is composed of primarily sandstone and shale, with thin, but laterally persistent beds of limestone and coal. Unconsolidated deposits of glacial and fluvial origin overlie the bedrock surface throughout most of the area.

Elm Street Site Geology, Topography, and Hydrology

In the area of the Elm Street site, surface and near subsurface conditions generally include silty fine sand with trace clay, fine to coarse gravel, and organic matter fill. Subsurface soils are predominantly very loose to dense silty fine to coarse sand with varied amounts of fine to coarse gravel to the shallow water table at approximately 44 feet bgs. Shale bedrock has been encountered below the site at approximately 130 to 150 feet bgs. The topography of the site is generally flat with a slight decline toward the Wabash River.

Aquifers in this region are represented by sands and gravels within the surficial glacial deposits and with the underlying shale bedrock formations. IAWC operates municipal wells located less than 100 feet west of the Elm Street site. These wells are only used in peak season and the water is blended and treated with water from the main water supply. The main water supply is collected from a radial well located near the Wabash River

(approximately1,200 feet west-northwest of the site), and consists of one vertical well with horizontal radial collectors extending below the Wabash River in southwest to northwest directions. Additionally, four deep municipal wells are used intermittently to supplement water when required for the area. This water supply is from the glacial sands and gravels extending well below the current ground surface elevation of the Elm Street site. The wellfield wells were installed in the same water-bearing zone just above the shale bedrock formation. All monitoring wells were installed in the same water bearing zone as the IAWC wells.

Elm Street Site Habitat

The site is in the Interior River Lowland ecoregion of Indiana. This ecoregion hosts a variety of land uses including forestry, agriculture, orchards, livestock production, and petroleum production.

The only potential terrestrial ecological habitat is near the Wabash River along the west edge of the site. Beyond the boundary of the site, the other major habitat is the aquatic habitat associated with the Wabash River. No wetlands are present on the site, however, a freshwater forested/shrub wetland is directly west along the Wabash River. The river itself is classified as a riverine wetland. The Wabash River serves as an important migration corridor for waterfowl and shorebirds such as ducks and geese. The river provides habitat for a large variety of fish including spotfin, emerald shiner, minnows, sunfish, and channel catfish.

Nature and Extent of Contamination

EPA divided the Elm Street site into four investigation areas. The four investigation areas (see Figures 3 through 7) were further divided into seven exposure areas plus the background area to determine the nature and extent of contamination:

- Background – this exposure area includes the area along the north side of Locust Street, beginning at North 2nd Street and wrapping around the east side of the site (east side of U.S. 41/North 3rd Street), with a final upgradient well (MW11) located south of MTS, between east-west and north-south segments of the CSX railroad.
- Gurman – this exposure area includes the Gurman facility.
- Ashland – this exposure area includes the Ashland facility.
- MTS – this exposure area includes the MTS facility.
- Sinclair – this exposure area includes the Sinclair exposure area east to the North 2nd facility.
- North 2nd Street– this exposure area is located between the MTS facility and the Sinclair facility.
- Riverside Apartment Complex – this exposure area includes the parcel of land upon which the Riverside Apartment Complex is located.
- IAWC – this exposure area includes the IAWC facility east to the Wabash River.

Figure 3: Ashland Pre-Demolition Site Features

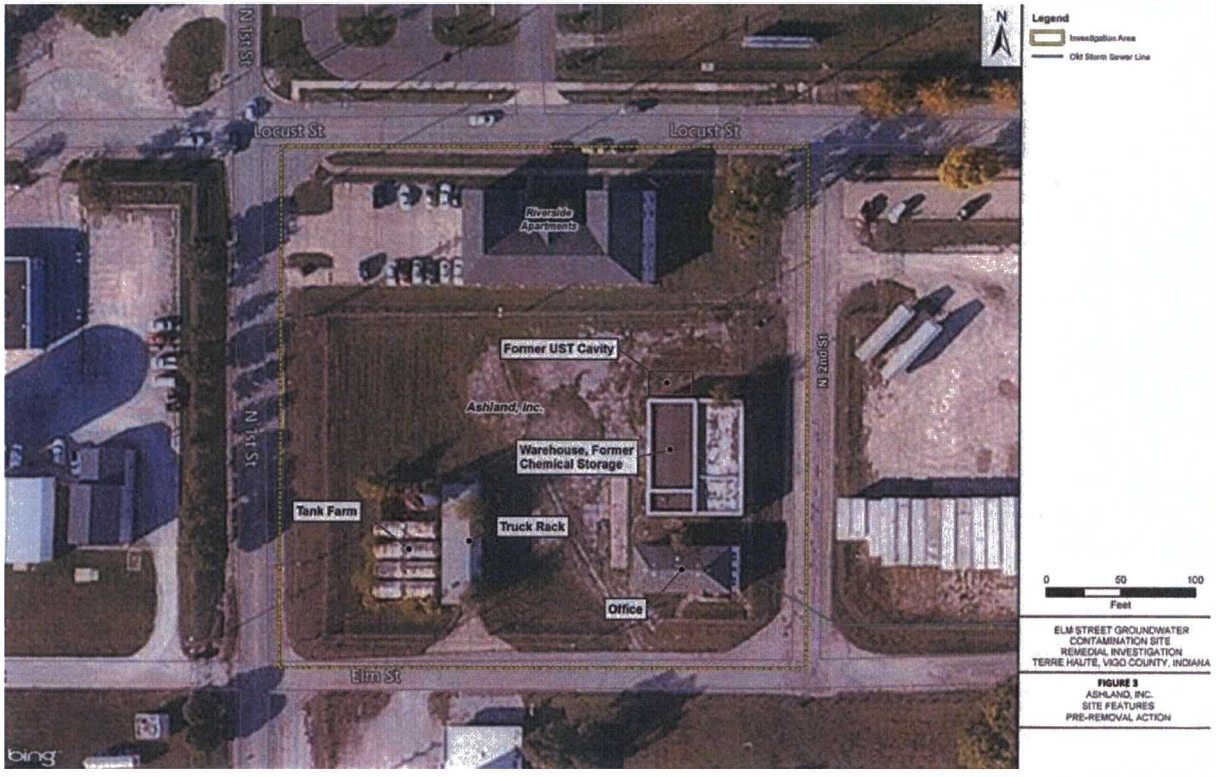


Figure 4: Ashland Post-Demolition Site Features

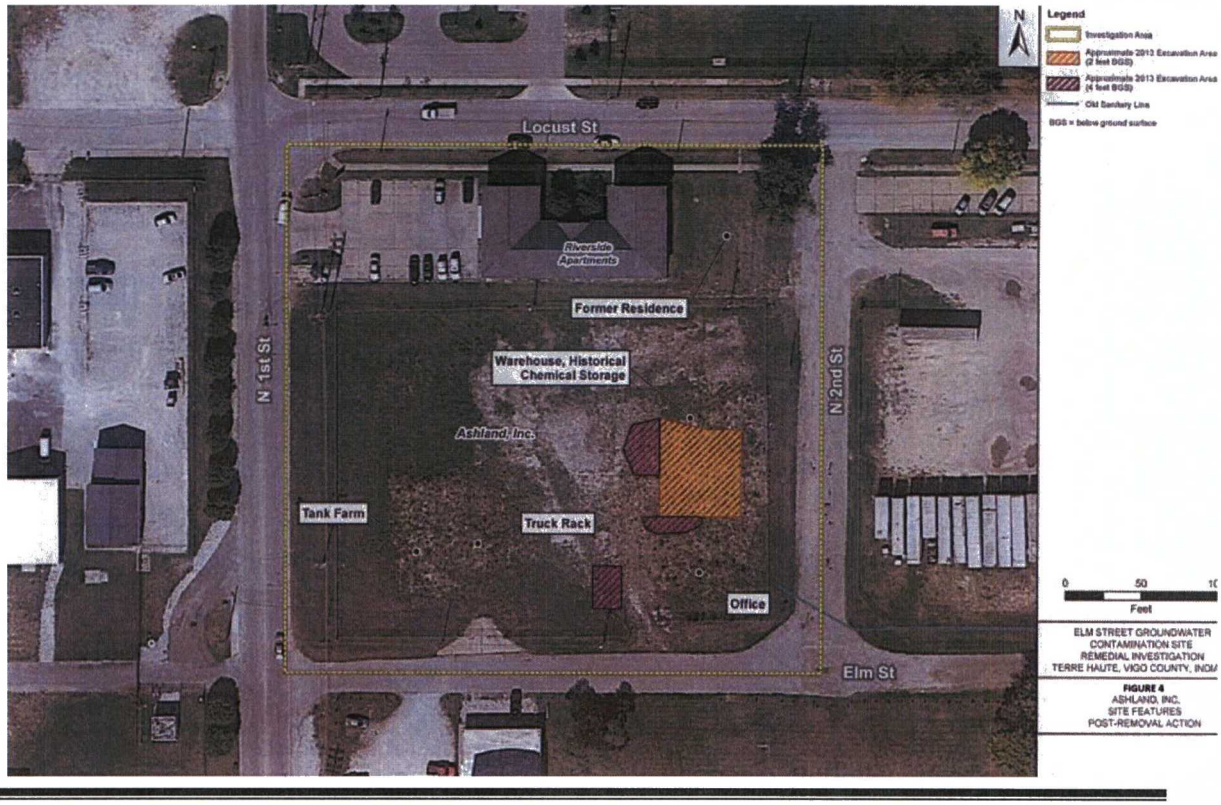


Figure 5: Gurman Site Features

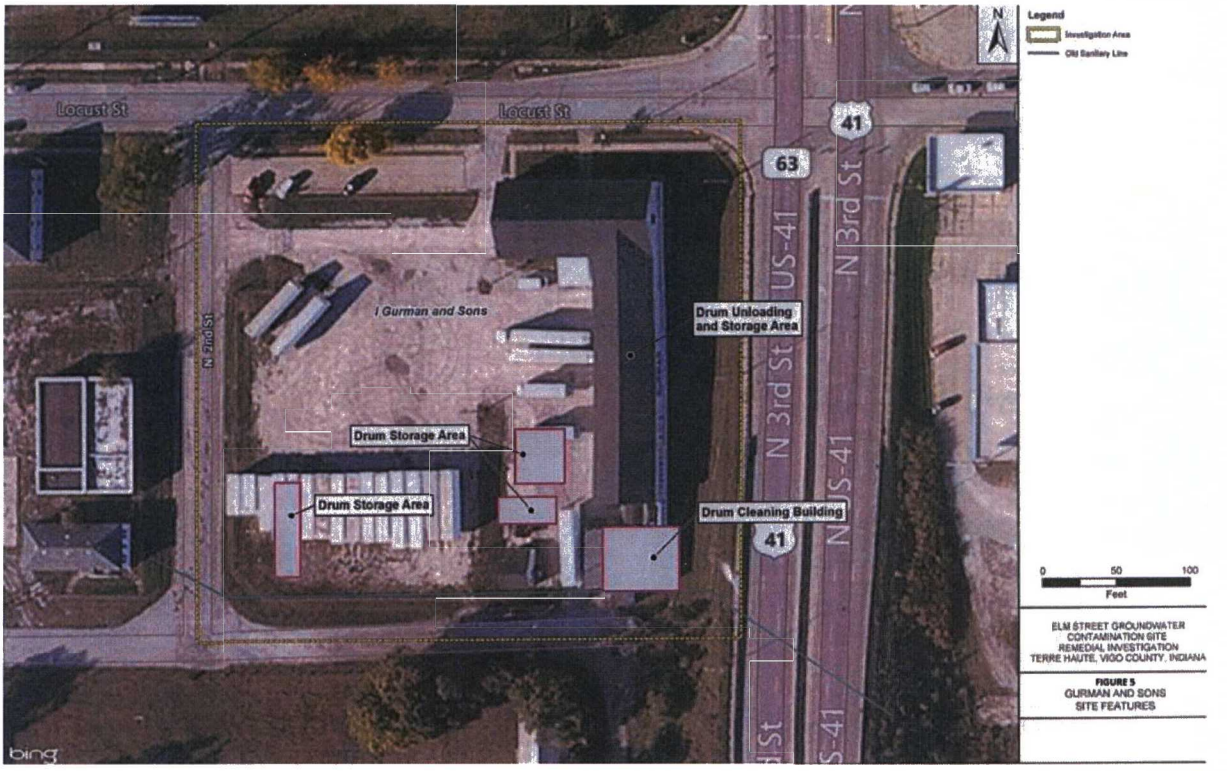


Figure 6: MTS Site Features

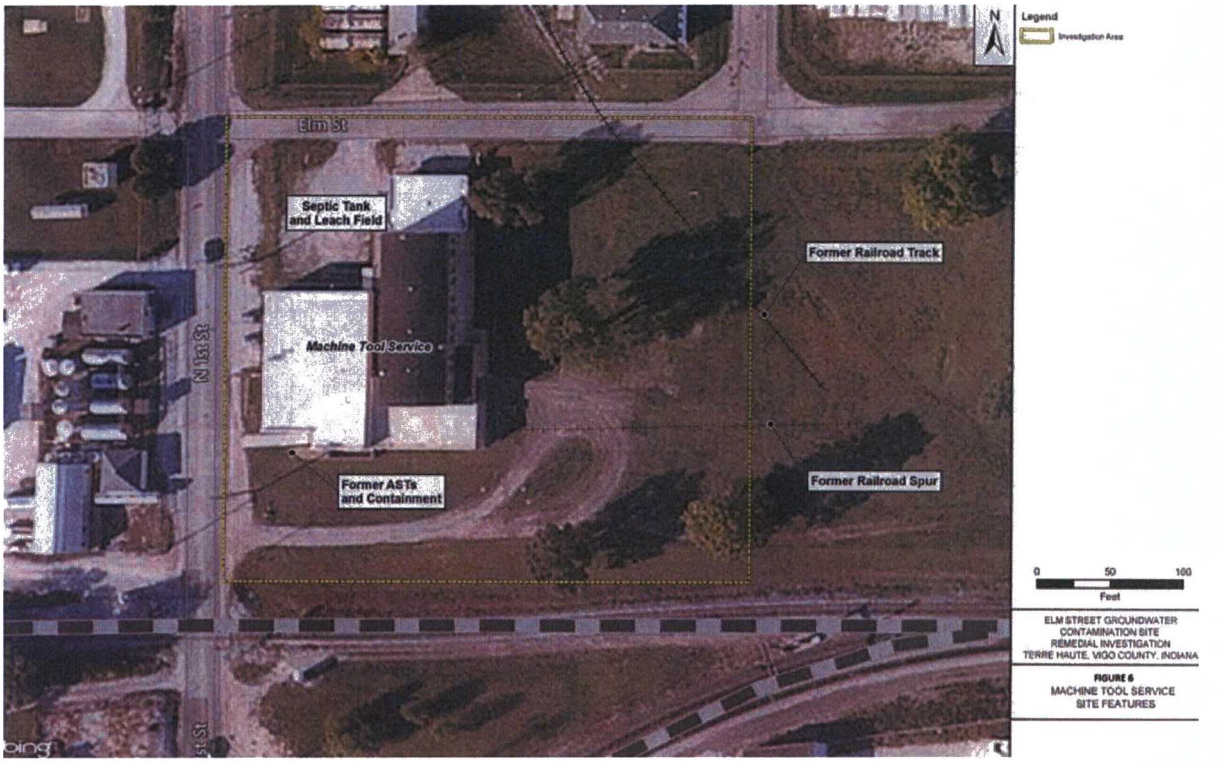
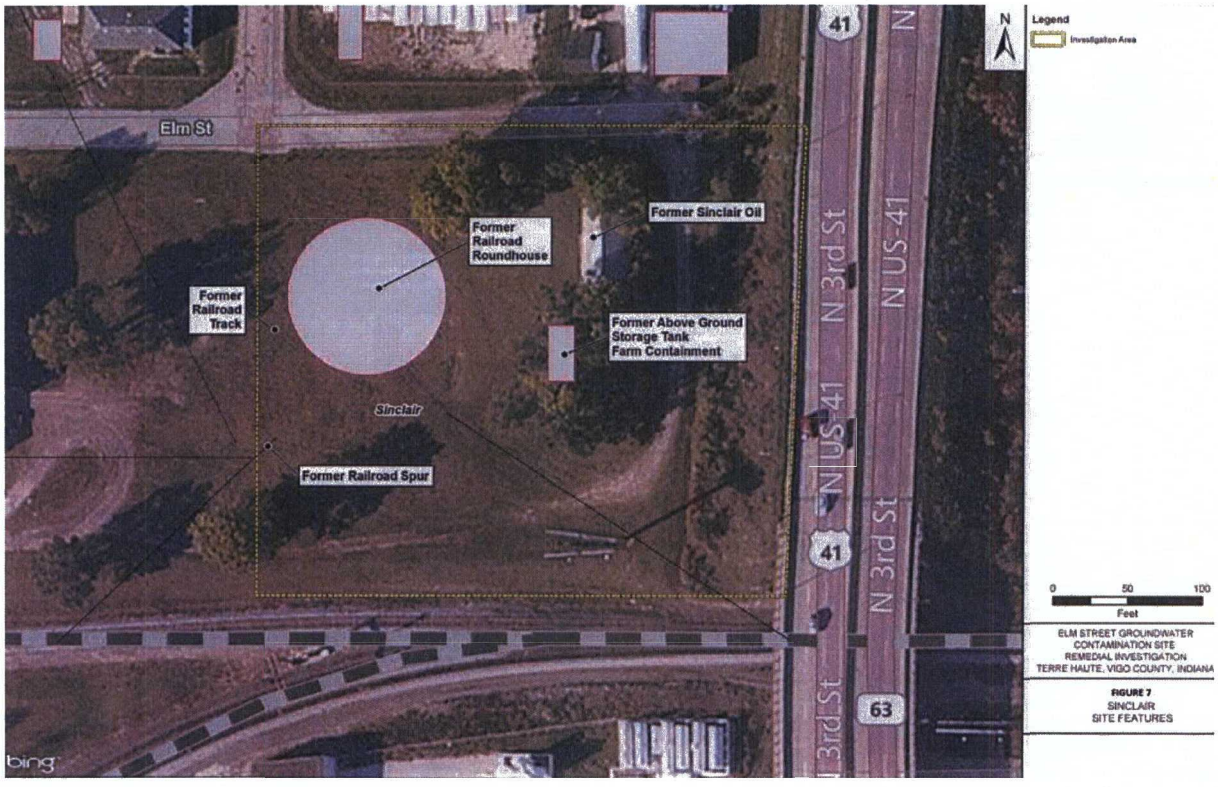


Figure 7: Sinclair Site Features



The seven exposure areas plus the background area were created to (1) separate the Riverside Apartment complex from Ashland, (2) designate the area where the former roundhouse was located between MTS and Sinclair as its own exposure area (North 2nd Street), and (3) separate the IAWC property west of North 1st Street from the rest of the site. Background areas for soil calculations and upgradient and down gradient areas for groundwater comparison were also identified. Background threshold value tables for surface and subsurface soil were presented and discussed in the RI.

Data were collected and compared with screening levels and established or calculated background concentrations to assess whether a chemical is potentially of concern (e.g., exceeds natural conditions), and if so, the extent of its distribution. Based on the recommendation from the Screening Level Ecological Assessment (SLERA) for the site, concentrations of chemicals of potential concern (COPC) detected in monitoring wells nearest the Wabash River did not exceed their respective Ecological Screening Values (ESV) and therefore, Ecological Screening Levels (ESLs) were not included in the evaluation of the nature and extent of contamination at the site.

Soil Contaminants Exceeding Region Screening Levels (RSLs)

Table 1 lists the VOCs, PAHs, PCBs, pesticides, and metals that exceeded the Residential RSLs at the site:

Table 1: Contaminants Exceeding Residential RSLs (units are in mg/kg)

Contaminant	Limit	Gurman	Ashland	MTS	Sinclair	N. 2nd	Riverside
VOCs							
TCE	0.94	ND- 5.10	ND-1.4				
1,1,2,2-Tetrachloroethane*	0.6			ND-5.4			
1,1,2-Trichloroethane*	1.1			ND-3.1J			
SVOCs							
Benzo(a)anthracene	0.16	ND-1.6J	ND-1.5	ND-23	ND-0.98	ND-1.1	
Benzo(a)pyrene	0.016	ND-1.2	ND-1.1	ND-20	ND-0.95	ND-1.2	
Benzo(b)fluoranthene	0.16	ND-1.6	ND-1.6	ND-25	ND-1.3	MD-2.1	
Indeno(1,2,3-cd)pyrene	0.16	ND-0.72	ND-0.35	ND-6	ND-0.59J	ND-0.72J	
Benzo(k)fluoranthene*	0.16			ND-12			
Chrysene*	16			ND-24			
Naphthalene*	3.8			ND-4.8			
Metals							
Arsenic	0.68	ND-14.6	ND-48.1J	ND-37.6	ND-41.6	ND-17.7	ND-6.5
Lead*	400	ND-675J					
Thallium	0.78	ND-2.5		ND-4.3			
Cobalt	23			ND-159			
Iron	55,000			ND-295,000			
Manganese	1,800			ND-5,500J			
Vanadium	390			ND-1,410			
Cyanide*	2.7	ND-3					
PCBs							
Aroclor-1260*	0.24				ND-3		
Aroclor-1254	0.24	ND-0.9J					
Pesticides							
Heptachlor*	0.13	ND-3.5J					
Heptachlor epoxide*	0.07	ND-0.22J					

*Found in one sample throughout the whole site.
ND: non-detect

Table 2 lists the VOCs, PAHs, PCBs, pesticides, and metals exceeded Industrial RSLs at the site:

Table 2: Contaminants Exceeding Industrial Residential RSLs (units are in mg/kg)

Contaminant	Limit	Gurman	Ashland	MTS	Sinclair	N. 2nd	Riverside
VOCs							
1,1,2,2-Tetrachloroethane*	2.7			ND-5.4			
SVOCs							
Benzo(a)anthracene	2.9			ND-23	ND-0.98		
Benzo(a)pyrene	0.29	ND-1.2	ND-1.1	ND-20	ND-0.95	ND-1.2	
Benzo(b)fluoranthene	2.9			ND-25			
Indeno(1,2,3-cd)pyrene	2.9			ND-6			
Metals							
Arsenic	3	ND-14.6	ND-48.1J	ND-37.6	ND-41.6	ND-17.7	ND-6.5
PCBs							
Aroclor-1260*	0.99				ND-3		
Pesticides							
Heptachlor*	0.63	ND-3.5J					

*Found in one sample throughout the whole site.
ND: non-detect

Table 3 lists the VOCs, PAHs, PCBs, pesticides, and metals that exceeded the IDEM Media to Groundwater Levels (MTGs) at the site.

Table 3: Contaminants Exceeding IDEM MTGs (units are in mg/kg)

Contaminant	Limit	Gurman	Ashland	MTS	Sinclair	N. 2nd	Riverside
VOCs							
TCE	0.94	ND- 5.10	ND-1.4				
1,1,2-Trichloroethane*	1.1			5.4			
Metals							
Arsenic	0.68	ND-14.6	ND-48.1J	ND-37.6	ND-41.6	ND-17.7	ND-6.5

*Found in one sample throughout the whole site.
ND: non-detect

Groundwater Contaminants Exceeding Human Health Screening Levels (HHSLs)

Table 4 lists the VOCs that exceeded the HHSLs in monitoring wells at the site.

Table 4: Contaminants Exceeding HHSLs in Groundwater (units are in µg/l)

Contaminant	Limit	Gurman	Ashland	MTS	Sinclair	N. 2nd	Riverside
VOCs							
PCE	5	5.5-7.8	6.5-7.6				
1,1,2,2-Tetrachloroethane*	0.66			1.1			

*Found in one sample throughout the whole site.

Table 5 lists the VOCs that exceeded the HHSLs in grab samples. Grab samples are considered "a snapshot in time".

Table 5: Contaminants Exceeding HHSLs in Groundwater (units are in µg/l)

Contaminant	Limit	Gurman	Ashland	MTS	Sinclair	N. 2nd	Riverside
VOCs							
PCE	5	ND-7.4	ND-8.2	ND-14	ND-11		
1,1,2,2-Tetrachloroethane*	0.66			ND-17			
1,2-Dichloropropane	5			ND-18			
Carbon Tetrachloride	5			ND-9.6			
Methylene Chloride	5						ND-5.5

*Found in one sample throughout the whole site.
ND: non-detect

Metals in groundwater were found in similar concentrations on-site and off-site.

Soil Vapor Contaminants Exceeding Human Health Screening Levels (HHSLs)

The results from sampling soil gas at Gurman, Ashland, MTS, and the Riverside Apartments exposure areas showed the following results:

Gurman: VOCs were detected in soil gas samples at the Gurman exposure area exceeding one or more HHSL, with the highest concentrations located on the southeastern portion of the exposure area (EA) near the drum processing area.

Ashland: VOCs were detected in soil gas samples at the Ashland exposure area exceeding one or more HHSL, with the highest concentrations located under the footprint of the former warehouse building generally from the deep soil gas wells near the groundwater table.

MTS: VOCs were detected in soil gas samples at the MTS exposure area exceeding one or more HHSL, with the highest concentrations located along the northern portion of the EA, north of the MTS building. All soil gas results that exceed screening levels were detected in the deep soil gas wells.

Riverside Apartments: VOCs were detected in soil gas samples at the Riverside Apartment exposures area exceeding one or more HHSLs, with the highest concentrations located along the southern portion of the exposure area, closest to the Ashland exposure area. Results that exceed screening levels were more frequent in shallow soil gas wells, but were varied, with highest concentrations for specific analytes varying between shallow and deep wells within a given well set.

Surface Water Contaminants Exceeding Human Health Screening Levels (HHSLs)

Arsenic was detected in one sample at the Wabash River with a concentration of 2.4 µg/l. The HHSL is 0.14 µg/l. This location was the farthest sampling location upstream of the Elm Street site, directly west of the radial collector well on the eastern bank of the Wabash River.

Conceptual Site Model

EPA developed Conceptual Site Models for the Elm Street site based on site characteristics and media sampling results (see Figures 8 and 9, next pages).

The primary source of contamination is historical operations at and discharges from the five primary industrial/commercial operations at the Elm Street site (Gurman, Ashland, MTS, Former Roundhouse Area, and Sinclair).

Five primary release/transport (R/T) mechanisms of contaminants of concern (COCs) to affected media include:

- Direct disposal of drum contents onto ground surface;
- Spills from locomotive repair/maintenance activities;
- Leaks from ASTs, drum storage areas, and tank farms;
- Leaks from sewers receiving rinsate from drum cleaning; and
- Leaks from USTs (including associated piping)

Contamination primarily spilled, leaked, or was released to the ground surface and is believed to have leached to the groundwater. Contaminants that have leached (or are leaching) to groundwater are migrating off-site with groundwater flow toward the Wabash River located west of the site. Also, volatile contaminants in groundwater may subsequently migrate to ambient air or into buildings through vapor intrusion. Similarly, volatile soil contaminants are expected to release to ambient air through volatilization and particulates (fugitive dust) emissions. Soil contaminants are also expected to be taken up (to varying degrees) into produce raised in on-site soil (i.e., homegrown produce).

Groundwater is the major contaminated medium identified for this site. If one assumes that the Wabash River is a gaining stream, discharge of groundwater occurs from the site to the aquatic habitat of the Wabash River. This causes surface water and sediment to be secondary contaminated media of concern. Therefore, potential direct exposure points for ecological receptors at the Elm Street site include sediment and surface water in the

Wabash River. The impact on sediment would be via movement of groundwater to the surface water through the sediments, and the groundwater would make up a significant portion of the sediment pore water. Pore water is the controlling factor for sediment toxicity.

Potential direct uptake mechanisms for ecological receptor include dermal contact/absorption and direct ingestion. Ecological receptors may also be exposed via consumption of prey/food items that have bioaccumulated/bioconcentrated constituents. However, given the class of contaminants identified in the groundwater at the site, VOCs, the bioaccumulation pathway is considered *de minimis* and will not be quantitatively evaluated.

Significant release/transport (R/T) mechanisms at the site include:

Direct Disposal of Drum Contents onto Surface Soil

Direct disposal is an important R/T mechanism because PAHs and metals are not very soluble and tend to sorb to soil particles. VOCs are soluble and tend to be mobile through soils and can leach/percolate to groundwater. PAHs, metals and VOCs are present in the soil at concentrations above screening levels. VOCs are present in the groundwater above screening levels.

Spills from Locomotive Repair/Maintenance Activities to Surface Soil

Spills are an important R/T mechanism because PAHs are not very soluble and tend to sorb to soil particles. PAHs are present in the soil at concentrations above screening levels.

Leaks from ASTs, Drum Storage Areas and Tank Farms

Leaks are an important R/T mechanism because PAHs are not very soluble and tend to sorb to soil particles. PAHs are present in the soil at concentrations above screening levels.

Leaks from USTs (including associated piping)

Leaks are an important R/T mechanism because VOCs and metals can impact subsurface soils and leach into the groundwater. VOCs and metals are present in the soil at concentrations above screening levels. VOCs can also volatilize into soil gas and percolate/leach into the groundwater.

Leaks from Sewers Receiving Rinsate from Drum Cleaning

Leaks are an important R/T mechanism because VOCs and metals can impact subsurface soils and can leach into the groundwater. VOCs and metals are present in the soil at concentrations above screening levels. VOCs can also volatilize into soil gas.

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Figure 8: Human Health Conceptual Site Model

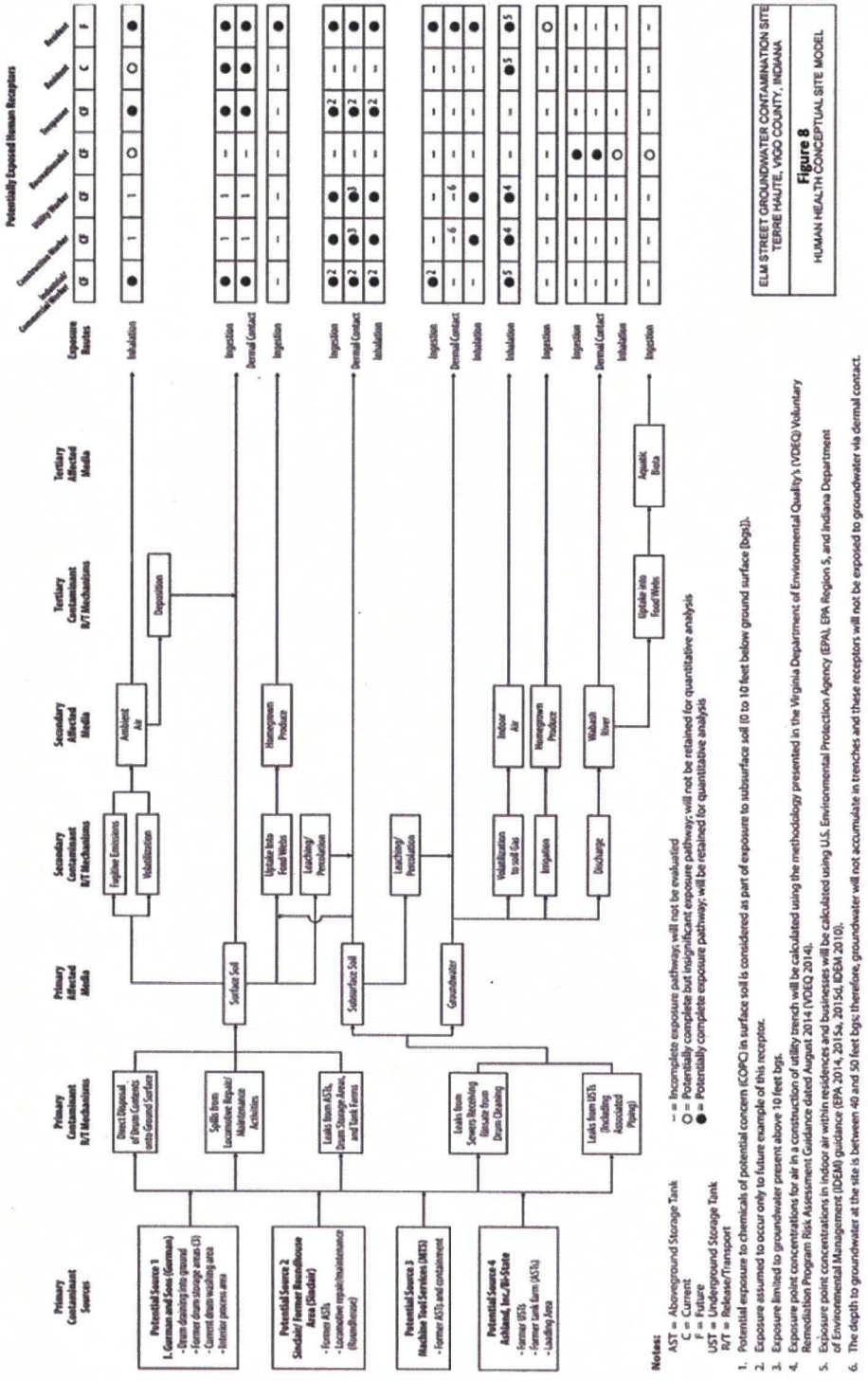

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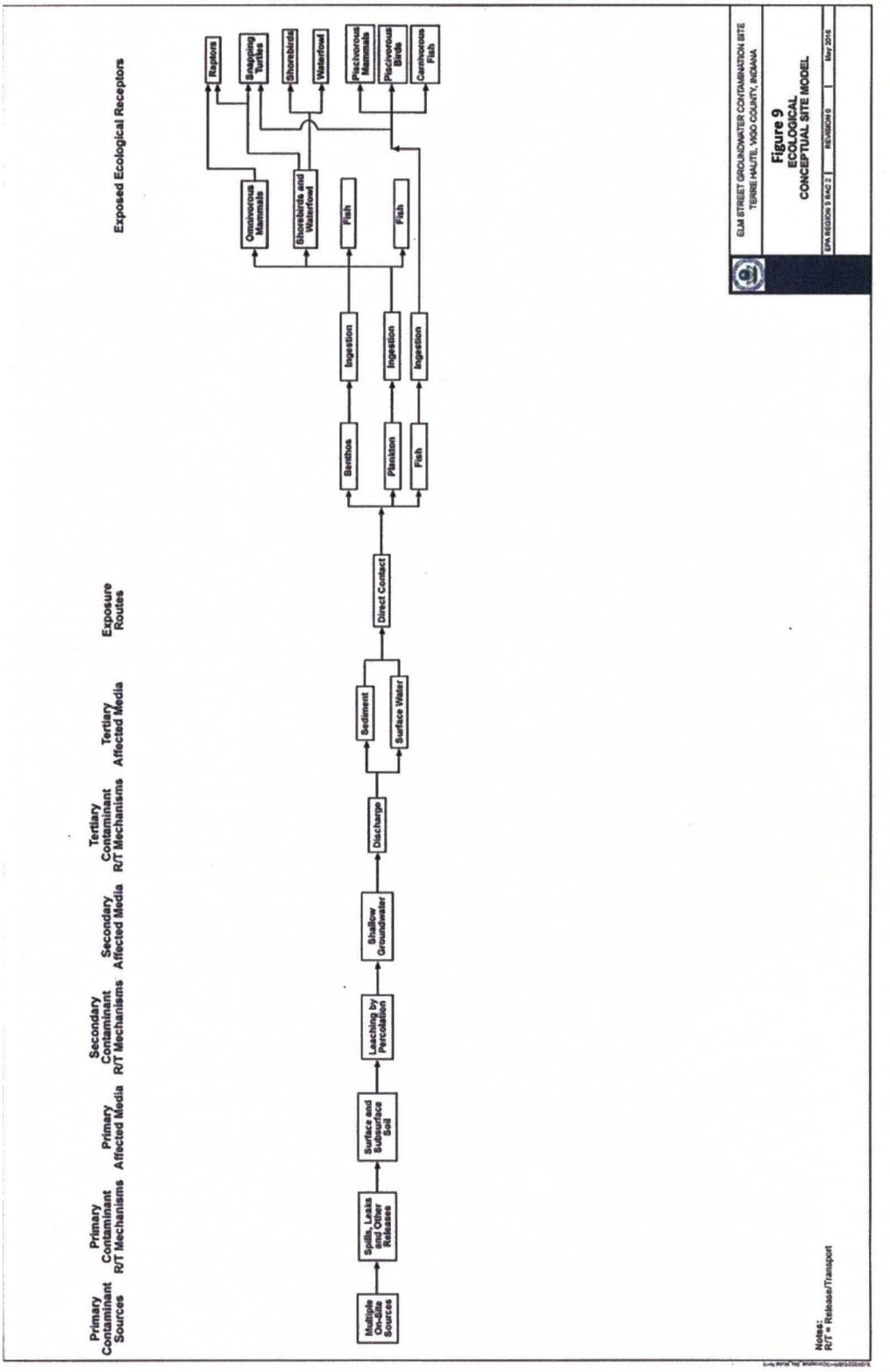
Figure 9: Ecological Risk Conceptual Site Model



R/T mechanisms that are not significant at the site include:

Surface Soil to Ambient Air to Soil

Generally, COCs have the potential to migrate to ambient air by fugitive dust and volatilization and then back to surface soil. PAHs and metals in the surface soil are more likely to have been caused by leaks and spills of contaminants onto the surface soil. Contamination by fugitive emissions and volatilization would be minor compared to direct contact.

Surface Soil to Uptake into Food Webs

This area is a commercial/industrial area. Homegrown produce would not normally occur in this area. The area is likely to remain commercial/industrial and homegrown produce would not be done in these areas. Also, homegrown produce was not observed at the Riverside Apartments.

Groundwater to Irrigation

This area is a commercial/industrial area. Irrigation for homegrown produce would not normally occur in this area. The area is likely to remain commercial/industrial and homegrown produce would not be done in these areas. Also, homegrown produce was not observed at the Riverside Apartments.

Groundwater to River Discharge

Groundwater to river discharge was evaluated and contaminants were found not entering into the Wabash River. Therefore, there would be no impacts on uptake into food webs and aquatic biota.

2.6 Current and Potential Future Land and Resource Uses

Properties at the Elm Street site are zoned commercial or industrial with light industrial activities occurring on the Gurman and MTS properties. The Ashland property has been devoid of any structures since 2013. The Sinclair property had one storage warehouse and a parked semi-trailer at the time of the RI. The Riverside Apartment Complex is the only residential structure, but it is zoned commercial. The Riverside Apartment Complex primarily houses students attending Indiana State University. Properties north of the Riverside Apartment Complex are developed by Indiana State University for use in various sporting fields. South of the site is a property abandoned by MAB Paints. This property was purchased by the University's Board of Trustees and is being razed.

Future site use is projected to be similar to current levels. Once the PAHs, metals, and VOCs in the soil and groundwater are addressed the properties could be attractive for redevelopment.

2.7 Summary of Site Risks

EPA conducted a baseline risk assessment to evaluate the potential for human health and ecological risks due to the contaminants found at the Elm Street site. The human health risk assessment (HHRA) addressed potential risks to people due to ingestion and/or dermal contact with contaminated soil and groundwater. The ecological risk assessment (ERA) determined the potential for adverse impacts to riparian habitat associated with the Wabash River.

Human Health Risk Assessment

EPA evaluated human health risks for the following potential receptors at the Elm Street site:

- **Current and Future Trespasser:** Current and future trespassers were assumed exposed via incidental ingestion of, dermal contact with, and inhalation of particulates and vapors from surface soil and subsurface soil.

- **Current and Future Resident:** Current and future residents at the Riverside Apartments may be exposed via inhalation of volatile contaminants that have migrated from subsurface soil and groundwater through soil gas to indoor air (i.e., vapor intrusion). Future residents at all Elm Street land-based exposure areas were assumed exposed via incidental ingestion of, dermal contact with, and inhalation of particulates and vapors, surface and subsurface soil, and ingestion of produce grown in surface and subsurface soil. In addition, future residents may be exposed via ingestion of and dermal contact with groundwater used as a source of potable water, and via inhalation of vapors that have migrated from groundwater to indoor air.

- **Current and Future Commercial/Industrial Workers:** Current industrial/commercial workers at the Gurman and MTS exposure areas were assumed to be exposed via incidental ingestions of, dermal contact with, and inhalation of particulates and vapors from surface soil, and via inhalation of vapors that have migrated from subsurface soil and groundwater through soil gas into indoor air via vapor intrusion. Future industrial/commercial workers were assumed exposed via incidental ingestion of, dermal contact with, and inhalation of particulates and vapors from surface and subsurface soil, and via ingestion of groundwater used as a source of potable water, and via inhalation of vapors that have migrated from groundwater to indoor air. Finally, workers at the IAWC exposure area were assumed to be potentially exposed via inhalation of volatile groundwater contaminants that have migrated into indoor air via vapor intrusion, as described above.

- **Current and Future Construction Worker:** Current and future construction workers were assumed exposed via incidental ingestion of, dermal contact with, and inhalation of particulates and vapors from surface and subsurface soil, and via inhalation of VOCs from the site while working inside construction trenches. (Note: the water table at the site is at 40 to 50 feet bgs, which is well below the typical depth of construction trenches.

Therefore, groundwater was assumed to not enter construction trenches, and construction workers were assumed to have no direct contact with groundwater.)

- **Current and Future Utility Worker:** Current and future utility workers were assumed exposed via incidental ingestion of, dermal contact with, and inhalation of particulates and vapors from surface and subsurface soil, and via inhalation of VOCs from the site while working inside utility trenches. (Note: the water table at the site is at 40 to 50 feet bgs, which is well below the typical depth of utility trenches. Therefore, groundwater was assumed to not enter utility trenches, and utility workers were assumed to have no direct contact with groundwater.)

- **Current and Future Recreationalist:** The Elm Street site is not expected to be developed for recreational purposes. However, the Wabash River is used for recreational purposes such as boating and fishing. Therefore, current and future recreationalists were assumed to be exposed to surface water via incidental ingestions and dermal contact. Sediment and aquatic life (fish) samples were not collected from the Wabash River. In assessing the risks to humans, residential, and industrial/commercial worker contaminant screening levels were based on a target excess lifetime cancer risk (ELCR) of 1×10^{-6}, or one additional instance of cancer in one million persons exposed over a lifetime, and a non-cancer hazard index (HI) quotient of one (1). The HI quotient is a way of expressing the potential for non-carcinogenic health effects that may occur due to exposure to a dose of a chemical. An HI quotient greater than one indicates that there may be a concern for potential health effects. EPA's target risk range is 1×10^{-6} to 1×10^{-4} ELCR.

  Table 6 gives a summary of risks at the site as calculated for each receptor in the exposure areas.

Table 6: Potential Human Health Risks at each Exposure Area

Exposure Area	Gurman	Ashland	MTS	N 2nd Street	Sinclair	Riverside	IAWC	Wabash River	Upgradient/ Background
Receptor	**ECLR HI**	**ELCR HI**	**ELCR HI**	**ELCR HI**	**ELCR HI**	**ELCR HI**	**ELCR HI**	**ELCR HI**	**ELCR HI**
Current Trespasser	5 x 10^{-6} C < 1 C 1 x 10^{-6} A < 1 A 2 x 10^{-6} Ad < 1 Ad	4 x 10^{-6}C < 1C 9 x 10^{-7}A < 1 A 1 x 10^{-6}Ad < 1 Ad	4 x 10^{-5}C < 1 C 7 x 10^{-6} A < 1 A 5 x 10^{-6}Ad < 1 Ad	4 x 10^{-6}C < 1C 9 x 10^{-7}A < 1 A 8 x 10^{-7}Ad < 1 Ad	3 x 10^{-6}C < 1 C 8 x 10^{-7}A < 1A 1 x 10^{-6} Ad < 1	4 x 10^{-7}C < 1 C 1 x 10^{-7}A < 1 A 2 x 10^{-7}Ad < 1 Ad	---------- ----		5 x 10^{-7}C < 1 C 1 x 10^{-7}A < 1 A 2 x 10^{-7} Ad < 1 Ad
Future Trespasser	3 x 10^{-6} C < 1 C 1 x 10^{-6} A < 1 A 1 x 10^{-6} Ad < 1 Ad	2 x 10^{-6}C < 1C 5 x 10^{-7}A < 1 A 7 x 10^{-7}Ad < 1 Ad	2 x 10^{-5}C < 1 C 4 x 10^{-6}A < 1 A 3 x 10^{-6}Ad < 1 Ad	3 x 10^{-6} < 1 6 x 10^{-7}A < 1 A 7 x 10^{-7}Ad < 1	3 x 10^{-6}C < 1 C 7 x 10^{-7} A < 1A 9 x 10^{-7} Ad < 1 Ad	4 X 10^{-7}C < 1 C 1 x 10^{-7}A < 1 A 2 x 10^{-7}Ad < 1 Ad	---------- -----		9 x 10^{-7}C < 1 C 2 x 10^{-7} A < 1 A 3 x 10^{-7} Ad <1 Ad
Current Resident	---------- -	---------- --	---------- -	----------	---------- ----	5 x 10^{-5} 0.9	---------- -----		---------- ----
Future Resident	3 x 10^{-3} 200 ss/gw 2 x 10^{-3} 200 sub/gw	2 x 10^{-3} 200 ss/gw 8 x 10^{-4} 100 sub/gw	2 x 10^{-3} 50 ss/gw 1 x 10^{-3} 60 sub/gw	5 x 10^{-4} 200 ss/gw 4 x 10^{-4} 100 sub/gw	4 x 10^{-4} 50 ss/gw 4 x 10^{-4} 40 sub/gw	2 x 10^{-4} 20 ss/gw 2 x 10^{-4} 20 sub/gw	2 x 10^{-6} < 1 gw		5 x 10^{-5} 8 ss/gw 5 x 10^{-5} 30 sub/gw
Current Commercial/ Industrial Worker	1 x 10^{-4} 30	1 x 10^{-4} 20	4 x 10^{-5} < 1	6 x 10^{-5} 4	6 x 10^{-5} 4	----------	5 x 10^{-7} < 1		3 x 10^{-6} < 1
Future Commercial/ Industrial Worker	2 x 10^{-4} 30	9 x 10^{-5} 20	9 x 10^{-5} 4	6 x 10^{-5} 4	6 x 10^{-5} 4	6 x 10^{-5} 4	5 x 10^{-7} < 1		3 x 10^{-6} < 1
Current Construction Worker	2 x 10^{-6} 1	8 x 10^{-7} < 1	3 x 10^{-6} 2	8 x 10^{-7} < 1	1 x 10^{-6} < 1	3 x 10^{-7} < 1	4 x 10^{-10} < 1		3 x 10^{-7} < 1
Future Construction Worker	2 x 10^{-6} 1	8 x 10^{-7} < 1	3 x 10^{-6} 2	8 x 10^{-7} < 1	1 x 10^{-6} < 1	3 x 10^{-7} < 1	4 x 10^{-10} < 1		3 x 10^{-7} < 1
Current Utility Worker	4 x 10^{-6} < 1	2 x 10^{-6} < 1	6 x 10^{-6} < 1	2 x 10^{-6} < 1	2 x 10^{-6} < 1	6 x 10^{-7} < 1	8 x 10^{-10} < 1		6 x 10^{-7} < 1
Future Utility Worker	4 x 10^{-6} < 1	2 x 10^{-6} < 1	6 x 10^{-6} < 1	2 x 10^{-6} < 1	2 x 10^{-6} < 1	6 x 10^{-7} < 1	8 x 10^{-10} < 1		6 x 10^{-7} < 1
Current Swimmer								< 1 x 10^{-6} < 1	
Future Swimmer								< 1 x 10^{-6} < 1	

Notes: Red = exceeds risk targets. C: child, A: adolescent, Ad: Adult, ss/gw: surface soil/groundwater, sub/gw: subsurface soil/groundwater

- According to the Beacon website for Vigo County, all the properties at the Elm Street site are either zoned commercial or industrial, including the Riverside Apartments.
- Indiana American Water Company provides municipal drinking water to the residences and businesses in Terre Haute.
- Future residents ELCR is driven primarily by consumption of metals and PAHs through incidental ingestion and consuming homegrown produce via surface soil and consumption of arsenic and VOCs via groundwater. The HI is primarily driven by ingestion of metals and VOCs in soil and groundwater. The Gurman exposure area has the addition of pesticides for both ELCR and HI.
- Commercial/Industrial Workers HI values at Gurman and Ashland exposure areas are primarily driven by inhalation of VOCs via groundwater. The Future Commercial/Industrial Workers' ELCR at the Gurman exposure area is primarily through consumption of VOCs in groundwater.
- Commercial/Industrial Workers' HI values for the MTS, N 2nd Street, Sinclair, and Riverside Apartments areas are primarily for ingestion of thallium via groundwater.
- Construction workers HI at the MTS exposure area had no individual HIs above 1. Future Resident HI at the Upgradient/Background exposure area is primarily through ingestion of metals in the soil via homegrown produce.

HHRA Conclusions

Total risks exceed 1 x 10^{-4} ELCR, the upper end of EPA's target risk range, only for future residents at the Gurman, Ashland, MTS, North 2nd Street, Sinclair, and Riverside Apartments exposure areas. The assumption is that future residents would live in slab structures and use potable groundwater rather than municipal water.

Total risks are less than 1 x 10^{-6} ELCR, and considered insignificant, primarily for some combination of trespassers, construction workers, and utility workers at Ashland, North 2nd Street, Sinclair, Riverside Apartments, IAWC, Wabash River, and Background/Upgradient exposure areas.

Total hazards greater than 3 are primarily for future residents and future commercial/industrial workers at the Gurman, Ashland, MTS, North 2nd Street, Sinclair, Riverside, and Background/Upgradient exposure areas. The assumption is that future residents would live in slab structures and use potable groundwater rather than municipal water.

Total hazards less than 1 and considered insignificant, primarily for some combination of trespassers, construction workers, and utility workers at the Ashland, MTS, North 2nd Street, Sinclair, Riverside, IAWC, Wabash River (all swimmers), and Background/Upgradient exposure areas.

Primary contaminants found in soil are arsenic and PAHs. Primary contaminants found in groundwater are metals and VOCs.

Ingestion of homegrown produce dominates future residential soil risk and hazard results contributing 70-98 percent of the total risk or hazard depending on the exposure area. Vapor intrusion risks were identified at the Gurman, Ashland, North 2nd Street, and Riverside Apartments exposure areas. No individual HI was greater than 1 for current residents at the Riverside Apartments.

Primary uncertainty in the risk assessment include assumptions in the future use of the individual properties at the site. They are unlikely to be developed into residential properties in the future.

Widespread, ambient background impacts as a result of historical activities are typical of industrial settings such as that of the Elm Street site. Uncertainty is associated with determining whether concentrations of some chemicals detected at the Elm Street site, and the resultant risks, are site-related, or are attributable to the industrial character of the area, or are naturally occurring in background.

Ecological Risk Assessment

EPA evaluated the potential for adverse effects on ecological receptors by establishing baseline conditions at the site and then calculating potential impacts based on factors such as exposure levels of contaminants found at the site and the potential effects that the contaminants could have on organisms. As for human health risks, EPA calculates a hazard quotient (HQ) for organisms, with a threshold value of 1. Generally, the higher the HQ, the greater the likelihood a toxic effect will occur. Although probabilities cannot be specified based on a point-estimate approach, an HQ of 1 is usually regarded as indicating a low probability of adverse ecological effects. An HQ greater than 1, however, does not imply that adverse effects will occur – only that adverse effects could occur.

Habitat

The two habitats observed at the site are the aquatic habitat of the Wabash River and the forested area next to the Wabash River. During the habitat evaluation, the forested area apparently was not directly affected by discharges of groundwater based on the depth of the groundwater; therefore, this habitat was not considered a complete exposure pathway and was not further evaluated. Therefore, the focus was on the riparian habitat associated with the Wabash River. The following assessment endpoints were evaluated: 1) ensure adequate protection of the benthic and aquatic communities in the Wabash River by protecting them from the deleterious effects of acute and chronic exposures to site-related contaminants present in the river, and 2) ensure adequate protection of threatened and endangered species (including candidate species) and species of special concern and their habitats by protecting them from the deleterious effects of acute and chronic exposure to site-related contaminants.

ERA Results

To evaluate the potential of the discharge of contaminated groundwater to the aquatic community in the Wabash River, site-wide concentrations of contaminants in the groundwater plume were compared with surface water ESVs to identify contaminants at concentrations that could cause an impact. Two constituents were at maximum detected concentrations (total) that resulted in HQs exceeding the EPA threshold value of 1, indicating potential for ecological effects. The contaminants of potential ecological concern (COPECs) and the maximum HQ for each were chloroform (HQ=1.3) and toluene (HQ=2.6).

These concentrations were identified in the sample collected from a location near the IAWC facility. The chloroform and toluene concentrations decreased in the sample locations closer to the river and were below the screening values in the monitoring wells evaluated. This indicates that groundwater concentrations of chloroform and toluene likely are below their screening values as groundwater enters the Wabash River.

ERA Conclusions

Based on the above results, aquatic receptors exposed to Wabash River surface water are not at risk for adverse effects.

2.8 Remedial Action Objectives

EPA developed the following Remedial Action Objectives (RAOs) to protect the public and the environment from potential health risks posed by the contaminants at the site:

Soils

- Prevent current and future receptors from direct contact exposure to soil COCs posing a total cancer risk (TCR) in excess of 1×10^{-6} or a HI greater than 1.
- Minimize leaching of VOCs from soil to groundwater.

Groundwater

- Prevent current and future residential receptors from direct ingestion exposure to COCs in excess of TCR 1×10^{-6} or a HI of 1.
- Protect new and existing IAWC public supply wells from site-related groundwater impacts.
- Restore groundwater to its beneficial uses (reduce concentrations of COCs to less than their Safe Drinking Water Act MCLs).

Vapor Intrusion

- Protect current receptors from VI exposure posing a TCR in excess of 1×10^{-4} or a HI greater than 1.
- Identify land-use or operational changes that could potentially result in VI exposure to future receptors posing a TCR in excess of 1×10^{-4} or a HI greater than 1.

An RAO for mitigating vapor intrusion is included, but has not been developed at this time as vapor intrusion mitigation may be considered in the future if land use changes from its current conditions. Based on risk assessment results, the following vapor intrusion risks (TCR > 1 x 10^{-6}) and hazards (HI >1) were identified:

- Future residents and current/future commercial/industrial workers at Gurman driven by TCE, PCE, 1,1-DCA, 1,1,2-TCA, and chloroform;
- Future residents and future commercial/industrial workers at Ashland driven by TCE and PCE;
- Future residents and future commercial/industrial workers (total risks only) at North 2nd Street driven by chloroform;
- Current and future residents and future commercial/industrial workers (total risk only) at Riverside Apartments driven by chloroform, PCE, and acrolein; and
- Future residents at IAWC driven by chloroform.

Although risks and hazards were identified above EPA's point of departure threshold levels (TCR > 1 x 10^{-6} and/or HI > 1), several points should be noted. First, chloroform is not considered a site-related risk driver for the following reasons: (1) it was detected in upgradient groundwater samples, (2) site groundwater concentrations were well below the MCL for trihalomethanes, and (3) chloroform – trihalomethanes in general – is often associated with chlorination of public water supplies and is commonly present in the environment. Therefore, eliminating chloroform from the list of site-related COCs results in potential cancer risks and hazards is warranted.

Second, for current land use, the vast majority of VI cancer risks and noncancer hazards at each of the exposure areas are within EPA's acceptable risk range (TCR between 1 x 10^{-6} and 1 x 10^{-4} and HI < 1). For a future residential land use scenario, total cancer risk and noncancer hazards are greater than 1 x 10^{-4} and 1, respectively, at both Gurman and Ashland.

Third, all current and future risks and hazards at Riverside Apartments are within EPA's risk range and less than 1 when eliminating acrolein from consideration. Acrolein is the only chemical with a hazard index (HI) greater than 1 (HI =1.3). For multiple reasons, acrolein was eliminated as a COC. These reasons include (1) its low frequency, (2) conventional rounding practices, and (3) concerns regarding its usability. Usability concerns are as follows: EPA's School Air Toxics Initiative – a national air-sampling program that investigates ambient air quality near schools and the Michigan Department of Environmental Quality (MDEQ) Air Quality Division (AQD) have concluded that acrolein cannot be measured in an accurate and valid way. In addition, other chemical compounds can react to form acrolein, potentially even from within the Summa canisters used for collecting the soil vapor and ambient air.

Fourth, the lack of a defined VOC source, background conditions resulting from contribution of vapors from the Gurman operations, and current or reasonably anticipated future land uses at Gurman, support the position to defer potential VI mitigation at Gurman to a later time if business operations change. The lack of a defined VOC source

and current or reasonably anticipated future land uses at Ashland (all the buildings have been razed and is a fenced open field) support the position to defer potential VI mitigation at Ashland to a later time if land use changes. As a result, screening of remedial technologies and process options, and development of remedial alternatives to address potential VI issues are not included. If VI mitigation is deemed necessary by EPA in the future, some examples of potential mitigation activities that could be implemented include the following: (1) installing ventilation systems to existing and new buildings, (2) installing sub-slab depressurization systems to existing and new buildings, and (3) installing vapor barriers during new construction.

Target Cleanup Levels

Based on the extent of contamination and the receptors potentially at risk, EPA identified primarily PAHs and metals as COCs in soils for human receptors. EPA also identified VOCs as COCs in the groundwater for human receptors.

Human Health Based Cleanup Levels

For each COC, a risk-based remediation goal (RG) was back-calculated to correspond with the lower of a TCR of 1 x 10^{-6} and non-cancer hazard of 1. In addition, for metals, site-specific background threshold values (BTVs) were also taken into consideration. For purposes of developing soil RGs, the following items were factored in when deriving COC-specific RGs: 1) current and future residential land use was assumed to be the most likely land use at the Riverside Apartments exposure area, 2) current and future industrial land use was assumed to be the most likely land use for all other EAs, 3) for the assumed land use (and resulting exposure scenarios), the RGs are back calculated using a TCR of 1 x 10^{-6} and an HI of 1 for all chemicals except arsenic, 4) given the widespread distribution of arsenic, the 1 x 10^{-5} risk level is protective, which is still lower than arsenic RGs for numerous other Superfund sites in Region 5, and 5) the oral slope factor for benzo(a)pyrene was revised by EPA resulting in a back-calculated RG roughly seven times higher than SLs used in the RI and HHRA.

Based on the assumptions listed above, the following RGs and the basis for selecting them are proposed to achieve the soil risk-based RAO.

- Arsenic – 7.4 mg/kg is the site-specific BTV; however, using the lower of 1 x 10^{-5}/HI=1 concentrations, the RG becomes 30 mg/kg based on the TCR concentration.
- Manganese – 3,200 mg/kg based on the non-cancer hazard concentration
- Alpha-chlordane – 7.7 mg/kg based on the TCR concentration
- Gamma-chlordane – 7.7 mg/kg based on the TCR concentration
- Heptachlor – 0.63 mg/kg based on the TCR concentration
- Heptachlor epoxide – 0.33 mg/kg based on the TCR concentration
- Benzo(a)pyrene – 2.1 mg/kg based on the TCR concentration
- Benzo(a)anthracene – 21 mg/kg based on the TCR concentration
- Benzo(a)fluoranthene – 21 mg/kg based on the TCR concentration
- Benzo(a)pyrene equivalents – 2.1 mg/kg based on the TCR concentration

- Aroclor-1254 – 0.99 mg/kg based on the TCR concentration
- Aroclor-1260 – 0.99 mg/kg based on the TCR concentration

In addition to risk-based RGs, chemicals detected in soil were also compared to IDEM MTG values to assess whether they are present at concentrations in soil that could adversely impact groundwater. Based on a comparison of soil concentrations at the site to IDEM's MTG values, the following RGs and the basis for selecting them are proposed to achieve the soil MTG RAO.

- Arsenic – 5.9 mg/kg is the IDEM MTG value; however, using the soil BTV of 7.4 mg/kg, the RG becomes 7.4 mg/kg based on background at the site.
- PCE – 0.045 mg/kg based on IDEM MTG value
- TCE – 0.036 mg/kg based on IDEM MTG value
- 1,1,2-TCA – 0.032 mg/kg based on IDEM MTG value
- 1,1-DCA – 0.15 mg/kg based on IDEM MTG value

The following RGs are proposed to achieve the groundwater RAOs. The proposed RGs for groundwater and the basis for selecting them are identified below.

- PCE – 5 µg/L based on the EPA SDWA MCL
- 1,1,2-TCA – 5 µg/L based on the EPA SDWA MCL
- 1,2-dichloropropane – 5 µg/L based on the EPA SDWA MCL
- Carbon tetrachloride – 5 µg/L based on the EPA SDWA MCL
- 1,1,2,2-PCA – 0.66 µg/L based on IDEM Remediation Closure Guide (IDEM 2012) (no MCL exists for this contaminant)

The metals retained as COCs in the HHRA include arsenic and thallium. The table below compares metals in wells at the site to background wells and total metals concentrations to dissolved metals concentrations.

Table 7: Comparison of Groundwater Metals Background Data vs. Site Data

Background Wells			**Site Wells (excluding MW-13S)**		
Metal	Total Metals Range	Dissolved Metals Range	Metal	Total Metals Range	Dissolved Metals Range
Arsenic	11.9 – 39.4	ND	Arsenic	16.8 – 23.5	ND
Cobalt	7.4	ND	Cobalt	4.9 – 21.4	ND
Iron	53,200	ND	Iron	13,400 – 23,400	ND
Lead	65.4	ND	Lead	ND	ND
Manganese	343 – 1,400	347 - 482	Manganese	334 – 1,290	334 – 508
Thallium	ND	ND	Thallium	2.1	2.1
Zinc	ND	ND	Zinc	ND	11,300

ND: Non-detect

As shown in the table above, the majority of metals detected in wells at the site were also detected in some of the upgradient background wells at similar concentrations. In

addition, elevated levels of metals samples in groundwater were primarily detected in the total metals samples and not in the filtered metals samples. This indicates that elevated levels of metals may be associated with suspended particulates rather than dissolved in groundwater and are less likely to migrate significant distances. Metals at the site appear to be ubiquitous and no MTG RG has been established.

Figure 10: Soil sample locations exceeding human health risk based RGs

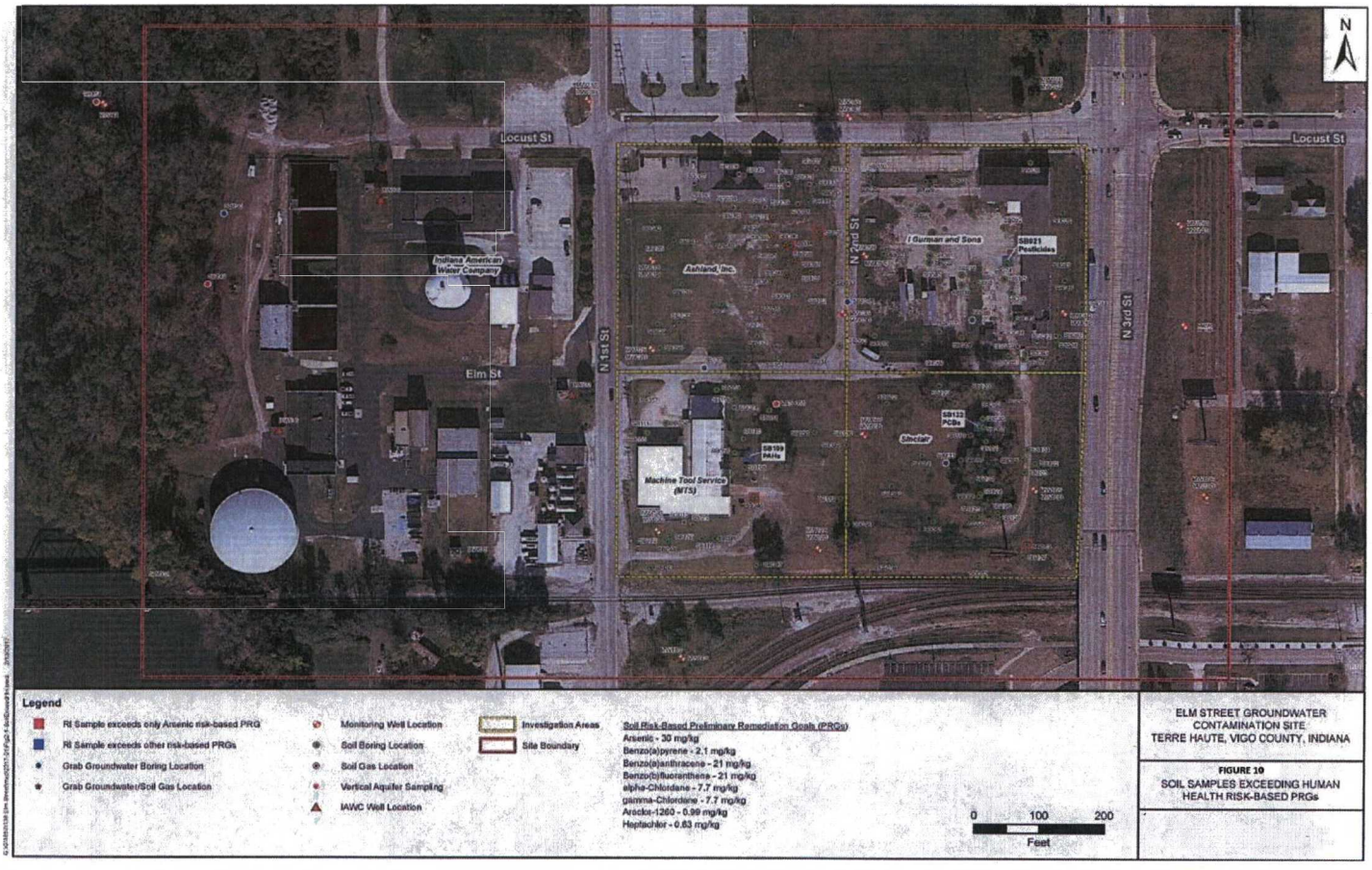


Figure 11: Soil sample locations exceeding migration to groundwater RGs

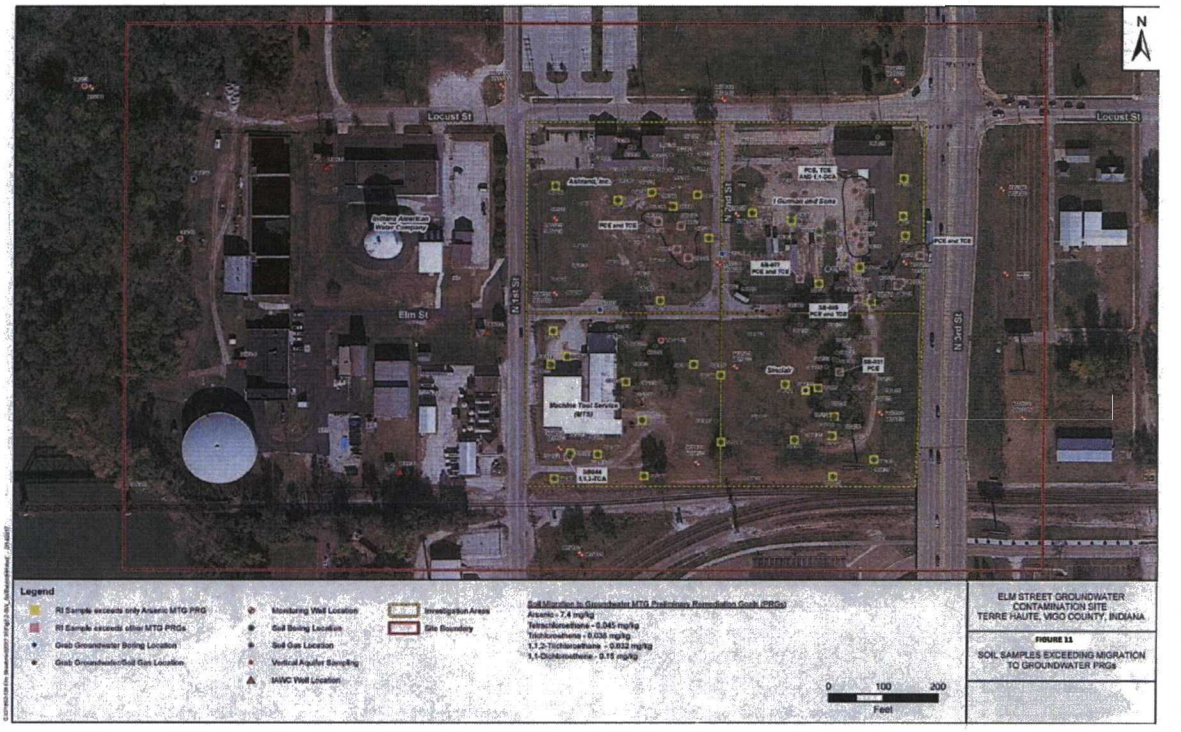
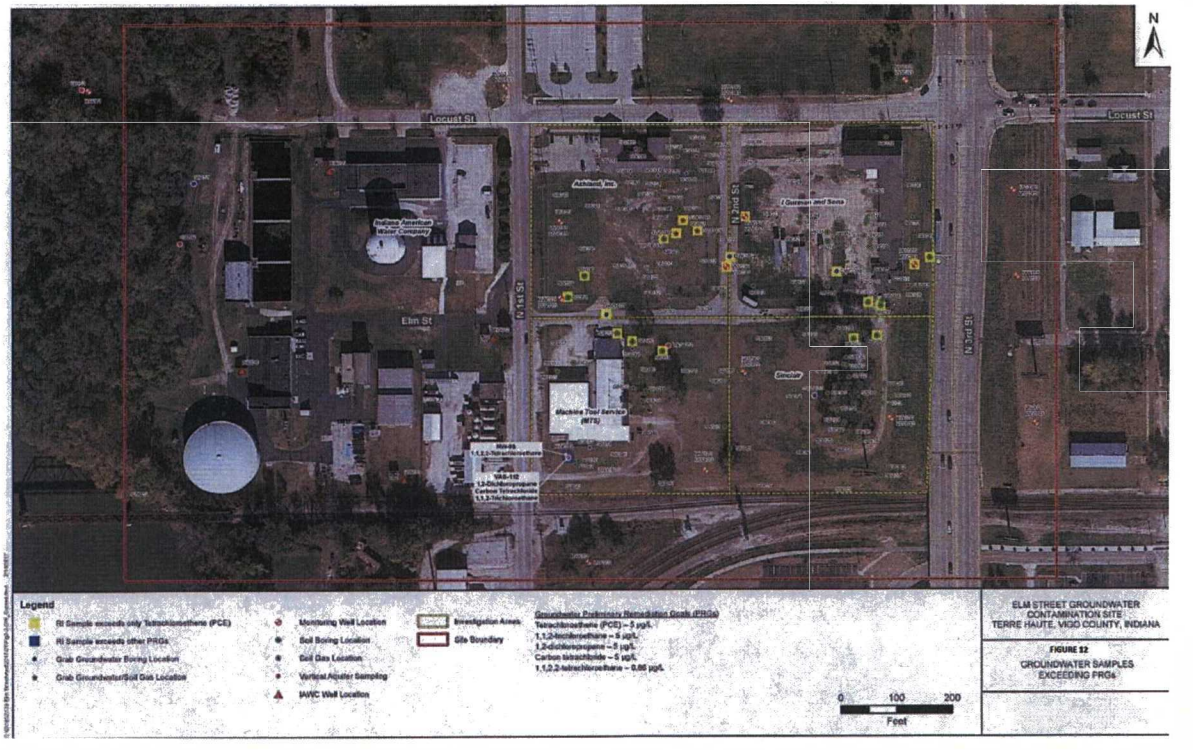


Figure 12: Groundwater sample locations exceeding RGs



Basis For Taking Action

The response action selected in this ROD is necessary to protect the public health or welfare or the environment from the actual or threatened releases of hazardous substances to the environment.

2.9 Description of Alternatives

EPA evaluated the following remedial alternatives to address contaminated soil in the Elm Street Feasibility Study:

Alternative S-1 - No Action
Alternative S-2 – Capping and Institutional Controls
Alternative S-3 – Soil Vapor Extraction (SVE), Soil Excavation with Off-site Disposal, and Institutional Controls
Alternative S-4 – Capping, Soil Excavation with Off-site Disposal, and Institutional Controls

Common elements

Alternatives S-2, S-3, and S-4 would use ICs (*e.g.* deed restrictions such as an easement or covenant) to limit human exposure to contaminated soil and groundwater. The type of restriction and enforceability would need to be determined for the selected remedy in the ROD. However, none of the remedies rely exclusively on ICs to achieve protectiveness.

Alternative S-1: No Action

Under this alternative, EPA would take no action at the site to prevent exposure to the soil contamination. There is no cost associated with this alternative. This alternative is developed and retained as a baseline to which the other alternatives may be compared.

Estimated Capital Cost: $0
Estimated Annual O&M Cost: $0
Estimated Present Worth Cost: $0
Estimated Construction/Implementation Timeframe None
Estimated time to Achieve RAOs: Does not achieve RAOs where contaminated soils remain

Alternative S-2: Capping and Institutional Controls

Under this alternative, EPA would rely on a combination of ICs and installation of multiple caps (clay, soil, asphalt, or concrete) in areas of the Elm Street site where contamination remains at concentrations above human health RGs. In addition, the caps would be installed over areas of soil containing contaminants exceeding the soil-migration-to-groundwater criteria, thus reducing infiltration from precipitation in these areas, and thereby reducing the leaching of contaminants to groundwater.

Clay and topsoil would likely be used in all areas except for the area along the west side of the Gurman building and the area southeast of the MTS building. These areas would likely require asphalt or concrete due to vehicle traffic that would regularly occur as a result of their operations. Groundwater monitoring would be required to ensure that groundwater is not becoming further contaminated by soil. A monitoring program would be established as part of the selected groundwater alternative and locations throughout the Elm Street site would be selected for periodic sampling to confirm the absence or presence of contamination.

EPA would implement ICs to restrict future land use by preventing specific areas of the site from being zoned for residential use, requiring maintenance of the caps into perpetuity, and preventing excavation of soil by future landowners or occupants. These controls would be put in place to (1) prevent the potential for direct contact with or ingestion of any contaminated soils and (2) to maintain caps that reduce infiltration through the soil.

Estimated Capital Cost: $600,000
Estimated IC Cost: $21,000
Estimated Annual O&M Cost: $41,000
Estimated Total Present Worth Cost: $1.6 MM
Estimated Construction/Implementation Timeframe: 8 months
Estimated time to Achieve RAOs: 8 months

Alternative S-3: SVE, Soil Excavation with Off-site Disposal, and Institutional Controls

Under this alternative, EPA would require SVE system installation in areas where VOC-impacted soil extends to depths greater than typically accessible by excavation of contaminated soil and in other areas where contamination does not extend as deep. Excavated soil would be disposed off-site and replaced with clean soil.

Targeted SVE areas include one area at the southern part of the MTS facility, one area at Ashland facility, and three areas at Gurman facility. It would also require excavation and off-site disposal of accessible (shallower) soil contaminated with VOCs, arsenic, PAHs, pesticides, and PCBs (Aroclors 1254 and 1260). This alternative assumes that the majority of the contaminated soil excavated would require disposal as non-hazardous waste and a small percentage would be characterized as hazardous or TSCA waste. Thus, excavated soil would be disposed of offsite in both a licensed hazardous waste/TSCA waste facility and a licensed non-hazardous waste facility.

Prior to installation of the SVE system, a pilot-test would be performed to determine the vacuum, soil vapor flow rate, and well radius of influence (ROI) needed to design the system. Because of the depth of VOC contamination, potential access restrictions, the possible presence of underground utilities, and limited areas for subsurface work, it is expected that a series of vertical extraction points will be installed to target the VOC contamination. The sandy soils at the site are expected to be very conducive to VOC remediation by SVE, with high ROI for each SVE well. The blower for the SVE system

would connect to a vertical stack to vent the extracted vapors to the atmosphere. It is unlikely that VOCs concentrations would exceed discharge limits, but if they do, then a granular-activated carbon (GAC) system would be used to treat the VOC emissions. The pilot test would determine the need for GAC. The SVE discharge would also be sampled periodically to determine if there is a reduction in contamination.

EPA would require ICs (for areas where concentrations of contaminants in soil remain above the RGs) to restrict disturbance of contaminated soil in the SVE area. Groundwater monitoring, as part of the groundwater remedy, would be used to monitor the reduction and migration of groundwater contaminants. Based on the results of the groundwater monitoring program, ICs for soil may be modified or discontinued.

Estimated Capital Cost: $1.1 MM
Estimated IC Cost: $21,000
Estimated Annual O&M Cost: $59,000
Estimated Total Present Worth Cost: $1.6 MM
Estimated Construction/Implementation Timeframe: 12 months
Estimated time to Achieve RAOs: 3 years

Alternative S-4: Capping, Soil Excavation with Off-site Disposal, and Institutional Controls

Under this alternative, EPA would require capping of soil at locations where VOCs are present in subsurface soil at depths that would make excavation unfeasible. It would also require excavation and off-site disposal of shallower accessible contaminated soil (not located under a building foundation).

To reduce migration of contaminants from the soil to groundwater, soil excavation would be conducted in designated areas of the site where VOC, arsenic, PAHs, pesticide, and PCB contamination is present. Soil excavation would proceed at depths reachable by standard excavation equipment. Deeper VOC-contaminated soil would be capped at locations where it is present beyond depths reachable by standard excavation equipment. Clay and topsoil will likely be used for capping in all areas except for the area along the west side of the Gurman building. The area would likely require asphalt or concrete due to the vehicle traffic that would regularly occur as a result of their operations.

EPA would require ICs to restrict access to soil in the capped areas of the site and prohibit future residential land use. Potential for direct contact with or ingestion of any contaminated soil would be reduced through ICs.

Groundwater monitoring, as part of the groundwater remedy, would be used to monitor the reduction and migration of groundwater contaminants.

Estimated Capital Cost: $760,000
Estimated IC Cost: $21,000
Estimated Annual O&M Cost: $34,000
Estimated Total Present Worth Cost: $1.6 MM
Estimated Construction/Implementation Timeframe: 8 months
Estimated time to Achieve RAOs: 8 months

EPA evaluated the following remedial alternatives to address contaminated groundwater in the Elm Street FS Report:

Alternative GW-1 – No Action
Alternative GW-2 – Groundwater Monitoring and ICs
Alternative GW-3 – Enhanced Reductive Dechlorination (ERD) and ICs
Alternative GW-4 – In-situ Chemical Oxidation or In-situ Chemical Reduction (ISCO or ISCR) and ICs
Alternative GW-5 – Pump-and-Treat and ICs

Common elements

All alternatives would use ICs (*e.g.* environmental covenants) to limit human exposure to contaminated groundwater. The type of restriction and method for enforcement would need to be determined for the selected remedy in the ROD. However, none of the remedies rely exclusively on ICs to achieve protectiveness.

Alternative GW-1: No Action

Under this alternative, EPA would take no action at the site to prevent exposure to the soil contamination. There is no cost associated with this alternative. This alternative is developed and retained as a baseline to which the other alternatives may be compared.

Estimated Capital Cost: $0
Estimated Annual O&M Cost: $0
Estimated Present Worth Cost: $0
Estimated Construction/Implementation Timeframe: None
Estimated time to Achieve RAOs: Does not achieve RAOs where contaminated groundwater remains

Alternative GW-2: Groundwater Monitoring and ICs

Under this alternative, EPA would rely on groundwater monitoring to measure groundwater contaminants and to evaluate the effectiveness of the soil remedy. Institutional controls would be used to restrict groundwater use. Groundwater would be monitored until RGs are met. Additional monitoring wells would be installed to provide supplementary data collection used to evaluate the effectiveness and to monitor the progress of the remedy.

Groundwater contamination reduction is expected through source removal and treatment. The locations that exceed the RGs for PCE at the Elm Street site are fairly contiguous and marginally exceed the remediation goals.

It is assumed that four monitoring well pairs would be installed within the groundwater plume to provide data collection points. In addition, it is assumed that five sentinel well pairs will be installed on the west side of North 1st Street, between the groundwater plume and Terre Haute's wellfield. These sentinel wells would also be included in the groundwater monitoring data collection process. The monitoring and sentinel wells would be comprised of nested wells installed at shallow and deep portions of the aquifer. The specific locations would be selected based on data collected to date, accessibility and presence of underground utilities.

During the RI, groundwater samples were not analyzed for monitored natural attenuation (MNA) parameters. However, field parameters including dissolved oxygen (DO) and oxidation/reduction potential (ORP) were measured and have been used to evaluate aquifer geochemistry. Degradation products, TCE and *cis*-DCE have been infrequently detected in groundwater at very low levels. Vinyl chloride has not been detected, indicating that some anaerobic biodegradation may be occurring naturally. Also, IDEM soil sampling from the late 1980s showed PCE, TCE, 1,1,1-TCA, trans-1,2-DCE, and 1,1-DCA near the Gurman facility. Further evaluation of groundwater chemistry would be necessary to fully assess the long-term effectiveness, speed, and applicability of MNA at the site.

MNA could be shown to be feasible and would further demonstrate the potential for reduction of contaminants through the degradation of the PCE in the groundwater. Data would need to be gathered for a trend analysis through the groundwater sampling.

Groundwater sampling for MNA would include VOCs, nitrate, ferrous iron, sulfate, methane, alkalinity, dissolved hydrogen, chloride, and field parameters such as pH, temperature, dissolved oxygen, oxidation-reduction potential, and conductivity.

Groundwater sampling to evaluate groundwater contamination would be performed quarterly for the first two years, semi-annually for the next 7 years, then annually until the VOCs have met RGs.

Estimated Capital Cost: $205,000
Estimated IC Cost: $21,000
Estimated Annual O&M Cost: $65,000
Estimated Total Present Worth Cost: $2.2 MM
Estimated Construction/Implementation Timeframe. 4 months
Estimated time to Achieve RAOs: 10-20 years

Alternative GW-3: ERD and ICs

Under this alternative, EPA would treat the contaminant plume through ERD which provides biostimulation and bioaugmentation. Additional monitoring wells would be installed to monitor progress of the remedy and as sentinel wells to Terre Haute's wellfield. Institutional controls would be implemented to prevent human exposure to contaminated groundwater until remediation goals have been attained.

The risk of discharging elevated concentrations of daughter products would decrease with distance from the source because the concentration of PCE being treated would decrease. Therefore, it is unlikely that daughter products from treatment would affect the wellfield. Based on reasonable assumptions, the daughter product plume would take 1 to 3 years to reach the Terre Haute's wellfield and the compounds would be expected to attenuate and disperse prior to reaching the wellfield. Naturally occurring metals solubilized by treatment are not expected to migrate more than a few hundred feet beyond the treatment area and are not expected to reach the wellfield.

ERD would involve biostimulation and bioaugmentation. Depending on the method of injection, biostimulation may employ generic substrates such as sodium lactate, or proprietary timed-release substrates such as emulsified vegetable oils. Bioaugmentation would require obtaining proprietary *dehalococcoides* microorganism cultures and would likely speed dechlorination to ethane and reduce the potential for production of vinyl chloride (a PCE and TCE degradation product that is more toxic than PCE and TCE). Additional monitoring wells would be installed to monitor progress as the remedy is implemented. In addition, five sentinel well pairs would be installed along the west side of North 1st Street to monitor groundwater quality approaching the IAWC.

The method of injection would depend on the accessibility of properties in targeted treatment areas. Options for substrate delivery include permanent injection wells and direct-push injection techniques. Direct-push injection would involve the advancement of dozens of boreholes within targeted treatment areas. The sandy soils at the site may limit the utility of direct push injections, and other drilling-injection rigs may be needed to inject amendments to deeper portions of the aquifer. In some cases, directional drilling may need to be used to access target areas under buildings.

Institutional controls would be implemented to prevent human exposure to contaminated groundwater as well as protect the remedy until RGs are attained.

Designing the remedy would require performing pre-design investigations to refine design parameters and a pilot test may also be needed.

Estimated Capital Cost: $2.4 MM
Estimated IC Cost: $21,000
Estimated Annual O&M Cost: $102,000
Estimated Total Present Worth Cost: $4.4 MM
Estimated Construction/Implementation Timeframe: 1 year
Estimated time to Achieve RAOs: 5 years

Alternative GW-4: ISCO or ISCR and ICs

Under this alternative, EPA would treat the contaminant plume through ISCO or ISCR. If ISCR is selected, the chemical used may be one of many proprietary products that combine Zero-Valent Iron (ZVI) or ferrous iron with organic carbon. Institutional controls would be implemented to prevent human exposure to contaminated groundwater until RGs have been attained.

This alternative would destroy most of the source mass through treatment. To reduce dissolved-phase concentrations by at least 50 percent, the source mass is dissolved, sorbed and non-aqueous phases would have to be reduced by more than 50 percent. Institutional controls would prevent human exposure to contaminated groundwater until RGs have been attained. Risk of impact to Terre Haute's wellfield would be minimized by monitoring progress, and making adjustments as necessary to reduce daughter product generation.

Treatment using ISCO or ISCR would be effective for treating discrete areas of contamination and also for possibly providing a treatment barrier upgradient of municipal wells. ISCR may solubilize naturally-occurring arsenic in treatment areas and cause it to migrate slowly downgradient. However, dissolved arsenic would once again return to its insoluble form when it migrates beyond artificially induced reducing zones. ISCO may oxidize arsenic into a less soluble, less mobile state, although this change will likely be temporary, and when the aquifer returns to its normal less oxidized state, arsenic may revert back to its original state.

Based on groundwater flow estimates, it would take approximately 1 to 3 years for the daughter products to reach the wellfield, and it is expected that these compounds would naturally attenuate prior to reaching the wellfield.

Although ISCO and ISCR use opposing chemistries to destroy groundwater COCs, the method of application is similar and, for the purposes of this proposed plan, these two technologies are combined as a single alternative.

ISCO would use strong oxidizing agents such as persulfate or permanganate. For ISCR, the most common amendment is ZVI, which destroys PCE and TCE via reductive dechlorination. The chemical used may be one of many proprietary ZVI products or could be activated carbon impregnated with ZVI.

Designing the remedy would require pre-design investigations to refine design parameters and groundwater chemistry. For example, a pre-design evaluating natural oxidant demand (NOD) to aid in selecting the most cost-effective ISCO/ISCR amendment based on (1) groundwater and soil chemistry, (2) site geology, (3) injection method, and (4) injection ROI for various amendments.

The ISCO or ISCR reagents would be injected via a series of direct push boreholes in the three PCE groundwater plume areas. In addition, a central injection plus 6 step-out injections would be done in the VAS112 area (see FS report for location) to address 1,1,2-trichloroethane, 1,2-dichloropropane, and carbon tetrachloride. The plume area is approximately 1,400 square feet.

Five sentinel well pairs would be installed along the west side of North 1st Street.

Estimated Capital Cost: $913,000
Estimated IC Cost: $21,000
Estimated Annual O&M Cost: $96,000
Estimated Total Present Worth Cost: $2.4 MM
Estimated Construction/Implementation Timeframe: 1 months
Estimated time to Achieve RAOs: 5 years

Alternative GW-5: Pump-and-Treat and ICs

Under this alternative, EPA would actively remediate the entire plume using a pump-and-treat system. *Ex situ* treatment of extracted groundwater may include air stripping or GAC. The representative process option for alternative development is air stripping. Treated water may be discharged by re-injecting it into groundwater or discharging it to the Wabash River. The representative process option for alternative development is discharge to the Wabash River. Institutional controls would be implemented to limit human exposure to contaminated groundwater as well as to protect the remedy until remediation goals are attained.

Groundwater and the contaminant plume would be extracted by pumping wells. The extraction wells would be designed and installed to create a capture zone that would hydraulically contain the entire plume. Over time, groundwater would be cleaned up as contaminated groundwater is extracted, treated, and then re-injected or discharged to the Wabash River. While the remedy is operating, ICs would prevent human exposure to contaminated groundwater. Once groundwater is cleaned up, there would no longer be a threat to the environment. A pump-and-treat system would involve the installation of groundwater extraction wells, conveyance piping, a treatment system, and a treated water discharge system. The number of extraction wells, locations, and flow rates will be refined in the remedial design via groundwater modeling. Air stripping would be the representative process option for treatment. Treated water may be discharged by re-injecting it into groundwater or discharging it to the Wabash River. These discharge options would require the installation of conveyance piping, which would include constructing varying amounts of trenching in streets and public right-of-ways.

Institutional controls would be implemented to limit human exposure to contaminated groundwater as well as protect the remedy until remediation goals are attained.

Designing the remedy would require additional groundwater sampling for water quality parameters, metals, anions/cations, and Langelier saturation index to evaluate the potential for corrosiveness, precipitate/scale formation, and discharge options. Groundwater modeling would be required to design the number, locations, and depths of the extraction wells, and to determine the required flow rates to achieve the desired hydraulic capture and optimize remediation time.

- It assumes that four extraction wells would be installed, three within the main PCE groundwater plume, and one at location VAS112. The extracted water would be treated with an air stripper, and no off-gas treatment is necessary. The treated water would be discharged to the river via an outfall meeting the substantive requirements of a National Pollutant Discharge Elimination System (NPDES) permit.

Five sentinel well pairs would be installed along the west site of North 1st Street.

Estimated Capital Cost: $1.3 MM
Estimated Annual O&M Cost: $200,000 MM
Estimated Total Present Worth Cost. $4.2 MM
Estimated Construction/Implementation Timeframe: 16 months
Estimated time to Achieve RAOs: 10 years

2.10 Comparative Analysis of Alternatives

EPA uses nine criteria to evaluate and compare cleanup alternatives. Each criterion is described below, followed by a discussion of how each alternative meets or does not meet each criterion. More details regarding the evaluation and comparison of the cleanup alternatives against the nine criteria can be found in the 2017 FS Report. In addition, Table 8 and 9 provides a qualitative summary of how each cleanup alternative ranked against each of the nine criteria.

Table 8: Comparison of the Soil Remedial Alternatives against the Nine Criteria

Evaluation Criteria	Soil Alternatives			
	S-1	S-2	S-3	S-4
Overall protection of human health and the environment	☐	■	■	■
Compliance with ARARs	N/A	■	■	■
Long-term effectiveness and permanence	☐	■	■	■
Reduction of toxicity, mobility, or volume through treatment	☐	☐	■	☐
Short-term effectiveness	■	■	■	■
Implementability	■	■	■	■
Cost	■	■	■	■
State Support/Agency Acceptance	☐	■	■	■
Community Acceptance	☐	☐	☐	☐

Fully meets criterion ■ Partially meets criterion ◘ Does not meet criterion ☐

Table 9: Comparison of the Groundwater Remedial Alternatives against the Superfund Remedy Selection Criteria

Evaluation Criteria	Groundwater Alternatives				
	GW-1	GW-2	GW-3	GW-4	GW-5
Overall protection of human health and the environment	☐	◘	■	■	■
Compliance with ARARs	N/A	■	■	■	■
Long-term effectiveness and permanence	☐	■	■	■	■
Reduction of toxicity, mobility, or volume through treatment	☐	☐	■	■	☐
Short-term effectiveness	■	◘	■	■	■
Implementability	■	■	◘	◘	☐
Cost	■	■	■	■	■
State Support/Agency Acceptance	☐	■	■	■	■
Community Acceptance	☐	■	☐	☐	☐

Fully meets criterion ■ Partially meets criterion ◘ Does not meet criterion ☐

1. Overall Protection of Human Health and the Environment

The No Action alternative is not protective of human health and the environment because no action would be taken to prevent receptors from contacting or ingesting contaminated soil and groundwater.

The action alternatives would be protective of human health and the environment because actions would be taken to prevent receptors from contacting or ingesting the PAHs and metals contaminants in the soil, either by capping it (Alternative S-2), treating and

removing it (Alternative S-3), or removing and capping it (Alternative S-4). Contaminant concentrations in soil and groundwater (by preventing contaminants leaching to groundwater) would decrease.

The action alternatives would be protective of human health and the environment because actions would be taken to prevent receptors from contacting or ingesting the VOCs contaminants in the groundwater, either by treatment (Alternatives GW-3 and GW-4), removal and treatment via air stripping (Alternative GW-5) or monitoring it (Alternative GW-2). Contaminant concentrations in groundwater would decrease.

2. Compliance with ARARs

There are no ARARs that apply to the No Action alternative.

Alternatives S-2, S-3, and S-4 would meet all potential ARARs that would apply to the various technologies or approaches. Contaminated soil removed for disposal would need to be classified so that it could be properly disposed of in a licensed facility.

Alternatives GW-2, GW-3, GW-4, and GW-5 would meet all potential ARARs that would apply to the various technologies or approaches.

3. Long-Term Effectiveness and Permanence

Alternatives S-3 would be the most effective in the long-term because it would treat VOCs as well as permanently remove portions of PAH and metal-contaminated soil above target cleanup levels from the site for disposal offsite.

Alternatives S-2 and S-4 would reduce residual risks, but both alternatives rely on capping of contaminated soil and institutional controls to mitigate exposure to contaminated soil and reduce leaching of contaminants from soil to groundwater. Alternative S-4 would provide better long-term effectiveness than S-2 because a portion of the soil would also be excavated and disposed of off-site. The caps for both of these alternatives would need to be maintained.

Alternatives GW-2, GW-3, and GW-4 would have similar effectiveness, and they would all attain remediation goals, result in the same magnitude of residual risk, and rely on the same controls to limit human exposure to contaminated groundwater. Alternative GW-5 would offer the most robust protection of Terre Haute's wellfield because it will keep the groundwater plume from migrating to the city's wellfield as soon as the pump and treat system becomes operational.

The No Action alternative would not be effective because nothing would be done to address the contaminants in the soil and groundwater.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative S-3 provides treatment of contaminants. VOCs in soil in the targeted SVE areas would be transferred to vapor phase and emitted to the atmosphere using SVE. Alternative S-3 is the only alternative that reduces the toxicity, mobility, or volume of VOCs through treatment of soils.

Alternatives GW-3 and GW-4 would destroy approximately the same mass of source area contaminants through treatment. Alternatives GW-2 and GW-5 would not destroy toxicity or mass through treatment, but ultimately the volume of the groundwater plume would be reduced.

5. Short-Term Effectiveness

Alternatives S-2, S-3, and S-4 would have comparable short-term effectiveness because they would quickly address the immediate risk posed by contaminated soil. Alternative S-2 would only require capping while Alternatives S-3 and S-4 would require excavation. Alternative S-3 would also require the construction of an SVE system while Alternative S-4 would require a cap. Both Alternatives S-2 and S-4 would require less than a year to construct and implement, and Alternative S-3 would take multiple years to construct and implement.

Alternatives GW-3 and GW-4 would have similar short-term effectiveness because they would have similar construction and remedial durations and pose similar risks until remediation goals are attained. Alternative GW-2 would not be effective in the short term, because it will take many years to achieve remediation. Alternative GW-5 would attain remedial action objectives in the short term by minimizing further migration of the contaminant plume.

It is estimated that Alternative GW-2 would take 20 years to attain RGs; Alternative GW-3 would take 5 years; Alternative GW-4 would take 5 years; and GW-5 would take 10 years. GW-5 would take the most time to construct, but provide the most short-term effectiveness.

Alternatives S-1 and GW-1 requires no time to implement and would have no short-term impacts on the site because it includes no construction activities.

6. Implementability

The No Action Alternative is readily implementable because nothing would be done to address soil contaminants.

Alternative S-2 would be the easiest to implement because it would only require installation of capping materials, which are expected to be readily available; however, capping the area on the southeast part of the Gurman facility could be slightly more challenging given the steep slope along the west side of North 3rd Street. Alternatives S-3 and S-4 require an additional amount of coordination and care during design and construction. Alternative S-3 requires excavation of soils in some areas and construction

of SVE systems in other areas. The SVE systems would require pilot testing to properly design the systems. Excavation under Alternative S-3 would be conducted near the MTS building and could require shoring to avoid undermining the building foundation. Alternative S-4 would incur some of the same technical challenges associated with capping and excavation, as well as the addition of an excavation area adjacent to the Gurman building, which could require shoring. Alternatives S-3 and S-4 require a borrow source for backfill material; Alternatives S-2 and S-4 require a source for capping materials. Alternatives S-2, S-3, and S-4 would require ICs; alternative S-4 could have it removed once RGs are achieved for groundwater.

Alternative GW-2 would be simple to implement. Alternatives GW-3 and GW-4 for the groundwater plume would require similar skill and effort to construct and would therefore have similar moderate implementability. Alternative GW-5 would take greater effort to construct and operate and would, therefore, be more difficult to implement.

7. Cost

Tables 10 and 11 summarizes the capital, annual operation and maintenance (O&M), and present worth costs for each alternative.

Table 10: Cost Comparison for the Soil Remedial Alternatives

	Alternative	Capital Cost (in millions)	Annual O&M Cost (30 years)	Total Present Worth Cost (in millions)
S-1	No Action	$ 0	$ 0	$ 0
S-2	Capping/ICs	$0.6	$41,000	$1.6
S-3	SVE/Excavation/ Off-site Disposal/ICs	$1.1	$59,000	$1.6
S-4	Capping/Excavation/Off-site Disposal/ICs	$0.8	$34,000	$1.6

Table 11: Cost Comparison for the Groundwater Remedial Alternatives

	Alternative	Capital Cost (in millions)	Annual O&M Cost (30 years)	Total Present Worth Cost (in millions)
GW-1	No Action	$ 0	$ 0	$ 0
GW-2	GW Mon/ICs	$0.2	$65,000	$2.2
GW-3	ERD/ICs	$2.4	$102,000	$4.4
GW-4	ISCO or ISCR /ICs	$0.9	$96,000	$2.4
GW-5	P&T/ICs	$1.2	$207,000	$4.2

8. State Support/Agency Acceptance

IDEM, as the support agency for the Elm Street site, concurred with this ROD on September 20, 2017. The state's concurrence letter will be added to the Administrative Record and is included in Appendix 2.

9. Community Acceptance

Written comments received during the public comment period expressed a preference for Alternatives GW-2, but not S-3. One set of comments preferred S-1 and GW-1, the "No Action" remedies. A full response to public comments is included in this ROD in *Part 3 – Responsiveness Summary.*

2.11 Principal Threat Waste

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (40 C.F.R. § 300.430(a)(1)(iii)(A)). Identifying principal threat wastes combines concepts of both hazard and risk. In general, principal threat wastes are those source materials considered to be highly toxic or highly mobile which generally cannot be contained in a reliable manner or would present a significant risk to human health or the environment should exposure occur. Conversely, non-principal threat wastes are those source materials that generally can be reliably contained and that would present only a low risk in the event of exposure. The manner in which principal threats are addressed generally will determine whether the statutory preference for treatment as a principal element is satisfied.

The principal threat concept is applied to the characterization of "source material" at a Superfund site. Source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contaminants to groundwater, surface water, or air, or acts as a source for direct exposure. EPA has defined principal threat wastes as those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur. There is no principal threat waste at the Elm Street site.

2.12 Selected Remedy

EPA selects Alternatives S-3 (SVE, Soil Excavation with Off-site Disposal, and ICs) and GW-2 (Groundwater Monitoring and ICs) to address the COCs in the Elm Street soil and groundwater.

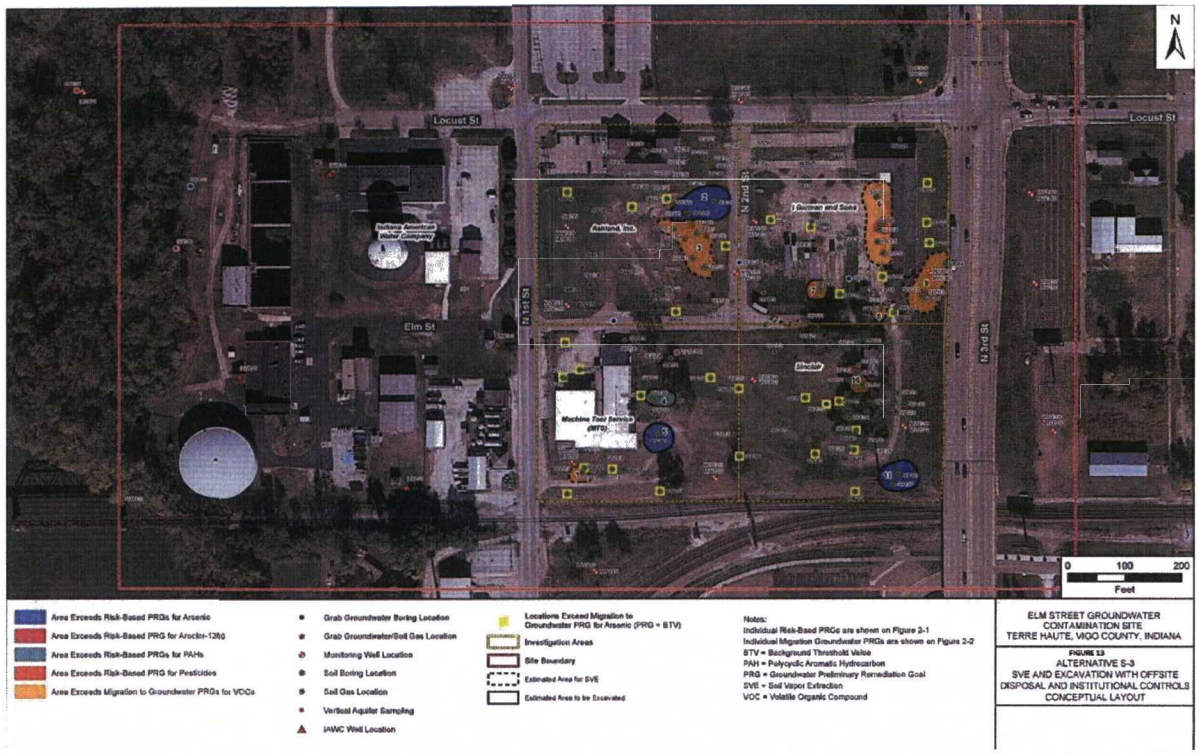
Description of the Selected Remedy

EPA's preferred alternative is Alternative S-3 to address COCs in the Elm Street soils (see Figure 13) and Alternative GW-2 to monitor COCs in the Elm Street groundwater

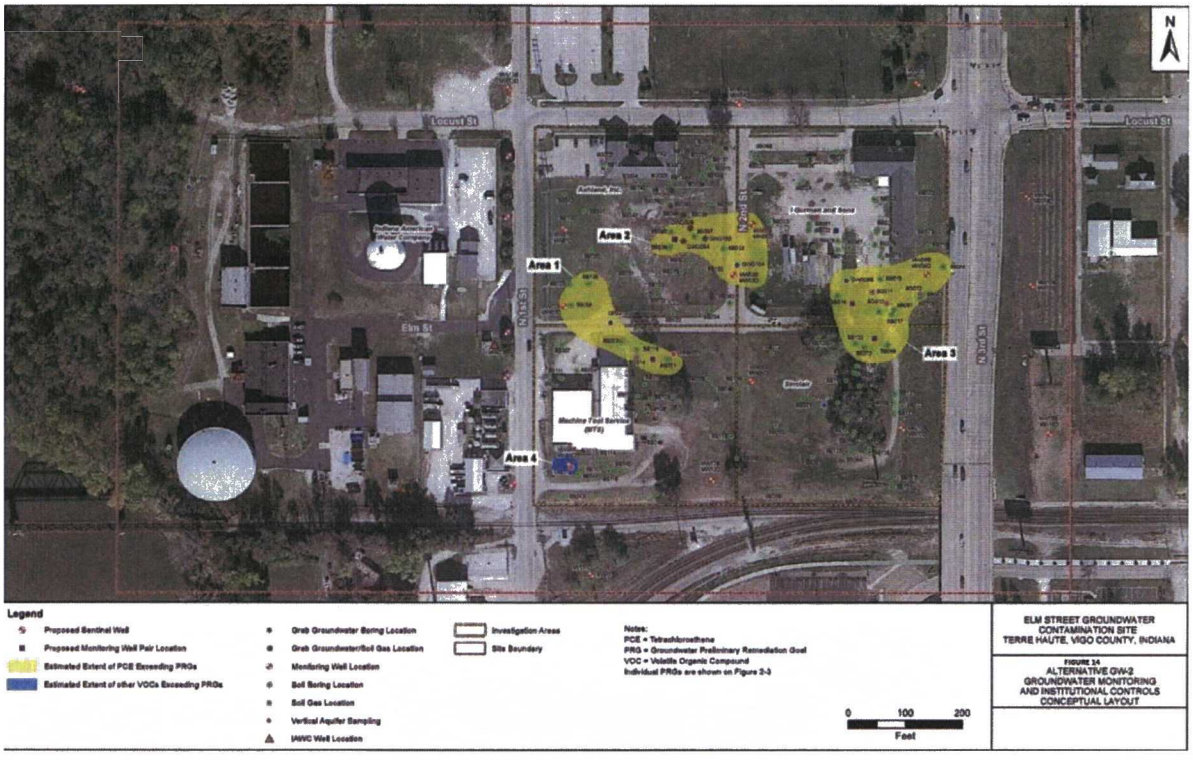
(see Figure 14). EPA proposes to use SVE to treat the VOCs where present in subsurface soil at depths that would make excavation unfeasible. It would also require excavation of shallower accessible contaminated soil (not located under a building foundation) for off-site disposal. Soil excavation would be conducted in designated areas where VOC, arsenic, PAHs, pesticides, and PCB contamination are present with standard excavating equipment. Deeper VOC-contaminated soil would be treated by SVE to reduce contamination to the groundwater. Groundwater monitoring, as an interim measure, would be done until remediation goals are met and to demonstrate the effectiveness of the soil remedy. The preferred alternative's costs, maximum construction timeframes, and maximum time to achieve RAOs are shown below:

Estimated Capital Cost: $1.3 MM
Estimated IC Cost: $21,000
Estimated Annual O&M Cost: $124,000
Estimated Total Present Worth Cost: $3.8 MM
Estimated Construction/Implementation Timeframe: 1 year
Estimated time to Achieve RAOs: 10 – 20 years for soil and groundwater

Figures 13: Soil Areas to be addressed by the preferred alternative



Figures 14: Groundwater Areas to be addressed by the preferred alternative



Rationale for the Selected Remedy

The Selected Remedy was chosen based on EPA's determination that Alternatives S-3 and GW-2 provide the best balance of the evaluation criteria among all of the alternatives. Alternatives S-3 and GW-2 are protective of human health, meet all federal and state ARARs, and meet the RAOs for this proposed remedial action.

In addition, the selected alternative best fulfills the five balancing criteria. With respect to Long-term Effectiveness and Permanence, the preferred alternative will permanently reduce soil contamination at the site. (A future decision document will be developed for the final groundwater alternative.) ICs will prevent exposure to contaminated soil and groundwater until such time that the ICs can be lifted. The selected remedy has virtually the same timeframe to achieve RAOs as Alternatives S-4 and GW-2, but it provides for protectiveness and, in the interim, the ICs will prevent exposure to contaminated soil and groundwater.

The selected alternative uses treatment to reduce the toxicity, mobility, or volume by removing or treating the contaminated soil. The mobility of contaminants is limited through removing highly contaminated surface soil and treating subsurface soil. This should result in also reducing contamination in the groundwater.

The selected alternative will be effective in the short-term. This alternative would protect human health because surface soil posing unacceptable risk would be removed and subsurface soil would be treated. This should result in also reducing contaminants in the groundwater.

All actions in the selected alternative are implementable.

The selected alternative is cost-effective. Alternatives S-3 and GW-2 (SVE, excavation and groundwater monitoring) is more cost effective than Alternatives SW-4 and GW-2 (excavation, capping, and groundwater monitoring) and is a more thorough method of remediating the soil and groundwater.

Expected Outcomes of the Selected Remedy

The Selected Remedy will reduce the risks to human health to levels within EPA's acceptable risk range by removing contaminated surface soil and treating subsurface soil and disposing the contaminated soil off-site. Groundwater contamination, in turn, should be reduced from remediation of the soils. The RAOs for surface soils will be met immediately upon completion of the remedial action construction work. The subsurface soil RAOs will be met in 1-3 years and the groundwater RAOs should be met within a reasonable timeframe after the completion of the remedial action. Soil and groundwater sampling will determine when the remedial goals have been met.

Cost of the Selected Remedy

The estimated cost of implementing the Selected Remedy is $3.8 million. This is based upon anticipated capital costs of $1.3 million and annual operation and monitoring costs of $124,000. The information in this cost estimate is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This is an order-of-magnitude engineering cost estimate that is expected to be within +50 to -30 percent of the actual project cost.

2.13 Statutory Determinations

Under CERCLA Section 121 and the NCP, the lead agency must select remedies that are protective of human health and the environment, comply with applicable or relevant and appropriate requirements (unless a statutory waiver is justified), are cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as a principal element and a bias against off-site disposal of untreated wastes. The following sections discuss how the Selected Remedy meets these statutory requirements.

Protection of Human Health and the Environment

The Selected Remedy Alternatives S-3 and GW-2, provide overall protection of human health from impacted soils and groundwater. The Selected Remedy will meet RAOs and protect human health by preventing exposure to impacted soil through removal and treatment of site contaminants.

The maximum current potential human health risks associated with soil exceed the target levels of acceptable risk at the site. The Selected Remedy will reduce the cancer risks from their current levels to 1×10^{-6} and the non-cancer Hazard Index to less than 1. There are no short-term threats associated with the Selected Remedy that cannot be readily controlled. In addition, no adverse cross-media impacts are expected from the Selected Remedy.

Compliance with Applicable or Relevant and Appropriate Requirements

The Selected Remedy is expected to comply with the state and federal ARARs that are specific to this remedial action. The federal and state ARARs for this action are listed in Appendix 3.

Cost-Effectiveness

In EPA's judgment, the Selected Remedy is cost-effective and represents a reasonable value for the money to be spent. In making this determination, the following definition was used: "A remedy shall be cost-effective if its costs are proportional to its overall effectiveness." (40 C.F.R. § 300.430(f)(1)(ii)(D)). This was accomplished by evaluating the "overall effectiveness" of those alternatives that satisfied the threshold criteria (i.e., were both protective of human health and the environment and ARAR-compliant). Overall effectiveness was evaluated by assessing three of the five balancing criteria in combination (long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness). Overall effectiveness was then compared to costs to determine cost-effectiveness. The relationship of the overall effectiveness of this remedial alternative was determined to be proportional to its costs and hence this alternative represents a reasonable value for the money to be spent.

The estimated present worth cost of the Selected Remedy is $3.8 million. Removing all the contaminated surface soil and treating the subsurface soil will be the most protective of human health. Capping the soil will still require maintenance to ensure the remedy is working and is essentially the same cost. The Selected Remedy is a permanent solution for soil contamination and an interim solution for groundwater contamination and will not require maintenance after the remedial goals have been met.

Utilization of Permanent Solutions and Alternative Treatment Technologies (or Resource Recovery Technologies) to the Maximum Extent Practicable/Preference for Treatment as a Principal Element

EPA has determined that the Selected Remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner at the site. Of those alternatives that are protective of human health and the environment and comply with ARARs, EPA has determined that the Selected Remedy provides the best balance of trade-offs in terms of the five balancing criteria, while also considering the statutory preference for treatment as a principal element and bias against off-site treatment and disposal and considering state and community acceptance.

The Selected Remedy satisfies the criteria for long-term effectiveness by removing contaminated surface soil and treating subsurface soil from the site and replacing the surface soil with clean soil. The Selected Alternative for this decision utilizes treatment to reduce the toxicity, mobility, or volume of the contaminants in soil. However, the interim selected remedy for groundwater does not destroy toxicity or mass through treatment, but ultimately the volume of the groundwater plume would be reduced.

Five-Year Review Requirements

Because this remedy will result in hazardous substances, pollutants, or contaminants being excavated and removed off-site as well as treatment of the contaminants, there will be no requirement to conduct FYRs after the soil and groundwater RGs have been met. If the RGs are met, the site should meet the requirements of UU/UE, which means that restrictions on the land or other natural resources will not be necessary.

2.14 Documentation of Significant Changes

EPA released the Proposed Plan for the Elm Street Superfund site for public comment on August 7, 2017. The Proposed Plan identified Alternative S-3 and GW-2 as the preferred alternative. The Proposed Plan public comment period ran from August 7, 2017, through September 6, 2017. CERCLA Section 117(b) and 40 C.F.R. § 300.430(f)(5)(iii) require an explanation of any significant changes from the remedy presented in the Proposed Plan that was published for public comment. Based upon its review of the written comments submitted during the public comment period, EPA has determined that no significant changes to the remedy are necessary or appropriate.

Part 3 – Responsiveness Summary

In accordance with CERCLA Section 117, 42 U.S.C. §9617, EPA released the Proposed Plan and Administrative Record on August 7, 2017, and the public comment period ran through September 6, 2017, to allow interested parties to comment on the Proposed Plan.

This Responsiveness Summary provides both a summary of the public comments EPA received regarding the Proposed Plan and EPA's response to those comments. EPA received three sets of written comments (via regular mail and email) during the public comment period, two were supportive of the groundwater monitoring and ICs proposed interim remedy, but were not supportive of the soil remedy. One set of comments proposed the 'No Action' remedies for soil and groundwater. A copy of the comments received is included in the Administrative Record for the site. The Administrative Record index is attached as Appendix 2 to this ROD. EPA, in consultation with IDEM, carefully considered all of the information in the Administrative Record prior to selecting the remedy documented in this ROD. Complete copies of the Proposed Plan, Administrative Record, and other pertinent documents are available at the Vigo County Public Library, 1 Library Square, Terre Haute, Indiana and at the EPA Region 5 Superfund Division Records Center, 77 West Jackson Boulevard, 7th floor, Chicago, Illinois.

Comments from the Community:

Comment 1: The Risk Assessment Should Have Been Updated as part of the Finalization of the FS.

Response: This comment relates to carcinogenic PAH risk numbers being updated between the time of finalization of the risk assessment and the Proposed Plan. The PRGs developed in the Proposed Plan used the updated risk numbers for carcinogenic PAHs.

Comment 2: Commercial/Industrial Land Use is the Current and Ongoing Land Use and Remedial Requirements Should be Determined on the Basis of this Land Use.

Response: EPA disagrees. It is a reasonable determination that future land use could be residential. Currently, a residential apartment complex exists adjacent to the site. EPA's policy is to identify all potentially exposed populations.

Comment 3: The Consideration of a Low-Density Residential Scenario for the Determination of Remedial Requirements is Not Appropriate.

Response: EPA disagrees. It is a reasonable determination that future land use could be residential. Currently, a residential apartment complex exists adjacent to the site. EPA's policy is to identify all potentially exposed populations.

Comment 4: The Background Assessment of Soil Requires More Work.

Response: EPA disagrees. The background assessment is complete for this site. For example, the excavation of arsenic is proposed based on a soil PRG (30 mg/kg) calculated using a target risk of 1 x 10-5. This arsenic PRG (30 mg/kg) is almost four times greater than the site-specific background threshold value (BTV) of 7.2 and 7.6 for surface and subsurface soil, respectively. It is also about double the alternate arsenic background concentration of 14 mg/kg mentioned in the comments. Additional background investigation is unlikely to result in a site-specific background concentration of arsenic greater than or equal to the proposed arsenic soil PRG.

Comment 5: Leaching of Metals and PAHs to Groundwater is not a Driver for Remediation at this Site.

Response: VOCs, hazardous substances, were the primary driver for IDEM's MTG PRGs. As discussed on page 23 of the Proposed Plan, metals were not carried forward since they were ubiquitous. PAHs were not considered for developing PRGs for IDEM's MTG PRGs.

Comment 6: Assessment of Potential Leaching to Groundwater is Generic and Not Appropriate for the Assessment of Remedial Requirements.

Response: EPA disagrees. The assessment of potential leaching to groundwater is appropriate. The presence of VOCs exceeding MTG values in both shallow and deep soil, as well as, VOCs exceeding PRGs in groundwater underlying the same areas indicates downward vertical migration of VOCs through the soil column to groundwater at the Gurman, MTS, and Valvoline properties. Exposure to certain VOCs causes damage to the kidney, liver, and central nervous system as well as can cause cancer in animals and humans. Furthermore, the VOCs had an impact on operations at the city of Terre Haute's only drinking water supply.

Comment 7: The Assessment Methodology Used to Assess Vapor Flux from Groundwater is Overly Conservative and Not Reflective of Site Conditions.

Response: EPA disagrees. The Vapor Intrusion Screening Levels (VISL) model is used to identify sites or buildings unlikely to pose a health concern through the vapor intrusion pathway. This data shows that vapor intrusion is likely to occur at the identified areas at the site.

Comment 8: Scope for SVE Activities is Overly Complicated and Pilot Testing is not Required in this Setting.

Response: The scope of SVE activities and pilot testing will be determined during the remedial design phase of this project. SVE is a common remediation method, including pilot testing.

Comment 9: For the soil cleanup alternative, I vote for the S-1 option. For the groundwater cleanup alternative, I vote for GW-1. The areas of concern for contamination are now dormant and will improve in time.

Response: EPA disagrees. The "No Action" remedies are not protective of human health and active remediation needs to be implemented at the site.

Comments on the Elm Street Groundwater Contamination Superfund Site Specifically on the Ashland (Valvoline) Property

Comment 1: U.S. EPA considers excess lifetime cancer risks (ELCRs) at or below 1×10^{-4} to be acceptable and not require remediation. The non-cancer hazard index (HI) equal to 1 also does not require remediation. Therefore, any exposure pathways with risks that are below this target risk or hazard level should be excluded from further evaluation.

Response: EPA evaluates ELCRs in the risk range of 1×10^{-6} to 1×10^{-4}. Sites which fall in this risk range are not necessarily "clean" and further evaluation may be warranted under the Superfund program. This is the case at the Elm Street Groundwater Contamination site. EPA develops PRGs for establishing site-specific cleanup levels. Aggregate exposures below an HI of 1 derived using target organ specific hazard quotients likely will not result in adverse non-cancer health effects over a lifetime of exposure and would ordinarily be considered acceptable.

Comment 2: The HHRA relies on outdated toxicity values for benzo(a)pyrene and the benzo(a)pyrene equivalents. In January 2017, U.S. EPA revised the cancer slope factor and inhalation unit risk for benzo(a)pyrene. The updated values reduce the risk by a factor of approximately 7. The HHRA should be revised to incorporate current toxicity values and the remedial alternatives should then be re-evaluated based on the updated risk assessment calculations before any remedy decision is made.

Response: This comment relates to carcinogenic PAH risk numbers being updated between the time of finalization of the risk assessment and the Proposed Plan. The PRGs developed in the Proposed Plan used the updated risk numbers for carcinogenic PAHs.

Comment 3: The soil and groundwater regional screening levels (RSLs) used to identify constituents of potential concern (COPCs) on the Valvoline Property are out-of-date. U.S. EPA updated is RSL calculator in January 2017 and formally released the new RSLs in June 2017. The HHRA should be revised to incorporate U.S. EPA's current screening levels in the risk assessment.

Response: EPA disagrees. It is a reasonable determination that future land use could be residential. Currently, a residential apartment complex exists adjacent to the site. EPA's policy is to identify all potentially exposed populations.

Comment 4: Significant soil removal occurred at the Valvoline Property in 2013, but it is unclear from the HHRA report whether this remedial work was appropriately considered in U.S. EPA's risk calculations. To the extent that the risk assessment was based on pre-excavation sampling data and/or failed to incorporate more recent post-excavation sampling data, then the assessment does not accurately reflect current site conditions at the Valvoline Property, and the HHRA should be revised before any remedial alternative is selected for the Property.

More generally, the data used to calculate the exposure point concentrations (EPCs) are included in the Appendix together with the ProUCL output. However, the sample IDs are not included, which precludes verifying the sample locations. The HHRA should be revised to include complete data tables with sample identifications.

Response: Results associated with excavated soil area at Ashland were removed from the database and were not considered in the risk assessment. The input files included in the HHRA were to allow readers to replicate the ProUCL statistics, if they chose. All soil statistics for Ashland were generated using the remaining soil analytical results after removal of the excavate soils results.

Comment 5: Ingestion of homegrown produce drives the results of the soil risk assessment at the Valvoline Property, but as discussed further in Comment 7, below, this not a reasonably foreseeable future used of the Property. Further, the EPC for trichloroethene (TCE), one of the risk drivers for this theoretical pathway, is based on the maximum detected concentration, which itself is an unrealistic and overly conservative exposure scenario. If this pathway is excluded, then the potential soil risks would be below U.S. EPA's 1 x 10^{-4} target risk and thus would present an acceptable risk. Likewise, the non-cancer hazards would be significantly reduced. Reviewing Table 9.7.2.2 from the HHRA, if the non-cancer hazards for soil exposure were evaluated by target organ, the individual target organ HIs would be less than or equal to the benchmark of 1.

Resident	**Risk/Hazard including Ingestion of Homegrown Produce**	**Risk/Hazard excluding Ingestion of Homegrown Produce**
RME – surface soil	1.3 x 10^{-3} / 110	7.8 x 10^{-5} / 2
RME – subsurface soil	4.5 x 10^{-4} / 33	3.9 x 10^{-5} / 2

Response: EPA disagrees. It is a reasonable determination that future land use could be residential. Currently, a residential apartment complex exists adjacent to the site. EPA's policy is to identify all potentially exposed populations.

Comment 6: In 2013, Valvoline conducted a voluntary soil excavation and removed approximately 211 tons of shallow soils from the Valvoline Property. Thereafter, Arcadis completed 19 soil borings to characterize the lateral and vertical extent of any remaining soil impacts after excavation. As detailed in the conclusions of the March 2014 Ashland Parcel Voluntary Remedial Investigation Report, "a preliminary risk evaluation was completed to assess the potential future risk for migration of volatile organic compounds (VOCs) in soil to groundwater. The results of the evaluation demonstrate that following the voluntary removal of impacted soils, remaining site-wide 95% upper confidence levels (UCLs) for tetrachloroethene (PCE) and TCE do not exceed the adjusted RSLs and Indiana Department of Environmental Management (IDEM) criteria. No additional remedial actions on the Ashland property are warranted."

As noted in Comment 4 above, it is unclear whether the HHRA and, by extension, the Proposed Plan, incorporated and properly considered this removal work when evaluating the need for potential additional soil remediation at the Valvoline Property. U.S. EPA should clarify the record on this point, and to the extent that these activities and their impact on site conditions were not appropriately considered, then the risk assessment should be revised and potential remedial alternatives for the Valvoline Property reassessed.

Response: Results associated with excavated soil area at Ashland were removed from the database and were not considered in the risk assessment. Further, the voluntary removal did not evaluate arsenic contamination.

Comment 7: Commercial/industrial land use is the long-standing land use at the Valvoline Property, and the use of a low-density residential screening scenario (including consumption of homegrown produce) is not appropriate considering the current and reasonably expected future site usage. Further, even if low density residential and consumption of homegrown produce were appropriately retained as screening criteria, then institutional and/or passive engineering control(s) could be used to more effectively define and limit future site usage and to eliminate any potential future exposure pathways. These controls include deed restrictions, a surface cap if appropriate (e.g., a parking lot or slab), etc. (See Comment 9, below.)

Response: EPA disagrees. It is a reasonable assumption that future land use could be residential. Further, EPA prefers treatment remedies. A cap over the soil will require maintenance in perpetuity. The Proposed Remedy of excavation, SVE, excavation and off-disposal is expected to allow unlimited use/unlimited exposure (UU/UE) for this site in the future.

Comment 8: Figure 1-25 from the May 2017 Final Remedial Alternatives Screening Technical Memorandum indicates that only two surface soil samples at the Valvoline Property exceed the industrial/commercial screening levels for VOCs and SVOCs. Further, those two samples would fall within acceptable risk range if U.S. EPA were to evaluate the potential risk using U.S. EPA's most current toxicity values for benzo(a)pyrene. (See Comment 2, above). The Proposed Plan, specifically Tables 1 and 2, should be revised to reflect that no industrial and/or commercial RSLs were exceeded for benzo(a)pyrene on the Valvoline Property.

Response: This comment relates to carcinogenic PAH risk numbers being updated between the time of finalization of the risk assessment and the Proposed Plan. The PRGs developed in the Proposed Plan used the updated risk numbers for carcinogenic PAHs.

Comment 9: Figure 1-27 from the July 2017 Final Feasibility Study indicates that arsenic is above the U.S. EPA residential and industrial soil RSLs, which correspond to a target risk of 1 x 10^{-6} and a non-cancer hazard quotient (HQ) of 1. Expanding the target risk range to the fullest extent (i.e., 1 x 10^{-4}) and the non-cancer HQ to 1, the U.S. EPA residential soil RSL could be set at 300 mg/kg (corresponding to a risk of 1 x 10^{-4} and a non-cancer HQ of 0.6). Based on site data, there is only one soil sample in excess of 35 mg/kg and no soil samples in excess of 300 mg/kg on the Valvoline Property. Further, as discussed in other comments, institutional controls can be used to limit future residential use. Therefore, arsenic should not be considered a primary soil contaminant for the Valvoline Property, as concluded in the Final Feasibility Study.

Response: Page 22 of the Proposed Plan states that arsenic was set at the 1 x 10^{-5} risk level and not at a 1 x 10^{-6} risk level. Arsenic is a COC in soils. Numerous health effects in humans have been documented after short-term exposure to arsenic. These include edema, conjunctivitis, liver enlargement, irritation of the mucous membranes, and gastrointestinal problems such as vomiting, diarrhea, cramps, and pain.

Comment 10: In reviewing the soil data associated with Figure 9 from the Proposed Plan, which shows the proposed area for SVE on the Valvoline Property, only two of the 14 discrete intervals are near groundwater movement (SB95-ASH-040-140415 and SB97-ASH-040-140415). (This is based on a review of data in Table A-1 from the Final Remedial Investigation Report, Revision 2, in conjunction with Figure 2-2 from the May 2017 Final Remedial Alternatives Screening Technical Memorandum, where soil borings SB093, SB095, SB097, and BS102 are indicated to be the soil sample locations exceeding migration-to-groundwater PRGs for VOCs. U.S. EPA then used those soil borings to determine the extent of the proposed soil remedy (S-3), which includes SVE for VOC remediation.) The other soil samples in the proposed SVE area are shallower, and geologic features present on-site (silt, clay, and organic fractions) act to inhibit migration vertically downward.

For example, the value called out as the maximum value for TCE in Table 3 of the Proposed Plan was from an isolated soil sample at SB097B (0-2 feet interval). A surface soil sample does not realistically represent a migration-to-groundwater concern when the depth to groundwater is approximately 40 feet below ground surface.

Given that only two soil sample intervals have the potential to be in contact with the groundwater table and the limited extent of impacts, an active remedy designed to address migration-to-groundwater is not warranted at the Valvoline Property. Instead, the data support the use of deed restrictions and/or a surface cap (if deemed appropriate), as a more feasible, cost-effective solution that would remain protective of human health and the environment.

Response: EPA disagrees. The assessment of potential migration to groundwater was appropriate. The presence of VOCs exceeding MTG values in both shallow and deep soil, as well as, VOCs exceeding PRGs in groundwater underlying the same areas indicates downward vertical migration of VOCs through the soil column to groundwater including the Valvoline property. Exposure to certain VOCs causes damage to the kidney, liver, and central nervous system as well as can cause cancer in animals and humans. Furthermore, the VOCs had an impact on operations at the city of Terre Haute's only drinking water supply.

Comment 11: The groundwater data supports the conclusion that SVE is not an appropriate remedy at the Valvoline Property. Figure 1-44 from the May 2017 Final Remedial Alternatives Screening Technical memorandum indicates that VOC exceedances of residential criteria in monitoring wells on the Valvoline Property is limited to one constituent (PCE) and one upgradient monitoring well (MW03S). The other four monitoring wells closer to the downgradient property boundary (two shallow and two deep) are below screening levels for all COPCs.

The most recent data collected from MW03S was in 2015 (two years after Valvoline's voluntary soil excavation efforts), and demonstrates that the PCE concentration in the well has been relatively stable and consistent over time (6.8-7.6 µg/l, based on samples between 2009 and 2015). Additionally, the voluntary soil removal activities have not materially affected the concentrations at the adjacent shallow monitoring well, demonstrating that the potential for migration to groundwater residual VOC soil impacts is negligible (especially after removal of surface structures and historic soils, which typically results in groundwater concentration increases due to increased infiltration).

The stability in groundwater concentrations at a shallow monitoring well adjacent to the excavation (pre- and post-excavation), combined with other monitoring well data below screening levels, supports the conclusion that a soil remedy targeted to address a migration-to-

groundwater condition that is not supported by the site data is not appropriate at the Valvoline Property.

Response: SVE is an appropriate remedy at the Valvoline Property. EPA prefers treatment remedies. A cap over the soil will require maintenance in perpetuity. The Proposed Remedy of SVE is expected to allow unlimited use/unlimited exposure (UU/UE) at the site in the future.

Comment 12: If SVE is selected for the Valvoline Property notwithstanding the above comments, then the system should be property specific. Due to the disparate nature and extent of impacts identified at the Elm Street Superfund Site, individually tailored SVE systems will be more effective and implementable than one large system servicing multiple properties.

Response: The specific details of the SVE system will be determined during the remedial design phase of this project. EPA agrees that the SVE system needs to be effective and implementable.

Appendix 1 – Administrative Record

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

ADMINISTRATIVE RECORD
FOR THE
ELM STREET GROUNDWATER CONTAMINATION SITE
TERRE HAUTE, VIGO COUNTY, INDIANA

ORIGINAL
AUGUST 2, 2017
SEMS ID: 935226

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	264439	9/12/88	Indiana Department of Natural Resources	File	Screening Site Inspection for I Gurman & Sons Inc.	247
2	264451	9/12/88	Indiana Department of Natural Resources	File	Screening Site Inspection Report for Machine Tool Service	484
3	935225	10/1/88	File	File	Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final, OSWER Directive 9355 3-01	186
4	264441	8/19/89	Indiana Department of Natural Resources	File	Screening Site Inspection Report for BI State Products	190
5	486078	2/15/90	Giles Engineering Associates	Duffy, M., Ashland Petroleum Co.	Geotechnical Exploration and Preliminary Petroleum Hydrocarbon Presence Study	14
6	479142	6/11/01	Spicuzza, J., Ashland Inc.	Molini, R., IDEM	Letter re: Draft Expanded Site Inspection Report	5
7	264440	6/15/02	Indiana Department of Natural Resources	File	Expanded Site Inspection Report for I Gurman & Sons Inc.	386
8	264442	6/15/02	Indiana Department of Natural Resources	File	Expanded Site Inspection Report for BI State Products	387
9	479141	6/20/02	Molini, R., IDEM	Pels, J., U.S. EPA	Letter re. BiState Products	22

10	479148	5/5/03	Boenzi, F., U.S. EPA	Dababneh, F., U.S. EPA, et al.	Email re: Trip Report for I. Gurman & Bi-State Sites	3
11	264443	7/15/03	Indiana Department of Natural Resources	File	Expanded Inspection Report for Machine Tool Service	480
12	932566	11/20/03	Perry, J., Machine Tool Service	Cuffman, C., U.S. EPA	104(E) Response - Machine Tool Service Inc (MTS) ***(Redacted)***	189
13	479126	12/9/03	Crossroads Court Reporting	U.S EPA	Transcript of Proceedings re: BiState Products Site V-W-04-C-770	134
14	486088	8/16/04	Perry, F., Machine Tool Service	File	Letter re: Refutation of Non-Compliance with 104(E) Request (W/Certified Mail Receipt of Letter Dated Dec 15, 2003, Delivered 12/22/2003)	2
15	932567	8/20/04	Perry, F., Machine Tool Service	File	Letter re: Request for Information, Re-Submitted (W/Attachments) ***(Redacted)***	22
16	512415	10/5/04	Techlaw Inc.	U S EPA	Title Search Report for Machine Tool Service Site	233
17	479143	10/20/04	Kaplan, L., IDEM	Mathur, B., U.S. EPA	Letter re: Aggregation and Designation of I. Gurman & Son, BiState Products, and Machine Tool Services as a Superfund Alternative Site	2
18	479144	1/26/05	Sleboda, J., U.S EPA	File	Memo re. Decision to Move Forward with Bi-State Products, Machine Tool Services and I. Gurman and Sons Superfund Alternative Sites Collectively	2
19	479138	4/14/05	Carney, W., U.S. EPA	Lampkin-Isabel, R., Ashland Inc., et al.	General Notice Letter for the Bi-State Products Site	12
20	932565	5/9/05	Lampkin-Isabel, R., Ashland Chemical Co.	Toney, M., U.S. Dept of Justice	Letter re: General Notice Letter and Potential for Superfund Alternative Site Approach ***(Redacted)***	1
21	479139	8/26/05	Carney, W., U.S. EPA	Lampkin-Isabel, R., Ashland Inc., et al	Special Notice Letter for Elm Street Groundwater Contamination Site	21

22	479121	11/3/05	Lampkin-Isabel, R., Ashland Inc.	Sleboda, J., U S. EPA	Special Notice Letter for Elm Street Groundwater Contamination Site- Terre Haute, Vigo County, Indiana	2
23	479122	12/13/05	Lampkin-Isabel, R., Ashland Inc.	Olson, E., U S. EPA	Special Notice Letter for Elm Street Groundwater Contamination Site- Terre Haute, Vigo County, Indiana	4
24	479120	12/14/05	Intermill, A., Bose, McKinney, & Evans, LLP	Olson, E., U.S EPA	Letter re. Machine Tool Service, Inc.- Elm Street Groundwater Contamination Site	4
25	479118	12/15/05	Schopmeyer, G., Kahn, Dees, Donovan, & Kahn, LLP	Olson, E., U.S EPA	Special Notice Letter for Elm Street Groundwater Contamination Site- Terre Haute, Vigo County, Indiana	2
26	479119	12/16/05	McHugh, L., Barnes & Thornburg	Olson, E., U.S EPA	Special Notice Letter for Elm Street Groundwater Contamination Site	1
27	479124	2/10/06	Carney, W., U.S. EPA	Multiple Addressee	Letter re: Notice of Termination of Negotiations	7
28	479134	3/1/06	Draugelis, A., U.S. EPA	Sleboda, J., U.S. EPA	Email re: Vapor Intrusion Model	1
29	479140	5/12/06	Easterly, T., IDEM	Mathur, B., U.S. EPA	Letter re: Proposed Inclusion of the Elm Street Groundwater Contamination Site	9
30	479117	6/19/06	Schopmeyer, G., Kahn, Dees, Donovan, & Kahn, LLP	Olson, E., U.S. EPA	Letter re: Elm Street Groundwater Contamination Site, Terre Haute, Vigo County, IN	31
31	479123	11/5/07	Carney, W., U.S. EPA	Lampkin-Isabel, R., Ashland Inc., et al	Special Notice Letter for Elm Street Groundwater Contamination Site- Terre Haute, Vigo County, Indiana (With attachments)	138
32	479132	1/23/08	McHugh, L., Barnes & Thornburg	Olson, E., U.S. EPA	Special Notice Letter for Elm Street Groundwater Contamination Site- Terre Haute, Vigo County, Indiana	3
33	291672	2/14/08	Carney, W., U.S. EPA	Multiple Addressee	Letter re: Notice of Termination of Negotiations	2
34	479125	2/22/08	Carney, W., U.S. EPA	Abner, D., Ashland Inc., et al.	Letter re: Notice of Termination of Negotiations	2

35	479116	7/8/08	U.S. EPA	File	Site Visit Summary	3
36	479133	7/28/08	Olson, E., U.S. EPA	Intermill, A., Bose McKinney & Evans	Letter re: Elm Street Groundwater Contamination Site	2
37	479136	8/13/08	Agency for Toxic Substances and Disease Registry	File	Health Consultation for Elm Street Groundwater Contamination	51
38	479115	6/9/09	Caine, H., U S. EPA	Storey Oil Company	Letter re: Surface Soil Sampling/Subsurface Soil Sampling/Groundwater Sampling	3
39	479135	7/15/09	Malone, B., SulTRAC	Caine, H., U.S. EPA	Revised Sampling and Analysis Plan for the Elm Street Groundwater Contamination Site	209
40	479150	10/13/09	McHugh, L., Barnes & Thornburg	Olson, E., U.S. EPA	Letter re· Elm Street Groundwater Contamination Site	17
41	479131	11/20/09	Olson, E., U.S. EPA	McHugh, L., Barnes & Thornburg	Letter re: Elm Street Groundwater Contamination Site	1
42	479130	11/24/09	McHugh, L., Barnes & Thornburg	Olson, E., U.S. EPA	Letter re: Elm Street Groundwater Contamination Site	1
43	365921	4/21/10	URS	Olson, E., U.S. EPA	Remedial Investigation Report	854
44	479145	9/1/10	Nebelsick, J., U.S EPA	Layne, W., U.S. EPA	Email re: Elm Street Groundwater Contamination Site Request	3
45	479146	10/7/10	Roach, S., Ashland Inc.	Caine, H., U.S. EPA	Letter re: Elm Street Groundwater Contamination Site	2
46	479129	11/5/10	Caine, H., U.S. EPA	Roach, S., Ashland, Inc.	Letter re. Response to Inquiry	2
47	479128	11/26/10	Olson, E., U.S. EPA	Roach, S., Ashland, Inc.	Letter re: Elm Street Groundwater Contamination Site	3
48	928412	11/29/10	SulTRAC	U.S. EPA	Data Validation Summary Report- Phase I Remedial Investigation Sampling Results	607
49	928415	11/29/10	SulTRAC	U.S. EPA	Data Evaluation Summary Report	219

50	479113	12/15/10	Malone, B , SulTRAC	Caine, H., U.S. EPA	Letter re: Additional Sampling to Confirm Phase I RI Analytical Results	2
51	516240	12/17/10	U.S. EPA	File	Data Quality Evaluation Guidelines for Ambient Air Acrolein Measurements	4
52	516239	1/21/11	State of Michigan Department of Community Health	Keeslar, F., Grand Traverse County Health Department	Letter re: Environmental Data for the Grand Traverse Overall Supply (GTOS)	14
53	479149	1/25/11	Draugelis, A., U.S. EPA	Caine, H., U.S. EPA	Email re: Elm Street GW Contamination Site	22
54	414530	1/19/12	SulTRAC	U.S. EPA	Final Phase I Data Evaluation Summary Report	259
55	479114	4/3/12	Huxhold, J., IDEM	Caine, H , U.S. EPA	Letter re: Phase II Field Sampling Plan	1
56	479152	5/2/12	Caine, H., U.S. EPA	Storey, M., Storey Oil Company	Letter re Phase I Data Evaluation Summary Report (With Attached Access Agreement)	2
57	479112	5/25/12	Prendiville, T , U.S. EPA	Caine, H , U.S EPA	Memo re: Conditional Approval for the Initial Revision of the Quality Assurance Project Plan (QAPP)	2
58	928413	8/21/12	SulTRAC	U.S. EPA	Field Sampling and Analysis Plan for the Elm Street Groundwater Contamination Site (With QAPP and HASP Attached)	540
59	928416	1/4/13	Malone, B., SulTRAC	Caine, H., U.S. EPA	Data Validation Summary Report- Phase II Remedial Investigation Multimedia Sampling Results	356
60	479110	4/25/13	Roach, S., Ashland Inc.	Caine, H., U.S. EPA	Email re Notice- Demolition Activities at Ashland's Former Elm Street Facility Located in Terre Haute, IN	1
61	479127	7/3/13	Fliss, J., IDEM	Caine, H., U.S. EPA	Letter re: Phase II Data Evaluation Summary Report	2
62	928410	9/25/13	SulTRAC	U.S EPA	Phase II Data Evaluation Summary Report	372

63	928414	3/1/14	Arcadis	Ashland Inc	Ashland Parcel Voluntary Remedial Investigation Report	125
64	479151	4/18/14	Caine, H., U S. EPA	Brenneman, C., Indiana American Water, et al.	Letter re: Phase II: Data Evaluation Summary Report	26
65	479111	10/21/14	Malone, B , SulTRAC	Caine, H., U S. EPA	Phase II Remedial Investigation Sampling and Analysis Plan (SAP) Addendum for the Elm Street Groundwater Contamination Site	146
66	479109	11/13/14	Kasarabada, P., IDEM	Caine, H., U.S. EPA	Letter re: Elm Street Groundwater Contamination Site	1
67	479108	11/26/14	Roberman, A., U.S. EPA	Caine, H., U.S. EPA	Memo re: Approval for the Initial Revision of the Quality Assurance Project Plan (QAPP) for the Elm Street Groundwater Contamination Site	1
68	479147	3/31/15	Caine, H., U.S. EPA	Brenneman, C., Indiana American Water, et al	Letter re: Phase II Resampling Mobilization	14
69	932601	6/1/15	U.S. EPA	File	OSWER Technical Guide for Assessing and Monitoring Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air, OSWER Publication 9200.2-154	267
70	516228	7/25/16	Roach, S., Ashland Inc.	Olson, E., U.S. EPA	Letter re· Project Transfer	2
71	934496	12/2/16	SulTRAC	U.S. EPA	Final Revision 2 - Remedial Investigation Report for Elm Street Groundwater Site (Attached with cover letter)	3082
72	516223	5/5/17	SulTRAC	U.S. EPA	Final Remedial Alternatives Screening Technical Memorandum	197
73	516233	7/20/17	SulTRAC	U.S. EPA	Final Feasibility Study - Elm Street Groundwater Contamination Site (Attached with Cover Letter)	342
74	516238	7/25/17	Caine. H., U S EPA	Lifka, J., SulTRAC	Letter re: Approval of Final Remedial Investigation Report Revision 2 and Feasibility Report	1

75	935219	8/14/17	U.S. EPA	File	Proposed Plan - Elm Street Groundwater Contamination Superfund Site	40

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

ADMINISTRATIVE RECORD
FOR THE
ELM STREET GROUNDWATER CONTAMINATION SITE
TERRE HAUTE, VIGO COUNTY, INDIANA

UPDATE 1
SEPTEMBER 13, 2017
SEMS ID: 936155

NO.	SEMS ID	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	531487	8/21/17	Owens, J , Spencer/Banks, Inc	U.S EPA	EPA - Public Comment Sheet	2
2	531488	9/6/17	Campbell, K., Manko, Gold, Katcher & Fox LLP	Allen, C., U.S EPA	Letter re: Comments on Proposed Plan for Elm Street Groundwater Contamination Superfund Site, Terre Haute, Indiana (With Attachment)	6
3	531489	9/6/17	Goulding, N., EHS Support	Allen, C., U S. EPA	Letter re Comments on Proposed Plan for Elm Street Groundwater Contamination Superfund Site	20
4	531486	9/12/17	Caine, H , U.S. EPA	File	Memo re: Feasibility Study Updated Figures - Elm Street Groundwater Contamination Site - Terre Haute, Indiana	5

Appendix 2 – Indiana Department of Environmental Management Concurrence Letter

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

September 20, 2017

Mr. Howard Caine
U.S. EPA Region 5
77 West Jackson Boulevard
Mail Code SR-6J
Chicago, Illinois 60604-3507

Dear Mr. Caine:

Re: Proposed Plan for a
Record of Decision (ROD)
Elm Street Superfund Site #7500098
Terre Haute, IN

The Indiana Department of Environmental Management (IDEM) has reviewed the U.S. Environmental Protection Agency's ROD Amendment for the Elm Street Superfund site. IDEM is in full concurrence with the major components of the selected remedy outlined in the document, which include:

1. Soil vapor extraction (SVE) and excavation of soil in combination with off-site disposal and institutional controls (ICs)

2. Groundwater monitoring and ICs

IDEM staff agree that the selected remedies are protective of human health and the environment, comply with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and are cost-effective. IDEM staff have been working closely with Region V staff in the selection of appropriate remedies and is satisfied with the selected alternatives.

Please be assured that IDEM is committed to accomplish cleanup at all Indiana sites on the National Priorities List and intends to fulfill all obligations required by law to achieve that goal. We look forward to beginning work on this project.

Sincerely,

Peggy Dorsey
Assistant Commissioner
Office of Land Quality

PD:DW:tr
cc: Bruce Oertel, IDEM
Rex Osborn, IDEM
Daniel Walterman, IDEM

Appendix 3 – Applicable or Relevant and Appropriate Requirements

APPENDIX C

TABLE 1
FEDERAL POTENTIALLY APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
ELM STREET GROUNDWATER CONTAMINATION SITE

Potential ARAR	Description	ARAR Type	Potentially Applicable or Relevant and Appropriate	Comment
SAFE DRINKING WATER ACT OF 1974 (42 U.S.C., ch. 6A, § 300[f]–300[j]-26)				
40 CFR Parts 141.60 – 141.63 and 141.50 – 141.52	The National Primary Drinking Water Regulations establish MCLs and MCLGs for several common organic and inorganic contaminants for public drinking water systems. MCLs specify the maximum permissible concentrations of contaminants in public drinking water supplies. MCLs are federally enforceable standards based in part on the availability and cost of treatment techniques. MCLGs specify the maximum concentrations at which no known or anticipated adverse effect on humans will occur. MCLGs are non-enforceable, health-based goals set equal to or lower than MCLs.	Chemical-specific	Relevant and appropriate	These regulations apply to all public water supplies (having more than 15 connections or serving more than 25 persons regularly). The MCLs are relevant and appropriate for the site because the aquifer underlying the site currently is used for the public water treated and supplied by the Indiana American Water Company (IAWC). Currently, nothing prohibits the use of groundwater at the site as a public water supply.
40 C.F.R. § 144.12, excluding the reporting requirements in § 144.12(b) and 144.12(c)(1)	The UIC program prohibits injection activities that allow movement of contaminants into underground sources of drinking water that may result in violations of MCLs or adversely affect health. An approved UIC program is required in states listed under SDWA Section 1422. Class I wells and Class IV wells are the relevant classifications for CERCLA sites.	Action-specific	Relevant and appropriate	Injection wells for groundwater treatment may be Class V wells under the UIC program.

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Potential ARAR	Description	ARAR Type	Potentially Applicable or Relevant and Appropriate	Comment
FLOODPLAIN MANAGEMENT EXECUTIVE ORDER 11988				
40 CFR Part 6, Appendix A	This order requires federal agencies to evaluate potential adverse effects associated with direct and indirect development of a floodplain. Alternatives that involve modification or construction within a floodplain may not be selected unless a determination is made that no practicable alternative exists. If no practicable alternative exists, potential harm must be minimized and action taken to restore and preserve the natural and beneficial values of the floodplain.	Location-specific	To be considered	Executive orders are TBCs, not ARARs. This order will constitute guidance for any construction activities in the Wabash River floodplain.
CLEAN WATER ACT OF 1977, as Amended, Section 404 (33 U.S.C. § § 1251-1387)				
33 U.S.C. § 1344 Permits for dredged or fill material	Federal agencies must minimize the destruction, loss, or degradation of wetlands and preserve and enhance natural and beneficial values of wetlands. Remediation required within wetland areas must minimize potential harm and action taken to restore natural and beneficial values of the wetland areas.	Location-specific	Applicable	The substantive statutory provisions are potentially applicable if discharge of dredged or fill material to the Wabash River floodplain is planned as part of the response action. No wetlands are currently known to exist along the southwest site boundary or the Wabash River.

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Potential ARAR	Description	ARAR Type	Potentially Applicable or Relevant and Appropriate	Comment
CWA Section 402 (33 U.S.C. ch. 26, § 1342) and 40 C.F.R. § 122.44(k)(2) and (4).	Discharge to surface waters, including storm water: Owners and operators of construction activities must be in compliance with discharge standards, including substantive provisions of the general requirements for storm water plans and BMPs.	Action-specific	Applicable	The substantive provisions are potentially applicable for construction activities that have the potential to discharge pollutants to surface water. All direct dischargers must meet technology-based requirements including the best control technology and the best available technology economically achievable.
FISH AND WILDLIFE COORDINATION ACT (16 U.S.C. §§ 661–666c)				
16 USC, § 662	Actions that affect species or habitat require consultation with the U.S. Department of the Interior, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and state agencies as appropriate to ensure that the proposed actions do not jeopardize the continued existence of the species or adversely modify or destroy critical habitat. Consultation with the responsible agency also is strongly recommended for on-site actions.	Location-specific	Applicable	The substantive provisions of this requirement may potentially be applicable if the selected remedial action involves diversion, channeling, or other activity that modifies a stream or other water body and affects fish or wildlife. Action must be taken to prevent, mitigate, or compensate for project-related damages or losses to fish and wildlife resources.
RESOURCE CONSERVATION AND RECOVERY ACT OF 1976 (RCRA) (42 U.S.C., ch. 82, §§ 6901–6991[i])				
40 CFR 261.21, 261.22(a)(1), 261.23, 261.24(a)(1), and 261.100	Defines RCRA hazardous waste. A solid waste is characterized as toxic, based on the TCLP, if the waste exceeds the TCLP maximum concentrations.	Chemical-specific	Applicable	The substantive provisions of this requirement may be potentially applicable for determining whether waste generated on site is hazardous for the affected site media: waste, groundwater, surface water, and/or soil.

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TABLE 1
FEDERAL POTENTIALLY APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
ELM STREET GROUNDWATER CONTAMINATION SITE

Potential ARAR	Description	ARAR Type	Potentially Applicable or Relevant and Appropriate	Comment
40 CFR 262.10(a), 262.11	Person who generates waste shall determine if that waste is a hazardous waste.	Action-specific	Applicable	The substantive provisions of this requirement may be potentially applicable for a remedial action where hazardous waste is generated such as the soil from excavation and offsite disposal. The determination of whether groundwater and/or wastes generated during remedial activities, such as soil cutting from well installation and treatment residues, are hazardous will be made at the time the wastes are generated.
40 CFR 262.34	Hazardous waste accumulation: On-site hazardous waste accumulation is allowed for up to 90 days as long as the waste is stored in containers in accordance with 262.171–178 or in tanks, on drip pads, inside buildings, is labeled and dated, etc.	Action-specific	Applicable	The substantive provisions of this requirement may be potentially applicable for a remedial action where hazardous waste is generated and transported. The determination of whether wastes generated during response action activities, such as soil cuttings from well installation and treatment residues, are hazardous will be made at the time the wastes are generated.

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TABLE 1
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Potential ARAR	Description	ARAR Type	Potentially Applicable or Relevant and Appropriate	Comment
40 C.F.R. § 264.554(d)(1)(i–ii) and (d)(2), (e), (f), (h), (i), (j), and (k). Staging piles.	Hazardous remediation waste temporarily stored in piles: Allows generators to accumulate solid remediation waste in a U.S. EPA-designated pile for storage only, up to 2 years, during remedial operations without triggering LDRs.	Action-specific	Applicable	The substantive provisions of this requirement may be potentially applicable for a remedial action where hazardous waste is stored in staging piles, such as excavated soil requiring off-site disposal. The determination of whether wastes generated during response action activities, such as soil cuttings from well installation and treatment residues, are hazardous will be made at the time the wastes are generated.
ENDANGERED SPECIES ACT(16 U.S.C. §§ 1531–1543)				
50 CFR Chapter 1, Subchapter B	Federal agencies may not jeopardize the continued existence of any listed species or cause the destruction or adverse modification of critical habitat.	Location-specific	Not an ARAR	No endangered species that would be affected by remedial actions are known to be present at the site.
NATIONAL HISTORIC PRESERVATION ACT OF 1966, as Amended (16 U.S.C. § 470–470x-6)				
36 C.F.R. Part 800, 40 C.F.R. § 6.301(b)	Historic project owned or controlled by federal agency: Action to preserve historic properties; planning of action to minimize harm to properties listed on or eligible for listing on the National Register of Historic Places.	Location-specific	Applicable	No part of the site is listed on the National Register of Historic Places. This Act is potentially applicable during remedial activities if scientific, historic, or archaeological artifacts are identified during implementation of the remedy.

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TABLE 1
FEDERAL POTENTIALLY APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
ELM STREET GROUNDWATER CONTAMINATION SITE

Notes:

§	Section
§§	Sections
ARAR	Applicable or relevant and appropriate requirement
CFR	*Code of Federal Regulations*
EPA	U.S. Environmental Protection Agency
FS	Feasibility study
IDEM	Indiana Department of Environmental Management
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPDES	National Pollutant Discharge Elimination System
POTW	Publicly owned treatment works
PRG	Preliminary Remediation Goals
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
U.S.	United States
USC	*United States Code*
VOC	Volatile organic compound

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TABLE 2
STATE POTENTIALLY APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
ELM STREET GROUNDWATER CONTAMINATION SITE

Potential ARAR	Description	ARAR Type	Potentially Applicable or Relevant and Appropriate	Comment
INDIANA ADMINISTRATIVE CODE (IAC)				
Regulation of Water Well Drilling (IC 25-39-4 and 312 IAC 13)	This regulation outlines requirements for construction and abandonment of groundwater wells for non-personal use in Indiana.	Action-specific	Applicable	The substantive provisions of this requirement may be applicable if installation and abandonment of water wells (such as extraction and monitoring wells) is required.
Indiana Air Pollution Control Regulations (IAC Title 326)	This law applies to the regulation of air emissions for activities that could create fugitive dust.	Action-specific	Applicable	The substantive provisions of this requirement may be relevant and appropriate if remedial action activities (such as construction and excavation) create fugitive dust.
Indiana Regulations for Establishing Emissions Levels for VOCs (326 IAC 8)	Establishes permitting requirements for emissions of VOCs and requires Best Available Control Technology for new sources with potential emissions exceeding a specified threshold value.	Action-specific	Applicable	The substantive provisions of these requirements may potentially be applicable if a remedy is chosen that involves the release of VOCs from treatment equipment.
Indiana Regulations for Permitting of Air Strippers (326 IAC 8)	Establishes permitting requirements for emissions of VOCs and requires Best Available Control Technology for new sources with potential emissions exceeding a specified threshold value.	Action-specific	Applicable	The substantive provisions of these requirements may potentially be applicable if a remedy involving the use of air strippers to remove VOCs from groundwater is chosen.
Indiana Regulations for Construction Permits for Water Treatment Facilities (327 IAC 3)	The regulations control the issuance of permits for the construction of water pollution treatment or control facilities.	Action-specific	Applicable	The substantive provisions of this requirement may be potentially applicable for a remedial action where on-site groundwater treatment facilities are constructed.

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TABLE 2
STATE POTENTIALLY APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
ELM STREET GROUNDWATER CONTAMINATION SITE

Notes:

ARAR	Applicable or relevant and appropriate requirement
EPA	U.S. Environmental Protection Agency
FS	Feasibility study
IAC	*Indiana Administrative Code*
IC	*Indiana Code*
IDEM	Indiana Department of Environmental Management
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPDES	National Pollutant Discharge Elimination System
POTW	Publicly owned treatment works
PRG	Preliminary Remediation Goals
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RSL	Regional Screening Level
U.S.	United States
USC	*United States Code*
VOC	Volatile organic compound

APPENDIX B

Statement of Work

REMEDIAL DESIGN/REMEDIAL ACTION

STATEMENT OF WORK FOR THE ELM STREET GROUNDWATER CONTAMINATION SITE

TABLE OF CONTENTS

1. INTRODUCTION

- **Purpose of the SOW**. This SOW sets forth the procedures and requirements for implementing the Work as defined in the Consent Decree.
- Section 1 (Introduction) outlines this SOW.
- Section 2 (Community Involvement) sets forth EPA's and Settling Defendants' responsibilities for community involvement.
- Section 3 (Coordination and Supervision) contains the provisions for selecting the Supervising Contractor and Project Coordinators regarding the Work.
- Section 4 (Remedial Action) sets forth requirements regarding the completion of the Remedial Action, including primary deliverables related to completion of the Remedial Action.
- Section 5 (SVE Remedy) sets forth Settling Defendants' obligations regarding implementation of the SVE Remedy.
- Section 6 (Reporting) sets forth Settling Defendants' reporting obligations.
- Section 7 (Deliverables) describes the contents of the supporting deliverables and the general requirements regarding Settling Defendants' submission of, and EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- Section 8 (Schedules) sets forth the schedule for submitting the primary deliverables, specifies the supporting deliverables that must accompany each primary deliverable, and sets forth the schedule of milestones regarding the completion of the Remedial Action.
- Section 9 (State Participation) addresses State participation.
- Section 10 (References) provides a list of references, including URLs.

1.1 The Scope of the Remedy includes the actions described in Section 1.4 of the Record of Decision, including:

(a) Excavating shallow, accessible contaminated soil (i.e., not located under a building foundation) containing volatile organic compounds ("VOCs"), arsenic, polycyclic aromatic hydrocarbons ("PAHs"), pesticides, and polychlorinated biphenyls ("PCBs") for off-site disposal;

(b) Installing and operating a soil vapor extraction ("SVE") system at locations where VOCs are present in subsurface soil at depths that would make excavation unfeasible;

(c) Installing and operating a groundwater monitoring system until remediation goals are met in the groundwater and to demonstrate the effectiveness of the soil remedy; and

(d) Implementing institutional controls ("ICs") to protect the integrity of the remedy and restrict use and activities related to soil and groundwater.

1.2 In late April 2022, EPA approved a remedial design ("Approved RD") separate from this SOW under the Administrative Settlement Agreement and Order on Consent

("ASAOC"), executed February 11, 2019 (CERCLA Docket No. V-W-19-C-004). The Approved RD includes the final remedial design for the actions described in Section 1.4 of the Record of Decision, excluding the SVE remedial action component described in ¶ 1.1(b) of this SOW (the "SVE Remedy"). Design and implementation of the SVE Remedy is being deferred, as outlined in ¶ 1.3 below.

1.3 The Approved RD and this SOW provide for remedial design and implementation of the SVE Remedy under the Consent Decree ("Decree") if certain triggering conditions for implementation of the SVE Remedy are met following completion of the soil excavation remedial action component described in ¶ 1.1(a). These triggering conditions are contained in Table 1 of the Sitewide Monitoring Plan attached as Appendix B to the Approved RD. If such triggering conditions for implementation of the SVE Remedy are not met, then EPA will propose a modification of the selected remedy set forth in the ROD, including to potentially no longer require the SVE Remedy.

1.4 The terms used in this SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the Decree, have the meanings assigned to them in CERCLA, in such regulations, or in the Decree, except that the term "Paragraph" or "¶" means a paragraph of the SOW, and the term "Section" means a section of the SOW, unless otherwise stated.

2. COMMUNITY INVOLVEMENT

2.1 As requested by EPA, Settling Defendants shall conduct community involvement activities under EPA's oversight as provided for in, and in accordance with this Section. Such activities must include designation of a Community Involvement Coordinator ("CI Coordinator"), if requested by EPA.

2.2 Community Involvement Responsibilities

(a) EPA has the lead responsibility for developing and implementing community involvement activities at the Site. EPA will develop a Community Involvement Plan ("CIP") for the Site pursuant to 40 C.F.R. § 300.435(c). EPA shall describe in the CIP further public involvement activities during the Work that are not already addressed or provided for, including, if applicable, any Technical Assistance Grant ("TAG"), any use of the Technical Assistance Services for Communities ("TASC") contract, and/or any Technical Assistance Plan ("TAP").

(b) **Settling Defendants' CI Coordinator**. As requested by EPA, Settling Defendants shall, within 30 days, designate and notify EPA of Settling Defendants' CI Coordinator (Settling Defendants' CI Coordinator). Settling Defendants may hire a contractor for this purpose. Settling Defendants' notice must include the name, title, and qualifications of the Settling Defendants' CI Coordinator. Settling Defendants' CI Coordinator shall coordinate his/her activities with EPA's CI Coordinator, provide support regarding EPA's community involvement activities, and, as requested by EPA's CI Coordinator, provide draft responses to the public's inquiries including requests for information

or data about the Site. The Settling Defendants' CI Coordinator has the responsibility to ensure that when they communicate with the public, the Settling Defendants protect any "Personally Identifiable Information" ("PII") (*e.g.* sample results from residential properties) in accordance with "EPA Policy 2151.0: Privacy Policy."

(c) As requested by EPA, Settling Defendants shall participate in community involvement activities, including participation in (1) the preparation of information regarding the Work for dissemination to the public, with consideration given to including mass media and/or Internet notification, and (2) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. Settling Defendants' support of EPA's community involvement activities may include providing online access to initial submissions and updates of deliverables to (1) any Community Advisory Groups, (2) any Technical Assistance Grant recipients and their advisors, and (3) other entities to provide them with a reasonable opportunity for review and comment. EPA may describe in its CIP Settling Defendants' responsibilities for community involvement activities. All community involvement activities conducted by Settling Defendants at EPA's request are subject to EPA's oversight. Upon EPA's request, Settling Defendants shall establish a community information repository at or near the Site to house one copy of the administrative record.

(d) **Information for the Community**. As requested by EPA, Settling Defendants shall develop and provide to EPA information about the design and implementation of the remedy including: (1) any validated data from monitoring of impacts to communities as provided in the Community Impacts Mitigation Plan under ¶ 7.7(f); (2) results from unvalidated sampling as provided under ¶ 7.7(e)(7); (3) a copy of the Community Impacts Mitigation Plan required under ¶ 7.7(f); (4) schedules prepared under Section 8; (5) dates that Settling Defendants completed each task listed in the schedules; and (6) digital photographs of the Work being performed, together with descriptions of the Work depicted in each photograph, the purpose of the Work, the equipment being used, and the location of the Work. The EPA Project Coordinator may use this information for communication to the public via EPA's website, social media, or local and mass media. The information provided to EPA should be suitable for sharing with the public and the education levels of the community as indicated in EJ Screen. Translations should be in the dominant language(s) of community members with limited English proficiency.

3. COORDINATION AND SUPERVISION

3.1 Project Coordinators

(a) Settling Defendants' Project Coordinator must have sufficient technical expertise to coordinate the Work. Settling Defendants' Project Coordinator may not be an attorney representing any Settling Defendant in this matter and may not act as the Supervising Contractor. Settling Defendants' Project Coordinator may assign

other representatives, including other contractors, to assist in coordinating the Work.

(b) EPA shall designate and notify the Settling Defendants of EPA's Project Coordinator and Alternate Project Coordinator. EPA may designate other representatives, which may include its employees, contractors, and/or consultants, to oversee the Work. EPA's Project Coordinator/Alternate Project Coordinator will have the same authority as a remedial project manager and/or an on-scene coordinator, as described in the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"). This includes the authority to halt the Work and/or to conduct or direct any necessary response action when it is determined that conditions at the Site constitute an emergency or may present an immediate threat to public health or welfare or the environment due to a release or threatened release of Waste Material.

(c) Unless otherwise agreed to by EPA and Settling Defendants, Settling Defendant' Project Coordinator shall communicate with EPA's Project Coordinator at least monthly.

3.2 Supervising Contractor. Settling Defendants' proposed Supervising Contractor must have sufficient technical expertise to supervise the Work and a quality assurance system that complies with the most recent version of *Quality Systems for Environmental Data and Technology Programs -- Requirements with Guidance for Use* (American National Standard), ANSI/ASQC E4 (Feb. 2014).

3.3 Procedures for Disapproval/Notice to Proceed

(a) Settling Defendants shall designate, and notify EPA, within 30 days after the Effective Date, of the names, titles, contact information, and qualifications of the Settling Defendants' proposed Project Coordinator and Supervising Contractor, whose qualifications shall be subject to EPA's review for verification based on objective assessment criteria (*e.g.*, experience, capacity, technical expertise) and do not have a conflict of interest with respect to the project.

(b) EPA shall issue notices of disapproval and/or authorizations to proceed regarding any proposed Project Coordinator and Supervising Contractor, as applicable. If EPA issues a notice of disapproval, Settling Defendants shall, within 30 days, submit to EPA a list of supplemental proposed Project Coordinators and/or Supervising Contractors, as applicable, including a description of the qualifications of each. Settling Defendants may select any coordinator/contractor covered by an authorization to proceed and shall, within 21 days, notify EPA of Settling Defendants' selection.

(c) EPA may disapprove the proposed Project Coordinator, the Supervising Contractor, or both, based on objective assessment criteria (*e.g.*, experience, capacity, technical expertise), if they have a conflict of interest regarding the project, or any combination of these factors.

(d) Settling Defendants may change their Project Coordinator and/or Supervising Contractor, or both, by following the procedures of ¶ 3.3(a) and 3.3(b).

(e) Notwithstanding the procedures of ¶ 3.3(a) through 3.3(d), Settling Defendants have proposed, and EPA has authorized Settling Defendants to proceed, regarding the following Project Coordinator and Supervising Contractor:

Project Coordinator
Reynolds B. Renshaw
EHS Support LLC
204 Ridgewood Ct NE
Vienna, VA 22180
703.946.5801
reynolds.renshaw@ehs-support.com

Supervising Contractor
Erica Fisher
EHS Support LLC
4885 McKnight Road, Suite 188
Pittsburgh, PA 15237
540-569-8371erica.fisher@ehs-support.com

4. REMEDIAL ACTION

In accordance with the schedule set forth in Section 8 below, Settling Defendants shall meet the following requirements regarding the Remedial Action.

4.1 Remedial Action Work Plan ("RAWP"). Settling Defendants shall submit a RAWP for EPA approval that includes:

(a) A proposed Remedial Action Construction Schedule in a Gantt chart, which may be changed by mutual agreement of the parties;

(b) An updated health and safety plan that covers activities during the Remedial Action; and

(c) Plans for satisfying permitting requirements, including obtaining permits for off-site activity and for satisfying substantive requirements of permits for on-site activity.

4.2 Meetings and Inspections

(a) **Preconstruction Conference**. Settling Defendants shall hold a preconstruction conference with EPA and others as directed or approved by EPA and as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059

(June 1995). Settling Defendants shall prepare minutes of the conference and shall distribute the minutes to all Parties.

(b) **Periodic Communications**. During the construction portion of the Remedial Action ("Remedial Action Construction"), Settling Defendants shall communicate regularly, each week, through email summaries with short updates, with EPA, and others as directed or determined by EPA, to discuss construction issues. Settling Defendants shall distribute an agenda and list of attendees to all Parties prior to each meeting or telephone call. Settling Defendants shall prepare minutes of the meetings or calls and shall distribute the minutes to all Parties.

(c) **Inspections**

(1) EPA or its representative shall conduct periodic inspections of or have an on-site presence during the Work. At EPA's request, the Supervising Contractor or other designee shall accompany EPA or its representative during inspections.

(2) Upon notification by EPA of any deficiencies in the Remedial Action Construction, Settling Defendants shall take all necessary steps to correct the deficiencies and/or bring the Remedial Action Construction into compliance with the approved Final Remedial Design, any approved design changes, and/or the approved RAWP. If applicable, Settling Defendants shall comply with any schedule provided by EPA in its notice of deficiency.

4.3 Permits

(a) As provided in CERCLA Section 121(e), 42 U.S.C § 9621(e), and Section 300.400(e) of the NCP, 40 C.F.R. § 300.400(e), no permit is required for any portion of the Work conducted entirely on-site *(i.e.*, within the areal extent of contamination or in very close proximity to the contamination and necessary for implementation of the Work). Where any portion of the Work that is not on-site requires a federal or state permit or approval, Settling Defendants shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

(b) Settling Defendants may seek relief under the provisions of Section X (Force Majeure) of the Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit or approval referenced in ¶ 4.3(a) and required for the Work, provided that they have submitted timely and complete applications and taken all other actions necessary to obtain all such permits or approvals.

(c) Nothing in the Decree or this SOW constitutes a permit issued under any federal or state statute or regulation.

4.4 Emergency Response and Reporting

(a) **Emergency Action**. If any event occurs during performance of the Work that causes or threatens to cause a release of Waste Material on, at, or from the Site and that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, Settling Defendants shall: (1) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release; (2) immediately notify the authorized EPA officer (as specified in ¶ 4.4(b)) orally; and (3) take such actions in consultation with the authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plan, the Emergency Response Plan, and any other deliverable approved by EPA under the SOW.

(b) **Release Reporting**. Upon the occurrence of any event during performance of the Work that Settling Defendants are required to report under CERCLA Section 103, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-Know Act ("EPCRA"), 42 U.S.C § 1100, Settling Defendants shall immediately notify the authorized EPA officer orally.

(c) The "authorized EPA officer" for purposes of immediate oral notifications and consultations under ¶ 4.4(a) and ¶ 4.4(b) is the EPA Project Coordinator, the EPA Alternate Project Coordinator (if the EPA Project Coordinator is unavailable), or the EPA Emergency Response Unit, Region 5 (if neither EPA Project Coordinator is available).

(d) For any event covered by ¶ 4.4(a) and ¶ 4.4(b), Settling Defendants shall: (1) within 14 days after the onset of such event, submit a report to EPA describing the actions or events that occurred and the measures taken, and to be taken, in response thereto; and (2) within 30 days after the conclusion of such event, submit a report to EPA describing all actions taken in response to such event.

(e) The reporting requirements under ¶ 4.4 are in addition to the reporting required by CERCLA Section 103, 42 U.S.C. § 9603, or EPCRA Section 304, 42 U.S.C § 1100.

4.5 Off-Site Shipments

(a) Settling Defendants may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if they comply with CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Settling Defendants will be deemed to be in compliance with CERCLA Section 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Settling Defendants obtain a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).

(b) Settling Defendants may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide notice to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator. This notice requirement will not apply to any

off-Site shipments when the total quantity of all such shipments does not exceed 10 cubic yards. The notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Settling Defendants also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Settling Defendants shall provide the notice after the award of the contract for Remedial Action construction and before the Waste Material is shipped.

(c) Settling Defendants may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if they comply with CERCLA Section 121(d)(3), 40 C.F.R. § 300.440, *EPA's Guide to Management of Investigation Derived Waste*, OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the Record of Decision. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 C.F.R. § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

4.6 Certification of Excavation Completion.

(a) For purposes of this ¶ 4.6 the "Excavation Component" means the excavation component of the remedy, as defined in ¶ 1.1(a).

(b) **Excavation Completion Inspection**. The Excavation Component is "Complete" for purposes of this ¶ 4.6 when it has been fully performed and the Performance Standards for the Excavation Component in the Approved RD have been achieved. Settling Defendants shall schedule an inspection for the purpose of obtaining EPA's Certification of Excavation Completion. The inspection must be attended by Settling Defendants and EPA and/or their representatives.

(c) **Excavation Report**. Following the inspection, Settling Defendants shall submit a Excavation Report to EPA requesting EPA's Certification of Excavation Completion. The report must: (1) include certifications by a registered professional engineer and by Settling Defendants' Project Coordinator that the Excavation Component is complete; (2) include as-built drawings signed and stamped by a registered professional engineer; (3) be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA's *Close Out Procedures for NPL Sites* guidance (May 2011), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); and (4) be certified in accordance with ¶ 7.5 (Certification).

(d) If EPA concludes that the Excavation Component is not Complete, EPA shall so notify Settling Defendants. EPA's notice must include a description of any deficiencies. EPA's notice may include a schedule for addressing such deficiencies or may require Settling Defendants to submit a schedule for EPA

approval. Settling Defendants shall perform all activities described in the notice in accordance with the schedule.

(e) If EPA concludes, based on the initial or any subsequent Excavation Report requesting Certification of Excavation Completion, that the Excavation Component is Complete, EPA shall so certify to Settling Defendants.

(f) Certification of Excavation Completion under this paragraph shall not be construed to constitute Certification of Remedial Action Completion under ¶ 4.7, Certification of SVE Remedial Action Construction Completion under ¶ 5.11, or Certification of Work Completion under ¶ 4.9.

4.7 Certification of Remedial Action Completion.

(a) **Remedial Action Completion Inspection**. The Remedial Action is "Complete" for purposes of this ¶ 4.7 when it has been fully performed and the Performance Standards have been achieved. Settling Defendants shall schedule an inspection for the purpose of obtaining EPA's Certification of Remedial Action Completion. The inspection must be attended by Settling Defendants and EPA and/or their representatives.

(b) **Monitoring Report**. Once all Performance Standards have been achieved, Settling Defendants shall submit a Final Monitoring Report to EPA requesting EPA's Certification of Remedial Action Completion. The report must: (1) include certifications by a registered professional engineer and by Settling Defendants' Project Coordinator that the Remedial Action is complete; (2) be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA's *Close Out Procedures for NPL Sites* guidance (May 2011), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); (3) contain monitoring data to demonstrate that Performance Standards have been achieved; and (4) be certified in accordance with ¶ 7.5 (Certification).

(c) If EPA concludes that the Remedial Action is not Complete, EPA shall so notify Settling Defendants. EPA's notice must include a description of any deficiencies. EPA's notice may include a schedule for addressing such deficiencies or may require Settling Defendants to submit a schedule for EPA approval. Settling Defendants shall perform all activities described in the notice in accordance with the schedule.

(d) If EPA concludes, based on the initial or any subsequent request for Certification of Remedial Action Completion, that the Remedial Action is Complete, EPA shall so certify to Settling Defendants. This certification will constitute the Certification of Remedial Action Completion for purposes of the Decree, including Section XIV of the Decree (Covenants by Settling Defendants). Certification of Remedial Action Completion will not affect Settling Defendants' remaining obligations under the Decree.

4.8 **Periodic Review Support Plan ("PRSP")**. Settling Defendants shall submit the PRSP for EPA approval. The PRSP addresses the studies and investigations that Settling Defendants shall conduct to support EPA's reviews of whether the Remedial Action is protective of human health and the environment in accordance with CERCLA Section 121(c) (also known as "Five-Year Reviews"). This plan shall include necessary monitoring to decide whether implementation of the SVE Remedy is necessary. Settling Defendants shall develop the plan in accordance with *Comprehensive Five-year Review Guidance*, OSWER 9355.7-03B-P (June 2001), and any other relevant five-year review guidances.

4.9 **Certification of Work Completion**.

(a) **Work Completion Inspection**. Settling Defendants shall schedule an inspection for the purpose of obtaining EPA's Certification of Work Completion. The inspection must be attended by Settling Defendants and EPA and/or their representatives.

(b) **Work Completion Report**. Following the inspection, Settling Defendants shall submit a report to EPA requesting EPA's Certification of Work Completion. The report must: (1) include certifications by a registered professional engineer and by Settling Defendants' Project Coordinator that the Work, including all O&M activities, is complete; and (2) be certified in accordance with ¶ 7.5 ("Certification"). If the Monitoring Report submitted under ¶ 4.7(b) includes all elements required under this ¶ 4.9(b), then the Remedial Action Report or Final Monitoring Report suffices to satisfy all requirements under this ¶ 4.9(b).

(c) If EPA concludes that the Work is not complete, EPA shall so notify Settling Defendants. EPA's notice must include a description of the activities that Settling Defendants must perform to complete the Work. EPA's notice must include specifications and a schedule for such activities or must require Settling Defendants to submit specifications and a schedule for EPA approval. Settling Defendants shall perform all activities described in the notice or in the EPA-approved specifications and schedule.

(d) If EPA concludes, based on the initial or any subsequent report requesting Certification of Work Completion, that the Work is complete, EPA shall so certify in writing to Settling Defendants. Issuance of the Certification of Work Completion does not affect the following continuing obligations: (1) activities under the Periodic Review Support Plan; (2) obligations under Sections VI (Property Requirements), and XVI (Records) of the Decree; (3) Institutional Controls obligations as provided in the ICIAP; and (5) reimbursement of EPA's Future Response Costs under Section IX (Payments for Response Costs) of the Decree.

5. SVE REMEDY

In accordance with the schedule set forth in Section 8 below, Settling Defendants shall meet the following requirements regarding the SVE Remedy.

5.1 **Testing/Investigations/Studies**. If EPA determines that additional testing, investigations, and/or studies beyond the items detailed in the Approved RD are needed for EPA to make a determination whether the triggering conditions for implementation of the SVE Remedy in Table 1 of the Sitewide Monitoring Plan attached as Appendix B to the Approved RD are met, Settling Defendants shall submit a plan for implementing such testing, investigations, and/or studies shall implement such testing and/or investigations in accordance with EPA's approval and/or modification of such plan, and shall submit reports to EPA regarding the results of such testing and/or investigations.

5.2 **Invocation of SVE Remedy**.

(a) If EPA determines that the triggering conditions for implementation of the SVE Remedy in Table 1 of the Sitewide Monitoring Plan attached as Appendix B to the Approved RD are met, EPA shall so notify Settling Defendants, and shall include a copy of EPA's decision document invoking the SVE Remedy.

(b) If EPA determines that the triggering conditions for implementation of the SVE Remedy in Table 1 of the Sitewide Monitoring Plan attached as Appendix B to the Approved RD are not met, EPA will propose to modify the selected remedy set forth in the ROD, including to potentially no longer require the SVE Remedy, in accordance with all applicable regulations.

5.3 **Implementation of SVE Remedy**. Unless the selected remedy set forth in the ROD is modified to no longer require the SVE remedy, Settling Defendants shall implement the SVE Remedy in accordance with the EPA notification in Section 5.2 and consistent with the requirements of this Section and Section 4 (Remedial Action) of this SOW.

5.4 **Remedial Design Work Plan ("RDWP")**. Settling Defendants have previously submitted, and EPA has previously approved, a Remedial Design Work Plan ("RDWP"). If EPA determines it is necessary to amend the EPA-approved RDWP to comply with the requirements of this Paragraph, Settling Defendants shall submit an amended RDWP for EPA approval in accordance with the schedule in Section 8.3. If EPA determines an amended RDWP is not necessary, Settling Defendants shall submit to EPA a letter certifying that no changes are needed to the existing RDWP. The RDWP must include:

(a) Plans for implementing all Remedial Design activities identified in this SOW, in the RDWP, or required by EPA to be conducted to develop the Remedial Design;

(b) A description of the overall management strategy for performing the Remedial Design, including a proposal for phasing of design and construction, if applicable;

(c) A description of the proposed general approach to contracting, construction, operation, maintenance, and monitoring of the Remedial Action as necessary to implement the Work;

(d) A description of the responsibility and authority of all organizations and key personnel involved with the development of the Remedial Design;

(e) Descriptions of any areas requiring clarification and/or anticipated problems (*e.g.*, data gaps);

(f) Description of any proposed pre-design investigation;

(g) Description of any proposed treatability study;

(h) Descriptions of any applicable permitting requirements and other regulatory requirements;

(i) Description of plans for obtaining access in connection with the Work, such as property acquisition, property leases, and/or easements; and

(j) The following supporting deliverables described in ¶ 7.7 (Supporting Deliverables): Health and Safety Plan and Emergency Response Plan.

5.5 Preliminary (50%) Remedial Design. Settling Defendants have previously submitted, and EPA has previously approved, a Soil Vapor Extraction Conceptual Design, attached as Appendix D to the Approved RD ("SVE Conceptual Design"). Settling Defendants shall submit to EPA for review and approval an updated SVE Conceptual Design ("the Preliminary (50%) Remedial Design") which shall comply with the requirements of this Paragraph. The Preliminary (50%) Remedial Design must include:

(a) A design criteria report, as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995);

(b) Preliminary drawings and specifications;

(c) Descriptions of permit requirements, if applicable;

(d) Preliminary Operation and Maintenance ("O&M") Plan and O&M Manual;

(e) A description of how the Remedial Action will be implemented in a manner that minimizes environmental impacts in accordance with EPA's *Principles for Greener Cleanups* (Aug. 2009);

(f) A description of monitoring and control measures to protect human health and the environment, such as air monitoring, and measures to reduce and manage traffic, noise, odors, and dust, during the Remedial Action in accordance with the Community Involvement Handbook pp. 53-66 (text box on p. 55) to minimize community impacts;

(g) Any proposed revisions to the Remedial Action Schedule that is set forth in ¶ 8.2 (Remedial Action Schedule); and

(h) Updates of all supporting deliverables required to accompany the RDWP and the following additional supporting deliverables described in ¶¶ 5.8 and 7.7 (Supporting Deliverables): Field Sampling Plan; Quality Assurance Project Plan; Site Wide Monitoring Plan; Community Impacts Mitigation Plan; Construction Quality Assurance/Quality Control Plan; Transportation and Off-Site Disposal Plan; O&M Plan; and O&M Manual.

5.6 **Pre-final (95%) Remedial Design**. Settling Defendants shall submit a Pre-final (95%) Remedial Design for the SVE Remedy for EPA's comment. The Pre-final (95%) Remedial Design must be a continuation and expansion of the conceptual remedial design submitted as part of the Approved RD. The Pre-final (95%) Remedial Design will serve as the approved Final (100%) Remedial Design if EPA approves the Pre-final Remedial Design without comments. The Pre-final (95%) Remedial Design must include:

(a) A complete set of construction drawings and specifications that are: (1) certified by a registered professional engineer; (2) suitable for procurement; and (3) follow the Construction Specifications Institute's Master Format (2020 edition);

(b) Descriptions of permit requirements, if applicable;

(c) Operation and Maintenance ("O&M") Plan and O&M Manual;

(d) A description of how the SVE Remedy will be implemented in a manner that minimizes environmental impacts in accordance with EPA's *Principles for Greener Cleanups* (Aug. 2009);

(e) A description of monitoring and control measures to protect human health and the environment, such as air monitoring, if required by Indiana Air Pollution Control Rules, and measures to reduce and manage traffic, noise, odors, and dust, during the implementation of the SVE Remedy in accordance with the Community Involvement Handbook pp. 53-66 (text box on p. 55) to minimize community impacts;

(f) A survey and engineering drawings showing existing Site features, such as elements, property borders, easements, and Site conditions;

(g) A specification for photographic documentation of the SVE Remedy; and

(h) A proposed schedule for implementing the SVE Remedy.

5.7 **Final (100%) Remedial Design**. Unless EPA approves the Pre-final Remedial Design for the SVE Remedy without comments, Settling Defendants shall submit the Final (100%) Remedial Design for the SVE Remedy for EPA approval. The Final Remedial Design must address EPA's comments on the Pre-final (95%) Remedial Design and must include final versions of all Pre-final (95%) Remedial Design deliverables.

5.8 **SVE Supporting Deliverables.** In addition to the Supporting Deliverables in ¶ 7.7, Settling Defendants shall submit the following "SVE Supporting Deliverables" in accordance with this Paragraph:

(a) **O&M Plan**. The O&M Plan describes the requirements for inspecting, operating, and maintaining the SVE System. Settling Defendants shall develop the O&M Plan for the SVE System in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017). The O&M Plan must include the following additional requirements:

(1) Description of Performance Standards required to be met to implement the Record of Decision;

(2) Description of activities to be performed: (i) to provide confidence that Performance Standards will be met; and (ii) to determine whether Performance Standards have been met;

(3) **O&M Reporting**. Description of records and reports that will be generated during O&M, such as daily operating logs, laboratory records, records of operating costs, reports regarding emergencies, personnel and maintenance records, monitoring reports, and monthly and annual reports to EPA and State agencies;

(4) Description of corrective action in case of systems failure, including: (i) alternative procedures to prevent the release or threatened release of Waste Material which may endanger public health and the environment or may cause a failure to achieve Performance Standards; (ii) analysis of vulnerability and additional resource requirements should a failure occur; (iii) notification and reporting requirements should O&M systems fail or be in danger of imminent failure; and (iv) community notification requirements; and

(5) Description of corrective action to be implemented in the event that Performance Standards are not achieved; and a schedule for implementing these corrective actions.

(b) **O&M Manual**. The O&M Manual serves as a guide to the purpose and function of the equipment and systems that make up the remedy. Settling Defendants shall develop the O&M Manual in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017).

(c) **SVE Performance Reports**. Settling Defendants shall submit quarterly SVE Remedy Performance Reports as outlined in the Approved RD.

5.9 **Other Modifications**. If EPA determines that implementation of the SVE Remedy will require modifications to any deliverable submitted under this SOW and so notifies Settling Defendants of the modifications required, Settling Defendants shall modify those deliverables in accordance with the schedule in Section 8.3.

5.10 Independent Quality Assurance Team ("IQAT"). Settling Defendants shall notify EPA of Settling Defendants' designated IQAT. The IQAT must be independent of, and cannot include the Supervising Contractor. Settling Defendants may hire a third party for this purpose. Settling Defendants' notice must include the names, titles, contact information, and qualifications of the members of the IQAT. The IQAT will have the responsibility to determine whether Work is of expected quality and conforms to applicable plans and specifications. The IQAT will have the responsibilities as described in ¶ 2.1.3 of the *Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties*, EPA/540/G-90/001 (Apr. 1990).

5.11 SVE Remedial Action Construction Completion.

(a) For purposes of this ¶ 5.11, "SVE Remedial Action Construction" comprises, for any Remedial Action that involves the construction and operation of an SVE system to achieve Performance Standards (for example, groundwater or surface water restoration remedies), the construction of such system and the performance of all activities necessary for the system to function properly and as designed.

(b) **Inspection of SVE Constructed Remedy**. Settling Defendants shall schedule an inspection to review the construction and operation of the SVE Remedy and to review whether the system is functioning properly and as designed. The inspection must be attended by Settling Defendants and EPA and/or their representatives. A reinspection must be conducted if requested by EPA.

(c) **Shakedown Period**. There shall be a shakedown period of up to one year for EPA to review whether the SVE Remedy is functioning properly and performing as designed. Settling Defendants shall provide such information as EPA requests for such review.

(d) **SVE Remedial Action Report**. Following the shakedown period, Settling Defendants shall submit a "SVE Remedial Action Report" requesting EPA's determination that the SVE Remedial Action Construction has been completed. The SVE Remedial Action Report must: (1) include statements by a registered professional engineer and by Settling Defendants' Project Coordinator that the construction of the SVE system is complete and that the system is functioning properly and as designed; (2) include a demonstration, and supporting documentation, that construction of the system is complete and that the system is functioning properly and as designed; (3) include as-built drawings signed and stamped by a registered professional engineer; (4) be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA's *Close Out Procedures for NPL Sites* guidance (May 2011), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); and (5) be certified in accordance with ¶ 7.5 (Certification).

(e) If EPA determines that Remedial Action Construction is not complete, EPA shall so notify Settling Defendants. EPA's notice must include a description of, and schedule for, the activities that Settling Defendants must perform to complete

Remedial Action Construction. EPA's notice may include a schedule for completion of such activities or may require Settling Defendants to submit a proposed schedule for EPA approval. Settling Defendants shall perform all activities described in the EPA notice in accordance with the schedule.

(f) If EPA determines, based on the initial or any subsequent Remedial Action Report, that Remedial Action Construction is complete, EPA shall so notify Settling Defendants.

6. REPORTING

6.1 **Progress Reports**. Commencing with the week following lodging of the Decree and until either (a) EPA approves the Remedial Action Completion under ¶ 4.7 or (b) EPA approves the SVE Remedial Action Construction Completion under ¶ 5.11, whichever is applicable, Settling Defendants shall submit progress reports to EPA on a monthly basis or as otherwise requested by EPA. The reports must cover all activities that took place during the prior reporting period, including:

(a) The actions that have been taken toward achieving compliance with the Decree;

(b) A summary of all results of sampling, tests, and all other data received or generated by Settling Defendants;

(c) A description of all deliverables that Settling Defendants submitted to EPA;

(d) A description of all activities relating to Remedial Action Construction that are scheduled for the next six weeks;

(e) An updated Remedial Action Construction Schedule, together with information regarding percentage of completion, delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays;

(f) A description of any modifications to the work plans or other schedules that Settling Defendants have proposed or that have been approved by EPA; and

(g) A description of all activities undertaken in support of the Community Involvement Plan ("CIP") during the reporting period and those to be undertaken in the next six weeks.

(h) **Reports Regarding Performance of SVE Remedy**. If the SVE Remedy is invoked under ¶ 5.2, Settling Defendants shall include in the progress reports information regarding the performance of the SVE Remedy.

6.2 **Notice of Progress Report Schedule Changes**. If the schedule for any activity described in the Progress Reports, including activities required to be described under ¶ 6.1(d), changes, Settling Defendants shall notify EPA of such change at least seven days before performance of the activity.

7. DELIVERABLES

7.1 **Applicability**. Settling Defendants shall submit deliverables for EPA approval or for EPA comment as specified in the SOW. If neither is specified, the deliverable does not require EPA's approval or comment. Paragraphs 7.2 (In Writing) through 7.4 (Technical Specifications) apply to all deliverables. Paragraph 7.5 (Certification) applies to any deliverable that is required to be certified. Paragraph 7.6 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.

7.2 **In Writing**. As provided in ¶ 66 of the Decree, all deliverables under this SOW must be in writing unless otherwise specified.

7.3 **General Requirements for Deliverables.** All deliverables must be submitted by the deadlines in the Remedial Design Schedule, Remedial Action Schedule or SVE Remedy Schedule, as applicable. Settling Defendants shall submit all deliverables to EPA in electronic form. Technical specifications for sampling and monitoring data and spatial data are addressed in ¶ 7.4. All other deliverables shall be submitted to EPA in the electronic form specified by the EPA Project Coordinator. If any deliverable includes maps, drawings, or other exhibits that are larger than 8.5" by 11", Settling Defendants shall also provide EPA with paper copies of such exhibits.

7.4 **Technical Specifications**

(a) Sampling and monitoring data should be submitted in standard regional Electronic Data Deliverable ("EDD") format version 3.0.21. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes.

(b) Spatial data, including spatially-referenced data and geospatial data, should be submitted: (1) in the ESRI File Geodatabase format and (2) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 ("NAD83") or World Geodetic System 1984 (WGS84) as the datum. If applicable, submissions should include the collection method(s). Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should be compliant with the Federal Geographic Data Committee ("FGDC") Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor ("EME"), complies with these FGDC and EPA metadata requirements and is available at https://edg.epa.gov/EME/.

(c) Each file must include an attribute name for each site unit or sub-unit submitted. Consult https://www.epa.gov/geospatial/geospatial-policies-and-standards for any further available guidance on attribute identification and naming.

(d) Spatial data submitted by Settling Defendants does not, and is not intended to, define the boundaries of the Site.

7.5 **Certification**. All deliverables that require compliance with this paragraph must be signed by the Settling Defendants' Project Coordinator, or other responsible official of Settling Defendants, and must contain the following statement:

> I certify under penalty of perjury that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.6 **Approval of Deliverables**

(a) **Initial Submissions**

(1) After review of any deliverable that is required to be submitted for EPA approval under the Decree or the SOW, EPA shall: (i) approve, in whole or in part, the submission; (ii) approve the submission upon specified conditions; (iii) disapprove, in whole or in part, the submission; or (iv) any combination of the foregoing.

(2) EPA also may modify the initial submission to cure deficiencies in the submission if: (i) EPA determines that disapproving the submission and awaiting a resubmission would cause substantial disruption to the Work; or (ii) previous submission(s) have been disapproved due to material defects and the deficiencies in the initial submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

(b) **Resubmissions**. Upon receipt of a notice of disapproval under ¶ 7.6(a) (Initial Submissions), or if required by a notice of approval upon specified conditions under ¶ 7.6(a), Settling Defendants shall, within 30 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. After review of the resubmitted deliverable, EPA may: (1) approve, in whole or in part, the resubmission; (2) approve the resubmission upon specified conditions; (3) modify the resubmission; (4) disapprove, in whole or in part, the resubmission, requiring Settling Defendants to correct the deficiencies; or (5) any combination of the foregoing.

(c) **Implementation**. Upon approval, approval upon conditions, or modification by EPA under ¶ 7.6(a) (Initial Submissions) or ¶ 7.6(b) (Resubmissions), of any deliverable, or any portion thereof: (1) such deliverable, or portion thereof, will be incorporated into and enforceable under the Decree; and (2) Settling Defendants

shall take any action required by such deliverable, or portion thereof. The implementation of any non-deficient portion of a deliverable submitted or resubmitted under ¶ 7.6(a) or ¶ 7.6(b) does not relieve Settling Defendants of any liability for stipulated penalties under Section XII (Stipulated Penalties) of the Decree.

(d) If: (1) an initially submitted deliverable contains a material defect and the conditions are met for modifying the deliverable under ¶ 7.6(a)(2); or (2) a resubmitted deliverable contains a material defect; then the material defect constitutes a lack of compliance for purposes of this Paragraph.

7.7 **Supporting Deliverables**. By the deadlines set forth in the Remedial Action Schedule, Settling Defendants shall submit each of the following supporting deliverables for EPA approval, except as specifically provided. Settling Defendants shall develop the deliverables in accordance with all applicable regulations, guidances, and policies (see Section 10 (References)). Settling Defendants have previously submitted, and EPA has previously approved, the following Supporting Deliverables under the ASAOC: Field Sampling Plan ("FSP"), Quality Assurance Project Plan ("QAPP"), Site Wide Monitoring Plan ("SWMP"), Construction Quality Assurance Plan ("CQAP") and Construction Quality Control Plan ("CQCP"), Transportation and Off-Site Disposal Plan ("TODP"), and Institutional Controls Implementation and Assurance Plan ("ICIAP"). Settling Defendants shall update each of these supporting deliverables as necessary or appropriate during the course of the Work, and/or as requested by EPA.

(a) **Health and Safety Plan ("HASP")**. The HASP describes all activities to be performed to protect on site personnel and area residents from physical, chemical, and all other hazards posed by the Work. Settling Defendants shall develop the HASP in accordance with EPA's *Emergency Responder Health and Safety Manual* and Occupational Safety and Health Administration ("OSHA") requirements under 29 C.F.R. §§ 1910 and 1926. The HASP should cover activities during the Remedial Action and updated to cover activities after Remedial Action completion. EPA does not approve the HASP but will review it to ensure that all necessary elements are included and that the plan provides for the protection of human health and the environment.

(b) **Emergency Response Plan ("ERP")**. The ERP must describe procedures to be used in the event of an accident or emergency at the Site (for example, power outages, water impoundment failure, treatment plant failure, slope failure, etc.). The ERP must include:

(1) Name of the person or entity responsible for responding in the event of an emergency incident;

(2) Plan and date(s) for meeting(s) with the local community, including local, State, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals;

(3) Spill Prevention, Control, and Countermeasures ("SPCC") Plan (if applicable), consistent with the regulations under 40 C.F.R. Part 112, describing measures to prevent, and contingency plans for, spills and discharges;

(4) Notification activities in accordance with ¶ 4.4(b) (Release Reporting) in the event of a release of hazardous substances requiring reporting under CERCLA Section 103 or EPCRA Section 304; and

(5) A description of all necessary actions to ensure compliance with ¶ 4.4 of the SOW in the event of an occurrence during the performance of the Work that causes or threatens a release of Waste Material from the Site that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.

(c) **Field Sampling Plan ("FSP")**. The FSP addresses all sample collection activities. The FSP must be written so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. Settling Defendants shall develop the FSP in accordance with *Guidance for Conducting Remedial Investigations and Feasibility Studies*, EPA/540/G 89/004 (Oct. 1988).

(d) **Quality Assurance Project Plan ("QAPP")**. The QAPP must include a detailed explanation of Settling Defendants' quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance, and monitoring samples. Settling Defendants shall develop the QAPP in accordance with EPA Directive CIO 2105.1 (Environmental Information Quality Policy, 2021), the most recent version of *Quality Management Systems for Environmental Information and Technology Programs – Requirements with Guidance for Use*, ASQ/ANSI E-4 (Feb. 2014, and *Guidance for Quality Assurance Project Plans*, EPA QA/G-5, EPA Office of Environmental Information (Dec. 2002). Settling Defendants shall collect, produce, and evaluate all environmental information at the Site in accordance with the approved QAPP.

(e) **Site Wide Monitoring Plan ("SWMP")**. The purpose of the SWMP is to obtain baseline information regarding the extent of contamination in affected media at the Site; to obtain information, through short- and long- term monitoring, about the movement of and changes in contamination throughout the Site, before and during implementation of the Remedial Action; to obtain information regarding contamination levels to determine whether Performance Standards are achieved; and to obtain information to determine whether to perform additional actions, including further Site monitoring. The SWMP must include:

(1) Description of the environmental media to be monitored;

(2) Description of the data collection parameters, including existing and proposed monitoring devices and locations, schedule and frequency of

monitoring, analytical parameters to be monitored, and analytical methods employed;

(3) Description of how performance data will be analyzed, interpreted, and reported, and/or other Site-related requirements;

(4) Description of verification sampling procedures;

(5) Description of deliverables that will be generated in connection with monitoring, including sampling schedules, laboratory records, monitoring reports, and monthly and annual reports to EPA and State agencies;

(6) Description of proposed additional monitoring and data collection actions (such as increases in frequency of monitoring, and/or installation of additional monitoring devices in the affected areas) in the event that results from monitoring devices indicate changed conditions (such as higher than expected concentrations of the contaminants of concern or groundwater contaminant plume movement);

(7) A plan to immediately provide to EPA any unvalidated sampling data from Community Areas as defined in ¶ 7.7(f) affected by the remedy that exceed removal management levels or three times remedial cleanup levels, whichever is lower; and

(8) A plan to expedite sampling and analysis in Community Areas as defined in ¶ 7.7(f) affected by the remedy (particularly in situations where EPA determines that unvalidated sampling data indicates substantial exceedances of cleanup standards), including procedures for expedited analysis, validation, and communication of sampling results to affected communities.

(f) **Community Impacts Mitigation Plan ("CIMP")**. The CIMP describes all activities including any to address concerns of EJ and disadvantaged communities to be performed: (1) to reduce and manage the impacts from remedy implementation (*e.g.*, air emissions, traffic, noise, odor, temporary or permanent relocation) to residential areas, schools, playgrounds, healthcare facilities, or recreational or impacted public areas ("Community Areas") from and during remedy implementation, (2) to conduct monitoring in Community Areas of impacts from remedy implementation, (3) to expeditiously communicate validated remedy implementation monitoring data, (4) to make adjustments during remedy implementation in order to further reduce and manage impacts from remedy implementation to affected Community Areas, (5) to expeditiously restore community resources damaged during remediation such as roads and culverts, and (6) to mitigate the economic effects that the Remedial Action will have on the community by structuring remediation contracts to allow more local business participation. The CIMP should contain information about impacts to Community Areas that is sufficient to assist EPA's Project Coordinator in performing the

evaluations recommended under the *Superfund Community Involvement Handbook*, OLEM 9230.0-51 (March 2020), pp. 53-56.

(g) **Construction Quality Assurance Plan ("CQAP") and Construction Quality Control Plan ("CQCP")**. The purpose of the CQAP is to describe planned and systemic activities that provide confidence that the Remedial Action construction will satisfy all plans, specifications, and related requirements, including quality objectives. The purpose of the CQCP is to describe the activities to verify that Remedial Action construction has satisfied all plans, specifications, and related requirements, including quality objectives. The CQAP/CQCP ("CQA/CP") must:

(1) Identify, and describe the responsibilities of, the organizations and personnel implementing the CQA/CP;

(2) Describe the Performance Standards required to be met to achieve Completion of the Remedial Action;

(3) Describe the activities to be performed: (i) to provide confidence that Performance Standards will be met; and (ii) to determine whether Performance Standards have been met;

(4) Describe verification activities, such as inspections, sampling, testing, monitoring, and production controls, under the CQA/CP;

(5) Describe industry standards and technical specifications used in implementing the CQA/CP;

(6) Describe procedures for tracking construction deficiencies from identification through corrective action;

(7) Describe procedures for documenting all CQA/CP activities; and

(8) Describe procedures for retention of documents and for final storage of documents.

(h) **Transportation and Off-Site Disposal Plan ("TODP")**. The TODP describes plans to ensure compliance with ¶ 4.5 (Off-Site Shipments). The TODP must include:

(1) Proposed times and routes for off-site shipment of Waste Material;

(2) Identification of communities, including underserved communities referred to in Exec. Order No. 14,008, 86 Fed. Reg. 7619, Section 222(b) (Jan. 27, 2021), affected by shipment of Waste Material; and

(3) Description of plans to minimize impacts (*e.g.*, noise, traffic, dust, odors) on affected communities.

(i) **Institutional Controls Implementation and Assurance Plan ("ICIAP").** Settling Defendants shall submit a proposed ICIAP for EPA approval. The ICIAP should describe plans to implement, maintain, monitor, and enforce the Institutional Controls ("ICs") at the Site. The ICIAP shall include plans to commence implementing ICs as early as is feasible, including before EPA approval of the 100% design under ¶ 4.9. The ICIAP also should include procedures for effective and comprehensive review of implemented ICs, procedures for the solicitation of input from affected communities regarding the implementation of ICs, procedures to periodically review and determine if the ICs are having their intended effect, and if not, procedures for the development, approval and implementation of alternative, more effective ICs. Settling Defendants shall develop the ICIAP in accordance with Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012), and Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0 77, EPA/540/R-09/02 (Dec. 2012). Settling Defendants also shall consider including in the ICIAP the establishment of effective Long-Term Stewardship procedures including those described in EPA Memorandum: Advanced Monitoring Technologies and Approaches to Support Long-Term Stewardship (July 20, 2018). The ICIAP must include the following additional requirements:

(1) Locations of recorded real property interests (e.g., easements, liens) and resource interests in the property that may affect ICs (e.g., surface, mineral, and water rights) including accurate mapping and geographic information system (GIS) coordinates of such interests; and

(2) Legal descriptions and survey maps that are prepared according to current American Land Title Association ("ALTA") Survey guidelines and certified by a licensed surveyor.

7.8 Groundwater Monitoring Reports. After excavation is complete, annual groundwater monitoring reports shall be submitted in accordance with the Approved RD.

8. SCHEDULES

8.1 Applicability and Revisions. All deliverables and tasks required under this SOW must be submitted or completed by the deadlines or within the time durations listed in the Remedial Design and Remedial Action Schedules set forth below. Settling Defendants may submit proposed revised Remedial Design Schedules or Remedial Action Schedules for EPA approval. Upon EPA's approval, the revised Remedial Design and/or Remedial Action Schedules supersede the Remedial Design and Remedial Action Schedules set forth below, and any previously-approved Remedial Design and/or Remedial Action Schedules.

8.2 Remedial Action Schedule

	Description of Deliverable / Task	¶ Ref.	Deadline
1	Award Remedial Action contract		30 days after EPA Notice of Authorization to Proceed with Remedial Action
2	RAWP	4.1	90 days after EPA Notice of Authorization to Proceed with Remedial Action
3	HASP ERP, CIMP	7.7	to be submitted with the RAWP
4	Pre-Excavation Conference	4.2(a)	30 days after Approval of RAWP
5	Start of Excavation		90 days after Approval of RAWP
6	Completion of Excavation		Per approved Remedial Action Construction Schedule
7	Excavation Completion Inspection	4.6(b)	30 days after completion of excavation and off-site disposal remedial action
8	Excavation Report	4.6(c)	60 days after Excavation Completion Inspection
9	Groundwater Monitoring Report	7.8	According to schedule in SWMP
	If SVE Remedy invoked: follow schedules in Section 8.3 (SVE RD Schedule) and 8.4 (SVE RA Schedule) before proceeding to row 10 of this Schedule.		
10	Remedial Action Completion Inspection	4.7(a)	30 days after request for Remedial Action Completion Inspection
11	Monitoring Report	4.7(b)	60 days after Performance Standards are met
12	Work Completion Inspection	4.9(a)	45 days after request for Work Completion Inspection
13	Work Completion Report	4.9(b)	30 days after Work Completion Inspection
14	Periodic Review Support Plan	4.8	Five years after Start of Remedial Action Construction

8.3 SVE RD Schedule

	Description of Deliverable, Task	¶ Ref.	Deadline
1	Amended RDWP or Letter that no RDEP Amendment Necessary	5.4	75 days after EPA's Notification of Invocation of SVE Component
2	Testing, Investigations, and/or Studies	5.1	90 days after EPA's request for Testing, Investigations, and/or Studies

3	Preliminary (50%) RD	5.5	90 days after EPA notification of invocation of SVE component as detailed in the notification letter
4	Pre-final (95%) RD	5.6	90 days after EPA comments on Preliminary (50%) RD
5	Final (100%) RD	5.7	45 days after EPA comments on Pre-final (95%) RD

8.4 SVE RA Schedule

	Description of Deliverable / Task	**¶ Ref.**	**Deadline**
1	SVE RAWP	4.1	90 days after EPA approval of the Final (100%) Remedial Design for the SVE Remedy
2	Updated HASP, ERP, FSP, QAPP, SWMP, CIMP, CQAP, CQCP, and TODP; O&M Plan, O&M Manual.	7.7; 5.8	To be submitted with SVE RAWP
3	Designate IQAT	5.10	30 days after EPA approval of the Final (100%) Remedial Design for the SVE Component
4	SVE Remedy Pre-Construction Conference	4.2(a)	30 days after Approval of SVE RAWP
5	Start of SVE Remedy Construction		60 days after Approval of SVE RAWP
6	Completion of SVE Remedy Construction		Per approved SVE Remedial Action Construction Schedule
7	Inspection of SVE Constructed Remedy	5.11(b)	30 days after completion of SVE Remedy construction
8	SVE Remedial Action Report	5.11(d)	60 days after Inspection of SVE Constructed Remedy
	Return to row 10 of Section 8.2 (Remedial Action Schedule)		

9. STATE PARTICIPATION

9.1 **Copies**. Settling Defendants shall, at any time they send a deliverable to EPA, send a copy of such deliverable to the State. EPA shall, at any time it sends a notice, authorization, approval, disapproval, or certification to Settling Defendants, send a copy of such document to the State. State Counterpart Information: Jessica Fliss, jfliss@idem.in.gov, 317-234-0351

9.2 **Review and Comment**. The State will have a reasonable opportunity for review and comment prior to:

(a) Any EPA notice to proceed under ¶ 3.3 (Procedures for Disapproval/Notice to Proceed);

(b) Any EPA approval or disapproval under ¶ 7.6 (Approval of Deliverables) of any deliverables that are required to be submitted for EPA approval; and

(c) Any approval or disapproval of the Certification of Excavation Completion under ¶ 4.6 (Certification of Excavation Completion), any approval or disapproval of the Certification of Remedial Action Completion under ¶ 4.7 (Certification of Remedial Action Completion (SVE Remedy Not Invoked)) or ¶ 5.11 (Certification of Remedial Action Completion (SVE Remedy Invoked)), and any approval or disapproval of the Certification of Work Completion under ¶ 4.9 (Certification of Work Completion).

10. REFERENCES

10.1 The following regulations and guidance documents, among others, apply to the Work. Any item for which a specific URL is not provided below is available on one of the three EPA web pages listed in ¶ 10.2:

(a) A Compendium of Superfund Field Operations Methods, OSWER 9355.0-14, EPA/540/P-87/001a (Aug. 1987).

(b) CERCLA Compliance with Other Laws Manual, Part I: Interim Final, OSWER 9234.1-01, EPA/540/G-89/006 (Aug. 1988).

(c) Guidance for Conducting Remedial Investigations and Feasibility Studies, OSWER 9355.3-01, EPA/540/G-89/004 (Oct. 1988).

(d) CERCLA Compliance with Other Laws Manual, Part II, OSWER 9234.1-02, EPA/540/G-89/009 (Aug. 1989).

(e) Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER 9355.5-01, EPA/540/G90/001 (Apr.1990).

(f) Guidance on Expediting Remedial Design and Remedial Actions, OSWER 9355.5-02, EPA/540/G-90/006 (Aug. 1990).

(g) Guide to Management of Investigation-Derived Wastes, OSWER 9345.3-03FS (Jan. 1992).

(h) Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, OSWER 9355.7-03 (Feb. 1992).

(i) Guidance for Conducting Treatability Studies under CERCLA, OSWER 9380.3-10, EPA/540/R-92/071A (Nov. 1992).

(j) National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, 40 C.F.R. part 300 (Oct. 1994).

(k) Guidance for Scoping the Remedial Design, OSWER 9355.0-43, EPA/540/R-95/025 (Mar. 1995).

(l) Remedial Design/Remedial Action Handbook, OSWER 9355.0-04B, EPA/540/R-95/059 (June 1995).

(m) EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis, QA/G-9, EPA/600/R-96/084 (July 2000).

(n) Comprehensive Five-year Review Guidance, OSWER 9355.7-03B-P, EPA/540-R-01-007 (June 2001).

(o) Guidance for Quality Assurance Project Plans, EPA QA/G-5, EPA Office of Environmental Information (Dec. 2002) https://www.epa.gov/quality/guidance-quality-assurance-project-plans-epa-qag-5.

(p) Institutional Controls: Third-Party Beneficiary Rights in Proprietary Controls, OECA (Apr. 2004).

(q) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).

(r) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B-01/002 (Mar. 2001, reissued May 2006).

(s) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2005), https://www.epa.gov/geospatial/epa-national-geospatial-data-policy.

(t) Summary of Key Existing EPA CERCLA Policies for Groundwater Restoration, OSWER 9283.1-33 (June 2009).

(u) Principles for Greener Cleanups (Aug. 2009), https://www.epa.gov/greenercleanups/epa-principles-greener-cleanups.

(v) Providing Communities with Opportunities for Independent Technical Assistance in Superfund Settlements, Interim (Sep. 2009).

(w) Close Out Procedures for National Priorities List Sites, OSWER 9320.2-22 (May 2011).

(x) Groundwater Road Map: Recommended Process for Restoring Contaminated Groundwater at Superfund Sites, OSWER 9283.1-34 (July 2011).

(y) Recommended Evaluation of Institutional Controls: Supplement to the "Comprehensive Five-Year Review Guidance," OSWER 9355.7-18 (Sep. 2011).

(z) Plan EJ 2014: Legal Tools, EPA Office of General Counsel (Dec. 2011), https://www.epa.gov/environmentaljustice/plan-ej-2014-legal-tools.

(aa) Construction Specifications Institute's MasterFormat 2020 edition, available from the Construction Specifications Institute, http://www.csinet.org/masterformat.

(bb) Updated Superfund Response and Settlement Approach for Sites Using the Superfund Alternative Approach, OSWER 9200.2-125 (Sep. 2012)

(cc) Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012), https://semspub.epa.gov/work/HQ/175446.pdf.

(dd) Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012), https://semspub.epa.gov/work/HQ/175449.pdf.

(ee) EPA's Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), https://www.epaosc.org/_HealthSafetyManual/manual-index.htm.

(ff) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).

(gg) Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions, OSWER 9355.0-129 (Nov. 2013).

(hh) Groundwater Remedy Completion Strategy: Moving Forward with the End in Mind, OSWER 9200.2-144 (May 2014).

(ii) Quality Management Systems for Environmental Information and Technology Programs -- Requirements with Guidance for Use, ASQ/ANSI E-4 (February 2014), available at https://webstore.ansi.org/.

(jj) Guidance for Management of Superfund Remedies in Post Construction, OLEM 9200.3-105 (Feb. 2017), https://www.epa.gov/superfund/superfund-post-construction-completion.

(kk) Advanced Monitoring Technologies and Approaches to Support Long-Term Stewardship (July 20, 2018), https://www.epa.gov/enforcement/use-advanced-monitoring-technologies-and-approaches-support-long-term-stewardship.

(ll) Superfund Community Involvement Handbook, OLEM 9230.0-51 (March 2020). More information on Superfund community involvement is available on the Agency's Superfund Community Involvement Tools and Resources web page at https://www.epa.gov/superfund/superfund-community-involvement-tools-and-resources.

(mm) EPA directive CIO 2105.1 (Environmental Information Quality Policy, 2021), https://www.epa.gov/sites/production/files/2021-04/documents/environmental_information_quality_policy.pdf.

(nn) Elm Street Groundwater Contamination Pre-Design Investigation Report (EHS Support, 2021).

(oo) Elm Street Groundwater Contamination Remedial Design Report (EHS Support, 2022).

10.2 A more complete list may be found on the following EPA web pages:

(a) Laws, Policy, and Guidance at https://www.epa.gov/superfund/superfund-policy-guidance-and-laws;

(b) Search Superfund Documents at https://www.epa.gov/superfund/search-superfund-documents; and

(c) Test Methods Collections at: https://www.epa.gov/measurements/collection-methods.

10.3 For any regulation or guidance referenced in the Decree or SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Work only after Settling Defendants receive notification from EPA of the modification, amendment, or replacement.

APPENDIX C

Site Map

APPENDIX C

Map of Elm Street Groundwater Contamination Site

Source: Figure 1-2 of Final Feasibility Study