

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF INDIANA
SOUTH BEND DIVISION

UNITED STATES OF AMERICA
and STATE OF INDIANA

Plaintiffs,

v.

ALCOA, INC., et al.

Defendants.

CIVIL ACTION NO. _____

**REMEDIAL DESIGN/REMEDIAL ACTION CONSENT DECREE
FOR THE CAM-OR SUPERFUND SITE**

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I. BACKGROUND

A. The United States of America (“United States”), on behalf of the Administrator of the United States Environmental Protection Agency (“EPA”), and the State of Indiana (the “State”) on behalf of the Commissioner of the Indiana Department of Environmental Management (“IDEM”), filed a complaint in this matter pursuant to Sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”), 42 U.S.C. §§ 9606, 9607.

B. The United States and the State in their joint complaint seek from the Work Settling Parties, inter alia: (1) reimbursement of certain costs incurred and to be incurred by EPA, the United States Department of Justice, IDEM and the Indiana Attorney General’s Office for response actions at the Cam-Or Superfund Site in Westville, LaPorte County, Indiana, together with accrued interest, under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a) and Indiana Code §§ 13-25-4 and 13-30; (2) a declaratory judgment under Section 113(g)(2) of CERCLA, 42 U.S.C. § 9613(g)(2) that the Settling Work Parties should pay the Plaintiffs’ future response costs at the Site; and (3) injunctive relief requiring the performance of the Remedial Design and Remedial Action set forth in the June 10, 2008 Record of Decision (“ROD”) for the Site, consistent with the National Contingency Plan, 40 C.F.R. Part 300 (as amended) (“NCP”).

C. In accordance with the NCP and Section 121(f)(1)(F) of CERCLA, 42 U.S.C. § 9621(f)(1)(F), EPA notified the State of Indiana (the “State”) on June 14, 2009, of negotiations with potentially responsible parties regarding the implementation of the remedial design and remedial action for the Site, and EPA has provided the State with an opportunity to participate in such negotiations and be a party to this Consent Decree.

D. In accordance with Section 122(j)(1) of CERCLA, 42 U.S.C. § 9622(j)(1), EPA notified the U.S. Department of the Interior on June 15, 2009, of negotiations with potentially responsible parties regarding the release of hazardous substances that may have resulted in injury to the natural resources under Federal trusteeship and encouraged the trustee to participate in the negotiation of this Consent Decree.

E. The Settling Parties who have entered into this Consent Decree do not admit any liability to the Plaintiffs arising out of the transactions or occurrences alleged in the complaints, nor do they acknowledge that the release or threatened release of hazardous substances at or from the Site constitutes an imminent or substantial endangerment to the public health or welfare or the environment.

F. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on March 6, 1998, 63 Fed. Reg. 11332-11337.

G. In response to a release or a substantial threat of a release of a hazardous substances at or from the Site, certain potentially responsible parties, under EPA oversight and pursuant to an Administrative Order on Consent and 40 C.F.R. § 300.430, commenced a Remedial Investigation and Feasibility Study (“RI/FS”) for the Site on April 25, 2002.

H. EPA approved a Remedial Investigation (“RI”) Report on July 5, 2007, and a Feasibility Study (“FS”) Report on October 11, 2007.

I. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the completion of the FS and of the proposed plan for remedial action on December 6, 2007 and

December 10, 2007, in two major local newspapers 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 is available to the public as part of the administrative record upon which the Regional Administrator based the selection of the response action.

J. The decision by EPA on the remedial action to be implemented at the Site is embodied in a final Record of Decision ("ROD"), executed on June 10, 2008, on which the State has given its concurrence. The ROD includes EPA's explanation of the Selected Remedy as well as a responsiveness summary to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA.

K. This Consent Decree is structured to allow participation by parties falling within two classes: (1) Settling Work Parties; and (2) Other Settling Parties. The Settling Work Parties are agreeing to perform work at the Site and reimburse certain government costs, as specified herein. The Other Settling Parties have made payments toward the costs associated with the Site under prior settlements with the United States and/or with certain Settling Work Parties. The Settling Work Parties and the Other Settling Parties are referred to herein collectively as the "Settling Parties."

L. Based on the information presently available to EPA and the State, EPA and the State believe that the Settling Work Parties will properly and promptly conduct the Work provided they conduct the Work in accordance with the requirements of this Consent Decree and its appendices.

M. Solely for the purposes of Section 113(j) of CERCLA, 42 U.S.C. § 9613(j), the Remedial Action set forth in the ROD and the Work to be performed by the Settling Work Parties shall constitute a response action taken or ordered by the President for which judicial review shall be limited to the administrative record.

N. The Parties recognize, and the Court by entering this Consent Decree finds that: 1) this Consent Decree has been negotiated by the Parties in good faith, 2) implementation of this Consent Decree will expedite the cleanup of the Site and will avoid prolonged and complicated litigation between the Parties, and 3) this Consent Decree is fair, reasonable, and in the public interest.

NOW, THEREFORE, it is hereby Ordered, Adjudged, and Decreed:

II. JURISDICTION

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1345, and 42 U.S.C. §§ 9606, 9607, and 9613(b). This Court also has personal jurisdiction over the Settling Parties. Solely for the purposes of this Consent Decree and the underlying complaints, Settling Parties waive all objections and defenses that they may have to jurisdiction of the Court or to venue in this District. Settling Parties shall not challenge the terms of this Consent Decree, or this Court's jurisdiction to enter and enforce this Consent Decree.

III. PARTIES BOUND

2. This Consent Decree applies to and is binding upon the United States and the State and upon all Settling Parties and their successors and assigns. Any change in ownership or

corporate status of a Settling Party including, but not limited to, any Transfer of assets or real or personal property, shall in no way alter such Settling Party's responsibilities under this Consent Decree.

3. The Settling Work Parties shall provide a copy of this Consent Decree to each contractor hired to perform the Work (as defined below) required by this Consent Decree, and to each person representing any Settling Work Party with respect to the Site or the Work, and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this Consent Decree. The Settling Work Parties or their contractors shall provide written notice of the Consent Decree to all subcontractors hired to perform any portion of the Work required by this Consent Decree. The Settling Work Parties shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the Work contemplated herein in accordance with this Consent Decree. With regard to the activities undertaken pursuant to this Consent Decree, each contractor and subcontractor shall be deemed to be in a contractual relationship with the Settling Work Parties within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3).

IV. DEFINITIONS

4. Unless otherwise expressly provided herein, terms used in this Consent Decree which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Consent Decree or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply solely for purposes of this Consent Decree:

a. "Cam-Or Property" shall mean the 15-acre property, originally designated as the "Cam-Or Superfund Site" on the National Priorities List, on which the Cam-Or Company (and its predecessor companies) conducted a waste oil recycling business, located on State Route 2 near Highway 421 in Westville, LaPorte County, Indiana, as generally depicted on the maps attached as Appendix C.

b. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*

c. "Consent Decree" or "Decree" shall mean this Decree and all appendices attached hereto (listed in Section XXIX). In the event of conflict between this Decree and any appendix, this Decree shall control.

d. "Date of Lodging" is the date the United States files this Consent Decree along with a "Notice of Lodging" and a complaint in the Federal District Court for the Northern District of Indiana.

e. "Day" shall mean a calendar day unless expressly stated to be a working day. "Working day" shall mean a day other than a Saturday, Sunday, or Federal holiday. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next working day.

f. "Effective Date" shall be the date upon which this Consent Decree is entered by the Court as recorded on the Court docket, or, if the Court instead issues an order approving the Consent Decree, the date such order is recorded on the Court docket.

g. “EPA” shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

h. “Future Oversight Costs” shall mean that portion of “Future Response Costs” that EPA incurs in monitoring and supervising Settling Defendants performance of the Work to determine whether such performance is consistent with the requirements of this Consent Decree, including costs incurred in reviewing plans, reports, and other deliverables submitted pursuant to this Consent Decree, as well as costs incurred in overseeing implementation of the Work; however, Future Oversight Costs do not include, *inter alia*, the costs incurred by the United States pursuant to Paragraph 8 (Notice to Successors in Title), Section VII (Remedy Review); IX (Access and Institutional Controls), XV (Emergency Response), and Paragraph 49 (Funding for Work Take Over), or the costs incurred by the United States in enforcing the terms of this Consent Decree, including all costs incurred in connection with Dispute Resolution pursuant to Section XIX (Dispute Resolution) and all litigation costs.

i. “Future Response Costs” shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs in reviewing or developing plans, reports and other items pursuant to this Consent Decree, verifying the Work, or otherwise implementing, overseeing, or enforcing this Consent Decree, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, litigation costs, the costs incurred pursuant to Paragraph 8 (Notice to Successor-in-Title), Sections VII (Remedy Review), IX (Access and Institutional Controls) (including, but not limited to, the cost of attorney time and any monies paid to secure access and/or to secure or implement, maintain, or enforce Institutional Controls including, but not limited to, the amount of just compensation), XV (Emergency Response), Section XIX (Dispute Resolution), and Paragraph 92 (Work Takeover) of Section XXI (Covenants by Plaintiffs), and Section XXX (Community Relations).

j. “Governmental Control” shall mean an Environmental Restrictive Ordinance, as defined under Indiana law at Indiana Code § 13-11-2-71.2, or other controls that may be imposed by State or local governments, such as zoning restrictions and the like that (i) limit land, water and/or resource use to minimize the potential for human exposure to Waste Materials at the Site; (ii) limit land, water and/or resource use to ensure non-interference with, or to ensure the protectiveness of the Remedial Action; and/or (iii) provide information intended to modify or guide human behavior at the Site. The term does not include a restrictive covenant as defined in IC 13-11-2-193.5.

k. “IDEM” shall mean the Indiana Department of Environmental Management and any successor departments or agencies of the State.

l. “Institutional Controls” shall mean Proprietary Controls and Governmental Controls.

m. “Institutional Control Implementation and Assurance Plan” or “ICIAP” shall mean the plan for implementing, maintaining, monitoring and reporting on the Institutional Controls set forth in the ROD, prepared in accordance with the Statement of Work (“SOW”). (Appendix B hereto).

n. “Interest,” shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The

applicable rate of interest shall 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.

o. “National Contingency Plan” or “NCP” shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

p. “Operation and Maintenance” or “O&M” shall mean all activities required to maintain the effectiveness of the Remedial Action as required under the Operation and Maintenance Plan approved or developed by EPA, after consultation with the State, pursuant to this Consent Decree and the SOW (Appendix B).

q. “Other Settling Parties” shall mean the group comprised of particular parties who have entered into a prior settlement relating to the Site with either the United States or one or more of the Settling Work Parties, provided that each such party: (1) is identified in Appendix E (or is the successor in interest to a party listed in Appendix E); (2) has provided the Plaintiffs and the Settling Work Parties with a copy of the prior settlement agreement, or other probative evidence of the prior settlement agreement; (3) has demonstrated that it is entitled as of the Effective Date and remains entitled to indemnity under that prior settlement by one or more of the Settling Work Parties for claims relating to the Site made against the party in contribution or by the United States; and (4) has executed the prescribed form of Consent Decree signature page for an Other Settling Party, and such signature page has been filed with the Court in this action and served on the Plaintiffs and the Settling Work Parties in accordance with Section XXVI (Notices and Submissions).

r. “Paragraph” shall mean a portion of this Consent Decree identified by an Arabic numeral or an upper case letter.

s. “Parties” shall mean the United States, the State of Indiana, and all Settling Parties (both the Settling Work Parties and the Other Settling Parties).

t. “Performance Standards” shall mean the cleanup standards and other measures of achievement of the goals of the Remedial Action, set forth in Sections II. H and II. L 4 of the ROD and Section II of the SOW (Appendix B) and any modified standards established by EPA.

u. “Plaintiffs” shall mean the United States and the State of Indiana.

v. “Proprietary Controls” shall mean easements or covenants, including restrictive covenants as defined in IC 13-11-2-193.5, running with the land that (a) limit land, water or resource use and/or provide access rights, and (b) are created pursuant to Indiana statutory law by an instrument that is recorded by the owner in the appropriate land records office.

w. “RCRA” shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901 *et seq.* (also known as the Resource Conservation and Recovery Act).

x. “Record of Decision” or “ROD” shall mean the EPA Record of Decision relating to the Cam-Or Site signed on June 10, 2008, by the Regional Administrator, EPA Region 5, or his/her delegate, and all attachments thereto. The ROD is attached as Appendix A.

y. “Remedial Action” shall mean all activities the Settling Work Parties are required to perform under the Consent Decree to implement the ROD, in accordance with the

SOW, the final Remedial Design and Remedial Action Work Plans, and other plans approved by EPA, including implementation of Institutional Controls, until the Performance Standards are met, and excluding performance of the Remedial Design, O&M and the activities required under Section XXV (Retention of Records).

z. “Remedial Action Work Plan” shall mean the document developed pursuant to Paragraph 11 of this Consent Decree and approved by EPA, and any modifications thereto.

aa. “Remedial Design” shall mean those activities to be undertaken by the Settling Work Parties to develop the final plans and specifications for the Remedial Action pursuant to the Remedial Design Work Plan.

bb. “Remedial Design Work Plan” shall mean the document developed pursuant to Paragraph 10 of this Consent Decree and approved by EPA, and any modifications thereto.

cc. “Section” shall mean a portion of this Consent Decree identified by a Roman numeral.

dd. “Settled EPA Costs” shall mean all response costs incurred by EPA in connection with the Site before the Effective Date, and all response costs incurred by the United States Department of Justice, on behalf of EPA, before the Effective Date.

ee. “Settling Parties” shall mean both the Settling Work Parties (identified in Appendix D) and the Other Settling Parties (identified in Appendix E). Where distinctions need to be made between the two groups of Settling Parties the terms “Settling Work Parties” and “Other Settling Parties” shall be used.

ff. “Settling Work Parties” shall mean the parties identified in Appendix D.

gg. “Site” shall mean the Cam-Or, Inc. Superfund Site which includes the “Cam-Or Property,” and all areas (both surface and beneath the surface) onto which hazardous substances from the “Cam-Or Property” have come to be located.

hh. “State” shall mean the State of Indiana.

ii. “State Future Response Costs” shall mean all costs, including, but not limited to, direct and indirect costs, that the State incurs in reviewing or developing plans, reports and other items pursuant to this Consent Decree, verifying the Work, or otherwise implementing, overseeing, or enforcing this Consent Decree, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Section VII, IX (including, but not limited to, the costs of attorney time and any monies paid to secure access and/or to secure or implement institutional controls including, but not limited to, the amount of just compensation), XV, and Paragraph 92 of Section XXI. State Future Response Costs shall also include all State Interim Response Costs.

jj. “State Interim Response Costs” shall mean all costs, including direct and indirect costs, (a) paid by the State in connection with the Site between March 8, 2009, and the Effective Date, or (b) incurred prior to the Effective Date, but paid after that date.

kk. “Statement of Work” or “SOW” shall mean the statement of work for implementation of the Remedial Design, Remedial Action, and Operation and Maintenance at

the Site, as set forth in Appendix B to this Consent Decree and any modifications made in accordance with this Consent Decree.

ll. “Supervising Contractor” shall mean the principal contractor retained by the Settling Parties to supervise and direct the implementation of the Work under this Consent Decree.

mm. “Transfer” shall mean to sell, assign, convey, lease, mortgage, or grant a security interest in, or where used as a noun, a sale, assignment, Transfer, or other disposition of any interest by operation of law or otherwise.

nn. “United States” shall mean the United States of America.

oo. “Waste Material” shall mean (1) any “hazardous substance” under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33), 42 U.S.C. § 9601(33); (3) any “solid waste” under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27); (4) any “extremely hazardous substance” within the meaning of Indiana Code § 13-11-2-76; (5) any “hazardous material” within the meaning of Indiana Code § 13-11-2-96; and (6) any “hazardous waste” within the meaning of Indiana Code § 13-11-2-99.

pp. “Work” shall mean all activities Settling Parties are required to perform under this Consent Decree, except those required by Section XXV (Retention of Records).

V. GENERAL PROVISIONS

5. Objectives of the Parties. The objectives of the Parties in entering into this Consent Decree are:

- a. to protect public health or welfare or the environment by the design and implementation of response actions at the Site by the Settling Work Parties;
- b. to provide for the payment of the Plaintiffs’ Future Response Costs and Future Oversight Costs by the Settling Work Parties;
- c. to resolve the claims of Plaintiffs against all Settling Parties; and
- d. to provide for full and complete contribution protection for all Settling Parties regarding matters addressed in this Consent Decree pursuant to Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2).

6. Commitments by Settling Work Parties.

a. The Settling Work Parties shall finance and perform the Work in accordance with this Consent Decree, the ROD, the SOW, and all work plans and other plans, standards, specifications, and schedules set forth herein or developed by the Settling Work Parties and approved by EPA pursuant to this Consent Decree. The Settling Work Parties shall also reimburse the United States for Settled EPA Costs and Future Response Costs, and the State for State Interim Response Costs and State Future Response Costs.

b. The obligations of the Settling Work Parties to finance and perform the Work and to pay amounts owed the United States and the State under this Consent Decree are joint and several. In the event of the insolvency or other failure of any one or more of the Settling Work Parties to implement the requirements of this Consent Decree, the remaining Settling Work Parties shall complete all such requirements.

c. All activities undertaken by the Settling Work Parties pursuant to this Consent Decree shall be performed in accordance with the requirements of all applicable federal and state laws and regulations. The Settling Work Parties must also comply with all applicable or relevant and appropriate requirements of all federal and state environmental laws as set forth in the ROD and the SOW. The activities conducted pursuant to this Consent Decree, if approved by EPA, shall be considered to be consistent with the NCP.

7. Permits.

a. As provided in Section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and Section 300.400(e) of the NCP, 40 C.F.R. § 3000.400(e), no permit shall be 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 Work Parties shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

b. The Settling Work Parties may seek relief under the provisions of Section XVIII (Force Majeure) of this Consent 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 Paragraph 7.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. This Consent Decree is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

8. Notice to Successors-in-Title and Transfers of Real Property.

a. In the event that any Settling Party ever owns any real property at the Site such "Owner Settling Party" shall (i) within five (5) days of acquiring the real property, notify the Plaintiffs of the acquisition, and (ii) within 60 days after a written request by EPA, submit to EPA for review and approval a proposed notice to be filed with the appropriate land records office that provides a description of the real property and provides notice to all successors-in-title that the real property is part of the Site, that EPA has selected a remedy for the Site, and that potentially responsible parties have entered into a Consent Decree requiring implementation of the remedy. The notice also shall describe the land use restrictions, if any, set forth in Paragraphs 25.b and 26.b. Such notice(s) shall identify the United States District Court in which the Consent Decree was filed, the name and civil action number of this case, and the Date of Entry of the Consent Decree. The Owner Settling Party shall record the notice(s) within ten days of EPA's approval of the notice(s), and shall provide EPA and the State with a certified copy of the recorded notice(s) within ten days of recording such notice(s).

b. An Owner Settling Party shall, at least 60 days prior to any Transfer of any real property located at the Site, give written notice: (i) to the transferee regarding the Consent Decree and any Institutional Controls regarding the real property; and (ii) to EPA and the State regarding the proposed Transfer, including the name and address of the transferee and the date on which the transferee was notified of the Consent Decree and any Institutional Controls.

c. An Owner Settling Party may Transfer any real property located at the Site only if: (1) any restrictive covenants required by Paragraph 25.c has been recorded with respect

to the real property; or (2) Owner Settling Party has obtained an agreement from the transferee, enforceable by the Settling Work Parties and the United States, to (i) allow access and restrict land/water use, pursuant to Paragraphs 26, (ii) record any restrictive covenant on the real property, (iii) subordinate its rights to any such restrictive covenants, and (iv) EPA has approved the agreement in writing. If, after a Transfer of the real property, the transferee fails to comply with the agreement provided for in this Paragraph 8.c, the Owner Settling Party shall take all reasonable steps to obtain the transferee's compliance with such agreement. The United States may seek the transferee's compliance with the agreement and/or assist the Owner Settling Party in obtaining compliance with the agreement. The Settling Work Parties shall reimburse the United States under Section XVI (Payments for Response Costs), for all costs incurred, direct or indirect, by the United States regarding obtaining compliance with such agreement, including, but not limited to, the cost of attorney time.

d. In the event of any Transfer of real property located at the Site, unless the United States otherwise consents in writing, the Settling Work Parties shall continue to comply with their obligations under the Consent Decree, including, but not limited to, their obligation to provide and/or secure access, to implement, maintain, monitor and report on Institutional Controls, and to abide by such Institutional Controls.

VI. PERFORMANCE OF THE WORK BY THE SETTLING WORK PARTIES

9. Selection of Supervising Contractor.

a. All aspects of the Work to be performed by the Settling Work Parties pursuant to this Section (Section VI) and Sections VII (Remedy Review), VIII (Quality Assurance, Sampling and Data Analysis), and XV (Emergency Response) of this Consent Decree shall be under the direction and supervision of the Supervising Contractor, the selection of which shall be subject to disapproval by EPA. In accordance with the schedule set forth in Section V. of the SOW, Settling Work Parties shall notify EPA and the State in writing of the name, title, and qualifications of any contractor proposed to be the Supervising Contractor. With respect to any contractor proposed to be Supervising Contractor, the Settling Work Parties shall demonstrate that the proposed contractor has a quality system that complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995), by submitting a copy of the proposed contractor's Quality Management Plan (QMP). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001) or equivalent documentation as determined by EPA. EPA will issue a notice of disapproval or an authorization to proceed. If at any time thereafter, the Settling Work Parties propose to change a Supervising Contractor, they shall give such notice to EPA and the State and must obtain an authorization to proceed from EPA before the new Supervising Contractor performs, directs, or supervises any Work under this Consent Decree.

b. If EPA disapproves a proposed Supervising Contractor, EPA will notify the Settling Work Parties in writing. The Settling Work Parties shall submit to EPA and the State a

list of contractors, including the qualifications of each contractor, that would be acceptable to them within thirty (30) days of receipt of EPA's disapproval of the contractor previously proposed. EPA will provide written notice of the names of any contractor(s) that it disapproves and an authorization to proceed with respect to any of the other contractors. The Settling Work Parties may select any contractor from that list that is not disapproved and shall notify EPA and the State of the name of the contractor selected within twenty-one (21) days of EPA's authorization to proceed.

c. If EPA fails to provide written notice of its authorization to proceed or disapproval as provided in this Paragraph and this failure prevents the Settling Work Parties from meeting one or more deadlines in a plan approved by the EPA pursuant to this Consent Decree, the Settling Work Parties may seek relief under the provisions of Section XVIII (Force Majeure) hereof.

10. Remedial Design.

a. In accordance with the schedule set forth in Section V. of the SOW, the Settling Work Parties shall submit to EPA and the State a work plan for the design of the Remedial Action at the Site ("Remedial Design Work Plan" or "RD Work Plan"). The Remedial Design Work Plan shall provide for design of the remedy set forth in the ROD, in accordance with the SOW and for achievement of the Performance Standards and other requirements set forth in the ROD, this Consent Decree and/or the SOW. EPA, in consultation with IDEM, shall review the RD Work Plan in accordance with Section XI. Upon its approval by EPA, the Remedial Design Work Plan shall be incorporated into and become enforceable under this Consent Decree. Within 45 days after EPA's issuance of an authorization to proceed under Paragraph 9, the Settling Work Parties shall also submit to EPA and the State a Health and Safety Plan for field design activities which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120.

b. The Remedial Design Work Plan shall include plans and schedules for implementation of all remedial design and pre-design tasks identified in Section III of the SOW.

c. EPA, in consultation with IDEM, shall review the Remedial Design Work Plan in accordance with Section XI. Upon approval of the Remedial Design Work Plan by EPA, after a reasonable opportunity for review and comment by the State, and submission of the Health and Safety Plan for all field activities to EPA and the State, the Settling Work Parties shall implement the Remedial Design Work Plan. The Settling Work Parties shall submit to EPA and the State all plans, submittals and other deliverables required under the approved Remedial Design Work Plan in accordance with the approved schedule for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Unless otherwise directed by EPA, the Settling Work Parties shall not commence further Remedial Design activities at the Site prior to approval of the Remedial Design Work Plan.

d. The preliminary design submittal shall include, at a minimum, the elements of Task 2A of the SOW.

e. The intermediate design submittal, if required by EPA or if independently submitted by the Settling Work Parties, shall be a continuation and expansion of the preliminary design. Any value engineering proposals must be identified and evaluated during this review.

f. The pre-final/final design submittal shall include, at a minimum, the elements specified in Task 2B of the SOW.

11. Remedial Action

a. In accordance with the schedule established in Section V. of the SOW, the Settling Work Parties shall submit to EPA and the State a work plan for the performance of the Remedial Action at the Site ("Remedial Action Work Plan"). The Remedial Action Work Plan shall provide for construction and implementation of the remedy set forth in the ROD and achievement of the Performance Standards, in accordance with this Consent Decree, the ROD, the SOW, and the design plans and specifications developed in accordance with the Remedial Design Work Plan and approved by EPA. EPA, in consultation with IDEM, shall review the Remedial Action Work Plan in accordance with Section XI. Upon its approval by EPA, the Remedial Action Work Plan shall be incorporated into and become enforceable under this Consent Decree. At the same time as they submit the Remedial Action Work Plan, the Settling Work Parties shall submit to EPA and the State a Health and Safety Plan for field activities required by the Remedial Action Work Plan which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120.

b. The Remedial Action Work Plan shall include the following: (1) schedule for completion of the Remedial Action; (2) method for selection of the contractor; (3) schedule for developing and submitting other required Remedial Action plans; (4) groundwater monitoring plan; (5) methods for satisfying permitting requirements; (6) methodology for implementation of the Operation and Maintenance Plan; (7) methodology for implementation of the Contingency Plan; (8) tentative formulation of the Remedial Action team (not including the Remedial Action contractor); and (9) procedures and plans for the decontamination of equipment and the disposal of contaminated materials. The Remedial Action Work Plan also shall include the methodology for implementation of the Construction Quality Assurance Plan and a tentative schedule for implementation of all Remedial Action tasks identified in the final design submittal and shall identify the initial formulation of the Settling Work Parties' Remedial Action Project Team (including, but not limited to, the Supervising Contractor, but excluding the RA contractor). The Remedial Action Work Plan shall incorporate the final plans developed under Task 3 of the SOW.

c. Upon approval of the Remedial Action Work Plan by EPA, after a reasonable opportunity for review and comment by the State, the Settling Work Parties shall implement the activities required under the Remedial Action Work Plan. The Settling Work Parties shall submit to EPA and the State all plans, submittals, or other deliverables required under the approved Remedial Action Work Plan in accordance with the approved schedule for review and approval pursuant to Section XI (EPA Approval of Plans and Other Submissions).

Unless otherwise directed by EPA, the Settling Work Parties shall not commence physical Remedial Action activities at the Site prior to approval of the Remedial Action Work Plan.

12. The Settling Work Parties shall continue to implement the Remedial Action and O&M until the EPA, after consultation with the State, determines that the Performance Standards have been achieved, and for so long thereafter as is otherwise required under this Consent Decree.

13. Modification of the SOW or Related Work Plans.

a. If EPA, after consultation with the State, determines that it is necessary to modify the work specified in the SOW and/or in work plans developed pursuant to the SOW to achieve and maintain the Performance Standards or to carry out and maintain the effectiveness of the remedy set forth in the ROD, and such modification is consistent with the scope of the remedy set forth in the ROD, then EPA may issue such modification in writing and shall notify the Settling Work Parties of such modification. For the purposes of this Paragraph and Paragraphs 51 (Completion of the Remedial Action) and 52 (Completion of the Work) only, the “scope of the remedy set forth in the ROD” is the remedy as described in *inter alia*, Section L.2 (pages 39-41) of the ROD. If the Settling Work Parties object to the modification, they may, within 30 days after EPA’s notification, seek dispute resolution under Paragraph 71 (record review).

b. The SOW and/or related work plans shall be modified: (i) in accordance with the modification issued by US EPA; or (ii) if the Settling Work Parties invoke dispute resolution, in accordance with the final resolution of the dispute. The modification shall be incorporated into and enforceable under this Consent Decree, and the Settling Work Parties shall implement all work required by such modification. The Settling Work Parties shall incorporate the modification into the Remedial Design or Remedial Action Work Plan under Paragraph 10 or 11, as appropriate.

c. Nothing in this Paragraph shall be construed to limit EPA’s authority to require performance of further response actions as otherwise provided in this Consent Decree.

d. Nothing in this Consent Decree, the SOW, or the Remedial Design or Remedial Action Work Plans constitutes a warranty or representation of any kind by Plaintiff[s] that compliance with the work requirements set forth in the SOW and the Work Plans will achieve the Performance Standards.

14. Off-Site Shipment of Waste Material.

a. The Settling Work Parties may ship Waste Material from the Site to an off-Site facility only if they verify, prior to any shipment, that the off-Site facility is operating in compliance with the requirements of Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440, by obtaining a determination from EPA that the proposed receiving facility is operating in compliance with 42 U.S.C. § 9621(d)(3) and 40 C.F.R. § 300.440.

b. The Settling Work Parties may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide written notice to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator. This notice requirement shall not apply to any off-Site shipments when the total quantity of all such shipments will not exceed ten cubic yards. The written notice shall include the following information, if available: (i) the name and location of the receiving facility; (ii) the type and quantity of Waste Material to be shipped; (iii) the expected schedule for the shipment; and (iv) the method of transportation. The Settling Work Parties 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. The Settling Work Parties shall provide the written notice after the award of the contract for Remedial Action construction and before the Waste Material is shipped. The identity of the receiving facility and state will be determined by the Settling Work Parties following the award of the contract for Remedial Action construction. The Settling Work Parties shall provide the information required by this Subparagraph (14.b) as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

15. The Settling Work Parties acknowledge and agree that nothing in this Consent Decree, the SOW, or the Remedial Design or Remedial Action Work Plans constitutes a warranty or representation of any kind by Plaintiffs that compliance with the work requirements set forth in the SOW and the Work Plans will achieve the Performance Standards.

VII. REMEDY REVIEW

16. Periodic Review. The Settling Work Parties shall conduct any studies and investigations as requested by EPA, in order to permit EPA to conduct reviews of whether the Remedial Action is protective of human health and the environment at least every five years as required by Section 121(c) of CERCLA and any applicable regulations.

17. EPA Selection of Further Response Actions. If EPA determines, at any time, that the Remedial Action is not protective of human health and the environment, EPA may select further response actions for the Site in accordance with the requirements of CERCLA and the NCP.

18. Opportunity To Comment. The Settling Work Parties and, if required by Sections 113(k)(2) or 117 of CERCLA, 42 U.S.C. § 9613(k)(2) or § 9617, the public, will be provided with an opportunity to comment on any further response actions proposed by EPA as a result of the review conducted pursuant to Section 121(c) of CERCLA and to submit written comments for the record during the comment period.

19. The Settling Work Parties' Obligation To Perform Further Response Actions. If EPA selects further response actions for the Site, the Settling Work Parties shall undertake such further response actions to the extent that the reopener conditions in Paragraph 88 or Paragraph 89 (United States' and State's Pre and Post-certification Reservations) are satisfied. The Settling Work Parties may invoke the procedures set forth in Section XIX (Dispute Resolution) to dispute (1) EPA's determination that the reopener conditions of Paragraph 88 or

Paragraph 89 of Section XXI (Covenants by Plaintiffs) are satisfied, (2) EPA's determination that the Remedial Action is not protective of human health and the environment, or (3) EPA's selection of the further response actions. Disputes pertaining to the whether the Remedial Action is protective or to EPA's selection of further response actions shall be resolved pursuant to Paragraph 71 (record review).

20. Submissions of Plans. If the Settling Work Parties are required to perform the further response actions pursuant to Paragraph 19, they shall submit a plan for such work to EPA for approval (with a copy sent to the State) in accordance with the procedures set forth in Section VI (Performance of the Work by the Settling Work Parties), and shall implement the plan approved by EPA, after consultation with the State, in accordance with the provisions of this Decree.

VIII. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS

21. The Settling Work Parties shall use quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance, and monitoring samples in accordance with "EPA Requirements for Quality Assurance Project Plans (QA/R5)" (EPA/240/B-01/003, March 2001) "Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/240/R-02/009, December 2002), and subsequent amendments to such guidelines upon notification by EPA to the Settling Work Parties of such amendment. Amended guidelines shall apply only to procedures conducted after such notification. Prior to the commencement of any monitoring project under this Consent Decree, the Settling Work Parties shall submit to EPA for approval, after a reasonable opportunity for review and comment by the State, a Quality Assurance Project Plan ("QAPP") that is consistent with the SOW, the NCP and applicable guidance documents. If relevant to the proceeding, the Parties agree that validated sampling data generated in accordance with the QAPP(s) and reviewed and approved by EPA shall be admissible as evidence, without objection, in any proceeding under this Decree. The Settling Work Parties shall ensure that EPA and State personnel and their authorized representatives are allowed access at reasonable times to all laboratories utilized by the Settling Work Parties in implementing this Consent Decree. In addition, the Settling Work Parties shall ensure that such laboratories shall analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring. The Settling Work Parties shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Decree perform all analyses according to accepted EPA methods. Accepted EPA methods consist of those methods which are documented in the "Contract Lab Program Statement of Work for Inorganic Analysis, ILM05.4," and the "Contract Lab Program Statement of Work for Organic Analysis, SOM01.2," and any amendments made thereto during the course of the implementation of this Decree; however, upon approval by EPA, after opportunity for review and comment by the State, the Settling Work Parties may use other analytical methods which are as stringent as or more stringent than the CLP- approved methods. The Settling Work Parties shall ensure that all laboratories they use for analysis of samples taken pursuant to this Consent Decree participate in an EPA or EPA-equivalent QA/QC program. The Settling Work Parties shall only use laboratories that have a documented Quality System which complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995), and "EPA Requirements

for Quality Management Plans (QA/R-2)," (EPA/240/B-01/002, March 2001, Reissued May 2006) or equivalent documentation as determined by EPA. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program (NELAP) as meeting the Quality System requirements. The Settling Work Parties shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this Decree will be conducted in accordance with the procedures set forth in the QAPP approved by EPA.

22. Upon request, the Settling Work Parties shall allow split or duplicate samples to be taken by EPA, the State and/or their authorized representatives. The Settling Work Parties shall notify EPA and the State not less than twenty-one (21) days in advance of any sample collection activity unless shorter notice is agreed to by EPA. In addition, EPA and the State shall have the right to take any additional samples that EPA or the State deem necessary. Upon request, EPA and the State shall allow the Settling Work Parties to take split or duplicate samples of any samples they takes as part of the Plaintiff's' oversight of the Settling Work Parties' implementation of the Work.

23. The Settling Work Parties shall submit to EPA and the State three (3) copies of the results of all sampling and/or tests or other data obtained or generated by or on behalf of the Settling Work Parties with respect to the Site and/or the implementation of this Consent Decree unless EPA agrees otherwise.

24. Notwithstanding any provision of this Consent Decree, the United States and the State hereby retains all of their information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA and any other applicable statutes or regulations.

IX. ACCESS AND INSTITUTIONAL CONTROLS

25. If any portion of the Site, or any other real property where access and/or land/water use restrictions are needed to implement this Consent Decree, ever becomes owned or controlled by any of the Settling Parties:

a. Such Settling Parties who then own or control any portion of the Site, or such other real property shall: (i) provide notice to the Plaintiffs of their ownership or control within five (5) days of acquiring ownership or control, and (ii) commencing on the Date of Lodging of this Consent Decree, provide the United States, the State, and their representatives, including EPA and its contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Consent Decree including, but not limited to, the following activities:

- (1) Monitoring the Work;
- (2) Verifying any data or information submitted to the United States or the State;
- (3) Conducting investigations relating to contamination at or near the

Site;

- (4) Obtaining samples;
- (5) Assessing the need for, planning, or implementing additional response actions at or near the Site;
- (6) Assessing implementation of quality assurance and quality control practices as defined in the approved Quality Assurance Project Plans;
- (7) Implementing the Work pursuant to the conditions set forth in Paragraph 92 (Work Takeover) of this Consent Decree;
- (8) Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by the Settling Parties or their agents, consistent with Section XXIV (Access to Information);
- (9) Assessing the Settling Parties' compliance with this Consent Decree;
- (10) Determining whether the Site or other real property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted, by or pursuant to this Consent Decree; and
- (11) Implementing, monitoring, maintaining, reporting on and enforcing any Institutional Controls pursuant to the ICIAP.

b. commencing on the Date of Lodging or the date when ownership is acquired (whichever is the latest), such Settling Parties shall refrain from using the Site, or such other real property, in any manner that EPA determines will pose an unacceptable risk to human health or the environment due to exposure to Waste Materials or interfere with or adversely affect the implementation, integrity, or protectiveness of the Remedial Action. Such requirements include, but are not limited to, maintenance of security on the Cam-Or Property with fences and signs; maintenance of the soil caps on the Cam-Or Property and compliance with all aspects of the Soil Management Plan or any other plan developed under the SOW, in accordance with the ROD, the SOW, and this Consent Decree; prohibition on drilling and use of groundwater unless and until all clean-up standards are met; no residential use of the Cam-Or Property, prohibition of use of groundwater where the plume has emanated from the Cam-Or Property unless and until all clean-up standards are met; observance of soil management plan and groundwater restrictions on and off the Cam-Or Property where LNAPL and other contaminants of concern have been released to the soil and groundwater; and

c. any Settling Party who owns such property shall:

(1) execute and record in the Recorder's Office of LaPorte County, State of Indiana, a restrictive covenant that (i) grants a right of access for the purpose of conducting any activity related to this Consent Decree including, but not limited to, those

activities listed in 25.a of this Consent Decree, and (ii) grants the right to enforce the land/water use restrictions listed in Paragraph 25.b of this Consent Decree, including but not limited to the specific restrictions listed therein and any land/water use restrictions listed in the ICIAP, as further specified in Paragraph 25c. (2)-(4). Such restrictive covenant shall meet the definition of “restrictive covenant” set forth IC 13-11-2-193.5 or shall conform to any successor provisions that may be applicable at the time of the recording.

(2) grant the restrictive covenant to the Settling Work Parties and their representatives. The restrictive covenant shall include a designation that EPA is a “third-party beneficiary,” allowing EPA to maintain the right to enforce the restrictive covenant without acquiring an interest in the real property. IDEM shall have the right to enforce such restrictive covenant pursuant to IC 13-14-2-6 or other applicable state law. The Settling Work Parties must monitor, maintain, report on and enforce any restrictive covenant granted to them pursuant to this Subparagraph.

(3) in accordance with the schedule established in the ICIAP, submit to EPA and IDEM for review and approval regarding such real property: (i) a draft restrictive covenant in substantially the form attached hereto as Appendix G; and (ii) a current title insurance commitment or other evidence of title acceptable to EPA, which shows title to the land affected by the restrictive covenant to be free and clear of all prior liens and encumbrances (except when EPA and IDEM waive the release or subordination of such prior lien) or when, despite best efforts, the Settling Work Parties are unable to obtain release or subordination of such prior liens or encumbrance.

(4) within fifteen (15) days of EPA’s approval and acceptance of the restrictive covenant and the title evidence, update the title search and, if it is determined that nothing has occurred since the effective date of the commitment, or other title evidence, to affect title adversely, record the restrictive covenant with the appropriate land records office. Within thirty (30) days of recording the restrictive covenant, the Owner Settling Party shall provide EPA with a final title insurance policy, or other final evidence of title acceptable to EPA, and a certified copy of the original recorded restrictive covenant showing the clerk’s recording stamps.

26. A. If any part of the Site, or any other real property where access and/or land/water use restrictions are needed to implement this Decree, is ever owned or controlled by persons other than the defunct Cam-Or, Inc., or any Settling Work Party, the Settling Work Parties shall use best efforts to secure from such persons:

a. an agreement to provide access thereto for the United States, the State, and the Settling Work Parties, and their representatives, contractors and subcontractors, to conduct any activity regarding the Consent Decree including, but not limited to, the activities listed in Paragraph 25.a;

b. an agreement, enforceable by the Settling Work Parties, the United States and the State, to refrain from using the Cam-Or Property, or such other real property, in any manner that EPA determines will pose an unacceptable risk to human health or to the environment due to exposure to Waste Materials or interfere with or adversely affect the

implementation, integrity, or protectiveness of the Remedial Action. This agreement shall include, but not be limited to:

(1) for the Cam-Or Property- the land/water use requirements listed in Paragraph 25.b;

(2) for property beneath which the contaminated groundwater plume from the Cam-Or Property has spread, a prohibition on drilling and use of groundwater unless and until all Performance Standards for Site groundwater are met; and

(3) for property beneath which the LNAPL from the Cam-Or Property has spread, a prohibition on drilling and use of groundwater, and a prohibition on the disturbance or use of soils in a manner that would conflict with the Soil Management Plan for the Site.

c. (1) the execution and recordation in the Recorder's Office for LaPorte County, Indiana, of a restrictive covenant as required by the ICIAP, that (i) grants a right of access to conduct any activity regarding the Consent Decree including, but not limited to, those activities listed in Paragraph 25.a, as applicable, and (ii) grants the right to enforce the land/water use restrictions set forth in Paragraph 25.b, including, but not limited to, the specific restrictions listed therein and any land/water use restrictions listed in the ICIAP. Such restrictive covenant shall meet the definition of "restrictive covenant" set forth in IC 13-11-2-193.5 or conform to any successor provisions that may be applicable at the time of recording, and shall be submitted to the Plaintiffs in accordance with this Paragraph 26 for review and approval before being recorded.

(2) the grant of a restrictive covenant to the Settling Work Parties and their representatives. The restrictive covenant shall include a designation that EPA is a "third party beneficiary," allowing EPA to maintain the right to enforce the restrictive covenant without acquiring an interest in real property. IDEM shall have the right to enforce such restrictive covenant pursuant to IC 13-14-2-6 or other applicable state law. The Settling Work Parties shall monitor, maintain, report on and enforce the restrictive covenants granted to them pursuant to this Subparagraph.

B. In accordance with the schedule set forth in the ICIAP, the Settling Work Parties shall submit to EPA and IDEM for review and approval regarding such property: (i) a draft restrictive covenant, in substantially the form attached hereto as Appendix G; and (ii) a current title insurance commitment, or other evidence of title acceptable to EPA, which shows title to the land affected by the restrictive covenant to be free and clear of all prior liens and encumbrances (except when EPA and IDEM waive the release or subordination of such prior liens or encumbrances or when, despite best efforts, the Settling Work Parties are unable to obtain release or subordination of such prior liens or encumbrances).

C. Within fifteen (15) days of EPA's approval and acceptance of such restrictive covenant and the title evidence, the Settling Work Parties shall update the title search and, if it is

determined that nothing has occurred since the effective date of the commitment, or other title evidence to affect the title adversely, the restrictive covenant shall be recorded with the Recorder for LaPorte County, Indiana. Within thirty (30) days of the recording of the restrictive covenant, the Settling Work Parties shall provide EPA with a final title insurance policy, or other final evidence of title acceptable to EPA, and a certified copy of the original recorded restrictive covenant showing the clerk's recording stamps.

27. For purposes of the two preceding paragraphs (Paragraphs 25 and 26), Paragraph 28, and Section II.G. of the SOW, "best efforts" includes the payment of reasonable sums of money to obtain access, an agreement to restrict land/water use, a Proprietary Control (for e.g., restrictive covenant), and/or an agreement to release or subordinate a prior lien or encumbrance. If, within sixty (60) days of EPA's approval of the ICIAP, the Settling Work Parties have not: (a) obtained agreements to provide access, restrict land/water use or record a Proprietary Control, as required by Paragraph 26; or (b) obtained pursuant to Paragraph 25 or 26, agreements from the holders of prior liens or encumbrances to release or subordinate such liens or encumbrances to the Proprietary Controls, the Settling Work Parties shall promptly notify the United States and the State in writing, and shall include in that notification a summary of the steps that the Settling Work Parties have taken to attempt to comply with Paragraph 25 or 26. The United States and the State may, as they deem appropriate, assist the Settling Work Parties in obtaining access, agreements to restrict land/water use, Proprietary Controls, or the release or subordination of a prior lien or encumbrance. The Settling Work Parties shall reimburse the United States and/or the State under Section XVI (Payment of EPA and State Response Costs), for all costs incurred, direct or indirect, by the United States (and/or the State) in obtaining such access, agreements to restrict land/water use, Proprietary Controls, and/or the release/subordination of prior liens or encumbrances including, but not limited to, the cost of attorney time and the amount of monetary consideration paid or just compensation.

28. If EPA, after consultation with IDEM, determines that Institutional Controls in the form of state or local laws, ordinances, zoning restrictions or other governmental controls are needed, the Settling Work Parties shall use best efforts to obtain such Institutional Controls and ensure compliance with them. Settling Work Parties shall use their best efforts to cooperate with EPA's and IDEM's efforts to secure and ensure compliance with such Institutional Controls.

29. Notwithstanding any provision of the Consent Decree, the United States and the State retain all of their access authorities and rights, as well as all of their rights to require Institutional Controls, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statute or regulations.

X. REPORTING REQUIREMENTS

30. In addition to any other requirement of this Consent Decree, the Settling Work Parties shall submit to EPA and the State three (3) copies of written monthly progress reports that: (a) describe the actions which have been taken toward achieving compliance with this Consent Decree during the previous month; (b) include a summary of all results of sampling and tests and all other data received or generated by the Settling Work Parties or their contractors or

agents in the previous month; (c) identify all work plans, plans and other deliverables required by this Consent Decree completed and submitted during the previous month; (d) describe all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next six weeks and provide other information relating to the progress of construction, including, but not limited to, critical path diagrams, Gantt charts and Pert charts; (e) include information regarding percentage of completion, unresolved 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) include any modifications to the work plans or other schedules that Settling Work Parties have proposed to EPA or that have been approved by EPA; and (g) describe all activities undertaken in support of the Community Relations Plan during the previous month and those to be undertaken in the next six weeks. The Settling Work Parties shall submit these progress reports to EPA and the State by the tenth day of every month following the Date of Lodging of this Consent Decree until EPA notifies the Settling Work Parties pursuant to Paragraph 51.b of Section XIV (Certification of Completion). Progress reports shall be submitted quarterly thereafter until EPA notifies the Settling Work Parties pursuant to Paragraph 52.b. Progress reports may be submitted in electronic format via email, but in submitting to IDEM, must comply with the guidelines for electronic submission established by IDEM's Office of Land Quality (currently set forth at http://www.in.gov/idem/files/lust_submittal_guidance.doc). If requested by EPA, the Settling Work Parties shall also provide briefings for EPA and the State to discuss the progress of the Work.

31. The Settling Work Parties shall notify EPA and the State of any change in the schedule described in the progress report for the performance of any activity, including, but not limited to, data collection and implementation of work plans, no later than seven (7) days prior to the performance of the activity.

32. Upon the occurrence of any event during performance of the Work that the Settling Work Parties are required to report pursuant to Section 103 of CERCLA or Section 304 of the Emergency Planning and Community Right-to-Know Act (EPCRA), the Settling Work Parties shall within 24 hours of the onset of such event orally notify the EPA Project Coordinator or the Alternate EPA Project Coordinator (in the event of the unavailability of the EPA Project Coordinator), or, in the event that neither the EPA Project Coordinator or Alternate EPA Project Coordinator is available, the Emergency Response Section, Region 5, United States Environmental Protection Agency. These reporting requirements are in addition to the reporting required by CERCLA Section 103 or EPCRA Section 304.

33. Within twenty (20) days of the onset of such an event, the Settling Work Parties shall furnish to Plaintiffs a written report, signed by the Settling Work Parties' Project Coordinator, setting forth the events which occurred and the measures taken, and to be taken, in response thereto. Within thirty (30) days of the conclusion of such an event, the Settling Work Parties shall submit a report setting forth all actions taken in response thereto.

34. The Settling Work Parties shall submit three (3) copies of all plans, reports, and data required by the SOW, the Remedial Design Work Plan, the Remedial Action Work Plan, or any other approved plans to EPA in accordance with the schedules set forth in such plans. The

Settling Work Parties shall simultaneously submit three (3) copies of all such plans, reports and data to the State. The Settling Work Parties shall also submit in electronic form all portions of any report or other deliverables that the Settling Work Parties are required to submit pursuant to the provisions of this Consent Decree.

35. All reports and other documents submitted by Settling Work Parties to EPA and the State (other than the monthly progress reports referred to above) which purport to document the Settling Work Parties' compliance with the terms of this Consent Decree shall be signed by an authorized representative of the Settling Work Parties.

XI. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

36. After review of any plan, report or other item which is required to be submitted for approval pursuant to this Consent Decree, EPA, after reasonable opportunity for review and comment by the State, shall: (a) approve in whole or in part the submission; (b) approve the submission upon specified conditions; (c) modify the initial submission to cure deficiencies; (d) disapprove, in whole or in part, the submission, directing that the Settling Work Parties modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing the Settling Work Parties at least one notice of deficiency and an opportunity to cure within twenty (20) days, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects and the deficiencies in the submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

37. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Paragraph 36(a), (b), or (c), the Settling Work Parties shall proceed to take any action required by the plan, report, or other item, as approved or modified by EPA subject only to their right to invoke the Dispute Resolution procedures set forth in Section XIX (Dispute Resolution) with respect to the modifications or conditions made by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Paragraph 36(c) and the submission has a material defect, EPA retains its right to seek stipulated penalties, as provided in Section XX (Stipulated Penalties).

38. Resubmission of Plans.

a. Upon receipt of a notice of disapproval pursuant to Paragraph 36(d), Settling Work Parties shall, within thirty (30) days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the plan, report, or other item for approval. Any stipulated penalties applicable to the submission, as provided in Section XX, shall accrue during the thirty (30) day period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 39 and 40.

b. Notwithstanding the receipt of a notice of disapproval pursuant to Paragraph 36(d), the Settling Work Parties shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the submission. Implementation of any non-

deficient portion of a submission shall not relieve the Settling Work Parties of any liability for stipulated penalties under Section XX (Stipulated Penalties).

39. In the event that a resubmitted plan, report or other item, or portion thereof, is disapproved by EPA, EPA may again require the Settling Work Parties to correct the deficiencies, in accordance with the preceding Paragraphs. EPA also retains the right to modify or develop the plan, report or other item. The Settling Work Parties shall implement any such plan, report, or item as modified or developed by EPA, subject only to their right to invoke the procedures set forth in Section XIX (Dispute Resolution).

40. If upon resubmission, a plan, report, or item is disapproved or modified by EPA due to a material defect, the Settling Work Parties shall be deemed to have failed to submit such plan, report, or item timely and adequately unless the Settling Work Parties invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution) and EPA's action is overturned pursuant to that Section. The provisions of Section XIX (Dispute Resolution) and Section XX (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is upheld, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XX (Stipulated Penalties).

41. All plans, reports, and other items required to be submitted to EPA under this Consent Decree shall, upon approval or modification by EPA, be enforceable under this Consent Decree. In the event EPA approves or modifies a portion of a plan, report, or other item required to be submitted to EPA under this Consent Decree, the approved or modified portion shall be enforceable under this Consent Decree.

XII. PROJECT COORDINATORS

42. In accordance with the schedule established in Section V. of the SOW, the Settling Work Parties, the State, and EPA will notify each other, in writing, of the name, address and telephone number of their respective designated Project Coordinators and Alternate Project Coordinators. If the Settling Work Parties' Project Coordinator or Alternate Project Coordinator initially designated is changed, the identity of the successor will be given to the other Parties at least five (5) Working Days before the changes occur, unless impracticable, but in no event later than the actual day the change is made. The Settling Work Parties' Project Coordinator shall be subject to disapproval by EPA and shall have the technical expertise sufficient to adequately oversee all aspects of the Work. The Settling Work Parties' Project Coordinator shall not be an attorney for any of the members of the Settling Work Parties in this matter. He or she may assign other representatives, including other contractors, to serve as a Site representative for oversight of performance of daily operations during remedial activities.

43. Plaintiffs may designate other representatives, including, but not limited to, EPA and State employees, and federal and State contractors and consultants, to observe and monitor the progress of any activity undertaken pursuant to this Consent Decree. EPA's Project Coordinator and Alternate Project Coordinator shall have the authority lawfully vested in a

Remedial Project Manager (RPM) and an On-Scene Coordinator (OSC) by the National Contingency Plan, 40 C.F.R. Part 300. In addition, EPA's Project Coordinator or Alternate Project Coordinator shall have authority, consistent with the National Contingency Plan, to halt any Work required by this Consent Decree and to take any necessary response action when s/he determines that conditions at the Site constitute an emergency situation or may present an immediate threat to public health or welfare or the environment due to release or threatened release of Waste Material.

44. EPA's Project Coordinator and the Settling Work Parties' Project Coordinator will meet, at a minimum, on a monthly basis unless EPA determines in any particular month that the meeting is unnecessary. IDEM's Project Manager may participate in these monthly meetings. The meeting may be held by telephone conference.

XIII. PERFORMANCE GUARANTEE

45. In order to ensure the full and final completion of the Work, the Settling Work Parties shall establish and maintain a Performance Guarantee for the benefit of EPA in the amount of twelve (\$12) million (hereinafter "Estimated Cost of the Work") in one or more of the following forms, which must be satisfactory in form and substance to EPA:

a. A surety bond unconditionally guaranteeing payment and/or performance of the Work 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. One or more irrevocable letters of credit, payable to or at the direction of EPA, that is issued by one or more financial institution(s) (i) that has the authority to issue letters of credit and (ii) whose letter-of-credit operations are regulated and examined by a U.S. Federal or State agency;

c. A trust fund established for the benefit of EPA that is administered by a trustee: (i) that has the authority to act as a trustee and (ii) whose trust operations are regulated and examined by a U.S. Federal or State agency;

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

e. A demonstration by one or more of the Settling Work Parties that each such Settling Work Party meets the financial test criteria of 40 C.F.R. § 264.143(f) with respect to the Estimated Cost of the Work, provided that all other requirements of 40 C.F.R. § 264.143(f) are satisfied; or

f. A written guarantee to fund or perform the Work executed in favor of EPA by one or more of the following: (i) a direct or indirect parent company of a Settling Work Party, or (ii) a company that has a "substantial business relationship" (as defined in 40 C.F.R. §

264.141(h)) with at least one Settling Work Party; provided, however, that any company providing such a guarantee must demonstrate to the satisfaction of EPA that it satisfies the financial test requirements of 40 C.F.R. § 264.143(f) with respect to the Estimated Cost of the Work that it proposes to guarantee hereunder.

46. The Settling Work Parties have selected, and EPA has found satisfactory as an initial Performance Guarantee in forms substantially identical to those required in 40 C.F.R. § 264.151 the following: \$12 million, with (1) no less than \$6 million to be placed in a trust fund as specified in Paragraph 45(c); (2) no more than \$3,822,536 by either the demonstration specified in Paragraph 45(e) or written guarantees as specified in Paragraph 45(f); and (3) the remainder of the \$12 million in either surety bonds as specified in Paragraph 45(a), irrevocable letters of credit as specified in Paragraph 45(b), or policies of insurance as specified in Paragraph 45(d). In addition, the Settling Work Parties will prepare and share with EPA and IDEM on a twice yearly basis (for the first five years) and then annually for the remaining years, a working budget for all Work, expenses incurred for the Work, and the amount deposited in any working fund that the Group utilizes to pay the Work expenses. Within ten (10) days after entry of this Consent Decree, the Settling Work Parties shall execute or otherwise finalize all instruments or other documents required in order to make the selected performance guarantees legally binding in forms substantially identical to the forms attached hereto as Appendices F1 through F5, and such Performance Guarantees shall thereupon be fully effective. Within thirty (30) days of entry of this Consent Decree, the Settling Work Parties shall submit copies of all executed and/or otherwise finalized instruments or other documents required in order to make the selected performance guarantees legally binding to the EPA Regional Financial management Officer in accordance with Section XXVI (Notices and Submissions), with a copy to the United States, EPA and IDEM, as specified in Section XXVI (Notices and Submissions).

47. If at any time during the effective period of this Consent Decree, the Settling Work Parties provide a Performance Guarantee for completion of the Work by means of a demonstration or guarantee pursuant to Paragraph 45(e) or Paragraph 45 (f) above, the Settling Work Parties shall also comply with the other relevant requirements of 40 C.F.R. § 264.143(f), 40 C.F.R. § 264.151(f), and 40 C.F.R. § 264.151(h)(1) relating to these methods unless otherwise provided in this Consent Decree, including but not limited to: (i) the initial submission of required financial reports and statements from the relevant entity's chief financial officer and independent certified public accountant; (ii) the annual re-submission of such reports and statements within ninety days after the close of each such entity's fiscal year; and (iii) the notification of EPA within ninety (90) days after the close of any fiscal year in which such entity no longer satisfies the financial test requirements set forth at 40 C.F.R. § 264.143(f)(1). For purposes of the Performance Guarantee methods specified in this Section XIII, references in 40 C.F.R. Part 264, Subpart H, to "closure," "post-closure," and "plugging and abandonment" shall be deemed to refer to the Work required under this Consent Decree, and the terms "current closure cost estimate" "current post-closure cost estimate," and "current plugging and abandonment cost estimate" shall be deemed to refer to the Estimated Cost of the Work.

48. In the event that EPA determines at any time that a Performance Guarantee provided by the Settling Work Parties pursuant to this Section is inadequate or otherwise no

longer satisfies the requirements set forth in this Section, whether due to an increase in the estimated cost of completing the Work or for any other reason, or in the event that the Settling Work Parties become aware of information indicating that a Performance Guarantee provided pursuant to this Section is inadequate or otherwise no longer satisfies the requirements set forth in this Section, whether due to an increase in the estimated cost of completing the Work or for any other reason, the Settling Work Parties, within thirty (30) days of receipt of notice of EPA's determination or, as the case may be, within thirty (30) days of the Settling Work Parties becoming aware of such information, shall obtain and present to EPA for approval a proposal for a revised or alternative form of Performance Guarantee listed in Paragraph 45 of this Consent Decree that satisfies all requirements set forth in this Section XIII. In seeking approval for a revised or alternative form of Performance Guarantee, the Settling Work Parties shall follow the procedures set forth in Paragraph 50(b)(2) of this Consent Decree. The Settling Work Parties' inability to post a Performance Guarantee for completion of the Work shall in no way excuse performance of any other requirements of this Consent Decree, including, without limitation, the obligation of the Settling Work Parties to complete the Work in strict accordance with the terms hereof.

49. The commencement of any Work Takeover pursuant to Paragraph 92 of this Consent Decree shall trigger EPA's right to receive the benefit of any Performance Guarantees provided pursuant to Paragraph 45(a), (b), (c), (d), or (f), and Paragraph 46, and at such time EPA shall have immediate access to resources guaranteed under any such Performance Guarantees, whether in cash or in kind, as needed to continue and complete the Work assumed by EPA under the Work Takeover. If for any reason EPA is unable to promptly secure the resources guaranteed under any such Performance Guarantee, whether in cash or in kind, necessary to continue and complete the Work assumed by EPA under Paragraph 92 (Work Takeover), or in the event that the Performance Guarantee involves a demonstration of satisfaction of the financial test criteria pursuant to Paragraph 45(e), the Settling Work Parties shall immediately upon written demand from EPA deposit into an account specified by EPA, in immediately available funds and without setoff, counterclaim, or condition of any kind, a cash amount up to but not exceeding the estimated cost of the remaining Work to be performed as of such date, as determined by EPA.

50. Modification of the Amount and/or Form of Performance Guarantee

a. Reduction of Amount of Performance Guarantee. If the Settling Work Parties believe that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 46 above, the Settling Work Parties may, on any anniversary date of entry of this Consent Decree, or at any other time agreed to by the Parties, petition EPA in writing to request a reduction in the amount of the Performance Guarantee provided pursuant to this Section so that the amount of the Performance Guarantee is equal to the estimated cost of the remaining Work to be performed. A copy of such petition should be also sent to the State. The Settling Work Parties shall submit a written proposal for such reduction to EPA that shall specify, at a minimum, the cost of the remaining Work to be performed and the basis upon which such cost was calculated. In seeking approval for a revised or alternative form of Performance Guarantee, the Settling Work Parties shall follow the procedures set forth in Paragraph 50.b(2) of this Consent Decree. If EPA decides to accept such a proposal, EPA shall notify the Settling

Work Parties of such decision in writing. After receiving EPA's written acceptance, the Settling Work Parties may reduce the amount of the Performance Guarantee in accordance with and to the extent permitted by such written acceptance. In the event of a dispute, the Settling Work Parties may reduce the amount of the Performance Guarantee required hereunder only in accordance with a final administrative or judicial decision resolving such dispute. No change to the form or terms of any Performance Guarantee provided under this Section, other than a reduction in amount, is authorized except as provided in Paragraphs 48 or 50(b) of this Consent Decree.

b. Change of Form of Performance Guarantee

(1) If, after entry of this Consent Decree, the Settling Work Parties desire to change the form or terms of any Performance Guarantees provided pursuant to this Section, the Settling Work Parties may, on any anniversary date of entry of this Consent Decree, or at any other time agreed to by the Parties, petition EPA in writing to request a change in the form of the Performance Guarantee provided hereunder. The submission of such proposed revised or alternative form of Performance Guarantee shall be as provided in Paragraph 50.b(2) of this Consent Decree. Any decision made by EPA on a petition submitted under this subparagraph (b)(1) shall be made in EPA's sole and unreviewable discretion, and such decision shall not be subject to challenge by the Settling Work Parties pursuant to the dispute resolution provisions of this Consent Decree or in any other forum.

(2) The Settling Work Parties shall submit a written proposal for a revised or alternative form of Performance Guarantee to EPA which shall specify, at a minimum, the estimated cost of the remaining Work to be performed, the basis upon which such cost was calculated, and the proposed revised form of Performance Guarantee, including all proposed instruments or other documents required in order to make the proposed Performance Guarantee legally binding. The proposed revised or alternative form of Performance Guarantee must satisfy all requirements set forth or incorporated by reference in this Section. The Settling Work Parties shall submit such proposed revised or alternative form of Performance Guarantee to the EPA Regional Financial Management Officer in accordance with Section XXVI ("Notices and Submissions") of this Consent Decree. A copy of such revised or alternative form of Performance Guarantee shall also be sent to the State. EPA shall notify the Settling Work Parties in writing of its decision to accept or reject a revised or alternative Performance Guarantee submitted pursuant to this subparagraph. Within ten (10) days after receiving a written decision approving the proposed revised or alternative Performance Guarantee, the Settling Work Parties shall execute and/or otherwise finalize all instruments or other documents required in order to make the selected Performance Guarantee legally binding in a form substantially identical to the documents submitted to EPA as part of the proposal, and such Performance Guarantee shall thereupon be fully effective. The Settling Work Parties shall submit all executed and/or otherwise finalized instruments or other documents required in order to make the selected Performance Guarantee(s) legally binding to the EPA Regional Financial Management Officer within thirty days of receiving a written decision approving the proposed revised or alternative Performance Guarantee in accordance with Section XXVI ("Notices and

Submissions") of this Consent Decree and to the United States and EPA and the State as specified in Section XXVI.

c. Release of Performance Guarantee. If the Settling Work Parties receive written notice from EPA in accordance with Paragraph 51 hereof that the Work has been fully and finally completed in accordance with the terms of this Consent Decree, or if EPA otherwise so notifies the Settling Work Parties in writing, the Settling Work Parties may thereafter release, cancel, or discontinue the Performance Guarantees provided pursuant to this Section. The Settling Work Parties shall not release, cancel, or discontinue any Performance Guarantee provided pursuant to this Section except as provided in this subparagraph. In the event of a dispute, the Settling Work Parties may release, cancel, or discontinue the Performance Guarantee required hereunder only in accordance with a final administrative or judicial decision resolving such dispute.

XIV. CERTIFICATION OF COMPLETION

51. Completion of the Remedial Action.

a. Within sixty (60) days after the Settling Work Parties conclude that the Remedial Action has been fully performed and the Performance Standards have been attained and in accordance with Section V. of the SOW, Settling Work Parties shall schedule and conduct a pre-certification inspection to be attended by the Settling Work Parties, EPA, and the State. If, after the pre-certification inspection, the Settling Work Parties still believe that the Remedial Action has been fully performed and the Performance Standards have been attained, they shall submit a written report requesting certification to EPA for approval, with a copy to the State, pursuant to Section XI (EPA Approval of Plans and Other Submissions) within sixty (60) days of the inspection. In the report, a registered professional engineer and the Settling Work Parties' Project Coordinator shall state that the Remedial Action has been completed in full satisfaction of the requirements of this Consent Decree. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall contain the following statement, signed by a responsible corporate official of a Settling Work Party or the Settling Work Parties' Project Coordinator:

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is 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.

If, after completion of the pre-certification inspection and receipt and review of the written report, EPA, after reasonable opportunity for review and comment by the State, determines that the Remedial Action or any portion thereof has not been completed in accordance with this Consent Decree or that the Performance Standards have not been achieved, EPA will notify the Settling Work Parties in writing of the activities that must be undertaken by the Settling Work Parties pursuant to this Consent Decree to complete the Remedial Action and achieve the Performance Standards. EPA will set forth in the notice a schedule for performance of such

activities consistent with the Consent Decree and the SOW or require the Settling Work Parties to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). The Settling Work Parties shall perform all activities described in the notice in accordance with the specifications and schedules established pursuant to this Paragraph, subject to their right to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent report requesting Certification of Completion and after a reasonable opportunity for review and comment by the State, that the Remedial Action has been performed in accordance with this Consent Decree and that the Performance Standards have been achieved, EPA will so certify in writing to the Settling Work Parties. This certification shall constitute the Certification of Completion of the Remedial Action for purposes of this Consent Decree, including, but not limited to, Section XXI (Covenants by Plaintiffs). Certification of Completion of the Remedial Action shall not affect Settling Work Parties' obligations under this Consent Decree.

52. Completion of the Work.

a. In accordance with the schedule established in Section V. of the SOW, when the Settling Work Parties conclude that all phases of the Work (including O&M), have been fully performed they shall schedule and conduct a pre-certification inspection to be attended by the Settling Work Parties, EPA, and the State. If, after the pre-certification inspection, the Settling Work Parties still believe that the Work has been fully performed they shall submit a written report by a registered professional engineer stating that the Work has been completed in full satisfaction of the requirements of this Consent Decree. The report shall contain the following statement, signed by a responsible corporate official of a Settling Work Party or the Settling Work Parties' Project Coordinator:

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is 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.

If, after review of the written report, EPA, after reasonable opportunity to review and comment by the State, determines that any portion of the Work has not been completed in accordance with this Consent Decree, EPA will notify the Settling Work Parties in writing of the activities that must be undertaken by the Settling Work Parties pursuant to this Consent Decree to complete the Work, provided, however, that EPA may only require the Settling Work Parties to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with the "scope of the remedy selected in the ROD," as that term is defined in Paragraph 13. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and the SOW or require the Settling Work Parties to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). The Settling Work Parties shall perform all activities described in the notice in accordance with the specifications and schedules established therein, subject to their right to invoke the dispute

resolution procedures set forth in Section XIX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent request for Certification of Completion by the Settling Work Parties and after a reasonable opportunity for review and comment by the State, that the Work has been performed in accordance with this Consent Decree, EPA will so notify the Settling Work Parties in writing.

XV. EMERGENCY RESPONSE

53. In the event of any action or occurrence during the performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, the Settling Work Parties shall, subject to Paragraph 54, immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and shall immediately notify the EPA's Project Coordinator, or, if the Project Coordinator is unavailable, EPA's Alternate Project Coordinator. If neither of these persons is available, the Settling Work Parties shall notify the EPA Emergency Response Unit, Region 5. The Settling Work Parties shall take such actions in consultation with EPA's Project Coordinator or other available authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plans, the Contingency Plans, and any other applicable plans or documents developed pursuant to the SOW. In the event that the Settling Work Parties fails to take appropriate response action as required by this Section, and EPA takes such action instead, the Settling Work Parties shall reimburse EPA and the State all costs of the response action not inconsistent with the NCP pursuant to Section XVI (Payment of EPA and State Response Costs).

54. Nothing in the preceding Paragraph or in this Consent Decree shall be deemed to limit any authority of the United States, or the State, a) to take 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 b) to direct or order such action, or seek an order from the Court, 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, subject to Section XXI (Covenants by Plaintiffs).

XVI. PAYMENT OF EPA AND STATE RESPONSE COSTS

55. Payment of EPA Costs.

a. Payment Toward the Settled EPA Costs. Within thirty (30) days of the Effective Date, the Settling Work Parties shall pay two hundred thousand dollars (\$200,000) to the United States, as a payment toward the Settled EPA Costs.

b. Prepayment of Certain Future Oversight Costs. In addition to the payment required by Subparagraph 55.a, within thirty (30) days of the Effective Date, the Settling Work Parties shall pay two million, two hundred thousand dollars (\$2,200,000) to the United States, as an initial payment toward the United States' Future Oversight Costs. The \$2,200,000 shall be deposited by EPA in the Cam-Or Site Future Oversight Costs Special Account. These funds

shall be retained and used by EPA to oversee future response actions at or in connection with the Site.

c. Additional Payments Toward the United States' Future Oversight Costs.

Once EPA has expended the two million, two hundred thousand dollars (\$2,200,000) deposited in the Cam-Or Site Future Oversight Costs Special Account -- plus all interest accrued on that amount -- the Settling Work Parties shall reimburse fifty percent (50%) of all subsequent Future Oversight Costs incurred by EPA, provided such costs are not inconsistent with the National Contingency Plan. On a periodic basis, EPA will bill the Settling Work Parties for fifty percent (50%) of the total Future Oversight Costs incurred and paid by EPA during the period covered by the bill.

d. Reimbursement of Other Future Response Costs.

The Settling Work Parties shall reimburse one hundred percent (100%) of all Future Response Costs that do not meet the definition of Future Oversight Costs, provided such costs are not inconsistent with the National Contingency Plan. On a periodic basis, EPA will bill the Settling Work Parties for all such Future Response Costs incurred and paid by EPA during the period covered by the bill.

56. Instructions for Payment of EPA Costs.

a. Initial Payments.

The payments required under Subparagraphs 55.a and 55.b shall be made at <https://www.pay.gov> to the U.S. Department of Justice account, in accordance with instructions provided to the Settling Work Parties by the Financial Litigation Unit ("FLU") of the United States Attorney's Office for the Northern District of Indiana after the Effective Date.

b. Payment of Periodic Bills.

(1) EPA will keep a separate accounting of "Future Oversight Costs" from other "Future Response Costs." On a periodic basis, the United States will send the Settling Work Parties a bill requiring payment of Future Oversight Costs and/or other Future Response Costs. Any such bill will include an Itemized Cost Summary which includes direct and indirect costs incurred by EPA, including costs of its contractors, and a U.S. DOJ-prepared cost summary which reflects costs incurred by DOJ and its contractors, if any. The Settling Work Parties shall make all payments within thirty (30) days of their receipt of each bill requiring payment, except as otherwise provided in Paragraph 59.

(2) If the payment amount demanded in the bill is more than \$10,000, payment shall be made to EPA by Electronic Funds Transfer ("EFT"), the Automated Clearinghouse ("ACH") for receiving U.S. currency, or payment through the U.S. Department of Treasury website (www.pay.gov), in accordance with current procedures available to the Settling Work Parties from U.S. EPA Region 5. Payment shall be accompanied by a statement identifying the name and address of the Parties making payment, the Cam-Or Site, EPA Region 5, the Site/Spill ID Number 058K, and the Court docket number for this action.

If the amount demanded in the bill is \$10,000 or less, the Settling Work Parties may, in lieu of

the procedures in Subparagraph 56.b.(2), make the required payment by a certified or cashier's check or checks made payable to "EPA Hazardous Substance Superfund," referencing the name and address of the party making the payment, EPA Site/Spill ID Number 058K, and DOJ Case Number 90-11-3-609/1. The Settling Work Parties shall send the check(s) to:

U. S. Environmental Protection Agency
Superfund Payments
Cincinnati Finance Center
PO Box 979076
St. Louis, MO 63197-9000

c. Notice of Payment. At the time any payment is made under this Paragraph, the Settling Work Parties shall send notice that payment has been made to the United States, to EPA, and to the Regional Financial Management Officer, in accordance with Section XXVI (Notices and Submissions).

57. Except as specified by Subparagraph 55.b, Amounts paid pursuant to Paragraph 55 shall be deposited by EPA in the Cam-Or Site 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 EPA Hazardous Substance Superfund. As provided above, payments under Subparagraph 55.b shall be deposited in the Cam-Or Site Future Oversight Costs Special Account.

58. Payment of State Response Costs. The Settling Work Parties shall pay to the State all State Future Response Costs (including "State Interim Response Costs") not inconsistent with the National Contingency Plan. On a periodic basis, IDEM will send the Settling Work Parties an invoice requiring payment that includes a cost summary. Settling Work Party shall make all payments within thirty (30) days of the date of the invoice, except as otherwise provided in Section XIX (Dispute Resolution) of this Consent Decree. The check, and a transmittal letter shall reference the name and address of the party making payment, the invoice number (if applicable), the Site name, the Civil Action No. _____, and the IDEM Site Identification Number 7500068 (SZ01W) and shall be sent to:

Indiana Department of Environmental Management
100 N. Senate Avenue, Mail Code 50-10C
Indianapolis, IN 46204-2251
Attention: Cashier

Any payments received by IDEM after 12:30 p.m. Eastern Time will be credited on the next business day. A copy of the transmittal letter shall be sent to IDEM's Project Manager in accordance with Section XXVI (Notices and Submissions).

59. The Settling Work Parties may contest payment of any Future Response Costs assessed by EPA under Subparagraphs 55.b or 55.c (or any State Future Response Costs assessed by the State under Paragraph 58) if they determine that the United States (or the State) has made an accounting error or if they allege that a cost item that is included represents costs that are inconsistent with the National Contingency Plan ("NCP"). Such objection shall be made in

writing within thirty (30) days of receipt of the bill and must be sent to the United States (if the United States' accounting is being disputed) or the State (if the State's accounting is being disputed) pursuant to Section XXVI (Notices and Submissions). Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection, the Settling Work Parties shall within the thirty (30) day period pay all uncontested Future Response Costs to the United States (or State Future Response Costs to the State) in the manner described in Paragraph 56 (for United States' costs) or Paragraph 58 (for State costs). Simultaneously, the Settling Work Parties shall establish an interest-bearing escrow account in a federally-insured bank duly chartered in any State in the United States and remit to that escrow account funds equivalent to the amount of the contested costs. The Settling Work Parties shall send to the United States, as provided in Section XXVI (Notices and Submissions), (or to the State, if State costs are in dispute), a copy of the transmittal letter and check paying the contested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. Simultaneously with establishment of the escrow account, the Settling Work Parties shall initiate the Dispute Resolution procedures in Section XIX (Dispute Resolution). If the United States or the State prevail in the dispute, within five (5) days of the resolution of the dispute, the Settling Work Parties shall pay the sums due (with accrued interest) to the United States, (or the State, if State costs are disputed), in the manner described in Paragraph 56 (or Paragraph 58 for State Costs). If the Settling Work Parties prevail concerning any aspect of the contested costs, the Settling Work Parties shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to the United States (or the State, if State costs are disputed) in the manner described in Paragraph 56 (for United States costs) or Paragraph 58 (for State costs); the Settling Work Parties shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XIX (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding the Settling Work Parties' obligation to reimburse the United States and the State for their Future Response Costs.

60. In the event that the payments required by Subparagraph 55.a and 55.b are not made within thirty (30) days of the Effective Date or the payments required by Paragraph 58 are not made within thirty (30) days of the date of the State's invoice, the Settling Work Parties shall pay Interest on the unpaid balance. The Interest to be paid on any overdue payment under Subparagraph 55.a or 55.b (and State Interim Response Costs) shall begin to accrue on the Effective Date. The Interest on any overdue payment for Future Response Costs shall begin to accrue on the date of the bill. The Interest shall accrue through the date of the Settling Work Parties' payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to Plaintiffs by virtue of the Settling Work Parties' failure to make timely payments under this Section including, but not limited to, payments under Section XX of this Decree (Stipulated Penalties). The Settling Work Parties shall make all payments required by this Paragraph in the manner described in Paragraph 56 or 58.

XVII. INDEMNIFICATION AND INSURANCE

61. The Settling Work Parties' Indemnification of the United States and the State.

a. The United States and the State do not assume any liability by entering into this agreement or by virtue of any designation of the Settling Work Parties as EPA's authorized representatives under Section 104(e) of CERCLA. The Settling Work Parties shall indemnify, save and hold harmless the United States, the State, and their officials, agents, employees, contractors, subcontractors, or representatives for or from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Settling Work Parties, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Decree, including, but not limited to, any claims arising from any designation of the Settling Work Parties as EPA's authorized representatives under Section 104(e) of CERCLA. Further, the Settling Work Parties agree to pay the United States and the State all costs they incur including, but not limited to, attorneys fees and other expenses of litigation and settlement arising from, or on account of, claims made against the United States or the State based on negligent or other wrongful acts or omissions of any member(s) of the Settling Work Parties, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Decree. Neither the United States nor the State shall be held out as a party to any contract entered into by or on behalf of the Settling Work Parties in carrying out activities pursuant to this Consent Decree. Neither the Settling Work Parties nor any such contractor shall be considered an agent of the United States or the State.

b. The United States and the State shall give the Settling Work Parties notice of any claim for which the United States or the State plans to seek indemnification pursuant to this Paragraph 61, and shall consult with the Settling Work Parties prior to settling such claim.

62. The Settling Work Parties waive all claims against the United States and the State for damages or reimbursement or for set-off of any payments made or to be made to the United States or the State, arising from or on account of any contract, agreement, or arrangement between any one or more of the Settling Work Parties and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, the Settling Work Parties shall indemnify and hold harmless the United States and the State with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of the Settling Work Parties and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

63. No later than fifteen (15) days before commencing any on-site Work, the Settling Work Parties shall secure, and shall maintain until the first anniversary of EPA's Certification of Completion of the Remedial Action pursuant to Subparagraph 51.b of Section XIV (Certification of Completion) comprehensive general liability insurance with limits of three million dollars, combined single limit, and automobile liability insurance with limits of three million dollars, combined single limit, naming the United States and the State as additional insureds. In addition,

for the duration of this Consent Decree, Settling Work Parties 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 the Settling Work Parties in furtherance of this Consent Decree. Prior to commencement of the Work under this Consent Decree, the Settling Work Parties shall provide to EPA and the State certificates of such insurance and a copy of each insurance policy. The Settling Work Parties shall resubmit such certificates and copies of policies each year on the anniversary of the Effective Date. If the Settling Work Parties demonstrate by evidence satisfactory to EPA, in consultation with the State, 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, the Settling Work Parties need provide only that portion of the insurance described above which is not maintained by the contractor or subcontractor.

XVIII. FORCE MAJEURE

64. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of the Settling Work Parties, of any entity controlled by the Settling Work Parties, or of the Settling Work Parties' contractors, that delays or prevents the performance of any obligation under this Consent Decree despite the Settling Work Parties' best efforts to fulfill the obligation. The requirement that the Settling Work Parties exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (1) as it is occurring and (2) following the potential force majeure event, such that the delay is minimized to the greatest extent possible. "Force Majeure" does not include financial inability to complete the Work or a failure to attain the Performance Standards.

65. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a force majeure event, the Settling Work Parties shall notify orally EPA's Project Coordinator or, in his or her absence, EPA's Alternate Project Coordinator or, in the event both of EPA's designated representatives are unavailable, the Director of the Superfund Division, EPA Region 5, within three (3) Working Days of when the Settling Work Parties first knew that the event might cause a delay. Within ten (10) Working Days thereafter, the Settling Work Parties shall provide in writing to EPA and the State an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; the Settling Work Parties' rationale for attributing such delay to a force majeure event if they intend to assert such a claim; and a statement as to whether, in the opinion of the Settling Work Parties, such event may cause or contribute to an endangerment to public health, welfare or the environment. The Settling Work Parties shall include with any notice all available documentation supporting their claim that the delay was attributable to a force majeure. Failure to comply with the above requirements shall preclude the Settling Work Parties from asserting any claim of force majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. The Settling Work Parties shall be deemed to know of any circumstance of which Settling Work Parties, any entity controlled by the Settling Work Parties, or its contractors knew or should have known.

66. If EPA, after a reasonable opportunity for review and comment by the State, agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended by EPA, for such time as EPA determines necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. If EPA, after a reasonable opportunity for review and comment by the State, does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify the Settling Work Parties in writing of its decision. If EPA, after a reasonable opportunity for review and comment by the State, agrees that the delay is attributable to a force majeure event, EPA will notify the Settling Work Parties in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

67. If the Settling Work Parties elect to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution), they shall do so no later than fifteen (15) days after receipt of EPA's notice. In any such proceeding, the Settling Work Parties shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that the Settling Work Parties complied with the requirements of Paragraphs 64 and 65, above. If the Settling Work Parties carry this burden, the delay at issue shall be deemed not to be a violation by the Settling Work Parties of the affected obligation of this Consent Decree identified to EPA and the Court.

XIX. DISPUTE RESOLUTION

68. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. However, the procedures set forth in this Section shall not apply to actions by the United States to enforce obligations of the Settling Work Parties that have not been disputed in accordance with this Section.

69. Any dispute which arises under or with respect to this Consent Decree shall in the first instance be the subject of informal negotiations between the Parties to the dispute. The period for informal negotiations shall not exceed thirty (30) days from the time the dispute arises, unless it is modified by written agreement of the Parties to the dispute. The dispute shall be considered to have arisen when one party sends the other Parties a written Notice of Dispute.

70. Statements of Position.

a. In the event that the Parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by EPA (with the exception noted in a.(i) below) shall be considered binding unless, within twenty (20) days after the conclusion of the informal negotiation period, the Settling Work Parties invoke the formal dispute resolution

procedures of this Section by serving on the United States and the State a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis or opinion supporting that position and any supporting documentation relied upon by the Settling Work Parties. The Statement of Position shall specify the Settling Work Parties' position as to whether formal dispute resolution should proceed under Paragraph 71 or Paragraph 72.

(i) Exception. Where the Settling Work Parties dispute payment of any State Future Response Costs, the position advanced by the State shall be considered binding, unless within twenty (20) days after the conclusion of the informal negotiation period, the Settling Work Parties invoke the formal dispute resolution procedures of this Section by serving on the United States and the State a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis or opinion supporting that position and any supporting documentation relied upon by the Settling Work Parties.

b. Within forty-five (45) days after receipt of the Settling Work Parties' Statement of Position, EPA (or the State, under the Exception set forth above) will serve on the Settling Work Parties its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by EPA (or the State). EPA's (or the State's) Statement of Position shall include a statement as to whether formal dispute resolution should proceed under Paragraph 71 or 72. Within thirty (30) days after receipt of EPA's (or the State's) Statement of Position, the Settling Work Parties may submit a Reply.

(i) If there is disagreement between EPA (or the State, under the Exception set forth above) and the Settling Work Parties as to whether dispute resolution should proceed under Paragraph 71 or 72, the Parties to the dispute shall follow the procedures set forth in the paragraph determined by EPA (or the State, under the Exception set forth above) to be applicable. However, if the Settling Work Parties ultimately appeal to the Court to resolve the dispute, the Court shall determine which paragraph is applicable in accordance with the standards of applicability set forth in Paragraphs 71 and 72.

71. Formal dispute resolution for disputes pertaining to the selection or adequacy of any response action and all other disputes that are accorded review on the administrative record under applicable principles of administrative law shall be conducted pursuant to the procedures set forth in this Paragraph. For purposes of this Paragraph, the adequacy of any response action includes, without limitation: (1) the adequacy or appropriateness of plans, procedures to implement plans, or any other items requiring approval by EPA under this Consent Decree; and (2) the adequacy of the performance of response actions taken pursuant to this Consent Decree. Nothing in this Consent Decree shall be construed to allow any dispute by the Settling Work Parties regarding the validity of the ROD's provisions.

a. An administrative record of the dispute shall be maintained by EPA and shall contain all statements of position, including supporting documentation, submitted pursuant to this Section. Where appropriate, EPA may allow submission of supplemental statements of position by the Parties to the dispute.

b. The Director of the Superfund Division, EPA Region 5, will issue a final administrative decision resolving the dispute (unless the dispute arises under the "Exception" set forth above in 70.a (i) above) based on the administrative record described in Paragraph 71.a. This decision shall be binding upon the Settling Work Parties, subject only to the right to seek judicial review pursuant to Paragraph 71c. and d. If the dispute arises under the Exception in 70.a(i) above, the IDEM Commissioner will issue a final administrative decision resolving the dispute, based on an administrative record. This decision shall be binding upon the Settling Work Parties, subject only to the right to seek judicial review pursuant to Paragraph 71c. and d.

c. Any administrative decision made by EPA (or IDEM) pursuant to Paragraph 71.b. shall be reviewable by this Court, provided that a motion for judicial review of the decision is filed by the Settling Work Parties with the Court and served on all Parties within ten (10) days of receipt of EPA's decision. The motion shall include a description of the matter in dispute, the efforts made by the Parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Decree. The United States may file a response to Settling Work Parties' motion.

d. In proceedings on any dispute governed by this Paragraph, Settling Work Parties shall have the burden of demonstrating that the decision of the EPA's Superfund Division Director (or IDEM's Commissioner, under the 70a.(i) exception) is arbitrary and capricious or otherwise not in accordance with law. Judicial review of EPA's (or IDEM's) decision shall be on the administrative record compiled pursuant to Paragraph 71.a.

72. Formal dispute resolution for disputes that neither pertain to the selection or adequacy of any response action nor are otherwise accorded review on the administrative record under applicable principles of administrative law, shall be governed by this Paragraph.

a. Following receipt of the Settling Work Parties' Statement of Position submitted pursuant to Paragraph 70, the Director of the Superfund Division, EPA Region 5, will issue a final decision resolving the dispute. The Superfund Division Director's decision shall be binding on the Settling Work Parties unless, within ten (10) days of receipt of the decision, the Settling Work Parties file with the Court and serve on the Parties a motion for judicial review of the decision setting forth the matter in dispute, the efforts made by the Parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of the Consent Decree. The United States may file a response to Settling Work Parties' motion.

b. Notwithstanding Paragraph M of Section I (Background) of this Consent Decree, judicial review of any dispute governed by this Paragraph shall be governed by applicable principles of law.

73. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone or affect in any way any obligation of the Settling Work Parties under this Consent Decree, not directly in dispute, unless EPA or the Court agrees otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed

pending resolution of the dispute as provided in Paragraph 82. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Decree. In the event that the Settling Work Parties do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XX (Stipulated Penalties).

XX. STIPULATED PENALTIES

74. The Settling Work Parties shall be liable for stipulated penalties in the amounts set forth in Paragraphs 75 and 76 to the United States for failure to comply with the requirements of this Consent Decree specified below, unless excused under Section XVIII (Force Majeure). “Compliance” by the Settling Work Parties shall include completion of the activities under this Consent Decree or any work plan or other plan approved under this Consent Decree identified below in accordance with all applicable requirements of law, this Consent Decree, the SOW, and any plans or other documents approved by EPA pursuant to this Consent Decree and within the specified time schedules established by and approved under this Consent Decree.

75. Stipulated Penalty Amounts - Work.

a. The following stipulated penalties shall accrue per day per violation for any noncompliance identified in Subparagraphs b, and/or c:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$1,000	1st through 14th day
\$3,000	15th through 30th day
\$5,000	31st day and beyond

b. Failure to Meet Compliance Due Dates in SOW Section V A failure to meet any “Due Date” in Section V of the SOW (See Appendix B) for the activities set forth below, shall constitute a separate violation. Additionally, the failure to meet a due date established by EPA for resubmission of one of the deliverables (or events) set forth below, shall also constitute a separate violation for each day such resubmission is late:

- (1) Identification of Supervising Contractor;
- (2) Identification of Project Coordinator;
- (3) Submission of Remedial Design Work Plan;
- (4) Submission of Preliminary Design;
- (5) Submission of Draft ICIAP;..

- (6) Submission of Pre-final Design;
- (7) Submission of Final Design;
- (8) Submission of Draft O&M Plan;
- (9) Submission of RA Work Plan
- (10) Award of RA Contract(s);
- (11) Conducting of Pre-Construction Inspection and Meeting;
- (12) Initiate Construction of RA;
- (13) Completion of Construction of RA;
- (14) Conducting of Pre-final Inspection;
- (15) Submission of Interim Final O&M Plan;
- (16) Submission of Final ICIAP Plan;
- (17) Submission of Pre-final Inspection Report;
- (18) Conducting of Final Inspection;
- (19) Submission of Construction Completion Report;
- (20) Submission of Final O&M Plan; and
- (21) Completion of Remedial Action Report.

c. Failure Properly to Implement Approved Plans. The failure properly to implement the following plans, once approved, shall constitute a separate violation, per day, for each plan:

- (1) Remedial Action Work Plan;
- (2) ICIAP;
- (3) Soil Management Plan; and
- (4) Final O&M Plan.

76. Stipulated Penalty Amounts - Reports. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports or other written documents required by this Consent Decree that are not among the documents listed in Subparagraph 75.b:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$500	1 st through 14 th days
\$1,500	15 th through 30 th days
\$3,000	31 st day and beyond.

77. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 91 of Section XXI (Covenants by Plaintiffs), the Settling Work Parties shall be liable for a stipulated penalty in the amount of one million dollars (\$1,000,000).

78. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section XI (EPA Approval of Plans and Other Submissions), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies the Settling Work Parties of any deficiency; (2) with respect to a decision by the Director of the Waste Management Division, EPA Region 5, under Paragraph 71.b.or 72.a of Section XIX (Dispute Resolution), during the period, if any, beginning on the 21st day after the date that the Settling Work Parties' reply to EPA's Statement of Position is received until the date that the Director issues a final decision regarding such dispute; or (3) with respect to judicial review by this Court of any dispute under Section XIX (Dispute Resolution), 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. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree.

79. Following EPA's determination that the Settling Work Parties have failed to comply with a requirement of this Consent Decree, EPA may give the Settling Work Parties written notification of the same and describe the noncompliance. EPA may send the Settling Work Parties a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified the Settling Work Parties of a violation.

80. All penalties accruing under this Section shall be due and payable to the United States within thirty (30) days of the Settling Work Parties' receipt from EPA of a demand for payment of the penalties, unless the Settling Work Parties invoke the Dispute Resolution procedures under Section XIX (Dispute Resolution). All payments to the United States under this Section shall be paid by certified or cashier's check made payable to "EPA Hazardous Substances Superfund," shall be mailed to EPA, Region 5; Cincinnati Finance Center; P.O. Box 979076; St. Louise, MO 63197-9000, shall indicate that the payment is for stipulated penalties, and shall

reference the Cam-Or, Inc. Site, EPA Region 5 and Site/Spill ID #058K, the DOJ Case Number 90-11-3-609/1, and the name and address of the party making payment. Copies of check paid pursuant to this Section, and any accompanying transmittal letter, shall be sent to the United States as provided in Section XXVI (Notices and Submissions).

81. The payment of penalties shall not alter in any way the Settling Work Parties' obligation to complete the performance of the Work required under this Consent Decree.

82. Penalties shall continue to accrue as provided in Paragraph 78 during any dispute resolution period, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of EPA that is not appealed to this Court, accrued penalties determined to be owing shall be paid to EPA and the State within 15 days of the agreement or the receipt of EPA's decision or order;

b. If the dispute is appealed to this Court and the United States prevails in whole or in part, the Settling Work Parties shall pay all accrued penalties determined by the Court to be owed to EPA and the State within sixty (60) days of receipt of the Court's decision or order, except as provided in Subparagraph c below;

c. If the District Court's decision is appealed by any Party, the Settling Work Parties shall pay all accrued penalties determined by the District Court to be owing to the United States into an interest-bearing escrow account within sixty (60) days of receipt of the Court's decision or order. Penalties shall be paid into this account as they continue to accrue, at least every sixty (60) days. Within fifteen (15) days of receipt of the final appellate court decision, the escrow agent shall pay the balance of the account to EPA and the State or to the Settling Work Parties to the extent that they prevail.

83. If the Settling Work Parties fail to pay stipulated penalties when due, the United States may institute proceedings to collect the penalties, as well as interest. The Settling Work Parties shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 79.

84. Nothing in this Consent Decree shall be construed as prohibiting, altering, or in any way limiting the ability of the United States or the State to seek any other remedies or sanctions available by virtue of the Settling Work Parties' violation of this Decree or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, provided, however, that the United States shall not seek civil penalties pursuant to Section 122(l) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of a willful violation of the Consent Decree.

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

XXI. COVENANTS BY PLAINTIFFS

86. Covenants for Settling Parties by the United States. In consideration of the actions that will be performed and the payments that will be made by the Settling Work Parties (on their behalf and on behalf of the Other Settling Parties) under this Consent Decree, and except as specifically provided in Paragraphs 88, 89, and 91, the United States covenants not to sue or to take administrative action against Settling Parties pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 & 9607(a), relating to the Site. Except with respect to future liability, these covenants shall take effect upon: (i) the Effective Date of this Consent Decree, for the Settling Work Parties; and (ii) the later of the Effective Date or the date on which an Other Settling Party's Consent Decree signature page is filed with the Court in this action, for such Other Settling Party. With respect to future liability, these covenants shall take effect upon Certification of Completion of Remedial Action by EPA pursuant to Paragraph 51.b of Section XIV (Certification of Completion). These covenants are conditioned upon the satisfactory performance by the Settling Work Parties of their obligations under this Consent Decree. These covenants extend only to the Settling Parties and do not extend to any other person.

87. Covenants for Settling Parties by the State. In consideration of the actions that will be performed and the payments that will be made by the Settling Work Parties (on their behalf and on behalf of the Other Settling Parties) under this Consent Decree, and except as specifically provided in Paragraphs 88, 89 and 91, the State covenants not to sue or to take administrative action against Settling Work Parties pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), or Indiana Code 13-25-4-8, relating to the Site. Except with respect to future liability, these covenants shall take effect upon (i) the Effective Date of this Consent Decree for the Settling Work Parties; and (ii) the later of the Effective Date or the date on which an Other Settling Party's Consent Decree signature page is filed with the Court in this action, for such Other Settling Party. With respect to future liability, these covenants shall take effect upon Certification of Completion of Remedial Action by EPA pursuant to Paragraph 51.b of Section XIV (Certification of Completion). These covenants are conditioned upon the satisfactory performance by Settling Parties of their obligations under this Consent Decree. These covenants extend only to Settling Parties and do not extend to any other person.

88. United States' and the State's Pre-certification Reservations. Notwithstanding any other provision of this Consent Decree, the United States and the State reserve, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel the Settling Parties:

- a. to perform further response actions relating to the Site, or
- b. to reimburse the United States and/or the State for additional costs of response if, prior to Certification of Completion of the Remedial Action:
 - (1) conditions at the Site, previously unknown to the EPA, are discovered, or
 - (2) information, previously unknown to EPA, is received, in whole or in part,

and EPA in consultation with the State determines that these previously unknown conditions or information together with any other relevant information indicates that the Remedial Action is not protective of human health or the environment.

89. United States' and State's Post-certification Reservations. Notwithstanding any other provision of this Consent Decree, the United States and the State reserve, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel the Settling Parties:

- a. to perform further response actions relating to the Site, or
- b. to reimburse the United States for additional costs of response if, subsequent to Certification of Completion of the Remedial Action:
 - (1) conditions at the Site, previously unknown to EPA are discovered, or
 - (2) information, previously unknown to EPA, is received, in whole or in part,

and EPA in consultation with the State determines that these previously unknown conditions or this information together with other relevant information indicate that the Remedial Action is not protective of human health or the environment.

90. For purposes of Paragraph 88, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date the ROD was signed and set forth in the Record of Decision for the Site and the administrative record supporting the Record of Decision. For purposes of Paragraph 89, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date of Certification of Completion of the Remedial Action and set forth in the Record of Decision, the administrative record file supporting the Record of Decision, the post-ROD administrative record, or in any information received by EPA pursuant to the requirements of this Consent Decree prior to Certification of Completion of the Remedial Action.

91. General reservations of rights. The United States and the State reserve, and this Consent Decree is without prejudice to, all rights against the Settling Parties with respect to all matters not expressly included within Plaintiffs' covenants. Notwithstanding any other provision of this Consent Decree, the United States and the State reserve all rights against the Settling Parties with respect to:

- a. claims based on a failure by the Settling Parties to meet a requirement of this Consent 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 upon the Settling Work Parties' transportation, treatment, storage, or disposal, or the arrangement for the transportation, treatment, storage, or disposal of Waste Material at or in connection with the Site, other than as provided in the ROD, the Work, or otherwise ordered by EPA, after signature of this Consent Decree by the Settling Work Parties;
- d. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
- e. criminal liability;
- f. liability for violations of federal or state law which occur during or after implementation of the Remedial Action; and
- g. liability, prior to Certification of Completion of the Remedial Action, for additional response actions that EPA determines are necessary to achieve Performance Standards, but that cannot be required pursuant to Paragraph 13 (Modification of the SOW or Related Work Plans);

92. Work Takeover

a. In the event EPA determines that Settling Work Parties have (i) ceased implementation of any portion of the Work, or (ii) are seriously or repeatedly deficient or late in their performance of the Work, or (iii) are implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may issue a written notice ("Work Takeover Notice") to the Settling Work Parties. Any Work Takeover Notice issued by EPA will specify the grounds upon which such notice was issued and will provide the Settling Work Parties a period of ten (10) days within which to remedy the circumstances giving rise to EPA's issuance of such notice.

b. If, after expiration of the ten (10)-day notice period specified in Paragraph 92.a, the Settling Work Parties have not remedied to EPA's satisfaction the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice, EPA may at any time thereafter assume the performance of all or any portions of the Work as EPA deems necessary ("Work Takeover"). EPA shall notify the Settling Work Parties in writing (which writing may be electronic) if EPA determines that implementation of a Work Takeover is warranted under this Paragraph 92.b.

c. The Settling Work Parties may invoke the procedures set forth in Section XIX (Dispute Resolution), Paragraph 71 (record review), to dispute EPA's implementation of a Work Takeover under Paragraph 92.b. However, notwithstanding the Settling Work Parties' invocation of such dispute resolution procedures, and during the pendency of any such dispute, EPA may in its sole discretion commence and continue a Work Takeover under Paragraph 92.b until the earlier of (i) the date that the Settling Work Parties remedy, to EPA's satisfaction, the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice, or (ii) the date that a final decision is rendered in accordance with Section XIX (Dispute Resolution) requiring

EPA to terminate such Work Takeover.

d. After commencement and for the duration of any Work Takeover, EPA shall have immediate access to and benefit of any performance guarantee provided pursuant to Section XIII of this Consent Decree, in accordance with the provisions of Paragraph 49 of that Section. If and to the extent that EPA is unable to secure the resources guaranteed under any such performance guarantee and the Settling Work Parties fail to remit a cash amount up to but not exceeding the estimated cost of the remaining Work to be performed, all in accordance with the provisions of Paragraph 49, any unreimbursed costs incurred by EPA in performing Work under the Work Takeover shall be considered Future Response Costs that Settling Work Parties shall pay pursuant to Section XVI (Payment of EPA and State Response Costs).

93. Notwithstanding any other provision of this Consent Decree, the United States and the State retain all authority and reserve all rights to take any and all response actions authorized by law.

XXII. COVENANTS BY SETTLING PARTIES

94. Covenant Not to Sue. Subject to the reservations in Paragraph 95, the Settling Parties hereby covenant not to sue and agree not to assert any claims or causes of action against the United States and/or the State with respect to the Site and this Consent Decree, including, but not limited to:

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. § 9507) through CERCLA Sections 106(b)(2), 107, 111, 112, 113 or any other provision of law;

b. any claims against the United States, including any department, agency or instrumentality of the United States under CERCLA Sections 107 or 113 related to the Site; or

c. any claims arising out of response actions at or in connection with the Site, including any claim under the United States Constitution, the State Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law.

Except as provided in Paragraph 97 (Waiver of Claims), and Paragraph 102 (Waiver of Claim-Splitting Defenses), these covenants not to sue shall not apply in the event that the United States or the State brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 88, 89, 91 (b)-(d) or (f)-(g), but only to the extent that the Settling Parties' claims arise from the same response action, response costs, or damages that the United States [or the State] is seeking pursuant to the applicable reservation.

95. The Settling Work Parties reserve, and this Consent Decree is without prejudice to, claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States while acting within the scope of his office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the

act or omission occurred. However, any such claim shall not include a claim for any damages caused, in whole or in part, by the act or omission of any person, including any contractor, who is not a federal employee as that term is defined in 28 U.S.C. § 2671; nor shall any such claim include a claim based on EPA's selection of response actions, or the oversight or approval of the Settling Work Parties' plans or activities. The foregoing applies only to claims which are brought pursuant to any statute other than CERCLA and for which the waiver of sovereign immunity is found in a statute other than CERCLA.

96. Nothing in this Consent Decree shall be deemed to constitute preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

97. Waiver of Claims. Settling Parties agree not to assert any claims to recover response costs and to waive all claims or causes of action for recovery of response costs that they may have for all matters relating to the Site, including for contribution, against any other person, with the exception noted paragraph 97.a. below. This waiver shall not apply with respect to any defense, claim, or cause of action that the Settling Parties may have against any person if such person asserts a claim or cause of action relating to the Site against such Settling Parties.

a. The Settling Work Parties have filed proofs of claim in the following three bankruptcy proceedings, and will retain their rights to recover on these claims from the three proceedings: (1) Old Carco (f/k/a Chrysler LLC), Case No. 09-50002 (S.D.N.Y.); (2) Motors Liquidation Company (f/k/a General Motors Corporation), Case No. 500026 (S.D.N.Y.); and (3) Lyondell Chemical Company, et al., Case No. 09-10069 (S.D.N.Y.).

XXIII. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION

98. Except as provided in Paragraph 97 (Waiver of Claims), nothing in this Consent Decree shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Consent Decree. The preceding sentence shall not be construed to waive or nullify any right that any person not a signatory to this decree may have under applicable law. Nothing in this Consent Decree diminishes the right of the United States or the State, pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response actions and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

99. The Parties agree, and by entering this Consent Decree this Court finds, that this settlement constitutes a judicially-approved settlement for purposes of Sections 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and that each Settling Party is entitled to protection from contribution actions or claims as provided by Section 113(f)(2), 42 U.S.C. § 9613(f)(2), or as may be otherwise provided by law, for "matters addressed" in this Consent Decree. The "matters addressed" in this Consent 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, the State or any other person, provided, however, that if the United States or the State exercises rights under the reservations in Section XXI (Covenants by Settling Plaintiffs) other than in Paragraph 91.a (claims for failure to meet a requirement of the settlement), 91.e (criminal liability), or 91.f

(violations of federal/state law during or after implementation of the Remedial Action), the “matters addressed” in this Consent Decree will no longer include those response costs or response actions that are within the scope of the exercised reservation. The contribution protection afforded by this Consent Decree shall take effect: (i) on the Effective Date, for the Settling Work Parties; and (ii) on the later of the Effective Date or the date on which an Other Settling Party’s Consent Decree signature page is filed with the Court in this action, for such Other Settling Party.

100. Each Settling Party shall, with respect to any suit or claim brought by it for matters related to this Consent Decree, notify the United States and the State in writing no later than 60 days prior to the initiation of such suit or claim.

101. Each Settling Party shall, with respect to any suit or claim brought against it for matters related to this Consent Decree, notify in writing the United States and the State within ten (10) days of service of the complaint on such Settling Work Party. In addition, each Settling Work Party shall notify the United States and the State within ten (10) days of service or receipt of any Motion for Summary Judgment and within ten (10) days of receipt of any order from a court setting a case for trial.

102. Waiver of Claim-Splitting Defenses. In any subsequent administrative or judicial proceeding initiated by the United States or the State for injunctive relief, recovery of response costs, or other appropriate relief relating to the Site, Settling Parties shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States or the State in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenants not to sue set forth in Section XXI (Covenants by Plaintiffs).

XXIV. ACCESS TO INFORMATION

103. The Settling Work Parties shall provide to EPA and/or the State, upon request, copies of all documents and information within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Consent Decree, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. The Settling Work Parties shall also make available to EPA and/or the State, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

104. Business Confidential and Privileged Documents.

a. The Settling Work Parties may assert business confidentiality claims covering part or all of the documents or information submitted to Plaintiffs under this Consent Decree to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be

confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to EPA and the State, or if EPA has notified Settling Work Parties that the documents or information are not confidential 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 documents or information without further notice to the Settling Work Parties.

b. The Settling Work Parties may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Settling Work Parties assert such a privilege in lieu of providing documents, they shall provide the Plaintiffs with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information; and (6) the privilege asserted by the Settling Work Parties. However, no documents, reports or other information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged.

105. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

XXV. RETENTION OF RECORDS

106. Until ten (10) years after the Settling Work Parties' receipt of EPA's notification pursuant to Paragraph 52.b of Section XIV (Certification of Completion of the Work), each Settling Work Party shall preserve and retain all non-identical copies of records and documents (including records or documents in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to its liability under CERCLA with respect to the Site. Each Settling Work Party must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above all non-identical copies of the last draft or final version of any documents or records (including documents or records in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work, provided, however, that each Settling Work Party (and its contractors and agents) must retain, in addition, copies of all data generated during the performance of the Work and not contained in the aforementioned documents required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

107. At the conclusion of this document retention period, the Settling Work Parties shall notify the United States and the State at least ninety (90) days prior to the destruction of any such records or documents, and, upon request by the United States or the State, the Settling Work Parties shall deliver any such records or documents to EPA or the State. The Settling Work Parties may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Settling Work

Parties assert such a privilege, they shall provide the Plaintiffs with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by the Settling Work Parties. However, no documents, reports or other information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged.

108. Each Settling Work Party hereby certifies individually that, to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by the United States or the State or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA requests for information pursuant to Section 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XXVI. NOTICES AND SUBMISSIONS

109. Whenever, under the terms of this Consent Decree, written notice is required to be given or a report or other document is required to be sent by one Party to another, it shall be directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties in writing. All notices and submissions shall be considered effective upon receipt, unless otherwise provided. Written notice as specified herein shall constitute complete satisfaction of any written notice requirement of the Consent Decree with respect to the United States, EPA, the State, and the Settling Work Parties, respectively.

As to the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
Re: DJ 90-11-3-609/1

and

Richard C. Karl
Director, Superfund Division
EPA, Region 5 (S-6J)
77 West Jackson Boulevard,
Chicago, IL 60604-3590

As to EPA:

Lolita Hill
EPA Project Coordinator
EPA Region 5 (SR-6J)
77 West Jackson Boulevard,
Chicago, IL 60604-3590
hill.lolita@epa.gov

Jerome Kujawa
EPA – ORC (C-14-J)
77 West Jackson Boulevard
Chicago, IL 60604-3590
kujawa.jerome@epa.gov

As to EPA's Regional Financial Management Officer:

Regional Financial Management Officer
Comptroller's Office, Mail Code: MF-10J
EPA Region 5
77 W Jackson Blvd., Chicago, IL 60604-3590

As to the State:

Resa Ramsey
Project Manager
IDEM
100 N. Senate Avenue (MC 66-31 IGCN 1101)
Indianapolis, Indiana 46204-2251
r Ramsey@idem.IN.gov

As to the Settling Work Parties:

Dennis Reis
Briggs & Morgan
2200 IDS Center
80 South 8th Street
Minneapolis, MN 55402
DReis@briggs.com

XXVII. EFFECTIVE DATE

110. The effective date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court as recorded on the Court docket, or, if the Court instead issues an order approving the Consent Decree, the date such order is recorded on the Court docket.

XXVIII. RETENTION OF JURISDICTION

111. This Court retains jurisdiction over both the subject matter of this Consent Decree and the Settling Parties for the duration of the performance of the terms and provisions of this Consent Decree for the purpose of enabling any of the Parties to apply to the Court at any time for such further order, direction, and relief as may be necessary or appropriate for the construction or modification of this Consent Decree, or to effectuate or enforce compliance with its terms, or to resolve disputes in accordance with Section XIX (Dispute Resolution) hereof.

XXIX. APPENDICES

112. The following appendices are attached to and incorporated into this Consent Decree:

“Appendix A” is the ROD.

“Appendix B” is the SOW.

“Appendix C” is maps of the Site.

“Appendix D” is the complete list of the Settling Work Parties.

“Appendix E” is the complete list of parties that are eligible to join this Consent Decree as an Other Settling Parties.

“Appendix F” is the complete set of the sample Performance Guarantee documents.

“Appendix G” is the prototype Environmental Restrictive Covenant.

XXX. COMMUNITY RELATIONS

113. Settling Work Parties shall propose to EPA and the State their participation in the community relations plan to be developed by EPA. EPA will determine the appropriate role for the Settling Work Parties under the Plan. The Settling Work Parties shall also cooperate with EPA and the State in providing information regarding the Work to the public. As requested by EPA, the Settling Work Parties shall participate in the preparation of such information for dissemination to the public and in public meetings which may be held or sponsored by EPA to explain activities at or relating to the Site.

XXXI. MODIFICATION

114. Schedules specified in this Consent Decree for completion of the Work may be modified by agreement of EPA and the Settling Work Parties. All such modifications shall be made in writing.

115. Except as provided in Paragraph 13 (Modification of the SOW or Related Work Plans), no material modifications shall be made to the SOW without written notification to and written approval of the United States, the Settling Work Parties, and the Court, if such modifications fundamentally alter the basic features of the selected remedy within the meaning of 40 C.F.R. § 300.435(c)(2)(B)(ii). Prior to providing its approval to any modification, the United States will provide the State with a reasonable opportunity to review and comment on the proposed modification. Modifications to the SOW that do not materially alter that document, or material modifications to the SOW that do not fundamentally alter the basic features of the selected remedy within the meaning of 40 C.F.R. § 300.435(c)(2)(B)(ii), may be made by written agreement between EPA, after providing the State with a reasonable opportunity to review and comment on the proposed modification, and the Settling Work Parties.

116. Nothing in this Decree shall be deemed to alter the Court's power to enforce, supervise or approve modifications to this Consent Decree.

XXXII. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

117. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment in accordance with Section 122(d)(2) of CERCLA, 42 U.S.C. § 9622(d)(2), and 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations which indicate that the Consent Decree is inappropriate, improper, or inadequate. Settling Parties consent to the entry of this Consent Decree without further notice.

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

XXXIII. SIGNATORIES/SERVICE

119. Each undersigned representative of a Settling Party to this Consent Decree, the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice and the Chief Counsel for Litigation of the Indiana Attorney General's Office certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind such Party to this document.

120. Each Settling Party hereby agrees not to oppose entry of this Consent Decree by this Court or to challenge any provision of this Consent Decree unless the United States has notified the Settling Parties in writing that it no longer supports entry of the Consent Decree.

121. Each Settling Party shall identify, on the attached signature page, the name, address and telephone number of an agent who is authorized to accept service of process by mail on behalf of that Party with respect to all matters arising under or relating to this Consent Decree. Settling Parties hereby agree to accept service in that manner and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local

rules of this Court, including, but not limited to, service of a summons. The Parties agree that Settling Parties need not file an answer to the complaint in this action unless or until the court expressly declines to enter this Consent Decree.

XXXIV. FINAL JUDGMENTS

122. This Consent Decree and its appendices constitute the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in the Consent Decree. The Parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Consent Decree.

123. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment between and among the United States, the State, and the Settling Parties. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

SO ORDERED THIS _____ DAY OF _____, 2011.

United States District Judge

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al* relating to the Cam-Or, Inc. NPL Site.

FOR THE UNITED STATES OF AMERICA

12/20/10
Date

ROBERT G. DREHER
Acting Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
Washington, D.C. 20530

12/16/10
Date

LISA A. CHERUP
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611

WAYNE T. AULT
Assistant United States Attorney
Northern District of Indiana
U.S. Department of Justice
South Bend, Indiana

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al* relating to the Cam-Or, Inc. NPL Superfund Site.

FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

12-13-10
Date

RICHARD C. KARL
Director, Superfund Division Region 5
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, IL 60604

Dec. 3, 2010
Date

JEROME P. KUJAWA
Assistant Regional Counsel
U.S. Environmental Protection Agency
Office of Regional Counsel (C-14J)
77 West Jackson Boulevard
Chicago, IL 60604

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States v. ALCOA INC., et al* relating to the Cam-Or, Inc. NPL Site.

FOR THE STATE OF INDIANA

10/14/10
Date

BRUCE H PALIN
Assistant Commissioner
Office of Land Quality
Indiana Department of
Environmental Management
100 N. Senate Avenue (IGCN-1101,
MC 66-30)
Indianapolis, IN 46204-2251

October 25, 2010
Date

PATRICIA JORLOFF-ERDMANN
Chief Counsel for Litigation
Office of Indiana Attorney General
302 W. Washington St. (IGCS Fifth Floor)
Indianapolis, IN 46204

THE UNDERSIGNED WORK SETTLING PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al.* relating to the Cam-Or, Inc. Superfund Site.

FOR Alcoa Inc.

Oct. 15, 2010
Date

Signature: _____
Name (print): William J. O'Rourke
Title: Vice President
Address: 201 Isabella St.
Pittsburgh, PA 15212

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): Dan J. Jordanger
Title: Counsel
Address: Hunton & Williams LLP
Riverfront Plaza, East Tower
951 East Byrd St., Richmond, VA 23219
Ph. Number: 804-788-8200

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States and the State of Indiana.

THE UNDERSIGNED WORK SETTling PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al.* relating to the Cam-Or, Inc. Superfund Site.

FOR ANR Pipeline Company

10/11/2010
Date

Signature: _____
Name (print): Kern Meier
Title: Vice President
Address: 2400-717-Texas St
Houston, TX
77002



10/11/2010
Date

Signature: _____
Name (print): Dean Patry
Title: VP US Pipelines Central
Address: 717 Texas St.
Houston, TX
77002



Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): The Corporation Trust
Title: _____
Address: 1209 Orange Street
Wilmington, Delaware 19801
Ph. Number: _____

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States and the State of Indiana.

THE UNDERSIGNED WORK SETTLING PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al.* relating to the Cam-Or, Inc. Superfund Site.

By: Clean Harbors Environmental Services, Inc.,
As Indemnitor on Behalf of, and
FOR Safety-Kleen (TG), Inc.

October 19, 2010
Date

Signature: _____
Name (print): Rae'ford Craig Lackey, Esquire U' r
Title: Vice President & Chief Counsel
Address: 400 Arbor Lake Drive, Suite B-900
Columbia, SC 29223

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): Michael R. McDonald, Esquire
Title: Senior Vice President & General Counsel
Address: Clean Harbors Environmental Services, Inc.
42 Longwater Drive
Norwell, MA 02061-9149
Ph. Number: (781) 792-5000

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States and the State of Indiana.

THE UNDERSIGNED WORK SETTLING PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al.* relating to the Cam-Or, Inc. Superfund Site.

FOR Consolidated Rail Corporation

10/12/10
Date

Signature: _____
Name (print): Jonathan M. Broder
Title: VP-Corp. Development & CLO
Address: Conrail
1717 Arch Street, 32nd Floor
Philadelphia, PA 19103

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): Jonathan M. Broder
Title: VP-Corp. Development & CLO
Address: Conrail
1717 Arch Street, 32nd Floor
Philadelphia, PA 19103
Ph. Number: 215-209-5020

**/* A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States and the State of Indiana.

THE UNDERSIGNED WORK SETTLING PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al.* relating to the Cam-Or, Inc. Superfund Site.

FOR CSX TRANSPORTATION, INC.

10/12/10
Date

Signature: _____
Name (print): Howard R. Elliott
Title: VP of Public Safety and Env
Address: CSX Transportation
500 Water Street J275
Jacksonville, FL 32202

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): JEFFREY W. STYRON
Title: ENVIRONMENTAL COUNSEL
Address: 500 WATER STREET, J150
JACKSONVILLE, FL 32202
Ph. Number: 904-366-4058

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States and the State of Indiana.

THE UNDERSIGNED WORK SETTLING PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al.* relating to the Cam-Or, Inc. Superfund Site.

FOR Ford Motor Company

October 15, 2010
Date

Signature: _____
Name (print): Peter J. Sherry, Jr.
Title: Secretary
Address: One American Rd.
Dearborn, MI 48126

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): CT Corporation
Title: _____
Address: 251 East Ohio Street, Suite 1100
Indianapolis, IN 46204
Ph. Number: 1-866-925-9916

**/* A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States and the State of Indiana.

THE UNDERSIGNED WORK SETTLING PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al.* relating to the Cam-Or, Inc. Superfund Site.

FOR Imperial Oil Limited

NOV 16, 2010
Date

Signature: _____
Name (print): PETE JANZEN
Title: REHABILITATION AND RECLAMATION SERVICES MANAGER.
Address: 237 FOURTH AVE S.W.
P.O. BOX 2480 STATION 'M'
CALGARY, ALBERTA, CANADA
T2P 3M9

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): PATRICIA H. FORREST
Title: SENIOR COUNSEL
Address: IMPERIAL OIL LIMITED
LAW DEPARTMENT
237-4TH AVE SW, CALGARY, AB, CANADA
Ph. Number: 403-237-2814 T2P 3M9

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States and the State of Indiana.

THE UNDERSIGNED WORK SETTLING PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al.* relating to the Cam-Or, Inc. Superfund Site.

FOR Northern Indiana Public Service Company

10/18/10
Date

By:

Signature: _____
Name (print): Jimmy D. Staton
Title: Executive Vice President & Group CEO
Address: 801 East 86th Avenue
Merrillville, IN 46410

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): Daniel J. Deeb
Title: Partner
Address: Schiff Hardin LLP
233 S. Wacker Drive, Suite 6600
Chicago, Illinois 60606
Ph. Number: 312-258-5500

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States and the State of Indiana.

THE UNDERSIGNED WORK SETTLING PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al.* relating to the Cam-Or, Inc. Superfund Site.

FOR ROCKWELL AUTOMATION

10/5/10
Date

Signature: _____
Name (print): Gary Ballesteros
Title: Vice President, Law
Address: 1201 South Second St.
Milwaukee, WI 53204

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): Same as above. PR
Title: _____
Address: _____

Ph. Number: _____

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States and the State of Indiana.

THE UNDERSIGNED WORK SETTLING PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al.* relating to the Cam-Or, Inc. Superfund Site.

FOR C. Stoddard & Sons, Inc., now known as Egil Corporation

11/4/10
Date

Signature: _____
Name (print): Geraldine Walker
Title: President
Address: P.O. Box 426
Wayland, MI 49348

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): Richard S. Baron Esq.
Title: Attorney, Foley Baron & Metzger PLLC
Address: 38777 Six Mile Road
Suite 300
Livonia, MI 48152
Ph. Number: (734) 742-1855

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States and the State of Indiana.

THE UNDERSIGNED WORK SETTling PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al.* relating to the Cam-Or, Inc. Superfund Site.

FOR Tennessee Gas Pipeline Company

10/05/10
Date

Signature: _____
Name (print): Norman G. Holmes
Title: President, TGP
Address: 1001 Louisiana St.
Houston, TX 77002

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): Dan Schnee
Title: Senior Counsel
Address: 2 North Nevada Avenue
Colorado Springs, CO 80944
Ph. Number: 719-520-4337

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States and the State of Indiana.

THE UNDERSIGNED WORK SETTLING PARTY enters into this Consent Decree in the matter of *UNITED STATES v. ALCOA INC., et al.* relating to the Cam-Or, Inc. Superfund Site.

FOR United States Steel Corporation (f/k/a USX Corporation)

10/5/10
Date

Signature: _____
Name (print): James D. Gafrax
Title: General Counsel & Sr. VP-Corporate Affairs
Address: 600 Grant Street
Pittsburgh, PA 15219

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): Andrew G. Thiros
Title: Attorney-Environmental
Address: 600 Grant Street
Suite 1500
Pittsburgh, PA 15219
Ph. Number: 412-433-2983

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States and the State of Indiana.

THE UNDERSIGNED OTHER SETTLING PARTY hereby assents to all terms of the UNITED STATES v. ALCOA INC., et al Consent Decree relating to Cam-Or Superfund Site applicable to the "Settling Parties" and the "Other Settling Parties," including the pertinent provisions of Section XXII (Covenants by the Settling Parties). The Consent Decree shall apply to and bind the undersigned "Other Settling Party" upon the later of the Consent Decree's Effective Date or the date on which this Consent Decree signature page is filed with the Court in this action.

FOR _____

Date

Signature: _____
Name (print): _____
Title: _____
Address: _____

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): _____
Title: _____
Address: _____

Ph. Number: _____

APPENDIX A – RECORD OF DECISION FOR CAM-OR SITE



Cam-Or Site

Westville, Indiana
LaPorte County

Record of Decision



**United States
Environmental Protection Agency**

Region 5

June 2008

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LIST OF ACRONYMS AND ABBREVIATIONS

$\mu\text{g/L}$	Micrograms Per Liter
ARAR	Applicable or Relevant and Appropriate Requirement
Area	West-Tech Redevelopment Area
ARCADIS	ARCADIS G&M, Inc.
BERA	Baseline Ecological Risk Assessment
BOD	Biological Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
Cam-Or	Westville Oil Division of Cam-Or, Incorporated
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environment Response, Compensation, and Liability Information System
COC	Contaminants of Concern
Commission	Westville Redevelopment Commission
COPC	Constituents of Potential Concern
COPEC	Chemicals of Potential Ecological Concern
CSF	Cancer Slope Factor
CSM	Conceptual Site Model
CTE	Central Tendency Exposure
1,1-DCA	1,1-Dichloroethane
1,2-DCA	1,2-Dichloroethane
1,2-DCE	1,2-Dichloroethene
DDT	Dichloro-Diphenyl-Trichloroethane
EL	Evaluation Level
EPA	United States Environmental Protection Agency
FS	Feasibility Study
ft	Feet
gpm	Gallons per minute
GRA	General Response Action
H ₂ O ₂	Hydrogen Peroxide
HHRA	Human Health Risk Assessment
HI	Hazard index
HQ	Hazard Quotient
IDEM	Indiana Department of Environmental Management
IRIS	Integrated Risk Information System
IWQS	Indiana Water Quality Standards
LMS	Linear Multistage
LNAPL	Light Non-Aqueous Phase Liquid
MCL	Maximum Contaminant Level
mg/kg	Milligrams per kilogram
NCEA	National Center for Environmental Assessment
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
PAHs	Polycyclic Aromatic Hydrocarbons

ppb	Parts Per Billion
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
POTW	Publicly Owned Treatment Works
PRGs	Preliminary Remediation Goals
PRP	Potentially Responsible Party
RA	Remedial Alternative
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RfC	Reference: Concentration
RfD	Reference Dose
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RI/FS SSP	Remedial Investigation/Feasibility Study Support Sampling Plan
RME	Reasonable Maximum Exposure
ROD	Record of Decision
RSD	Risk Specific Doses
SARA	Superfund Amendments and Reauthorization Act of 1986
Site	Cam-Or Site
Site Group	Cam-Or Site Extended Group
SMP	Soil Management Plan
SOW	Statement of Work
SR2	Indiana State Route 2
SVOCs	Semi-Volatile Organic Compounds
TAL	Target Analyte List
TBC	To Be Considered
1,1,1-TCA	1,1,1-Trichloroethane
TCE	Trichloroethene
TRV	Toxicity Reference Value
TSCA	Toxic Substances Control Act
TSDF	Transportation, Storage and Disposal Facility
the Order	Administrative Order by Consent, April 2002
TRW	Technical Review Workgroup
UAO	Unilateral Administrative Order
UCL	Upper Confidence Limit
USGS	United States Geological Survey
UV	Ultraviolet Light
VAS	Vertical Aquifer Sampling
VC	Vinyl Chloride
VOCs	Volatile Organic Compounds
WWTP	Wastewater Treatment Plant

Record of Decision – Cam-Or Site

Westville, Indiana

This Record of Decision (ROD) documents the remedy selected for the Cam-Or Site located in Westville, LaPorte County, Indiana. The ROD is organized in three sections: Part I contains the *Declaration* for the ROD, Part II contains the *Decision Summary* and the *Responsiveness Summary* is included as Part III.

PART I: DECLARATION

This section summarizes the information presented in the ROD and includes the authorizing signature of the United States Environmental Protection Agency (EPA) Region 5 Superfund Division Director.

Site Name and Location

The Cam-Or Site (CERCLIS # IND005480462) is an approximately 15-acre parcel of land located on the north side of Westville, Indiana in LaPorte County (Section 29 of Township 36 North, Range 4 West). The Site is located west of the intersection between U.S. Highway 421 and Indiana State Route 2 (SR2) and is bounded by SR2 to the south and County Road 400 South to the north. The facility is not located within the 100-year flood plain and there are no wetlands present.

Statement of Basis and Purpose

This decision document presents the selected remedy for the Cam-Or Site. The remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and, to the extent practicable, the National Contingency Plan (NCP). Information used to select the remedy is contained in the Administrative Record file for the Site. The Administrative Record file is available for review at the EPA Region 5 Records Center, 77 West Jackson Boulevard, Chicago, Illinois, and at the Westville Public Library, 153 Main Street, Westville, Indiana.

Assessment of the Site

The response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of pollutants or contaminants from this site which may present an imminent and substantial endangerment to public health or welfare.

Description of the Selected Remedy

The selected remedy specified in this ROD will serve as the final action for the Cam-Or Site. The selected remedy specifies response actions through excavation and on-site consolidation of

contaminated soil; contaminant mass removal and treatment followed by long term monitoring for groundwater; and either dual phase recovery or total fluids recovery of LNAPL (Light Non Aqueous Phase Liquid). EPA believes the response actions outlined in this ROD, if properly implemented, will protect human health and the environment.

The major components of the selected remedy are:

Soil

- Institutional controls restricting future use of the property to commercial use. Redevelopment plans must be consistent with this use and will limit future invasive activities in the areas where lead impacted soil has been capped.
- Soil Management Plan that would establish procedures for handling and disposing of impacted soil and control exposure to impacted soil.
- Excavation and on-site consolidation of surface soil (0 to 2 feet below ground surface) exceeding the EPA commercial standard for lead of 800 mg/kg. A geotextile fabric layer would be placed over the consolidated soil to separate impacted soil from clean backfill. The consolidated soil would be graded to enhance surface drainage and prevent future erosion.
- Capping of the consolidated soil and any lead impacted subsurface soils remaining in-place with a vegetative soil cover (2 feet of soil plus 6 inches of topsoil, seeded). Grading the soil cover to promote surface drainage and prevent erosion.

Groundwater

- Pump groundwater to remove contaminant mass until the 1,4-dioxane concentration is reduced below 500 ppb in the aquifer. The actual length of time necessary to operate the extraction and treatment system will be determined through evaluation of the system progress during the cleanup period.
- Long-term groundwater monitoring of the contaminant plume until the 1,4-dioxane (the main contaminant) and other Contaminants of Potential Concern (COPC) have attenuated and met the clean up goals presented in this ROD.
- Implement institutional controls such as environmental Restrictive Covenants combined with either a groundwater use ordinance or enforceable permit process to restrict groundwater use within contaminant plume area.

LNAPL

- Pump LNAPL from recovery wells and send off-site for incineration. Treat extracted groundwater and discharge to Town of Westville WWTP.
- Implement institutional controls and a Soil Management Plan to prevent direct contact with LNAPL on-site. Institutional controls on adjacent properties where LNAPL pool extends off-site to prevent property owners from excavating to the depth of LNAPL.

Statutory Determinations

The selected remedy is protective of human health and the environment, complies with federal and state requirements that are applicable or relevant and appropriate to this remedial action, is cost-effective, and utilizes permanent solutions and alternative treatment technologies (or resource recovery) to the maximum extent practicable. This remedy also satisfies the statutory preference for treatment as a principal element of the remedy by significantly reducing contaminant concentrations in groundwater including 1,4-dioxane, and removal of LNAPL. Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

Data Certification Checklist

The following information is included in the Decision Summary section (Part II) of this ROD. Additional information can be found in the Administrative Record file for this Site.

- Contaminants of concern and their respective concentrations (Section E);
- Baseline risk represented by the contaminants of concern (Section G);
- Cleanup levels established for contaminants of concern and the basis for these levels (Section L);
- How source materials are considered a principle threat (Section K);
- Current and reasonably anticipated future land use assumptions used in the baseline risk assessment and ROD (Section F);
- Potential land use that will be available at the Site as a result of the selected remedy (Section L.4);
- Estimated total present worth costs and the number of years over which the remedy cost estimates are projected (Section L.3); and
- Key factors that led to selecting the remedy (Section L.1).

Support Agency Acceptance

The State of Indiana Letter of Concurrence dated April 18, 2008 is attached to this Record of Decision in Appendix E.

Authorizing Signature

Richard C. Karl, Director
Superfund Division
United States Environmental Protection Agency, Region 5

6/10/08
Date

PART II: DECISION SUMMARY

A. SITE NAME, LOCATION, AND BRIEF DESCRIPTION

The Cam-Or Site is an approximately 15-acre parcel of land located on the north side of Westville, Indiana in LaPorte County (Section 29 of Township 36 North, Range 4 West). The Site is located west of the intersection between U.S. Highway 421 and Indiana State Route 2 (SR 2) and is bounded by SR2 to the south and County Road 400 South to the north.

The CERCLIS identification # for the Cam-Or Site is IND005480462.

EPA is the lead agency for this site, and the Indiana Department of Environmental Management (IDEM) is the support agency. To date, we have used potentially responsible party (PRP) and Superfund trust fund monies to perform several time critical removal actions and a remedial investigation and feasibility study at the Cam-Or Site.

The Cam-Or facility was originally owned by Westville Oil, which began re-refining waste oil in approximately 1934. Several lagoons were constructed on-site and used for waste oil storage, disposal and gross separation of oil and water. Cam-Or, Inc. purchased Westville Oil in 1976. The Cam-Or Site was identified as the source of oil spills to surrounding surface water bodies in 1978 and 1980. Refinery operations were stopped in 1987 when the company closed the business as a result of the IDEM and the EPA closure requirements for some of the lagoons.

B. SITE HISTORY AND ENFORCEMENT ACTIVITIES

1. Site History

The Cam-Or facility was originally owned by Westville Oil, and operated as a waste oil re-refinery beginning in 1934. The refinery purchased waste oil from industrial facilities, pipelines, railroad yards, and service stations. During the 1950s, several unlined lagoons were constructed on-site to store the waste oil. The lagoons were used until 1978. The waste oil was refined for use in automotive motor oil and industrial grade oil. Packaging of the motor oil was performed in the on-site cannery building.

Westville Oil was purchased by Cam-Or, Inc. in 1976 and the facility operations were subsequently modernized into a high-vacuum distillation process. A wastewater treatment building processed 50,000 gallons of wastewater per day, including wastewater containing high biological oxygen demand (BOD) and phenol concentrations. An aboveground tank system which included three 420,000 gallon tanks was also installed. The tanks were used to store the used oil prior to refining, in place of the on-site lagoons. The former lagoons and a former well in the center of the Site which may have been used as an injection well are two potential sources of the 1,4-dioxane contaminant plume. Site Map, Figure 1 located in Appendix A.

2. Previous Investigations and Enforcement

In June 1978, state investigators identified the Cam-Or Site as a source of an oil spill in Crooked Creek. The Cam-Or Site reported an additional oil release in August 1980. Cam-Or conducted the first groundwater investigation at the Site in 1985. As part of this investigation, the first series of monitoring wells were installed at the Site by Cam-Or's consultant, ATEC; however, no water quality samples for laboratory analyses were collected. Additional monitoring wells were installed by the LaPorte County Health Department in 1986.

A Toxic Substances Control Act (TSCA) consent agreement and final order was filed in July 1986, in which Cam-Or agreed to remediate Polychlorinated Biphenyls (PCBs) present in on-site lagoons. A Resource Conservation and Recovery Act (RCRA) action to address heavy metals, Volatile Organic Compounds (VOCs), and Semi-Volatile Organic Compounds (SVOCs) was also initiated. However, Cam-Or closed its refinery operations in February 1987 and did not conduct any cleanup work.

The EPA initiated a removal action at the Site in March 1987. The removal action consisted of draining eight lagoons, then treating and discharging the water into Forbes Ditch. The sludges containing PCBs were consolidated into one lagoon. The non-PCB containing sludges were stabilized and placed into another lagoon. A floating, synthetic cover was placed over four closely spaced lagoons located in the northwest area of the site.

The EPA issued a CERCLA Section 106(a) Unilateral Administrative Order on September 18, 1989 to a number of waste oil generators who were former customers of Cam-Or requiring that certain clean up actions be undertaken at the Site. This group of former customers (Cam-Or Site Extended PRP Group) agreed to conduct response actions at the Site and performed Phase I, Phase II and Phase II (b) response activities pursuant to the UAO. The Site Group's activities were conducted with oversight by EPA.

In the summer of 1995, the EPA conducted a groundwater investigation which consisted of the collection of groundwater samples from temporary sampling points. In December 1995, the Site Group began conducting its own off-site groundwater investigation. The presence of 1,4-dioxane was identified by the contract laboratory during the analysis of the first round of groundwater samples collected by the Site Group.

In March 1997, the EPA conducted a field investigation to delineate the nature and extent of groundwater impacts in the study area, determine the hydraulic properties of the aquifer underlying the Site, identify potential groundwater receptors that could be potentially impacted by the Site, determine the nature and extent of impact that might be present in surface water bodies, and identify and evaluate potential routes of exposure to constituents of concern. EPA installed new monitoring wells and collected groundwater samples from both the existing and newly installed monitoring wells. Private wells located primarily southwest of the Site were also sampled.

In March 1998, the Cam-Or Site was added to the National Priorities List (NPL). In 1998, the Site Group removed all of the buildings, tanks, and other remaining structures at the Site, except the concrete foundations of the buildings and other structures. The underground storage tanks and underground piping that were found during the removal of structures were also removed. The sewer that formerly connected the Site to the Town of Westville sewer system was plugged by the Site Group in 1999.

In 1999, the Site Group extended the municipal water line to the Coulter Loop area on the western edge of the town of Westville to provide potable water to a number of private well users identified by the water well survey.

EPA signed an Administrative Order on Consent with the Cam-Or Site Group in April 2002. The Site Group conducted the Remedial Investigation/Feasibility Study (RI/FS) with EPA oversight. The EPA approved the RI in July 2007 and approved the FS in October 2007.

C. COMMUNITY PARTICIPATION

The RI/FS Report and Proposed Plan for the Cam-Or Site were made available to the public in November 2007. They can be found in the Administrative Record file maintained at the EPA Region 5 Records Center in Chicago, Illinois and at the local Information Repository located at the Westville Public Library, Westville, Indiana. The notice of the availability of these two documents was published in the Westville Indicator on December 6, 2007, the LaPorte Herald Argus on December 10, 2007, and the Michigan City News-Dispatch December 10, 2007. A public comment period was held from December 3, 2007 to January 11, 2008. In addition, a public meeting was held on December 12, 2007 to present the Proposed Plan to a broader community audience than those that had already been involved at the site. At this meeting, representatives from the EPA and IDEM answered questions about problems at the site and the remedial alternatives. EPA also used this meeting to solicit a wider cross-section of community input on the reasonably anticipated future land use and potential beneficial groundwater uses at the site. Roughly 25 people were in attendance at this meeting, including representatives from the Westville Town Council and LaPorte County Health Department. EPA's response to the comments received during this period is included in the Responsiveness Summary, which is part of this Record of Decision. These comments were considered prior to selection of the final remedy for the Cam-Or Site.

U.S EPA developed a Community Involvement Plan (CIP) when RI/FS activities began at the Site in 2002. The RI/FS and Proposed Plan were also posted to the EPA Region 5 website at <http://www.epa.gov/region5/sites/Cam-Or>

D. SCOPE AND ROLE OF RESPONSE ACTIONS

EPA addressed the Site in its entirety in the RI Report dated May 4, 2007 and the FS dated August 27, 2007 (modified September 28, 2007). EPA has identified three media of concern in which chemical contaminants may exceed human health or ecological risk-based cleanup levels at the Cam-Or Site. The media are:

- Soil

- Groundwater
- LNAPL

The November Proposed Plan presented EPA's recommended clean up for the lead-impacted soil, the 1,4-dioxane contaminated groundwater, and the LNAPL. This ROD addresses the entire site and the selected response actions herein are for the lead-impacted soil, 1,4-dioxane impacted groundwater, and LNAPL that EPA will address under its remedial authority under CERCLA. EPA expects the remedy described in this ROD to be the final clean up for the Cam-Or site.

E. SITE CHARACTERISTICS

1. Conceptual Site Model for the Cam-Or Site

The conceptual site model (CSM) provides an understanding of the site based on the sources of contaminants of concern, potential transport pathways, and environmental receptors. Figure 3 pictorially depicts the CSM for the Cam-Or Site, which the risk assessment sampling and risk assessment analysis was based on. Based on the nature and extent of contamination and the fate and transport mechanisms described in the RI and FS reports, the refined CSM includes the following components:

- Pathways of exposure evaluated for the trespasser, resident, and Site worker included ingestion of soil, dermal contact with soil, and inhalation of soil particulates. Although the Site is currently vacant, current and future on-site receptors include adolescent and adult trespassers, residents, Site workers, construction workers, and utility workers. Site workers were also assumed to be exposed to groundwater vapors migrating into future on-site buildings. Construction and utility workers were assumed to be exposed to surface and subsurface soils via direct contact with soil as well as through inhalation of VOCs in a trench.
- On-site surface and subsurface soils at the Site were found to have concentrations of several compounds present at levels above Preliminary Remediation Goals (PRGs) for industrial soil and site-specific background concentrations, where available. (See Tables G-1 through G-3) Although hypothetical residential exposure to on-site soils exceeds risk guidelines, the exposure scenario is incomplete because current zoning is for industrial/commercial use only, there is no current residential use of the Site, and reasonably anticipated future redevelopment of the Site does not include residential use. On-site soil was identified for remedial action because the 95% upper confidence limit (UCL) lead concentration exceeded EPA's residential and commercial standard. (See Table L-1)
- Lead in on-site soils was retained as an ecological chemical of concern associated with the Site. A PRG for lead was developed considering exposure by both insectivorous birds and mammals. (See Table L-3)
- 1,4-dioxane was observed in groundwater on-site and extending approximately 1 mile downgradient. The distribution of 1,4-dioxane in the groundwater plume follows the

observed groundwater flow direction. Concentrations of 1,4-dioxane are higher at sampling locations farther from the Site. Due to its high miscibility 1,4-dioxane often migrates farther in groundwater than other contaminants. Groundwater was identified because potential cumulative non-cancer hazards exceed 1 and potential cumulative cancer risks exceed 1×10^{-4} . (See Tables G-6 through G-9) Although municipal drinking water is available for use by all residents within the plume area, there is the potential for exposure since an individual could install a well for potable use in the future.

- The LNAPL migrated from beneath the Site toward the south-southwest. (Figure 9) The LNAPL is a diesel-range hydrocarbon known to contain benzene, toluene, ethylbenzene and xylenes (BTEX); trichloroethene (TCE) and PCBs. This liquid waste is inherently toxic and mobile. Currently, there are no unacceptable direct contact exposure risks associated with the LNAPL. A soil vapor investigation determined that there is negligible potential for adverse human health risks resulting from exposure to vapors from the LNAPL. The LNAPL does not appear to be an ongoing source of 1,4-dioxane in groundwater, as 1,4-dioxane is not currently detected in groundwater samples collected from monitoring wells and piezometers immediately downgradient of the off-site LNAPL plume. The LNAPL is a potential source of other VOCs which have been detected in groundwater samples collected from monitoring wells and piezometers beneath and periodically downgradient of the LNAPL plume. There is also the potential for the LNAPL to migrate from the present location. Although potential risks associated with LNAPL were not quantified, the remedial action for LNAPL was selected to address any LNAPL from the Site to the extent practicable to prevent potential groundwater contamination and further migration in accordance with Superfund practice and State of Indiana guidance.

2. Site Overview

The Cam-Or Site is an approximately 15-acre parcel of land located on the north side of Westville, Indiana in LaPorte County (Section 29 of Township 36 North, Range 4 West). The Site is located west of the intersection between U.S. Highway 421 and Indiana State Route 2 (SR2) and is bounded by SR2 to the south and County Road 400 South to the north. The facility is not located within the 100-year flood plain and there are no wetlands present.

Within the property boundaries of the Cam-Or Site, two constructed clay covers located in the Northeast and Northwest Areas are the highest topographic points (Appendix A, Figure 2). The southern part of the Site is relatively flat and surface drainage is generally to the southwest. Immediately following storm events, standing water can be observed in some portions of the southeast and southwest areas of the Site. The stream nearest the Site is the Crumpacker Arm of Forbes Ditch (hereafter referred to as "Crumpacker Ditch"). Crumpacker Ditch discharges into Forbes Ditch, which discharges into Crooked Creek and then into the Kankakee River, approximately 21 miles southwest of the former refinery Site.

The land surrounding the Site is primarily used for agricultural purposes. Agricultural areas are located north of the Site. A former railroad right-of-way is located adjacent to the western edge of the Site and further west is agricultural land. A business that sells auto parts is located adjacent to the eastern edge of the Site. Further east is primarily a residential area. Residential areas are also located immediately south of the Site across SR2. An auto salvage yard is located immediately southwest of the Site and additional agricultural land is located southwest of the intersection of SR2 and U.S. Highway 6. The Correctional Facility, operated by the Indiana Department of Correction, is located approximately two miles south-southwest of the Site.

The primary aquifer at the Site is the sand and gravel deposits of the Kankakee Outwash formation. The aquifer thickness in the vicinity of the Site ranges from 148 ft at MW-09 to 215 ft at MW-07. The sand and gravel deposits are underlain by a continuous layer of moderately hard to stiff clay that represents the bottom of the aquifer and the limits of the RI groundwater investigation.

Hydraulic testing indicates that the aquifer beneath the Site acts as one groundwater flow system. The groundwater flow model conducted as part of the RI estimated the horizontal and vertical hydraulic conductivities as approximately 60 ft/day and 12 ft/day, respectively.

Four hydrogeologic zones were previously defined by EPA groundwater investigations at the site: "S" designates the water table; "D" designates a zone 80 feet below land surface (bls) near the middle of the aquifer; "MD" 100 to 150 feet bls; and "XD" designates groundwater at the bottom of the aquifer between 150 and 215 feet bls.

The direction of groundwater flow in all four hydrogeologic zones (S, D, MD, and XD) is west-southwest from the Site to Crumpacker Ditch. The direction of groundwater flow on the western side of Crumpacker Ditch is dependent on the groundwater elevations. When groundwater elevations are lower, the groundwater flow direction continues to the west-southwest, unchanged by Crumpacker Ditch. When groundwater elevations are higher, the groundwater flow direction turns in a more southerly direction west of Crumpacker Ditch.

According to the 2000 census, the Town of Westville has a population of 2,116 with 897 occupied households (<http://factfinder.census.gov>). The Town relies on groundwater for its water supply. The Town of Westville water supply plant serves a total of 385 customers (Bart Frank pers. comm., 2005). The Town of Westville currently operates two water supply wells (City Well Nos. 3 and 4), which are located approximately 2,500 feet (ft) east (hydraulically upgradient) of the Site. Currently, municipal water is available to all residences and businesses for potable use within the groundwater plume area.

No sensitive ecosystems have been identified on-site or within ¼ mile of the Site. The terrestrial habitat at the Cam-Or Site is limited to low quality “old field” habitat, and is of limited ecological value. The off-site aquatic habitat including Crumpacker Ditch, Wright Arm, Forbes Ditch, and Crooked Creek, has been greatly modified by channelization. The riparian zone which is only five to fifteen feet wide in most areas is limited by surrounding agricultural land use. Additionally, portions of Crumpacker Ditch have no riparian zone.

No Indiana listed threatened or endangered species or significant habitats were identified during the RI. Although the Site is within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened bald eagle (*Haliaeetus leucocephalus*), no summer Indiana bat roosts were identified on-site or within ¼ mile of the Site; and the small aquatic systems located near the Site do not provide suitable habitat for bald eagles.

According to the Midwestern Regional Climate Center (MRCC), the average annual temperature for LaPorte County is 49.7 degrees F, while average monthly temperatures range from 22.9 degrees F in January to 73.6 degrees F in July. Average annual precipitation is 40.8 inches and average monthly precipitation ranges from 1.91 inches in February to 4.4 inches in June. Average annual snowfall is 63.4 inches with a maximum average monthly snowfall of 22.3 inches in January.

3. Sampling Strategy

The *Remedial Investigation/Feasibility Study Support Sampling Plan* (RI/FS SSP) identified the additional RI investigation activities needed to supplement the existing data in order to complete the site characterization, human health and ecological risk assessments, and support the development of remedial alternatives in the FS. All RI sample collection activities at the Cam-Or site were conducted in accordance with the RI/FS SSP as well as the *Sampling and Analysis Plan* (SAP) and *Quality Assurance Project Plan* (QAPP) submitted as Appendices B and C of the RI/FS SSP. The following field investigations were conducted as part of the RI/FS SSP:

- Completion of soil borings and visual inspections to evaluate the condition of the existing caps in the Northwest and Northeast Areas of the Site;
- Collection of surface and subsurface soil samples in areas of the Site that previously had not been sampled;
- Collection of surface and subsurface soil samples in the Highway Drainage Ditch adjacent to SR2;
- Collection of surface water and sediment samples;

- Collection of biota (earthworm and plant) samples;
- Completion of Vertical Aquifer Sampling (VAS) at selected on-site locations to characterize on-site groundwater;
- Completion of VAS at selected off-site locations and installation of additional off-site monitoring wells to complete delineation of the extent of 1,4-dioxane;
- Collection of groundwater samples from existing and newly installed monitoring wells and private wells;
- Completion of an investigation to delineate the extent of light non-aqueous phase liquid (LNAPL); and
- Completion of a soil vapor investigation in on-Site and near-Site areas where LNAPL and/or groundwater containing VOCs are present.

Appendix A, Figure 4 Groundwater sampling locations; Figure 5 LNAPL sampling locations; Figure 6 Soil Vapor sampling locations; Figure 7 Soil sampling locations; Figure 8 extent of groundwater 1,4-dioxane plume; Figure 9 extent of LNAPL.

4. Source of Contamination

As discussed in Section B.1 of this ROD, the 1,4-dioxane found at the Cam-Or Site most likely originated from former lagoons and a former well, which may have been used as an injection well, in the center of the Site. LNAPL and lead are a result of the former oil refinery operations on-site. The LNAPL is a diesel-range hydrocarbon known to contain BTEX; TCE and PCBs.

5. Types of Contaminants and Affected Media

At the Cam-Or Site, surface water, groundwater, sediment, and soil were analyzed for Target Analyte List (TAL) inorganics, VOCs, SVOCs, and 1,4-dioxane. The results were carefully evaluated in the Human Health and Ecological Risk Assessments to determine the Contaminants of Potential Concern (COPC), which revealed which of these chemicals and affected media were most important in driving potential risk at the Site. These findings are summarized in Section G of this ROD, but extensive evaluation is found in the RI Report. Human health and ecological risk assessments were evaluated using the site data, and the primary Contaminants of Concern (COC) at the site were determined to be 1,4-dioxane in groundwater, lead in soils, and LNAPL.

6. Extent of Contamination

a. Groundwater Investigations and Results

Groundwater studies were performed as part of the RI/FS SSP in order to further characterize groundwater conditions at the Site. Groundwater studies completed during the RI included VAS, new monitoring well installation and sampling, and sampling of existing monitoring wells.

- **1,4-dioxane sampling**

A total of twenty (20) VAS points (P41 through P60) and seven monitoring wells (MW-09MD, MW-10MD, MW-16MD, MW-19MD, MW-19XD, MW-20MD, and MW-20XD) were installed to define the extent of 1,4-dioxane in the groundwater plume.

Groundwater samples were collected from these VAS points at each previously defined hydrogeologic zone (shallow, mid-aquifer, deep, base of aquifer). Groundwater samples were collected from the newly installed monitoring wells once after installation, and a second time three months later for analysis of 1,4-dioxane.

Groundwater samples were also collected from the existing Site monitoring wells which included B-4, MW-02S/D/MD/XD, MW-03S/D, MW-04S/D/XD, MW-06S/D, MW-08S/D, MW-09S/XD, MW-10S/XD, MW-14S, MW-15S/MD/XD, MW-16D/XD, MW-17MD/XD, MW-18S/XD, and LP-3. The first sampling event was conducted in October and November 2003. A sample was collected from MW-16S for analysis of 1,4-dioxane in August 2005.

- **Constituents other than 1,4-dioxane**

Groundwater samples were collected at each previously defined hydrogeologic zone (shallow, deep, mid-aquifer, base of aquifer) from on-site VAS points, P43 to P46, and for analysis of Target Analyte List (TAL) metals, Target Compound List (TCL) VOCs and TCL SVOCs in September and October 2003. In October and November 2003, groundwater samples were collected from ten monitoring wells (B-4, MW-02S/MD/D, MW-03S/D, MW-04S, MW-06S/D, and MW-14S).

- **Private Well Sampling**

Private water wells A, B, C (2 wells), D, and E were sampled as part of the 1,4-dioxane delineation investigation.

- **Groundwater Results**

1,4-dioxane was observed in groundwater on-site and extending approximately 1 mile downgradient. The distribution of 1,4-dioxane in the groundwater plume follows the observed groundwater flow direction. Concentrations of 1,4-dioxane are declining with time at sampling locations on-site and close to the Site. Concentrations of 1,4-dioxane are higher at sampling locations farther from the Site.

The RI confirmed that the extent of VOCs and SVOCs (other than 1,4-dioxane) in groundwater is limited to on and near the Site. VOCs and SVOCs (other than 1,4-dioxane) were detected only in monitoring wells immediately west of the Site.

During the RI groundwater investigation, VOCs and SVOCs (other than 1,4-dioxane) were detected primarily in the shallow zone. The VOCs detected at the highest concentrations include benzene, chloroethane, 1,2-dichloroethane (1,2-DCA), and 1,2-dichloroethene (1,2-DCE). Detections of VOCs have decreased over time and have not migrated a significant distance from the Site, suggesting that VOCs are naturally attenuating.

When the Site Group installed the waterline and connected residences and businesses on the Coulter Loop to the Town of Westville water supply, several private groundwater wells were left in service by the owners for non-potable purposes, such as washing cars. These non-potable water wells are identified as Private Well B (1 well), Private Well C (2 wells), Private Well D (1 well), and Private Well E (1 well). The facility owning Private Well D is connected to the water supply line and the private well is disconnected; however, the well has not been abandoned.

Groundwater samples were collected from Private Wells A, B, C, and E (the pump in Well D is not electrically connected) during the RI. 1,4-dioxane was not detected in Private Wells B,C or E. 1,4-dioxane was detected at very low concentrations in Private Well A; however, the well has since been abandoned.

b. Surface Water Results

Surface water samples collected for the RI did not detect 1,4-dioxane. RI surface water samples were collected when Crumpacker Ditch was dry upstream of the Town of Westville wastewater treatment plant (WWTP), indicating that at the time of sampling groundwater was not discharging to Crumpacker Ditch at this location. The absence of 1,4-dioxane in surface water at the time of sampling further suggests that 1,4-dioxane containing groundwater was not discharging to Crumpacker Ditch at the point where the plume first crosses Crumpacker Ditch.

c. Sediment Results

Sediment samples contained concentrations of total PCBs and benzo(a)pyrene that exceeded Region 9 industrial soil PRGs and site-specific reference concentrations. Total PCBs and benzo(a)pyrene exceeded screening levels in only one sample located near the intersection of Crumpacker Ditch and the Highway Drainage Ditch.

d. Soil Vapor Investigation and Results

Temporary soil vapor probes were advanced at 10 locations using direct-push drilling methods. A background soil vapor sample was located hydraulically up-gradient of the Site. Three soil vapor sampling locations were located onsite. The remaining six soil vapor sampling locations were located to the south and west of the Site. Three of the soil vapor sampling locations were located immediately west of the Site, and three soil vapor sampling locations were located in the residential area immediately south of the Site.

Soil vapor samples were collected on-site and near-site to evaluate the subsurface vapor-to-indoor air migration pathway. Concentrations of VOCs were higher in the on-site samples than in the near-site samples and were generally highest closest to the groundwater and/or LNAPL source, decreasing significantly at shallower depths. Of the VOCs detected in the soil vapor, 1,1,1-trichloroethane (1,1,1-TCA), 1,1-DCA, 1,2-DCE, vinyl chloride (VC), toluene and xylenes were present in the highest concentrations.

e. Soil Investigations and Results

Subsurface and surface soil samples were collected from 10 soil borings in areas that were previously not sampled where former buildings, tanks and other structures were demolished in 1998. Three soil borings were advanced at the former Cannery Building; three soil borings were advanced at the former Finished Oil Storage Area; one soil boring was advanced at the former West Process and Boiler Building Area; and three soil borings were advanced at the former Waste Oil Storage Area. In these areas, 22 subsurface samples were collected and 25 surface soil samples were collected.

On-site subsurface soils at the Site were found to have concentrations of several compounds at levels above Region 9 Preliminary Remediation Goals (PRGs) for industrial soil and site-specific background concentrations, where available.

- Lead was detected at a concentration level above the Region 9 PRG in three soil borings located in the Former Sludge Curing Area and the Northwest and Northeast Areas.
- Arsenic was detected in subsurface soils at concentrations ranging from 1.2 mg/kg to 4.1 mg/kg. Four subsurface soil samples exceeding the arsenic Region 9 PRG and site-specific background concentration are distributed across the Site.
- Total PCBs exceeded the Region 9 industrial PRG in one sample located near the Former Finished Oil Storage Tank Farm.
- Tetrachloroethene (PCE) and TCE were detected at concentrations greater than the Region 9 PRGs in soil samples primarily distributed along the western edge of the Site (Northwest and Southwest Areas).
- Polycyclic aromatic hydrocarbons (PAHs) were detected above Region 9 PRGs in only three sampling locations: one in the Southwest Area, one in the Northeast Area, and one in the Southeast Area.

On-site surface soils were found to have concentrations of several compounds present at levels above EPA Region 9 preliminary remediation goals (Region 9 PRGs) for industrial soil and site-specific background concentrations, where available.

- Lead was present at concentrations ranging from 12 milligrams per kilogram (mg/kg) to 13,000 mg/kg. The majority of the Region 9 PRG exceedances were concentrated in the Former Sludge Curing Area (southeast) and near the Former Boiler Building/West Process Building Areas. The extent of lead impact was delineated in the RI.
- Concentrations of arsenic exceeded Region 9 PRGs and site-specific background concentrations in one sample located between the Northeast and Northwest Areas.
- Manganese exceeded its Region 9 PRG at one sampling location near the Former Cannery Building.
- Total PCBs exceeded Region 9 PRGs in four samples located in the Former Sludge Curing Area (southeast).

- Benzo(a)pyrene was detected at concentrations ranging from 0.036 mg/kg to 1.4 mg/kg. Concentrations of benzo(a)pyrene exceeded the Region 9 PRG in four surface soil samples distributed across the former process areas in the southern portion of the Site.

Twenty-five surface and 49 subsurface on-site soil samples were analyzed for 1,4-dioxane. None of the samples identified the presence of 1,4-dioxane above reporting limits ranging from 0.3 mg/kg to 49.5 mg/kg.

Highway Drainage Ditch (located along north side of SR2) surface soils were found to have concentrations of several compounds present at levels above Region 9 PRGs for industrial soil and site-specific background concentrations, where available. Constituents were not detected above screening levels in subsurface soils from the Highway Drainage Ditch.

- Arsenic was detected at concentrations exceeding the Region 9 industrial soil PRG in two surface soil samples collected from the Drainage Ditch.
- Lead was present at concentrations ranging from 17 mg/kg to 1,400 mg/kg in Drainage Ditch surface soils. Lead concentrations exceeded the Region 9 PRG at surface soil sampling locations distributed along the length of the Drainage Ditch.
- Total PCBs were detected in the majority of Drainage Ditch surface soil samples and concentrations exceeded the Region 9 industrial soil PRG in three of the surface soil samples collected and analyzed for PCBs.
- All detected concentrations of SVOCs were below the Region 9 industrial soil PRGs in surface and subsurface soils with the exception of extractable petroleum hydrocarbons (EPH) and volatile petroleum hydrocarbons (VPH). EPH/VPH were detected in the majority of Drainage Ditch surface and subsurface soil samples. In total, concentrations exceeded at least one Massachusetts Department of Environmental Protection (MADEP) soil screening level in 2 of 7 surface soil samples and 4 of 7 subsurface samples.

f. LNAPL Investigation and Results

LNAPL had been observed in monitoring wells MW-01S, MW-06S and B-2 during prior investigation activities at the Site. Further investigation of the southwest corner of the property, the former Filter Press Building and former Cannery Building areas was conducted as part of the RI to determine the extent, properties and potential recoverability of the LNAPL. The LNAPL investigation was conducted in a phased approach. During the initial phase, 17 borings were advanced in areas of suspected LNAPL. Twelve borings were completed in a ring around the southwest corner of the Site, two borings were completed near the Filter Press Building foundation and three borings were completed near the former Cannery Building foundation. If LNAPL was determined not to be present at a soil boring, a piezometer was installed in the borehole to confirm the absence of LNAPL. If LNAPL was present at a soil boring, an additional soil boring was advanced radially outward from the initial ring. Three additional piezometers were installed in the middle of the initial ring of soil borings where LNAPL was known to be present in order to determine product thickness. A total of thirty-four (34) soil

borings were advanced as part of the LNAPL investigation. Fifteen (15) of these borings were converted to piezometers.

The LNAPL extends south-southwest from the Site. Based on the data collected during the course of the RI and the monitoring network established, the LNAPL appears to be stable and immobile under the conditions encountered. The LNAPL is a diesel-range hydrocarbon known to contain benzene, toluene, ethylbenzene and xylenes (BTEX); trichloroethene (TCE); and PCBs. 1,4-dioxane was not detected in groundwater samples collected from monitoring wells and piezometers immediately downgradient of the off-site LNAPL plume. TCE and related chemicals were detected in groundwater collected from monitoring wells and piezometers beneath and periodically downgradient of the LNAPL plume. The data indicated that the distribution of the LNAPL is independent of the direction of the groundwater flow. There is no data indicating that the LNAPL currently flows in the direction of the Crumpacker ditch.

F. CURRENT AND POTENTIAL FUTURE LAND AND WATER USES

For purposes of the human health and ecological risk assessments for this Site, current and reasonably anticipated future land uses and current and potential beneficial groundwater uses were identified.

The Town of Westville recently established the Westville Redevelopment Commission (Commission) in an effort to encourage redevelopment of certain land located on the north side of the Town, including the Cam-Or Site. The Commission designated this area as the West-Tech Redevelopment Area (Area) and is reviewing several plans for commercial redevelopment of the Area. The Commission and the Town are currently in the process of establishing a Tax Increment Financing plan to fund the initial part of the redevelopment.

The remedial alternatives developed in the FS were screened to account for redevelopment. That is, only future Site uses and alternatives that are compatible with the planned redevelopment are considered.

The Town of Westville water supply plant serves a total of 385 customers (Bart Frank pers. comm., 2005). The Town of Westville currently operates two water supply wells (City Well Nos. 3 and 4), which are located approximately 2,500 feet (ft) east (hydraulically upgradient) of the Site. Currently, municipal water is available and believed to be used by all residences and businesses for potable water within the groundwater plume area.

G. SUMMARY OF SITE RISKS

A baseline risk assessment was performed to estimate the probability and magnitude of potential adverse human health and environmental effects from exposure to contaminants associated with the Site assuming no remedial action was taken. It provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by the remedial action. The baseline health risk assessment followed a four step process: 1) hazard identification, which identified those hazardous substances which, given the specifics of the Site were of significant concern; 2) exposure assessment, which identified actual or potential

exposure pathways, characterized the potentially exposed populations, and determined the extent of possible exposure; 3) toxicity assessment, which considered the types and magnitude of adverse health effects associated with exposure to hazardous substances; and 4) risk characterization and uncertainty analysis, which integrated the three earlier steps to summarize the potential and actual risks posed by hazardous substances at the Site, including carcinogenic and non-carcinogenic risks and a discussion of the uncertainty in the risk estimates. A summary of those aspects of the human health risk assessment which support the need for remedial action is discussed below followed by a summary of the environmental risk assessment.

1. Human Health Risk Assessment

A baseline human health risk assessment (HHRA) was completed for the Cam-Or Site to evaluate the likelihood and magnitude of potential human health effects associated with historical releases. The HHRA evaluated the potential for contaminants in soils on the property and within the drainage ditch on the north side of SR2; surface water and sediment in Forbes Ditch system; groundwater close to the property (Nearer Portion of Plume) and further downgradient of the property (Further Portion of Plume); and indoor and outdoor air impacted via subsurface migration of volatile compounds at on-property and near-property locations to impact human receptor populations.

a. Identification of Chemicals of Concern

Fifty-three of the more than 100 chemicals detected at the site were selected for evaluation in the human health risk assessment as chemicals of potential concern. The chemicals of potential concern were selected to represent potential Site-related hazards based on toxicity, concentration, frequency of detection, and mobility and persistence in the environment and can be found in Tables 3-1 through 3-12 of the risk assessment. From this, a subset of the chemicals were identified in the FS as presenting a significant current or future risk and are referred to as the chemicals of concern (COC) in this ROD and summarized in Appendix C, Tables G-1 through G-3 for on-property soil, groundwater close to the property (Nearer Portion of Plume) and further downgradient from the property (Further Portion of Plume). These tables contain the exposure point concentrations used to evaluate the reasonable maximum exposure (RME) scenario in the baseline risk assessment for the chemicals of concern. Estimates of average or central tendency exposure concentrations for the chemicals of concern and all chemicals of potential concern can also be found in Tables 4-2 through 4-13 of the baseline human health risk assessment.

b. Exposure Assessment

Current and potential future Site-specific pathways of exposure to chemicals of concern were determined. The extent, frequency, and duration of current or future potential exposures were estimated for each pathway. From these exposure parameters, a daily intake level for each Site-related chemical was estimated.

The property is currently vacant. All lagoons have been capped and all buildings have been demolished. A 6-foot fence surrounds the property. A drainage ditch borders the southern edge

of the property following SR2, a highway with heavy traffic. Beyond SR2 to the south is a mixed residential/commercial area. A commercial area is present immediately east of the property and an abandoned railroad right-of-way borders the property to the west. County Road 400 South forms the northern property boundary with agricultural fields located further to the west and north. The nearest surface water body is Crumpacker Arm of the Forbes Ditch system, located west and southwest of the property. This ditch system discharges to Crooked Creek approximately four miles downstream of the property. Groundwater flow is generally west-southwest from the property toward Crumpacker Arm of the Forbes Ditch system. Town water supply wells are located 2500 feet east (hydraulically upgradient) of the Site. However, supply wells for the correctional facility are located approximately 2 miles south-southwest (hydraulically downgradient) of the property. In addition, several private wells are located less than 1 mile southwest of the property in the vicinity of Coulter Road. The area is currently serviced by municipal water. However, there are no restrictions on the use of existing private wells for potable or non-potable uses or on the installation of additional private wells.

The following is a brief summary of the exposure pathways that were found to present a risk at the Site. A more thorough description of all exposure pathways evaluated in the risk assessment including estimates for an average exposure scenario, can be found in Section 4 and on Tables 4-14 through 4-25 of the baseline human health risk assessment.

No current exposure pathways were found to present a significant risk at the Site.

The following future exposure pathways were found to present a risk at the Site:

- Resident (adult and young child) and adult site worker exposure to lead in on-property soil;¹ and
- Resident (adult and young child) exposure to untreated groundwater (by ingestion, dermal contact, and inhalation) from Nearer Portion of Plume and Further Portion of Plume monitoring wells.²

c. Toxicity Assessment

EPA assessed the potential for cancer risks and non-cancer health effects.

The potential for carcinogenic effects is evaluated with chemical-specific cancer slope factors (CSFs) and inhalation unit risk values. A weight of evidence classification is available for each chemical. CSFs have been developed by EPA from epidemiological or animal studies to reflect a conservative "upper bound" of the risk posed by potentially carcinogenic compounds. That is,

¹ Future residential soil exposures to lead were evaluated by comparison of soil lead levels to a residential screening level of 400 mg/kg, developed by EPA using the Integrated Exposure Uptake Biokinetic Model specifically for evaluating lead exposures in young children. For adult site workers, lead in soil was evaluated by comparison of soil lead levels to a commercial/industrial screening level of 800 mg/kg, protective of all subpopulations including pregnant workers.

² For future residential exposures to groundwater, drinking water ingestion rates of 2.3 L/day and 1.5 L/day for the adult and young child, respectively, were assumed. An exposure frequency of 350 days/year was used for a combined exposure duration of 30 years. Dermal contact was assumed with 18,000 cm² of surface area for the adult, and 6,600 cm² for the child. Showers/baths were assumed to occur 350 days/year for 0.56 hr/day for the adult and 0.75 hr/day for the child. Airborne concentrations of volatile compounds released during showering/bathing were estimated using a volatilization constant of 0.5 L/m³ and inhalation rates of 13.2 m³/day for the adult and 7.6 m³/day for the child.

the true risk calculated using the CSF is unlikely to be greater than the risk predicted. A summary of the cancer toxicity data relevant to the chemicals of concern is presented in Appendix C, Table G-4.

The potential for non-cancer health effects is quantified by reference dose (RfD) for oral exposure and reference concentrations (RfCs) for inhalation exposures. RfDs and RfCs have been developed by EPA and they represent an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure that is likely to be without an appreciable risk of deleterious health effects during a lifetime. RfDs and RfCs are derived from epidemiological or animal studies and incorporate uncertainty factors to help ensure that adverse health effects will not occur. A summary of the non-carcinogenic toxicity data relevant to the chemicals of concern at the Site is presented in Appendix C, Table G-5.

d. Risk Characterization

Risk characterization combines estimates of exposure with toxicity data to estimate potential health effects that might occur if no actions were taken.

Excess lifetime cancer risks were determined for each exposure pathway by multiplying the daily intake levels (see *Section 1.b. above, Exposure Assessment*) by the CSF or by comparison to the unit risk value. These toxicity values are conservative upper bound estimates, approximating a 95% upper confidence limit, on the increased cancer risk from a lifetime exposure to a chemical. Therefore, the true risks are unlikely to be greater than the risks predicted. Cancer risk estimates are expressed as a probability, e.g., one in a million. Scientific notation is used to express probability. One in a million risk (1 in 1,000,000) is indicated by 1×10^{-6} or 1E-06. In this example, an individual is not likely to have greater than a one in a million chance of developing cancer over a lifetime as a result of exposure to the concentrations of chemicals at a site. All risks estimated represent an "excess lifetime cancer risk" in addition to the background cancer risk experienced by all individuals over a lifetime. The chance of an individual developing cancer from all other (non-site related) causes has been estimated to be as high as one in three. EPA's generally acceptable risk range for site related exposure is 10^{-4} to 10^{-6} . Current EPA practice considers carcinogenic risks to be additive when assessing exposure to a mixture of hazardous substances.

In assessing the potential for adverse effects other than cancer, a hazard quotient (HQ) is calculated by dividing the daily intake by the RfD or RfC. A $HQ \leq 1$ indicates that an exposed individual's dose of a single contaminant is less than the RfD or RfC and that a toxic effect is unlikely. The Hazard Index (HI) is generated by adding the HQs for all chemical(s) of concern that affect the same target organ (e.g., liver) within or across those media to which the same individual may reasonably be exposed. A $HI \leq 1$ indicates that toxic non-carcinogenic effects are unlikely.

The following is a summary of the media and exposure pathways that were found to present a risk exceeding EPA's cancer risk range and non-cancer threshold at the Site. Only those exposure pathways deemed relevant to Site conditions are presented in this ROD. Readers are referred to Section 6 and tables in Attachments B and C of the baseline human health risk

assessment for a more comprehensive risk summary of all exposure pathways evaluated for all chemicals of potential concern and for estimates of the central tendency risk.

Future On-Property Resident and Site Worker

Lead in soil was evaluated in the baseline human health risk assessment by comparing on-property soil concentrations to residential and commercial/industrial screening levels, developed based on EPA models. The Integrated Exposure Uptake Biokinetic Model was used to develop the residential screening level of 400 mg/kg, protective of young child soil lead exposures. The Adult Lead Model was used to develop the commercial/industrial screening level of 800 mg/kg, protective of all adult subpopulations including pregnant workers. Because lead concentrations in on-property soils exceed both the residential and commercial/industrial screening levels, lead in soil poses a risk in excess of EPA risk management criteria for future residents and future site workers at the property.

Future Residential Groundwater Use

Appendix C, Tables G-6 through G-9 depict the carcinogenic and non-carcinogenic risk summary for the chemicals of concern in future residential wells evaluated to reflect potential future potable water exposure corresponding to the RME scenario, under the assumption that groundwater near the property (Nearer Portion of Plume) and further downgradient of the property (Further Portion of Plume) migrates to potable wells in the future. For the future resident using untreated groundwater as household water, carcinogenic and non-carcinogenic risks exceeded the EPA acceptable risk range of 10^{-4} to 10^{-6} and/or a target organ HI of 1 for groundwater. The exceedances were due primarily to the presence of 1,4-dioxane, bis(2-chloroethyl)ether, bis(2-ethylhexyl)phthalate, benzene, cis-1,2-dichloroethene, dichloromethane, tetrahydrofuran, trichloroethene, vinyl chloride, 4,4'-DDT, alpha-BHC, beta-BHC, chlordanes, dieldrin, antimony, arsenic, iron, and thallium in the Nearer Portion of Plume groundwater, and 1,4-dioxane, bis(2-ethylhexyl)phthalate, arsenic, iron, and thallium in Further Portion of Plume groundwater.

e. Uncertainties

Trichloroethene and 1,4-dioxane are being re-evaluated for carcinogenic potency by EPA. For trichloroethene, the high-end of the range of oral slope factors and unit risk values was used for risk estimation. This approach may have resulted in an overestimate of the risk associated with trichloroethene in groundwater. The re-evaluation of 1,4-dioxane potency may have resulted in either an overestimate or underestimate of the risk associated with 1,4-dioxane in groundwater, depending on whether the re-evaluation results in estimates of carcinogenic potency that are less than or greater than the current EPA value for this compound. These uncertainties will be periodically reviewed to address changes in and the availability of toxicity values for these compounds.

For the groundwater dermal contact pathway, risk and hazard associated with dermal absorption of chlorinated organic compounds may be underestimated. Permeability constants for the chlorinated organic compounds such as cis-1,2-dichloroethene, trichloroethene, and vinyl

chloride tend to be underestimated by the correlation modeling. This uncertainty may result in an underestimation of risk. This uncertainty will be periodically reviewed to address changes in the dermal absorption values for these compounds.

Airborne concentrations of volatile compounds for the showering/bathing scenario were estimated using EPA exposure equations. The use of these equations to estimate airborne concentrations of volatile compounds during showering/bathing likely results in an over-estimate of risk and hazard since conservative assumptions were employed in the exposure equations.

2. Ecological Risk Assessment

A baseline ecological risk assessment (BERA) was completed for the Cam-Or Site including off-site and on-site study areas. The study area for the BERA included the on-site terrestrial habitat within the 15 acre Cam-Or site, and off-site aquatic habitat. The off-site study area included locations that could have potentially been affected by the site due to input from the highway drainage ditch that discharges to off-site aquatic habitat. The BERA evaluated the potential for contaminants to impact ecological receptor populations exposed to upland soil on-site and surface water and sediment in the off-site aquatic habitat.

a. Identification of Contaminants of Potential Ecological Concerns

Chemicals of Potential Ecological Concern (COPEC) identified in the Screening Ecological Risk Assessment (SERA) using effects-based screening involving the comparison of maximum contaminant concentrations to ecological benchmarks for each medium and exposure area, and included all COPEC that would bioaccumulate. The refinement of COPEC in the BERA identified COPEC based on exceedance of effects-based screening values, resulting in an HQ greater than 1.0 and site-specific and receptor-specific toxicity refinement as presented in Attachment C to the BERA. Data used to identify COPEC are summarized in Table G-10 (surface water), Table G-11 (sediment), and Table G-12 (soil).

No COPEC were identified in surface water. Six metals (cadmium, copper, lead, mercury silver, and zinc) and polycyclic aromatic hydrocarbons (PAHs) were identified as COPEC for benthic invertebrates' exposure to sediments (Table G-11). Zinc was identified as a COPEC in sediment for potential exposure to aquatic-feeding wildlife. In upland soils, six metals (arsenic, cadmium, copper, lead, selenium, and zinc) were identified as COPEC for potential risk to herbivorous and insectivorous wildlife (Table G-12). Additionally, polychlorinated biphenyls (PCBs) and the pesticides, DDT and endrin, were identified as COPEC in the BERA refinement for insectivorous wildlife only.

b. Exposure Assessment

The majority of the Site consists of 15 acres of upland habitat, dominated by poor quality "old field" habitat, with most of the upland covered with tall grasses and other herbaceous species, including invasive, "weed" species. Small deciduous trees are located along the fence line. Remnants of facility buildings (e.g. concrete pads, parking areas), can be found throughout the central and southern portions of the Site. The Cam-Or site is surrounded by agricultural fields to

the north and west and residential areas with commercial establishments to the east and south. An abandoned railroad easement is at the western boundary of the site, with County Road 400 South and Route 2 immediately bordering the Site to the north and south, respectively.

There are no aquatic resources on the Cam-Or Site. Surface drainage is generally to the south and west. The low-lying southern portion of the Site supports some wetland vegetation. A small drainage ditch runs along the southern edge of the Site, between the fence line and Route 2. The aquatic habitat evaluated consists mainly of man-made drainage features through agricultural land downstream of the Site, including Crumpacker Ditch, Forbes Ditch, and Crooked Creek. No complete exposure pathways were identified for surface water for evaluation in the BERA. Sediment samples were evaluated in the BERA exposure assessment.

Indiana Natural Heritage Data Center was contacted to obtain information on state listed protected species on site or in the vicinity of the Cam-Or site. No Indiana listed threatened or endangered species or significant habitats were identified. The U.S. Fish and Wildlife Service (USFWS) was contacted regarding the presence of federally listed, proposed, threatened or endangered species or critical habitat in the vicinity of the Site. The USFWS responded that the Cam-Or site is within the range of both the federally endangered Indiana bat and the federally threatened bald eagle. However, based on evaluation of the habitat present on site, the potential for exposure of either species to site-related contaminants is unlikely and the risk to endangered species is negligible.

Based on the conceptual site model, complete exposure pathways were identified, sampled, tested, and evaluated in each habitat area separately. Consistent with the site conceptual model, exposure pathways, assessment endpoints, and measurement endpoints are summarized in Table G-13.

Potential receptors in aquatic habitat include aquatic invertebrate and fish populations exposed to COPEC in surface water or sediment. Exposure of wildlife receptors was evaluated in the BERA by calculating the daily intake of COPEC via multiple pathways including diet and incidental sediment and soil ingestion. Based on the evaluation in the BERA, COPEC with complete exposure pathways were identified for terrestrial herbivores (northern bobwhite quail and meadow vole), insectivores (American robin and short-tailed shrew), and piscivorous birds (belted kingfisher). Based on the BERA evaluation of wildlife exposures, no COPEC were identified for fish or terrestrial carnivorous wildlife.

c. Ecological Effects

The measurement and assessment endpoints identified in Table G-13 were evaluated in the BERA to evaluate the potential adverse ecological effects resulting from the exposure to COPEC in on-site soil or sediments. Potential effects on benthic invertebrate communities as well as avian and mammalian wildlife were evaluated.

The sediment chemistry evaluation assessed the potential for effects on invertebrates based on the comparison to effects-based benchmarks. The ecological effects assessment also evaluated

the bioavailability of the COPEC using AVS-SEM measurements, and calculating the potential sediment toxicity due to mixtures of PAHs using site-specific organic carbon concentrations.

Concentrations of COPEC were measured in plant and earthworm samples collected on site to characterize the exposure point concentrations for food items of the wildlife species of interest. These concentrations of COPEC in prey were combined with estimates of daily intake of food, dietary preferences, and soil ingestion rates to calculate daily intake of COPEC in the diet. These intake rates were compared to literature-based toxicity reference values (TRVs), to produce a Hazard Quotient (HQ) and evaluate the potential toxicity to exposed wildlife. Based on these calculations, HQs less than or equal to 1 indicate that toxicity is unlikely.

d. Ecological Risk Characterization

The evaluation of the benthic invertebrate community indicated that the structure and function of the invertebrate community is not at risk due to COPEC potentially related to the site. Organic enrichment associated with other sources, and limited physical habitat quality, are more important factors affecting the benthic community in the study area. In addition, the evaluation of metals data from the Cam-Or study area indicates the organic-carbon normalized concentration of available metals were lower than values that would indicate bioavailability and indicates a low probability of metal toxicity to benthic invertebrates. The evaluation of sediment PAH data indicated toxicity would not be expected from exposure to sediment.

Potential risks to wildlife were assessed by calculating HQs for each of the selected ecological receptors for each COPEC. Based on the dietary models, there were no risks to herbivorous birds or mammals from exposures to COPEC in on-site soil and biota (HQs <1). Potential risk (HQ > 1), was calculated for insectivorous birds and mammals due to lead in on-site soils. Insectivorous birds (robin) also have a low probability of risk of impaired reproduction due to zinc in on-site soil (Table G-14). Selenium concentrations in earthworms resulted in predicting a potential risk of impaired reproduction in insectivorous birds and mammals. However, due to uncertainties in the measured concentrations in soils compared to earthworms, and the low magnitude of the risk, the risks from exposure to selenium and zinc in insectivores were not determined to be actionable, and no protective levels were developed in the FS. Dietary modeling also indicated potential risk of impaired reproduction in insectivorous birds from the exposure to DDT and endrin in earthworms (Table G-14). Through evaluation of the distribution of the pesticides, the risks associated with them were determined to not be related to site activities, and site-specific clean-up levels were not established.

Low potential risk (HQ = 2) was calculated for aquatic feeding birds (belted kingfisher) from exposure to zinc. Limited available habitat for piscivorous bird populations reduces the risk of exposure, and results in low risk to birds from exposure to zinc in aquatic habitats.

e. Uncertainties

Ecological risk assessments are subject to a variety of uncertainties as the result of both the assumptions used to describe the site conditions, habitats and estimated receptor exposures, plus variability in receptor exposure and toxicological response. As a result, the assessment must

estimate or infer the information concerning individuals to reach a conclusion about risk at the population level.

The BERA provided an evaluation of potential sources of uncertainty in the calculation of risk. These uncertainties include a lack of medium- and species-specific benchmarks and toxicity data for some of the COPEC. Extrapolation of toxicity data among species and limited data on the bioavailability of COPEC in each medium are factors that contribute to significant uncertainty in the use of benchmarks.

3. Risk Assessment Conclusions

The risk to human health due to the 1,4-dioxane will drive the clean up of groundwater; and the ecological risk due to lead will drive the clean up of surface soils (0-1ft) while the human health risk to lead will drive the clean up of deeper soils at the Cam-Or Site. The response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of pollutants or contaminants from this site into the environment.

H. REMEDIAL ACTION OBJECTIVES and ARARS

1. Remedial Action Objectives (RAOs)

RAOs are general descriptions of the goals established for protecting human health and the environment, to be accomplished through remedial action. RAOs identify the medium of concern, COPC, allowable risk levels, potential exposure routes, and potential receptors. The identification of RAOs for the Site was based on the requirements of CERCLA (as amended by SARA), the NCP, and the Statement of Work (SOW) for the RI/FS. The SOW for the RI/FS provided preliminary RAOs for the Site. These preliminary RAOs were refined after completion of the RI, HHRA, and BERA to reflect the specific conditions at the Site. In accordance with the risk-based approach of CERCLA, the refined RAOs do not allow unacceptable risk levels for potential exposure scenarios.

The RI identified three media which require remedial action: groundwater, on-site soil and LNAPL. Groundwater was identified because potential cumulative non-cancer hazards exceed 1 and potential cumulative cancer risks exceed 1×10^{-4} . (See Tables G-6 through G-9) Although municipal drinking water is available for use by all residents within the plume area, there is the potential for exposure since an individual could install a well for potable use in the future. On-site soil was identified for remedial action because the 95% UCL lead concentration exceeded EPA's residential and commercial standard. Although potential risks associated with LNAPL were not quantified, the remedial action for LNAPL was selected to address any LNAPL from the Site to the extent practicable to prevent potential groundwater contamination and further migration in accordance with Superfund practice and State of Indiana guidance. The RAOs for each medium are listed below.

Site-Specific RAO for Groundwater

Prevent human exposure to groundwater COPC in exceedance of Maximum Contaminant Levels (MCLs) for drinking water or associated with a HI>1 and/or Incremental Lifetime Cancer Risk (ILCR) > 10⁻⁶ to 10⁻⁴ for future residential use as tap water.

Site-Specific RAO for On-Site Soil

Prevent human exposure to on-site soil with lead concentrations greater than U.S. EPA's residential standard (i.e., 400 mg/kg) or if an institutional control restricts residential development, prevent human exposure to on-site soil with lead concentrations greater than EPA's commercial standard (i.e., 800 mg/kg).

Prevent ecological receptor exposures to on-site soil with lead concentrations creating unacceptable levels of risk.

Site-Specific RAO for LNAPL

Address the recoverable portion of the free-phase LNAPL to the extent practicable, in accordance with Superfund practice and State of Indiana guidance.

2. Applicable or Relevant and Appropriate Requirements (ARARs)

Applicable Requirements

These requirements are, "...those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, constituent, remedial action, location or other circumstances at a CERCLA site" (EPA 1988 [RI/FS Guidance]).

Therefore, in order for a requirement to be applicable, the requirement must satisfy all of the legal prerequisites for application of the requirement standing on its own. In other words, a requirement will be applicable if and only if it would legally apply to the remedial action not withstanding the fact that the cleanup is proceeding under CERCLA.

Relevant and Appropriate Requirements

These requirements are those standards that "...address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site" (40 CFR 300). The term "relevant and appropriate" therefore requires that the requirement: (1) be a promulgated law or regulation; and (2) be particularly well suited to address the cleanup issue at the Site. In addition, the nature of the constituents prevalent at the Site, the characteristics of the Site, the circumstances of the release, the ability of the action to address the release, the purpose of the requirement versus the goals of remediation, the similarity of the action regulated by the requirement to the action in the remediation, and waivers from the requirement and their applicability to Site conditions are considered in the analysis. Most importantly, however, a determination of the exposure level regulated by the requirement versus the exposure level at the CERCLA site must be compared.

To-be-Considered Criteria

These criteria include non-promulgated advisories or guidance documents issued by the Federal or state government that are not legally binding and do not have the status of potential ARARs.

In determining the necessary level of cleanup for protection of human health or the environment, TBC criteria may be used where no specific ARARs exist for a chemical or situation, or where such ARARs are not sufficient to afford protection. The identification of site-specific ARARs is based on specific constituents at a site, the various response actions proposed, and the general site characteristics. As such, ARARs are classified into three general categories:

Chemical-specific ARARs

Chemical-specific requirements set health- or risk-based concentration limits or ranges for specific hazardous substances in various environmental media. These ARARs provide Site PRGs or a basis for calculating PRGs for COPC. Chemical-specific ARARs are also used to indicate an acceptable level of discharge, to determine treatment and disposal requirements for a particular remedial activity, and to assess the effectiveness of a remedial alternative

Action-specific ARARs

Action-specific requirements set controls or restrictions on the design, implementation, and performance of remedial actions. These ARARs specify performance levels, actions, or technologies and specific levels for discharge of residual chemicals. They also provide a basis for assessing the feasibility and effectiveness.

Location-specific ARARs

Location-specific requirements set restrictions on the types of remedial activities that can be performed based on specific Site characteristics or location. Location-specific ARARs provide a basis for assessing restrictions during the formulation and evaluation of site-specific remedies. Remedial alternatives may be restricted or precluded based on citing laws for hazardous waste facilities and based on proximity to wetlands, floodplains, or man-made features such as landfill, disposal area, and/or local historic buildings.

Potentially applicable federal, state and local ARARs and TBCs are summarized in Appendix B.

I. Description of Alternatives

Following development of the RAOs, a screening and evaluation of potential remedial alternatives was conducted in accordance with CERCLA and the NCP in the FS Report.

Technologies that are clearly not applicable based on Cam-Or Site conditions or are inappropriate for achieving the RAOs were screened out at this level and not retained for further technology screening. The screening for groundwater focuses on remediation of 1,4-dioxane because it is the most prevalent and extensive COPC, and remediation of 1,4-dioxane will result in remediation of other COPC. The technologies retained were then screened further using the following criteria: effectiveness, implementability, and relative cost. Technologies or process options that are clearly not effective or implementable were screened out at this level and not retained for further technology screening.

Each of the process options that were retained have been assembled into remedial alternatives for each media of concern at the Site (soil, groundwater and LNAPL). The No Action alternative is retained throughout the FS as required by the NCP as a baseline comparison for other remedial

alternatives. With the exception of the No Action alternative, the assembled remedial alternatives are protective of human health and the environment.

1. Remedy Components

Each of the alternatives is briefly described below. More detailed information about each of the alternatives can be found in the FS report, which is included in the Administrative Record for the Site.

For soil, the only risk is direct exposure to lead impacted soil. The retained process options were assembled into remedial alternatives that eliminate exposure to the lead impacted soil and, therefore, are protective of human health and the environment. The remedial alternatives (except no action) include institutional controls (easements, building permit restrictions, and land use zoning restrictions) for future commercial uses (consistent with the redevelopment plans for the area) and a Soil Management Plan (SMP) to control excavation activities during redevelopment.

S1: No Action

S2: Vegetative Soil Cover

S3: Excavation and On-Site Consolidation

S4: Excavation and Off-Site Disposal

For groundwater, the primary risk is through ingestion of impacted groundwater.

Although potable water provided by the Town of Westville is available for use by all residents and businesses above the plume, there are no restrictions preventing the future installation and use of a groundwater well within the plume. The remedial alternatives (except No Action) all rely on institutional controls (well drilling prohibitions) to protect human health by preventing the use of impacted groundwater until RAOs are achieved.

G1: No Action

G2: Long-term Monitoring and Focused In-situ Treatment

G3: Mass Removal (Intermediate Duration) with Ex-Situ Treatment Followed by Long-term Monitoring

G4: Mass Removal (Longer Duration) with Ex-Situ Treatment Followed by Long-term Monitoring

Remedial action was selected for LNAPL to address any LNAPL from the Site to the extent practicable to prevent potential groundwater contamination and further migration in accordance with Superfund practice and State of Indiana guidance. In addition to the No Action alternative, two process options were retained to remove the recoverable portion of LNAPL. Additionally, institutional controls (easements, building permit restrictions, well drilling prohibitions) will prevent potential contact with LNAPL.

L1: No Action

L2: Dual Phase Recovery

L3: Total Fluids Recovery

2. Common Elements and Distinguishing Features of Each Alternative

Soil

Alternatives S2, S3, and S4 all employ the use of a vegetative cap, consisting of two feet of clean borrow material topped with 6 inches of topsoil to be seeded, to reduce risk of direct contact with lead-impacted soils. Additionally, S2, S3, and S4 include the use of institutional controls and a Soil Management Plan.

Alternative S2 differs from S3 and S4 in that it does not provide as much flexibility for redevelopment because S2 neither consolidates the contaminated soil into one area on-site, nor removes the impacted soil from the site.

Although alternative S4 would need to transport excavated soils off-site to a treatment Storage and Disposal Facility (TSDF), and S2 and S3 would not require soil to be transported off-site, all three alternatives would take approximately the same amount of time.

In alternative S3 and S4, no O&M would be required for the excavated area where lead impacted subsurface soils are not present. Alternatives S2 however would require O&M such as periodic inspections, grass cutting, and maintenance of the vegetative cover as needed. S3 would require O&M for the area on-site where soil is consolidated.

Groundwater

Alternatives G2, G3 and G4 employ institutional controls to prohibit the use of groundwater. G3 and G4 combine contaminant mass removal groundwater extraction with the institutional controls.

Alternatives G3 and G4 have many common elements such as the groundwater extraction well locations, the pumping rates as well as the ex-situ treatment, discharge processes, and potential technologies to enhance natural attenuation. G2, G3 and G4 alternatives would include periodic groundwater monitoring until COPC achieve the groundwater RAO.

The primary difference between G3 and G4 is the level to which the main contaminant, 1,4-dioxane is reduced in the aquifer. G3 will reduce the 1,4-dioxane mass to a concentration below 1000ppb and G4 will reduce the contaminant mass to below 500ppb in the aquifer.

Alternative G2 employs the use of in-situ treatment to enhance the natural attenuation of 1,4-dioxane while G3 and G4 would use ex-situ treatment as well as extraction.

A Fate and Transport Model was developed to evaluate the chemical fate and transport of 1,4-dioxane in groundwater. Fate and transport modeling focused on 1,4-dioxane rather than all COPC because the extent of 1,4-dioxane in groundwater is greater than that of any other COPC. The Fate and Transport Model was used to support the detailed analysis of remedial alternatives for groundwater in the FS. For alternatives G3 and G4 which utilize groundwater recovery wells, the Fate and Transport Model is used to determine the period of pumping, followed by a period of natural attenuation, during which groundwater concentrations would decline below risk-based 1,4-dioxane evaluation levels within a reasonable period of time. The development of

risk-based 1,4-dioxane evaluation levels for groundwater at the Site cover the EPA target risk range of 1×10^{-4} (480 ppb) to 1×10^{-6} (4.8 ppb).

The 1×10^{-6} risk based clean up level for 1,4-dioxane in groundwater at the Cam-Or Site is 4.8ppb. However, EPA is currently in the process of reevaluating the Integrated Risk Information System (IRIS) toxicity data which could result in a change in the toxicity value for the contaminant, 1,4-dioxane. Groundwater flow models developed as part of the Feasibility Study calculated that Alternative G4 provides the shortest time frame to reach a 1,4-dioxane concentration of 48 ppb. As such Alternative G4 will provide the shortest time to attain the clean up goal presented in this ROD with continued natural attenuation.

3. Expected Outcomes of Each Alternative

Soil

The site is currently vacant; however it is zoned for commercial/industrial use. If Alternative S1 is implemented, no remedial action or maintenance of existing fence would result in no means to limit future exposure to lead concentrations in the on-site surface and subsurface soils.

Alternatives S2, S3, and S4 would implement institutional controls which would provide protection of human health by limiting future land use to commercial purposes, and restricting future invasive activities including but not limited to excavation in the northeast and northwest capped areas. Additionally, Alternatives S2, S3, and S4 would implement a soil management plan to prevent future risks by establishing procedures for handling soil during redevelopment. However, S3 and S4 would also permanently remove the potential for exposure to lead impacted surface soils in the southeast and south-central portions of the site through soil excavation, thus allowing for commercial/industrial redevelopment without restrictions in these areas.

Groundwater

Municipal water is readily available for use in any redevelopment scenario. Municipal water is available for potable purposes to all residents and businesses in the groundwater plume area, however there is no legal restriction that would prevent the future installation and use of a well. Therefore, legal restrictions on groundwater use must be implemented to prevent exposure to impacted groundwater. The restriction could be in the form of a restrictive covenant, local ordinance, or a permit process.

If alternative G1 is implemented no environmental monitoring would occur, thus no means by which to identify and control any future risks to impacted groundwater.

Groundwater alternatives G2, G3, and G4 implement the use of institutional controls to restrict the use of impacted groundwater both on-site and off-site, and use groundwater monitoring to determine the contaminant migration and concentration. In addition, alternatives G3 and G4 would permanently remove 1,4-dioxane mass as well as other COPC from the aquifer. However, alternative G4 would actively reduce the contaminant mass to a lower cleanup target; therefore it is more effective in the short-term.

LNAPL

Although potential risks associated with LNAPL were not quantified, and the Cam-Or site is currently vacant, removing the LNAPL to the extent practicable will reduce the potential future risks of direct contact by reducing the potential for further migration. Further, it will reduce a potential source of groundwater contamination.

The L1 alternative does not remove any free-phase liquids and does not reduce the potential future risks of exposure.

Alternatives L2 and L3 include the implementation of institutional controls such as a restrictive covenant or land use zoning restrictions to prevent excavation to the depth of LNAPL thereby preventing direct exposure. L2 and L3 would also implement a soil management plan which would provide a standardized method of handling future construction activities that may involve LNAPL impacted soils. Both L2 and L3 would extract, remove, and treat the recoverable portion of LNAPL to the extent practicable.

J. Comparative Analysis of Alternatives

This section of the ROD explains the EPA's rationale for selecting the preferred alternative. The EPA has developed nine criteria to evaluate remedial alternatives to ensure that important considerations are factored into remedy selection decisions. These criteria are derived from the statutory requirements of Section 121 of CERCLA, the NCP, as well as other technical and policy considerations that have proven to be important when selecting remedial alternatives. When selecting a remedy for a site, EPA conducts a detailed analysis of the remedial alternatives consisting of an assessment of the individual alternatives against each of the nine evaluation criteria and a comparative analysis focusing upon the relative performance of each alternative against those criteria.

The nine evaluation criteria are described in more detail below.

Threshold Criteria

Threshold criteria are standards that an alternative must meet to be eligible for selection as a remedial action. There is little flexibility in meeting the threshold criteria. If ARARs cannot be met, a waiver may be obtained where one or more site exceptions occur as defined in the NCP.

Overall Protection of Human Health and the Environment. Protectiveness is the main requirement that remedial actions must meet under CERCLA. It is an assessment of whether each alternative achieves and maintains adequate protection of human health and the environment. A remedy is protective if it eliminates, reduces, or controls all current and potential risks posed by the site through each exposure pathway. Adequate engineering controls, institutional controls, or some combination of the two can be implemented to control exposure and thereby ensure reliable protection of human health and the environment over time. In addition, implementation of a remedy cannot result in unacceptable short-term risks or cross-media impacts on human health and the environment.

Compliance with ARARs. Compliance with ARARs is a statutory requirement of remedy selection. This criterion is used to determine whether the selected alternative would meet the federal, state, and local ARARs identified in Appendix B. A discussion of the compliance of each alternative with chemical-, location-, and action-specific ARARs is included.

Primary Balancing Criteria

Balancing criteria are used to weigh tradeoffs between alternatives. These represent the standards upon which the detailed evaluation and comparative analysis of alternatives are based. A high rating on one generally can compensate for a low rating on another.

Long-Term Effectiveness and Permanence. Long-term reliability and effectiveness reflects CERCLA's emphasis on implementing remedies that will protect human health and the environment in the long term. Under this criterion, results of a remedial alternative are evaluated in terms of the risk remaining at the site after response objectives are met. The primary focus of the evaluation is the extent and effectiveness of the actions or controls that may be required to manage the risk posed by treatment residuals or untreated wastes.

Factors to be considered and addressed are magnitude of residual risk, adequacy of controls, and reliability of controls. Magnitude of residual risk is the assessment of the risk remaining from untreated waste or treatment residuals after remediation. Adequacy and reliability of controls is the evaluation of the controls that can be used to manage treatment residuals or untreated wastes that remain onsite.

Reduction of Toxicity, Mobility, or Volume through Treatment. This criterion addresses the statutory preference for remedies that employ treatment to significantly reduce the toxicity, mobility, or volume of the hazardous substances. That preference is satisfied when treatment is used to reduce the principal threats at a site by destroying toxic chemicals or reducing the total mass or total volume of affected media. This criterion is specific to evaluating only how the treatment reduces toxicity, mobility, and volume. Specifically, the analysis will examine the magnitude, significance and irreversibility of reductions. It does not address containment actions, such as capping.

Short-Term Effectiveness. This criterion examines the short-term impacts associated with implementing the alternative. Implementation may affect workers, the neighboring community, or the surrounding environment. Short-term effectiveness also includes potential threats to human health and environment associated with excavation, treatment and transportation of hazardous substances; potential cross-media impacts of the remedy; and the time required to achieve protection of human health and the environment.

Implementability. Implementability considerations include technical and administrative feasibility of the alternatives, as well as the availability of goods and services

(including treatment, storage or disposal capacity) associated with the alternative. Implementability considerations often affect the timing of remedial actions (for example, limitations on the season in which the remedy can be implemented, the number and complexity of material handling steps, and the need to secure technical services). Onsite activities must comply with the substantive parts of applicable permitting regulations.

Cost. The detailed cost analysis of alternatives includes capital and annual O&M costs incurred over a period of 30 years in accordance with EPA guidance *Guide to Developing and Documenting Cost Estimates During the Feasibility Study*. The focus during the detailed analysis is on the net present worth of these costs. Costs are used to select the most cost-effective alternative that will achieve the remedial action objectives.

The cost estimates are prepared to have accuracy in the range of –30 to +50 percent. The exact accuracy of each cost estimate depends upon the assumptions made and the availability of costing information. Present worth will be calculated assuming the current discount rate established by the Office of Management and Budget

Modifying Criteria

Modifying criteria are evaluated by addressing comments received after the regulatory agencies and the public have reviewed the FS and Proposed Plan. This evaluation is presented in the Responsiveness Summary, found in Part III of this document.

State Acceptance. This criterion evaluates the technical and administrative issues and concerns the state may have regarding the alternatives. This was addressed upon receiving comments on the RI/FS Report and the Proposed Plan.

Community Acceptance. This criterion evaluates the issues and concerns the public may have regarding the alternatives. This was addressed upon receiving comments documented during the public comment period.

The full text of the detailed analysis of the remedial alternatives against the nine evaluation criteria (including both the individual analysis and the comparative analysis) is contained in the FS Report for the Cam-Or Site, which is part of the Administrative Record for the Site. Because the two Modifying Criteria cannot be fully evaluated until the public comment is closed, they were not evaluated in the FS. The Responsiveness Summary of this ROD contains a more detailed discussion of public comments received.

A comparative analysis of the remedial alternatives presented for the Site is also included in this section of the ROD. The purpose of the comparative analysis is to identify the relative advantages and/or disadvantages of each remedial action alternative. The NCP is the basis for the detailed comparative analysis. The following tables summarize the comparative analysis.

Table J-1
 Comparative Analysis of Groundwater Remedial Alternatives
 Cam-Or Site, Westville, Indiana

Alternative Number	Remedial Alternative Name	Protective of Human Health and the Environment	Compliance with ARARs	Long-Term Effectiveness and Permanence	Reduction of Toxicity, Mobility, and Volume through Treatment	Short-Term Effectiveness	Implementability	Present Worth Cost
G1	No Action	Not protective	Not applicable	Low degree of long-term effectiveness	Not reduced	Not applicable	Not applicable	\$0
G2	Long-term Monitoring and Focused In-situ Treatment	Alternative is protective. Degree of protection is comparable to G3 and G4.	Complies with ARARs. Degree of compliance is comparable to G3 and G4.	Effective, comparable to G3 and G4.	Mobility, toxicity and volume are reduced through in-situ enhancement of natural attenuation processes. Reduction of toxicity and volume is comparable to G3 and G4. Reduction of mobility is comparable to G3 and G4 for the 480 ppb EL, but less than G4 for the 48 ppb EL. Enhancement of natural attenuation processes through aerobic biodegradation or chemical oxidation via catalyzed sodium persulfate could decrease mobility for G2.	Effective, comparable to G3 and G4 with respect to remedy implementation risks. Remedial time frames: 480 ppb EL = 45 to 50 years; 48 ppb EL = 80 to 85 years. Enhancement of natural attenuation processes through aerobic biodegradation or chemical oxidation via catalyzed sodium persulfate could decrease the remedial timeframe for G2.	Implementable, comparable to G3 and G4.	\$2,056,000
G3	Mass Removal (Intermediate Duration) with Ex-Situ Treatment Followed by Long-term Monitoring	Alternative is protective. Degree of protection is comparable to G2 and G4.	Complies with ARARs. Degree of compliance is comparable to G2 and G4.	Effective, comparable to G2 and G4.	Mobility, toxicity and volume are reduced through pumping and in-situ enhancement of natural attenuation processes. Reduction of toxicity and volume is comparable to G2 and G4. Reduction of mobility is comparable to G2 and G4 for the 480 ppb EL, but less than G4 for the 48 EL. Enhancement of natural attenuation processes through aerobic biodegradation or chemical oxidation via catalyzed sodium persulfate could decrease mobility for G3.	Effective, comparable to G2 and G4 with respect to remedy implementation risks. Remedial time frames: 480 ppb EL = 25 to 30 years; 48 ppb EL = 50 to 55 years. Enhancement of natural attenuation processes through aerobic biodegradation or chemical oxidation via catalyzed sodium persulfate could decrease the remedial timeframe for G3.	Implementable, comparable to G2 and G4.	\$7,031,000
G4	Mass Removal (Longer Duration) with Ex-Situ Treatment Followed by Long-term Monitoring	Alternative is protective. Degree of protection is comparable to G2 and G3.	Complies with ARARs. Degree of compliance is comparable to G2 and G3.	Effective, comparable to G2 and G3.	Mobility, toxicity and volume are reduced through pumping and in-situ enhancement of natural attenuation processes. Reduction of toxicity and volume is comparable to G3 and G4. Reduction of mobility is comparable to G2 and G3 for the 480 ppb EL, but superior to G2 and G3 for the 48 ppb EL.	Effective, comparable to G2 and G3 with respect to remedy implementation risks. Remedial time frames: 480 ppb EL = 10 to 15 years; 48 ppb EL = 40 to 45 years. Enhancement of natural attenuation processes through aerobic biodegradation or chemical oxidation via catalyzed sodium persulfate could decrease the remedial timeframe for G4.	Implementable, comparable to G2 and G3.	\$9,171,000

Notes:
 ARARs = Applicable or Relevant and Appropriate Requirements
 EL = Evaluation Level

Table J-2
 Comparative Analysis of Soil Remedial Alternatives
 Cam-Or Site, Westville, Indiana

Alternative Number	Remedial Alternative Name	Protective of Human Health and the Environment	Compliance with ARARs	Long-Term Effectiveness and Permanence	Reduction of Toxicity, Mobility, and Volume through Treatment	Short-Term Effectiveness	Implementability	Present Worth Cost
S1	No Action	Not protective	Not applicable	Low degree of long-term effectiveness	Not reduced	Not applicable	Not applicable	\$0
S2	Vegetative Soil Cover /Institutional Controls	Alternative is protective. Degree of protection is comparable to S3 and S4.	Complies with ARARs. Degree of compliance is comparable to S3 and S4.	Effective, but does not provide as much redevelopment flexibility as S3 or S4.	No significant reduction in toxicity, or volume; reduced mobility from erosion and dust migration. Lead is not a groundwater issue, so mobility is not a concern. Comparable to S3 and S4.	No significant short term risks. Can be implemented in a timely manner.	Readily implementable, comparable to S3 and S4	\$951,000
S3	Excavation and On-Site Consolidation /Institutional Controls	Alternative is protective. Degree of protection is comparable to S2 and S4.	Complies with ARARs. Degree of compliance is comparable to S2 and S4.	Effective, consolidates impacted surface soil into one area of the Site; thereby enhancing redevelopment options.	No significant reduction in toxicity, or volume; reduced mobility from erosion and dust migration. Lead is not a groundwater issue, so mobility is not a concern. Comparable to S2 and S4.	Some short term risks due to excavation and handling of lead impacted soil. Can be implemented in a timely manner.	Readily implementable, comparable to S2 and S4	\$1,025,000
S4	Excavation and Off-Site Disposal /Institutional Controls	Alternative is protective. Degree of protection is comparable to S2 and S3.	Complies with ARARs. Degree of compliance is comparable to S2 and S3.	Effective, removes impacted surface soil from the Site; thereby enhancing redevelopment options. However, offers little advantage over S3 since Northeast and Northwest Area caps will remain onsite	No significant reduction in toxicity, or volume; reduced mobility from erosion and dust migration. Lead is not a groundwater issue, so mobility is not a concern. Comparable to S2 and S3.	Increase in short term risks due to excavation, handling and transportation of lead impacted soil. Truck traffic associated risks due to off-site removal. Can be implemented in a timely manner.	Readily implementable, comparable to S2 and S3	\$3,367,000

Notes:
 ARARs = Applicable or Relevant and Appropriate Requirements
 EL = Evaluation Level

Table J-3
 Comparative Analysis of LNAPL Remedial Alternatives
 Cam-Or Site, Westville, Indiana

Alternative Number	Remedial Alternative Name	Protective of Human Health and the Environment	Compliance with ARARs	Long-Term Effectiveness and Permanence	Reduction of Toxicity, Mobility, and Volume through Treatment	Short-Term Effectiveness	Implementability	Present Worth Cost
L1	No Action	Protective because RI did not identify risks for this media.	Not applicable	Low degree of long-term effectiveness	Not reduced	Not applicable.	Not applicable	\$0
L2	Dual Phase Recovery	Protective because RI did not identify risks for this media.	Complies with ARARs. Degree of compliance is comparable to L3.	Effective, comparable to L3.	Toxicity, mobility and volume reduced through collection and treatment of LNAPL. Comparable to L3.	Effective, comparable to L3. Can be implemented in a timely manner.	Implementable, comparable to L3.	\$1,034,000
L3	Total Fluids Recovery	Protective because RI did not identify risks for this media.	Complies with ARARs. Degree of compliance is comparable to L2.	Effective, comparable to L2.	Toxicity, mobility and volume reduced through collection and treatment of LNAPL. Comparable to L2.	Effective, comparable to L2. Can be implemented in a timely manner.	Implementable, comparable to L2.	\$1,329,000

Notes:
 ARARs = Applicable or Relevant and Appropriate Requirements
 EL = Evaluation Level

1. Overall Protection of Human Health and the Environment

Soil Alternative S1, No Action, does not prevent exposure to impacted soil and is not protective of human health. Soil Alternatives S2, S3, and S4 provide comparable protection of human health and the environment. These alternatives protect human health by preventing exposure to the impacted soil through either the use of a vegetative soil cover (S2, S3, and S4) and/or through excavation and off-site disposal (S4) combined with an existing cap. Institutional controls such as a restrictive covenant and a soil management plan prevent potential future risks by restricting excavation activities and establishing procedures for handling the soil. Soil Remedial Alternatives S2, S3, and S4 are equally ranked with respect to this evaluation criterion.

Groundwater Alternative G1, No Action, does not prevent the use of impacted groundwater and is not protective of human health. Alternatives G2, G3, and G4 provide a similar level of protection from exposure to impacted groundwater. All three alternatives rely on groundwater use restrictions to protect human health until the RAO is achieved. Groundwater Alternatives G2, G3, and G4 are equally ranked with respect to this evaluation criterion.

The LNAPL Alternative L1, No Action, is less protective because it does not prevent potential direct contact with LNAPL. Both LNAPL Alternatives L2 and L3 prevent direct exposure to the LNAPL through the use of a restrictive covenant and a SMP that restrict excavations in the LNAPL impacted areas. Alternatives L2 and L3 are equally ranked with respect to this evaluation criterion.

2. Compliance with ARARs

The ARARs for the Cam-Or site are located in Appendix B. Soil Alternative S1, No Action, has no chemical-specific, location-specific, or action-specific ARARs. Alternatives S2, S3, and S4 have no chemical-specific or location-specific ARARs. Alternatives S2, S3, and S4 have action-specific ARARs which can be met without difficulty. Alternatives S2, S3, and S4 are equally ranked with respect to this evaluation criterion.

Groundwater Remedial Alternatives G2, G3, and G4 will meet ARARs and are equally ranked with respect to this evaluation criterion.

LNAPL Remedial Alternatives L2 and L3 will meet ARARs and are equally ranked with respect to this evaluation criterion.

3. Long-Term Effectiveness and Permanence

Soil Alternative S1 does not achieve long-term effectiveness and permanence. Alternatives S2, S3, and S4 all include a reliable and long-term effective means for protecting human health by preventing exposure to the impacted soil through institutional controls which can be in the form of a restrictive covenant and an SMP, and either the use of a vegetative soil cover alone (S2 and S3) or through excavation and off-site disposal (S4) combined with an existing cap. Alternative S2 – Vegetative Cover provides less redevelopment flexibility because a larger surface area of the Site contains soil with lead concentrations in excess of the commercial-use standard.

Alternatives S3 and S4 increase redevelopment flexibility by reducing the surface area of the Site containing lead impacted soil. Alternative S4 does not offer a clear advantage over Alternate S3 given that the cover over the impacted subsurface soils in the Southeast portion of the Site and the Northeast and Northwest Area caps will remain on-site. No Action, in contrast, will not prevent exposure to impacted soil and is, therefore, less effective. Soil Remedial Alternatives S3 and S4 are equally ranked with respect to this evaluation criterion. Alternative S2 is ranked lower due to limitation of redevelopment flexibility.

Groundwater remedial alternatives, G2, G3, and G4, provide reliable and permanent means to protect human health via institutional controls until groundwater clean up standards are achieved. In all alternatives COPC are permanently removed from the aquifer via mass extraction and attenuation (G3 and G4) or via attenuation (G1 and G2). Alternatives G2, G3, and G4 are equally ranked with respect to this evaluation criterion.

Both LNAPL Alternatives L2 and L3 are protective because they effectively remove the extractable portion of LNAPL from the subsurface. Alternative L1, No Action, is less protective because LNAPL is not removed. LNAPL Remedial Alternatives L2 and L3 are equally ranked with respect to this evaluation criterion.

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

None of the soil remedial alternatives reduce the toxicity or volume of lead impacted soils through treatment. However, Alternatives S2, S3, and S4 reduce erosion and wind blown migration of lead impacted soil, whereas, Alternative S1, No Action, would leave the soil in its current state. Lead has not been detected in groundwater samples collected from monitoring wells located along the western property boundary (B-4, MW-2, and MW-3) indicating that lead concentrations present in the soil are not impacting groundwater. Soil Remedial Alternatives S2, S3, and S4 are equally ranked with respect to this evaluation criterion.

Groundwater Remedial Alternatives G2, G3, and G4 are equally ranked with respect to reduction of toxicity and volume. With respect to reduction in mobility, Alternative G4 achieves the greatest reduction in mobility. Natural attenuation processes could be enhanced and/or accelerated through the use of in-ground cleanup technologies, such as chemical oxidation via catalyzed sodium persulfate or aerobic biodegradation, in areas of the highest concentrations for Alternatives G2, G3, and G4 and make the alternatives more comparable.

Both Remedial Alternatives L2 and L3 effectively remove the extractable portion of LNAPL from the subsurface. The No Action alternative L1 is less protective because LNAPL is not removed. LNAPL Remedial Alternatives L2 and L3 are equally ranked with respect to this evaluation criterion.

5. Short-Term Effectiveness

Soil Remedial Alternative S1 has no short-term effectiveness since no action will be taken. Alternatives S2, S3, and S4 all require the implementation of worker health and safety measures such as personal protective equipment and dust control during implementation. Alternative S2

has a higher degree of short-term effectiveness protecting human health and the environment because the lead impacted soil is left in place, which limits the risk associated with handling the soil. Both S3 and S4 require additional handling of the impacted soils, but S4 is rated lower because the impacted soil is removed from the Site and transported to a TSDF creating the potential for exposure to impacted soil via transportation causes. Soil Remedial Alternative S2 has the best short term effectiveness, with Alternative S3 being closely rated. Alternative S4 is the lowest ranked alternative due to risks associated with off-site shipment of lead impacted soil. The No Action alternative S1 is not rated because no remedial measures are used.

Groundwater Remedial Alternatives G2, G3, and G4 are equally ranked with respect to the remedy implementation aspects of this evaluation criterion. The risk based target clean up level for 1,4-dioxane in groundwater at the Cam-Or Site is 4.8ppb which is a target risk level of 1×10^{-6} . However, EPA is currently in the process of reevaluating the Integrated Risk Information System (IRIS) toxicity data which could result in a change in the toxicity value for the contaminant, 1,4-dioxane. Groundwater flow models developed as part of the Feasibility Study calculated that Alternative G4 provides the shortest time frame to reach a 1,4-dioxane concentration of 48 ppb. As such Alternative G4 will provide the shortest time to attain the clean up goals presented in Section L of this ROD with continued natural attenuation.

LNAPL Remedial Alternatives L2 and L3 both require the implementation of worker health and safety measures such as personal protective equipment for handling LNAPL and impacted groundwater. A similar level of health and safety precautions is required for both alternatives. The alternatives will remove the recoverable LNAPL in a comparable time frame. The No Action alternative is not rated because no remedial measures are used. LNAPL Remedial Alternatives L2 and L3 are equally ranked with respect to this evaluation criterion.

6. Implementability

All of the soil alternatives can be implemented in a timely manner. Alternative 1 is the easiest to implement because no effort is associated with the alternative. Soil Remedial Alternatives S2, S3, and S4 are all readily implementable. Remedial Alternative S2 requires a grading plan to implement. Alternative S3 requires a cut and fill analysis as well as a more detailed grading plan to consolidate the material next to the existing Northeast and Northwest Area caps. Remedial Alternative S4 requires traffic coordination for off-site shipment of lead impacted soil. The No Action alternative is not rated because no remedial measures are used. Soil Remedial Alternatives S2, S3, and S4 are equally ranked with respect to this evaluation criterion.

Groundwater Remedial Alternatives G2, G3, and G4 all include the implementation of institutional controls for the protection of human health and the environment. Remedial Alternatives G3 and G4 have additional administrative requirements such as obtaining permission from local government agencies to construct recovery wells in road right-of-ways and on state-owned land and obtaining discharge permits. Other administrative requirements include obtaining a lease or purchase agreement from the State of Indiana to construct a treatment building in the farm field. Remedial Alternatives G3 and G4 also have a moderately low degree of technical implementability due to the extensive O&M requirements and storage of hazardous chemicals (hydrogen peroxide). However, these distinctions are not considered to be substantive. The No Action alternative is not rated because no remedial measures are used. Groundwater

Remedial Alternatives G2, G3, and G4 are equally ranked with respect to this evaluation criterion.

Both LNAPL alternatives require constructing a product recovery system, a groundwater treatment system and obtaining a permit to discharge to the Town of Westville WWTP. Additionally, L2 and L3 alternatives include institutional controls to prevent direct contact with LNAPL. The No Action alternative is not rated because no remedial measures are used. LNAPL Remedial Alternatives L2 and L3 are equally ranked with respect to this evaluation criterion.

7. Cost

The costs presented in this section are Net Present Value. Total present value analysis was performed in order to compare costs between different Alternatives using a single value. This single cost is equivalent to the amount of money needed at an initial point in time to assure that necessary funds will be available in the future.

The Soil Remedial Alternatives rate in the following order, from the lowest present worth cost to the highest:

S1: No Action - \$0

S2: Vegetative Soil Cover - \$951,000

S3: Excavation and On-Site Consolidation - \$1,025,000

S4: Excavation and Off-Site Disposal - \$3,367,000

Soil Remedial Alternatives S2, S3 and S4 are comparably ranked for 4 of the 7 evaluation criteria. Soil Remedial Alternative S2 is ranked lower for Long-Term Effectiveness based on limiting redevelopment flexibility. Soil Remedial Alternative S4 is ranked lowest for Short-Term Effectiveness because of risks associated with off-site shipment of lead impacted soil and lowest for Cost due its high cost without commensurate increase in benefit. Soil Remedial Alternative S3 does not have any significant deficiencies when compared against 6 of the evaluation criteria and has only a marginally higher cost than Alternative S2 and a significantly lower cost than Alternative S4.

The groundwater remedial alternatives rate in the following order, from the lowest present worth cost to the highest:

G1: No Action - \$0

G2: Long-term Monitoring and Focused In-situ Treatment- \$2,056,000

G3: Mass Removal (Intermediate Duration) with Ex-Situ Treatment Followed by Long-term Monitoring - \$7,031,000

G4: Mass Removal (Longer Duration) with Ex-Situ Treatment Followed by Long-term Monitoring - \$9,171,000

For the purpose of the comparative analysis, a 30-year period of performance was used to calculate the Net Present Value of Alternatives G2 through G4. Although the exact period of performance for each of the alternatives is unknown, based on the estimated remedial timeframes, O&M costs for all alternatives to reduce 1,4-dioxane concentration below clean up goals are likely to extend beyond 30 years.

Groundwater Remedial Alternatives G2, G3 and G4 are comparably ranked for 4 of the 7 evaluation criteria. Groundwater Remedial Alternative G4 is ranked highest for Reduction of Toxicity, Mobility and Volume based on its greater limitation on the migration of the 1,4-dioxane plume for the groundwater flow model 48 ppb scenario, as discussed in Section J5. Groundwater Remedial Alternative G4 is ranked highest for Short-Term Effectiveness because of its shorter remedial timeframe for the 48 ppb scenario. Alternative G3 does not have any significant deficiencies when compared against 6 of the evaluation criteria. Enhancement of natural attenuation processes through aerobic biodegradation or chemical oxidation via catalyzed sodium persulfate could decrease mobility and shorten the remedial timeframe and make the alternatives more comparable. However, the costs associated with implementation of these emerging technologies are not included in the costs for Alternatives G2 and G3 provided in this ROD.

The LNAPL Remedial Alternatives rate in the following order, from the lowest present worth cost to the highest:

L1: No Action - \$0

L2: Dual Phase Recovery - \$1,034,000

L3: Total Fluids Recovery - \$1,329,000

LNAPL Remedial Alternatives L2 and L3 are comparably ranked for 6 of the 7 evaluation criteria. The cost difference between L2 and L3 is relatively small. Overall Alternatives L2 and L3 are comparable and should both be considered in the remedial design.

8. State Acceptance

The State Agency, IDEM, has been involved with the Site prior to it being listed on the National Priorities List, and has continued to be involved in all steps of the RI/FS for the Site. A letter of concurrence from the State of Indiana dated April 18, 2008 was received by EPA and is attached to this ROD as Appendix E.

9. Community Acceptance

During the public comment period on the Proposed Plan, the community expressed its concern as to whether the remedy would be protective of human health. As discussed in the Responsiveness Summary, EPA explained that the selected remedy would be protective of human health and the environment. This ROD includes a responsiveness summary that summarizes the public comments and EPA's response to those comments. The responsiveness summary is included in this record of Decision as Part III.

K. Principal Threat Wastes

The NCP establishes an expectation that EPA will use treatment to address the principal threat posed by a site wherever practicable. 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. The 1,4-dioxane and LNAPL contamination found in the groundwater at the Cam-Or Site are considered to be highly toxic or highly mobile. To address these principal threat wastes, the selected remedy will use extraction, removal and treatment of groundwater and LNAPL contaminant mass.

L. Selected Remedy

This section describes the selected remedy and provides EPA's reasoning behind its selection. Alternatives can change or be modified if new information is made available to EPA through further investigation or research. An appropriate range of alternatives was developed, based upon initial screening of technologies, and potential for contaminants to impact the environment, and site-specific RAOs and goals.

1. Summary of the Rationale Selected Remedy

EPA selects Alternative S3, G4, and L2 or L3 – excavation and on-site consolidation of lead impacted soils, groundwater contaminant mass removal with ex-situ treatment, and either dual phase recovery or total fluids recovery of LNAPL. This alternative represents the best balance of overall protectiveness, compliance with ARARs, long-term effectiveness and permanence, cost, and other criteria.

2. Description of the Selected Remedy

Remedial Alternative S3 combines institutional controls with excavation of lead impacted surface soil for on-site consolidation. The institutional controls can include a restrictive covenant, building permit restrictions and land use zoning restriction and a SMP. The institutional controls would limit future use of the property to commercial uses consistent with redevelopment plans for the Site and limit future invasive activities in the areas where lead impacted soil has been capped. In addition, the existing fence around the perimeter of the Site would be maintained to prevent unauthorized entry to the Site until the Site is redeveloped. A SMP for the Site would establish standardized procedures for any future construction at the Site. The SMP would identify the volumes and locations of soil that require management and establish management procedures for handling (excavating, grading, etc.) and disposing of impacted soil, if necessary. The SMP would also control exposure to construction workers during future work that may involve handling impacted soil by establishing engineering controls and other health and safety procedures.

The surface soil (0 - 2 ft below ground surface) exceeding the EPA commercial standard of 800 mg/kg will be excavated for on-site consolidation. Post-excavation sidewall sampling and domain averaging would be conducted to confirm that impacted surface soil was removed during excavation. Removal of soil above the commercial use human health PRG is expected to result in remaining soil providing a lead exposure point concentration which is also protective of ecological receptors. Post-excavation sampling will be conducted and the results evaluated to confirm that the calculated exposure point concentration of lead left in place in surface soil (0 - 1 ft) is below the ecological clean up goal of 330 mg/kg.

The consolidated soil will be covered using a vegetative soil cover to prevent exposure to the consolidated soil. Lead impacted subsurface soils remaining in-place will also be covered using a vegetative soil cover. The consolidation area and cover system, along with the vegetative cover over the subsurface soils in the Southeast portion of the Site and the Northeast and Northwest Area caps, will be maintained. O&M requirements will include periodic inspections, grass cutting and maintenance of the vegetative cover, as necessary. No O&M will be required for the excavated and backfilled area where lead impacted subsurface soils are not present.

Remedial Alternative G4 combines institutional controls with mass removal by groundwater extraction. Extracted groundwater will undergo ex-situ treatment likely via UV/H₂O₂ oxidation and discharge to Crumpacker Ditch. Pre-design studies will be conducted to identify the most appropriate treatment technology process. Pre-design studies will also evaluate if the time to reach clean up levels can be reduced through in-situ treatment. In addition, pre-design groundwater sampling and background studies will be conducted during the remedial design phase to aid in selection of the final COPC and make any adjustments to the cleanup levels, if necessary.

The groundwater extraction and treatment system will be operated to remove mass such that the maximum 1,4- dioxane concentration in the aquifer is reduced to less than 500 ppb, after which time long-term monitoring will be performed. The actual length of time necessary to operate the extraction and treatment system will be determined through evaluation of the system progress during the cleanup period. Prior to the EPA's decision on termination of the groundwater extraction system, EPA will evaluate the remaining conditions and determine if further mass removal is necessary to achieve RAOs presented in this ROD. Groundwater monitoring will continue until the groundwater contaminants have attenuated and meet clean up goals presented in this ROD. Table L-2 lists the COCs in groundwater based on sampling conducted during the RI and their cleanup levels.

Institutional controls will prohibit the use of groundwater both on the Cam-Or site and surrounding properties within the groundwater plume area. IDEM has an environmental restrictive covenant process through which deed restrictions can be placed if the landowners concur. Municipal water is available for potable purposes to all residents and businesses in the groundwater plume area, however, there is no restriction that would prevent the future installation and use of a well. Therefore, restrictions on groundwater use must be implemented to prevent exposure to impacted groundwater.

Remedial Alternative L2 combines institutional controls with dual phase recovery. Institutional controls such as restrictive covenants or land use zoning restrictions and a Site Management Plan prevent direct contact with LNAPL. Dual phase recovery combines skimmers and submersible groundwater pumps in an LNAPL recovery well. The dual phase recovery system would be operated until the LNAPL has been recovered to the extent practicable. The recovered LNAPL will be transported off-site for treatment. The representative process option for treating the extracted LNAPL in the FS is incineration due to the expected concentration of PCBs. The recovered groundwater will be treated above-grade and discharged to the Town of Westville WWTP. The representative process option for treating the extracted groundwater is adsorptive media such as granular activated carbon (GAC).

Remedial Alternative L3 combines institutional controls with total fluids recovery. Institutional controls such as restrictive covenants or land use zoning restrictions and a Site SMP prevent direct contact with LNAPL. The co-recovered groundwater and oil will be separated above-ground. A plate coalescer was selected as the representative separation process option for evaluation. The separated LNAPL will be transported off-site for incineration. The separated groundwater stream will be treated above-grade via adsorptive media and discharged to the Town of Westville WWTP.

Both L2 and L3 would use a series of product recovery wells or trenches installed in the southwest corner of the Site and the areas near Monitoring Wells MW-01 and MW-06. Pre-design investigations will be conducted to determine the most efficient means of LNAPL collection. It is not anticipated that trenches will be used in the residential area to the south of the Cam-Or property. To the extent feasible and to minimize disturbances to surrounding property owners, extraction wells and pipe trenches installed in the residential area would be located in the road right-of-way, with permission from local authorities. All extraction wells would be piped to a central process building located in the southwest corner of the Site.

Institutional controls and a SMP prevent direct contact with LNAPL. On the Cam-Or property, a restrictive covenant and the SMP would address the volume of soil impacted by LNAPL by establishing procedures for handling and disposal of impacted soil as well as worker health and safety. Where the LNAPL pool extends off of the Cam-Or property, institutional controls such as building permit restrictions or restrictive covenants would be used to prevent property owners from excavating to the depth of LNAPL to prevent direct exposure. The restrictions could be in the form of restrictive covenants, local ordinances, or permit process.

A pre-design investigation would be conducted to more clearly identify locations where LNAPL might be recoverable and the most efficient means of LNAPL collection.

3. Cost Estimates for Selected Remedy

Major cost elements of the selected remedy are presented in Appendix D. The information in the cost estimate summary table is based on the best available information regarding the 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. Major changes may be documented in the form of a memorandum in the Administrative Record file, an Explanation of Significant Difference (ESD), or a ROD amendment. This is an order-of-magnitude engineering cost estimate that is expected to be within +50 to -30 percent of the actual project cost.

4. Expected Outcomes of the Selected Remedy

The selected remedy will be protective of human health and the environment and will comply with all ARARs. The on-property area of the Site will no longer present an unacceptable risk to future site workers via surface soil incidental ingestion and will be suitable for

commercial/industrial use. Less than 5 years is estimated as the amount of time necessary to achieve the goals consistent with commercial/industrial land use.

Another expected outcome of the selected remedy is that groundwater within the delineated plume boundary will not present an unacceptable risk to future residents via ingestion, dermal contact, and inhalation and will be suitable for potable use of groundwater, once goals consistent with future potable groundwater use are achieved. During the time that the active groundwater treatment system is in operation, a significant level of risk reduction is anticipated. Long-term groundwater monitoring will continue until goals consistent with potable groundwater use are achieved.

The selected remedy will also provide environmental and ecological benefits in that the site soil will no longer present an unacceptable risk to insectivorous wildlife via dietary exposure to prey in soils and will become suitable habitat for local populations of terrestrial wildlife.

The following are expected to occur by implementing the selected remedy:

- Institutional controls (restrictive covenant, land use zoning restrictions, building permit restrictions) will provide long-term effectiveness and permanence in maintaining the integrity of the vegetative soil cover and preventing direct contact with or ingestion of lead impacted soil.
- The excavation of impacted soils in the southeast and south-central portions of the Site and clean backfill permanently removes the potential for exposure to lead impacted surface soils in these areas, allowing commercial/industrial redevelopment without restrictions in these areas.
- Surface area of the lead impacted surface soil is reduced by consolidating the soil near the existing caps which are already restricted for redevelopment. The overall effect is to reduce the surface area of the Site that would be restricted for future development.
- Groundwater extraction will permanently remove 1,4-dioxane and other COC mass from the aquifer.
- Institutional controls will prevent the use of impacted groundwater on the Cam-Or property as well as surrounding properties within the contaminant plume. The institutional controls can be in the form of environmental restrictive covenants, or local ordinance or permit process.
- Dual phase extraction or total fluids extraction will effectively remove the recoverable portion of LNAPL.
- Institutional controls (building permit process, land use zoning restrictions) will prevent direct contact with or ingestion of LNAPL impacted soil.

- The SMP provides a standardized method of handling future construction activities that may involve LNAPL impacted soil on the Cam-Or property. The SMP will establish health and safety procedures for construction workers as well as soil management and disposal procedures to prevent exposure to impacted soil.

Tables L1, L2, L3, and L4 in Appendix C summarize the cleanup levels for the Cam-Or Site that will achieve these expected outcomes.

M. Statutory Determinations

Under CERCLA Section 121 and the NCP, remedies selected for Superfund sites are required to be protective of human health and the environment, comply with applicable or relevant and appropriate requirements (unless a waiver is justified) and be cost effective. The following sections discuss how the selected remedy for the Cam-Or Site meets these statutory requirements.

1. Protection of Human Health and the Environment

The current and potential future risks at the Cam-Or Site are due to the presence of 1,4-dioxane and other COC in groundwater, lead in soils and LNAPL. Implementation of the selected remedy will be protective of human health and the environment, as described in the NCP, through the pumping and treatment of groundwater followed by long-term monitoring, until the concentration of 1,4-dioxane (the main groundwater contaminant) meets the clean up goals presented in Section L of this ROD; excavation and on-site consolidation of soils with lead concentrations above 800 mg/kg; and recovery of LNAPL to the maximum extent possible.

Institutional controls in the form of a Restrictive Covenant or other mechanism (e.g., local ordinance, permit process), shall ensure that any new structures on the property be constructed to minimize potential risks from any remaining contamination and will prevent use of groundwater as drinking water. The site specific RAOs were developed to protect current and future receptors that are potentially at risk from contaminants at the Site. The selected remedy will meet the RAOs.

2. Compliance with ARARs

Section 121(d) of CERCLA requires that Superfund remedial actions meet ARARs. Appendix B provides all ARARs identified for this Site which will be met under this ROD. In addition to ARARs, non-enforceable guidelines, criteria, and standards may be useful in designing the selected remedy. As described previously in Section H.2 of this ROD, these guidelines, criteria, and standards are known as TBCs. The selected remedy will comply with the ARARs for the Site.

3. Cost Effectiveness

In EPA's judgment, the selected remedy is cost-effective because the remedy's costs are proportional to its overall effectiveness (see 40 CFR 300.430(f)(1)(ii)(D)). This determination was made by evaluating the overall effectiveness of those alternatives that satisfied the threshold

criteria (i.e. that are protective of human health and the environment and comply with all federal and any more stringent ARARs, or as appropriate, waive ARARs). Overall effectiveness was evaluated by assessing three of the five balancing criteria ~ long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness, in combination. The overall effectiveness of each alternative then was compared to the alternative's 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 represents a reasonable value for the money to be spent.

Remedy costs were estimated separately for each of the media as follows:

Soil estimated cost: \$1 Million. Alternative S3 Excavation and on-site consolidation of surface soil (0 to 2 feet below ground surface) where lead concentrations exceed the EPA commercial standard of 800mg/kg.

Groundwater estimated cost: \$9 Million. Alternative G4 Mass removal of 1,4-dioxane (the main contaminant) to a concentration of less than 500ppb with Ex-Situ treatment followed by long-term monitoring.

LNAPL estimated cost: \$1 Million. Either Alternative L2 Dual Phase recovery or Alternative L3 Total fluids recovery, to the maximum extent practical.

4. Utilization of Permanent Solutions and Alternative Treatment (or Resource Recovery) Technologies to the Maximum Extent Practicable (MEP)

The selected remedy represents the maximum extent to which permanent solutions and treatment are practicable at the Cam-Or 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 treats the source materials constituting principal threats at the site, achieving significant reductions in 1,4-dioxane concentrations in groundwater and stabilizing lead contamination in soil. The selected remedy satisfies the criteria for long-term effectiveness by removing 1,4-dioxane from groundwater. Stabilization of lead contaminated soil and capping will effectively reduce the mobility of and potential for direct contact with contaminants remaining on-site. The selected remedy does not present short-term risks different from the other treatment alternatives. There are no special implementability issues that set the selected remedy apart from any of the other alternatives evaluated.

5. Preference for Treatment as a Principal Element

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes an expectation that EPA will use treatment technology to address the principal threat wastes at a site wherever practicable (NCP § 300.430(a)(1)(iii)(A)). Principal threat wastes are 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. Remedies that involve treatment of principal threat wastes likely will satisfy the statutory preference for treatment as a principal element.

EPA considers the 1,4-dioxane in groundwater and the LNAPL media to be principal threat wastes, and we plan to address this media through removal and treatment. Thus, the statutory preference for treatment as a principal element would apply to the groundwater and LNAPL media. By utilizing treatment as a significant portion of the remedy, the statutory preference for remedies that employ treatment as a principal element is satisfied

6. Five-Year Review Requirements

The NCP requires that the remedial action be reviewed no less often than every five years if the remedial action results in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure. Because this remedy will result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure at the completion of the remedial action, a statutory review will be conducted within five years after initiation of remedial action to ensure that the remedy is or will be protective of human health and the environment.

N. Documentation of Significant Changes

The Proposed Plan for the Cam-Or Site was released for public comment on November 26, 2007 and the public comment period ran from December 3, 2007 through January 11, 2008. The Proposed Plan identified Alternative S3 (Soil Excavation and on-site consolidation), Alternative G4 (contaminant mass removal with treatment followed by long-term monitoring), and Alternative L2 (dual phase recovery) or L3 (total fluids recovery) as the preferred alternatives for the Site. EPA reviewed all written and verbal comments submitted during the comment period and determined that no significant changes to the remedy, as originally identified in the Proposed Plan, were necessary or appropriate.

sludge from three lagoons into one; covering the lagoons; and removal of about 112 drums from the site.

In 1989 EPA issued a unilateral administrative order to a number of former customers of Cam-Or Inc. requiring that certain response actions be undertaken at the site. These companies are called “potentially responsible parties” or PRPs because their waste was brought to Cam-Or. The PRPs are now collectively known as the Cam-Or Site Extended Group.

The site is located within an area designated as the West-Tech Redevelopment Area by the Westville Redevelopment Commission. Future use of the site has not yet been determined, but the commission is considering commercial redevelopment of the location and surrounding area.

In 2002, EPA signed an Administrative Order on Consent (AOC) with the Group and began a remedial investigation and feasibility study at the Cam-Or site. The Group, under EPA oversight, sampled the soil and groundwater at the site for contaminants. The Group also conducted a vapor intrusion investigation of the surrounding residential area. The Group performed a human health and an ecological risk assessment using their sampling data to determine actual or potential risks to human health and the environment posed by site contaminants. EPA approved the Remedial Investigation Report in July 2007 and the Feasibility Study report in October 2007.

On about November 27, 2007, EPA issued a proposed plan fact sheet to the public to summarize the results of the remedial investigation for the Cam-Or site and to present our recommended cleanup remedies for the contaminated soil and groundwater of the site. The proposed plan was available for public comment from December 3, 2007 through January 11, 2008. EPA placed an advertisement announcing the availability of the proposed plan and the start of the comment period in the Michigan City News-Dispatch, a local newspaper of wide circulation in the Westville area, in addition to the LaPorte County Herald-Argus and the Westville Indicator, a local newspaper published weekly. Staff also hand-delivered fact sheets to the Westville Public Library for distribution.

Each fact sheet contained an EPA-addressed comment page to facilitate receipt of mailed comments. We accepted oral, written, e-mailed, or faxed comments during the comment period.

EPA held a public meeting and public hearing on December 12, 2007 at the Westville Public Library to discuss the results of the remedial investigation, to answer any questions regarding the proposed cleanup actions, and to take oral comments regarding the proposed cleanup actions. The public meeting was attended by more than 25 persons including local residents. A court reporter documented formal oral comments on the proposed plan during the public meeting, and we placed a verbatim transcript of the public comments into the information repositories and the Administrative Record. We received 3 oral comments concerning the proposed plan at the public meeting. EPA received 3 written (by letter, e-mail, or fax) comments concerning the proposed plan during the comment period. The comments received during the public comment period and our responses to these comments are included in this Responsiveness Summary which is a part of the Record of Decision for the Cam-Or site.

Summary of Significant Comments

A. Written Comments

1. Mr. Bart S. Frank, Westville, IN;

a. “Will the wells in the plume be closed?”

Response: As indicated in the Feasibility Study, (FS) there were several private wells left in service by the owners for non-potable use, as shown on Figure 5 of the FS. However only Private Well B is located within the 1,4-dioxane plume and has not been abandoned. Private Well B was sampled during the remedial investigation and 1,4-dioxane was not detected therefore at present, there are no plans to abandon this well.

b. “Will the wells in the plume be tested; how often and for how long?”

Response: All wells located within the 1,4-dioxane plume that have been sampled as part of the Remedial Investigation, will continue to be sampled as part of the clean up remedy for the site. It is anticipated that monitoring of the 1,4-dioxane plume will take place for up to 40 years or more.

c. “If the wells are closed will they be hooked up to the city water?”

Response: The Town of Westville water use records were reviewed to verify that property owners within the limits of the plume were connected to and using municipal water. Additionally, in 2005, as part of the Remedial Investigation of the Cam-Or site, well installation records from IDNR were reviewed to identify any additional wells that may have been installed in the vicinity of the plume. No additional potable groundwater use was identified.

d. “Will the monitoring wells be tested; how often and for how long?”

Response: Yes. As part of the selected remedy for the site, a well monitoring plan will be implemented which will require routine sampling of monitoring wells. The frequency of monitoring well sampling will be determined during the remedy design phase of the clean up.

e. “Will the creek be cleaned and will it be tested; how often and for how long?”

Response: No. Surface water samples collected during the remedial investigation did not detect 1,4-dioxane or significant levels of any other contaminants.

2. Mr. J. Mayes, Westville, IN;

“It appears the suggested alternative is merely collecting the contaminated soil from several areas on the site and moving it to another area of the site. While I realize it would be costly to remove the soil to an approved

landfill site, I believe this would be a much better and safer option for Westville and its residents.

I do not see how turning one area of the site into basically a landfill -- one that is not suited to such waste -- is much of an improvement. It appears to be just moving the problem several feet to the north. Also, the site lies in what will undoubtedly be a prime area for future growth in the town, but I do not see any type of growth occurring in the area with a large area of contaminated soil remaining.

I believe it would severely restrict any type of development to leave contaminated soil on site. And if the State of Indiana goes through with a proposal to reroute Indiana Route 2 to the north, basically over the south end of the property, the north part would remain a blighted unusable area located directly on a major thoroughfare.

I believe for this reason that Soil Cleanup Alternative S4 is much more logical, not only for the safety of the site and the health of residents, but for future development in the area. While the cost is higher, I do not believe it is unreasonable in the overall price tag of the project.”

Response: As stated in the Feasibility Study, Alternative S3 combines institutional controls with capping the lead impacted soils. The institutional controls consist of deed restrictions and a Soil Management Plan (SMP). The excavated soils would be consolidated between the existing northwest area and northeast area caps. The side slopes of the existing caps are steep and the soil would be mounded against and between the existing caps. While the volume of lead contaminated soil would not decrease, the surface area of the consolidated soil decreases. The vegetative soil cover could be incorporated into a redevelopment plan for the site by serving as a green space or could be substituted as a parking lot or building slab. Consolidation on-site of the impacted soils reduces the human health risks associated with handling of the impacted soils as compared to off-site removal, which creates the potential for exposure via transportation.

3. Environmental Management, Inc., Pittsburgh, Pennsylvania;

- a. The site boundary is incorrectly represented on the figures included in the proposed cleanup plan. The eastern site boundary is not located immediately adjacent to U.S. Highway 421. Figure 1 from the Feasibility Study (FS) Report shows the correct site boundary.

Response: The small figure included in the Proposed Plan was intended to present approximate location of the site. Figure 1 in the Record of Decision shows the correct site boundary.

- b. The extent of the LNAPL plume is incorrectly shown on the figure on page 2 of the proposed cleanup plan. Figure 10 from the FS Report shows the correct limits. A copy of Figure 10 is attached. It is important to note that Figure 10 shows the maximum extent of

LNAPL; the limits are based on piezometers where LNAPL was not present. As a result, the actual extent of LNAPL is less than is shown on Figure 10.

Response: The figure included the Proposed Plan illustrates an estimated extent of LNAPL. Figure 9 in the Record of Decision correctly outlines the maximum extent of the LNAPL.

- c. The extent of the groundwater plume containing constituents of potential concern (COPC) is incorrectly shown on the figure on page 3 of the proposed cleanup plan. Figure 6 from the FS Report shows the correct limits. A copy of Figure 6 is attached. It is important to note that most of the non-1,4-dioxane COPC are present only in the near-Site groundwater.

Response: The figure included in the Proposed Plan illustrates an estimated extent of COPC in groundwater. Figure 6 from the Feasibility Study will be included in the Record of Decision and labeled Figure 8.

- d. For Soil Alternative S3, the FS Report states that building slabs will be demolished and consolidated under the soil cover with the excavated soil. The proposed cleanup plan incorrectly states that the building slabs will be disposed off-site.

Response: For soil alternative S3, EPA's preferred remedy; building slabs will be demolished and consolidated with the excavated soil.

- e. As stated in the FS Report, all groundwater alternatives include a background study to potentially limit the number of COPC.

Response: Groundwater alternatives in the FS include a background study to determine the presence and concentrations of COPC in groundwater in the background. The results will be considered in selecting the final COPC to be addressed in the remedy as well as any adjustments to the groundwater PRGs based on background considerations.

- f. Since 1,4-dioxane extends further in groundwater than other COPC, monitoring of most non-1,4-dioxane COPC should be more limited than monitoring for 1,4-dioxane.

Response: Monitoring requirements for specific COPC will be developed during the design of the Remedial Action.

- g. As stated in the FS Report, Groundwater Alternatives G3 and G4 allow the use of treatment technologies other than UV/peroxide treatment, if warranted by pre-design studies.

Response: For the purposes of evaluation of Alternatives G3 and G4, the treatment technology UV/peroxide treatment was presumed. However, pre-design studies will be conducted to identify the most appropriate treatment technology to treat the extracted groundwater.

- h. As stated in the FS Report, Groundwater Alternatives G3 and G4 allow discharge of treated groundwater to the Westville wastewater treatment plant, in addition to discharge to surface water.

Response: The direct discharge to the Town of Westville wastewater treatment plant will be evaluated during design of the groundwater extraction and treatment system as an alternative to effluent discharge to Crumpacker Ditch.

- i. As stated in the FS Report, the cost estimates for Groundwater Alternatives G3 and G4 do not include costs associated with in situ treatment technologies.

Response: The Proposed Plan stated that additional in-situ treatment could be implemented to reduce the time to meet cleanup goals. The cost estimates presented in the Proposed Plan for Alternatives G3 and G4 do not include costs associated with additional in-situ treatment.

- j. As stated in the FS Report, the selected LNAPL remedies allow more passive means of LNAPL collection (e.g., periodic extraction using a vacuum truck) to be used, if warranted by pre-design studies.

Response: The Proposed Plan acknowledges that effectiveness of any LNAPL recovery system will be evaluated during pre-design investigations, including recovery rate and extent. Pre-design investigations will be conducted to determine the most efficient means of LNAPL collection.

- k. As you know, the Integrated Risk Information System database toxicity factor for 1,4-dioxane is currently under review by EPA's National Center for Environmental Assessment. The current schedule for this work indicates that the draft Toxicity Assessment became available for Agency review in December 2007, and is scheduled for public review in June 2008. Literature indicates that the cancer slope factor (CSF) for 1,4-dioxane could decrease by as much as three orders of magnitude, which would result in a corresponding increase of up to three orders of magnitude in the remediation goal for 1,4-dioxane.

The 1,4-dioxane remediation goal is very important in the evaluation and selection of a groundwater remedial alternative for the Site. In fact, the analysis of alternatives in the FS Report leads to different conclusions depending on the magnitude of the final 1,4-dioxane remediation goal. As the remediation goal is likely to change significantly in the coming months, the Record of Decision (ROD) needs to be flexible so that the most appropriate remedial alternative is selected based on the final remediation goal. The ROD should specify a transition to a groundwater remedy starting with immediate initiation of several activities that are common to all of the groundwater remedial alternatives considered in the FS Report. These common activities include establishing institutional controls, conducting groundwater pre-design studies and a background investigation, periodically monitoring groundwater, and evaluating emerging technologies. When these activities are complete, a remedy should be implemented to address residual groundwater

risk to the applicable level. Given appropriate flexibility in the ROD, all stakeholders will find it in their interest to pursue completion of these activities on an expedited schedule.

Response: Using currently available toxicity information, EPA is recommending a pump and treat approach for remediation of COPC in groundwater at the Cam-Or site, including 1,4-dioxane, trichloroethene, vinyl chloride, benzene, and arsenic. The Remedial Action Plan for groundwater will be reassessed if EPA's toxicity re-evaluation for 1,4-dioxane or any other COPC results in a change in EPA-recommended toxicity values.

Oral Comments (from public hearing December 12, 2007)

1. Will consideration be given to people with wells installed after initial city hookup in 1999, to be hooked up now?

Response: In 2005, well installation records from IDNR were reviewed as part of the Remedial Investigation of the Cam-Or site to identify any additional wells that may have been installed in the vicinity of the plume. No additional potable groundwater use was identified.

2. How deep is the contamination? At what water depth is the highest concentration of contaminant?

Response: The main groundwater contaminant 1,4-dioxane has been found in monitoring wells sampling from the Base of the Aquifer (XD) water zone, which is 120 ft and deeper at certain locations. The highest concentrations of 1,4-dioxane have been found in monitoring wells sampling from the Mid-Aquifer (MD) water zone, between approximately 70 and 110 feet deep. The highest concentrations of other organic contaminants, including trichloroethene and benzene, are generally found in the shallow (S) water zone near the top of the water table that is five to ten feet below land surface. Similarly, LNAPL contamination is found in the shallow water zone.

3. At what depth is the 175 gallons per minute pumping going to occur? Will this pumping volume cause private wells to go dry?

Response: The depth of pumping is anticipated to be from approximately 90 to 150 feet below land surface. EPA evaluated the expected effect of pumping at the rates proposed using a groundwater flow model. Although during the design phase EPA anticipates to more thoroughly evaluate the effect of pumping on those wells in the area that are still in place and in use, analysis thus far indicates that there will be no detrimental effect. The aquifer from which water is planned to be removed has significant capacity. The removal of 175 gallons per minute, although a significant amount, is still a relatively small amount compared to the overall capacity of the aquifer. EPA intends to conduct a thorough evaluation during the design phase.

APPENDIX A
Figures



Legend

- Municipal Well Locations
- Private Well Locations
- Roads
- Cam-Cr Site

N
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NO.	DATE	REVISION DESCRIPTION	BY	CHKD	NO.	DATE	REVISION DESCRIPTION	BY	CHKD

ARCADIS
 33 East Wacker Drive, Suite 1000
 Chicago, IL 60601
 Tel: (312) 263-6703 Fax: (312) 263-7897

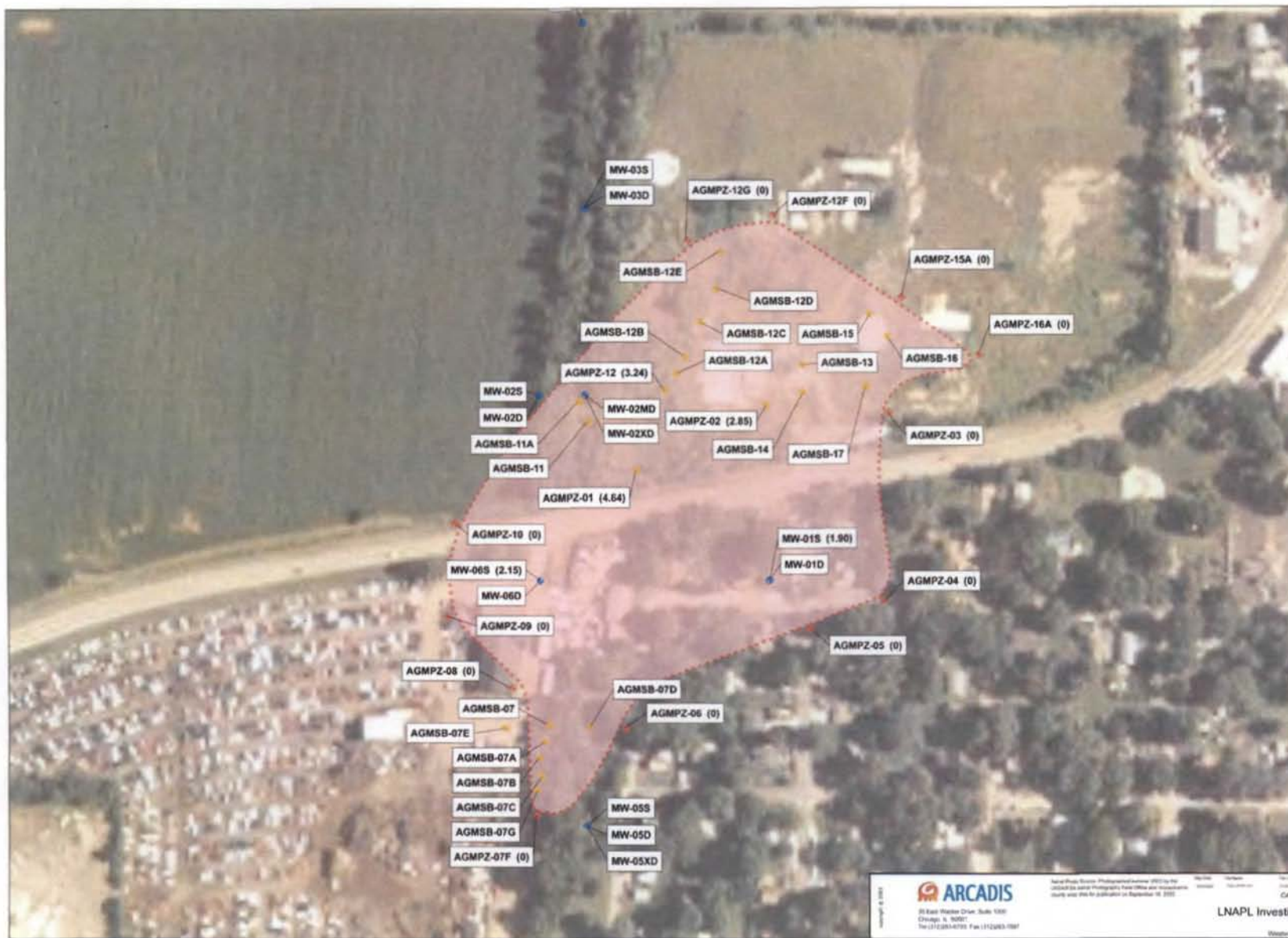
CAM-OR SITE
 SITE PLAN
 WESTVILLE, INDIANA

Checked By
 M. LACEY
 Drawn By
 PS

Drawing Date
 05/06/02
 Project Manager
 J. KRATZMEYER

File Name
 00CI0056_SSP_2-2.DWG
 Project Number
 CI001144.0005

File Location
 C:\drawing\clients\Cam-or
 Figure
 2



Legend

- Monitoring wells
- Piezometer
- LNAPL Storings
- Maximum Possible Extent of LNAPL
- (2.85) LNAPL Thickness Measured 4/21/04, Feet
- (0) LNAPL Not Present





- Legend**
- Soil Vapor Locations
 - Monitoring Wells
 - Potential
 - Maximum Possible Extent of LNAPL
 - AAB Ambient Air Sample



ARCADIS
 10 East Plano Blvd. Suite 1100
 Irving, TX 75039
 Tel: 214.264.4100 Fax: 214.264.1560

Project Name	Client	Scale	Revision	Date
Soil Vapor Sampling Locations	ARCADIS	1"=400'-0"	01	11/11/11
Drawing Title			Sheet No.	Total Sheets
Soil Vapor Sampling Locations			6	6



See Figure 9

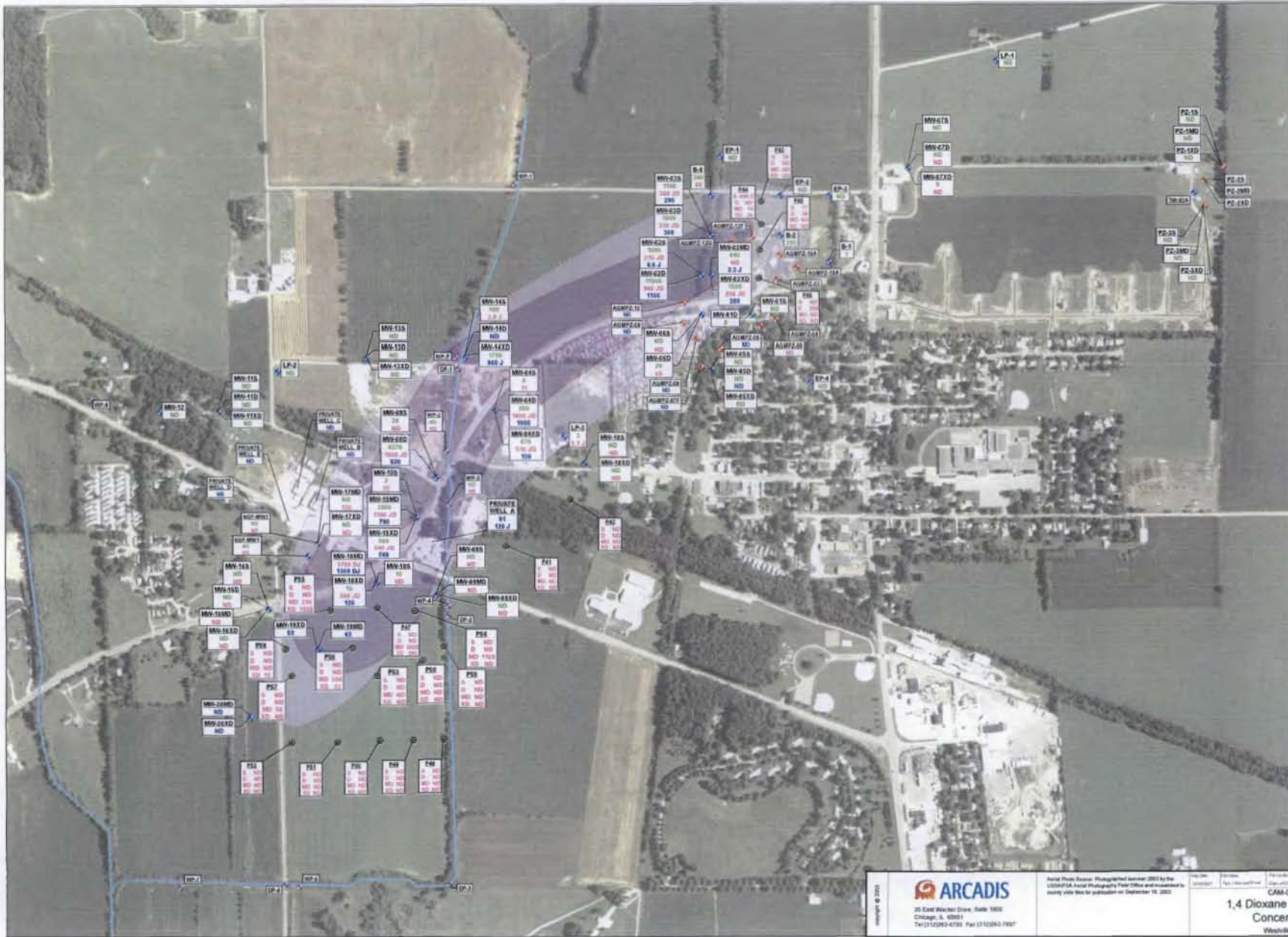
- Legend**
- Background Surface Soil Sample Locations
 - Foreground Surface Soil Sample Locations
 - Subsurface Soil Sample Locations
 - Surface Soil Sample Locations
 - Surface and Subsurface Sample Locations
 - Roads



ARCADIS
 28 East Wacker Drive, Suite 1000
 Chicago, IL 60601
 Tel: (312) 265-4700 Fax: (312) 265-7891

Phase I Environmental Site Investigation (ESI) for the
 CAM DB
 Final Report
 Issued for publication on September 18, 2010

Soil Sampling Locations
 7

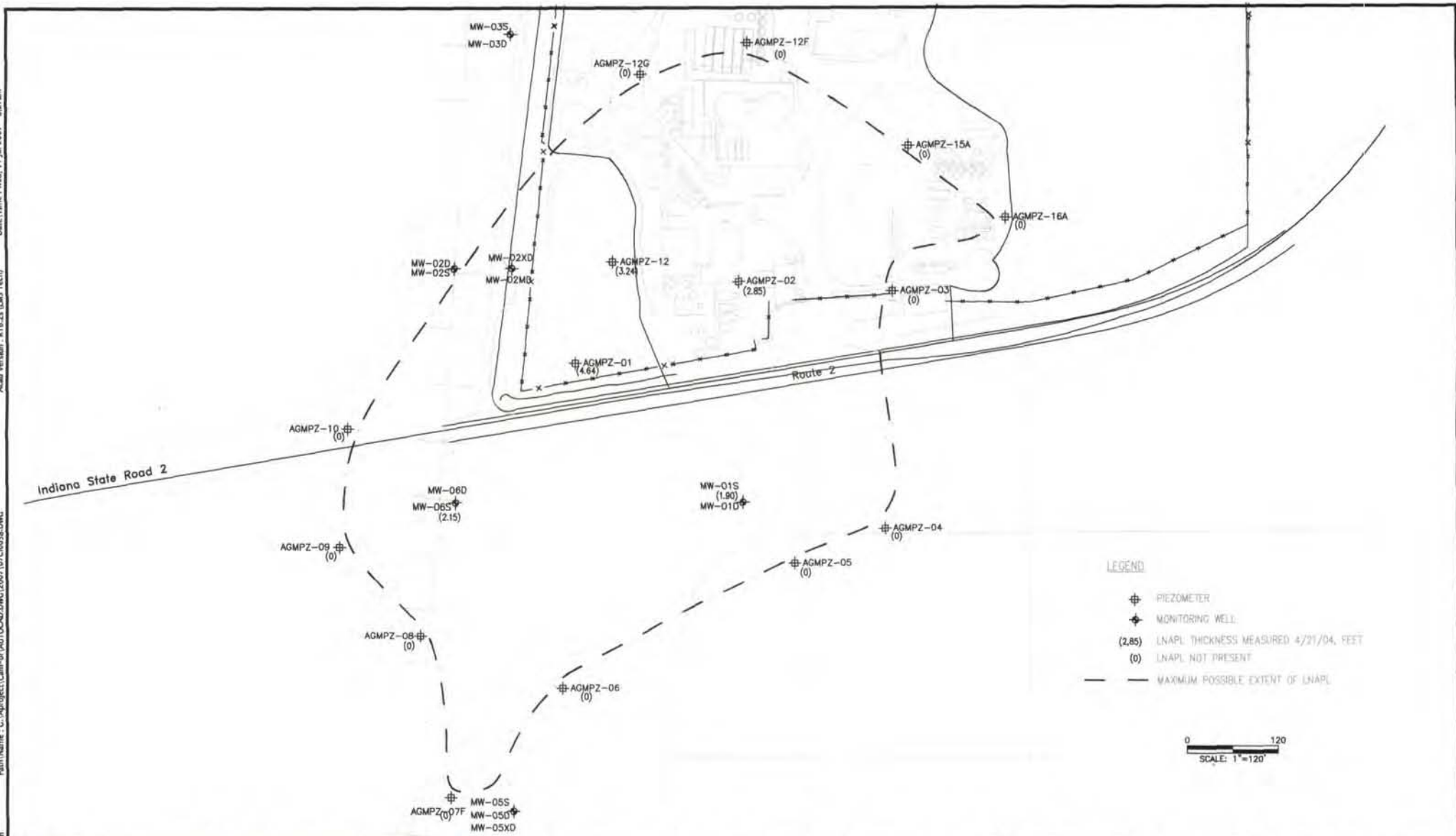


- Legend**
- Vertical Aquifer Sampling Points
 - ◆ Monitoring Wells
 - ▲ Piezometers
 - ⊕ Well Points
 - Ditch
 - 1,4-Dioxane Concentrations Greater than 500 ppb
 - 1,4-Dioxane Concentrations from Not Detected (inferred) to 500 ppb
 - Shallow Zone
 - Deep Zone
 - Middle Deep Zone
 - Base of Aquifer Zone
 - ND Not Detected
 - 12 2005 Remedial Investigation 1,4-Dioxane Result (ppb/L)
 - 12 J Estimated
 - 12 D Diluted
 - Results reported in ug/L

ARCADIS
 35 East Wacker Drive, Suite 1900
 Chicago, IL 60601
 Tel: (312) 663-4700 Fax: (312) 663-7887

Aerial Photo Source: Photographed December 2002 by the USGS/FA Acacia Photography Field Office and made available to the public via the Internet on September 18, 2003.

1,4-Dioxane Groundwater Concentrations
 Westville, Indiana
 CAM-CR SITE



NO.	DATE	REVISION DESCRIPTION	BY	CHKD	NO.	DATE	REVISION DESCRIPTION	BY	CHKD

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 35 East Wacker Drive, Suite 1000
 Chicago, IL 60601
 Tel: (312) 263-6703 Fax: (312) 263-7897

CAM-OR SITE
EXTENT OF LNAPL
 WESTVILLE, INDIANA

Checked By
M. LACEY
 Drawn BY
K. SCARBROUGH

Drawing Date
03/16/07
 Project Manager
J. KRATZMEYER

File Name
07C0058.DWG
 Project Number
C1001144.0005

File Location
 C:\nsf\mg\idms\Cam-or
 Figure
9

APPENDIX B
ARARs and TBCs

Table . Potential Chemical-Specific ARARs
Cam-Or Site, Westville, Indiana

Media	Authority	Requirement	Status	Requirement Synopsis
Soil	Federal Criteria, Advisories, and Guidance	U.S. EPA Region 9 Human Health Preliminary Remediation Goals (PRGs) for Commercial/Industrial Land Use	To Be Considered	These values are non-promulgated guidance to be used as guidelines for evaluating Site investigation data. PRGs are based on potential adult worker exposure to soil contaminants through incidental ingestion of soil, dermal absorption, and inhalation of vapors and airborne particles from the soil. PRGs correspond to a lifetime cancer risk of 1.0×10^{-6} for carcinogens (i.e., one person in one million), or a hazard quotient of 1 for noncarcinogens.
		Risk Assessment Guidance for Superfund (RAGS) – Parts A, B, D, and E (U.S. EPA 1989, 1991, 2001a,b, 2004)	To Be Considered	RAGS provides a basis for determining levels of chemicals that can remain on-site and still be protective of public health, taking into account Site conditions and land use.
		U.S. EPA Soil Screening Levels	To Be Considered	These levels are non-promulgated guidance that represent concentrations in soil that may pose a migration risk to groundwater used as a drinking water source.
		U.S. EPA Region 5 Soil Lead Screening Level	To Be Considered	This level is non-promulgated guidance that provides a soil lead screening level for adult workers.
	State Criteria, Advisories, and Guidance	Risk Integrated System of Closure (RISC)	To Be Considered	RISC is the Indiana Department of Environmental Management's (IDEM) method for developing remediation objectives (risk-based and site-specific) for contaminated soil and groundwater. These remediation objectives protect human health and take into account Site conditions and land use.
Groundwater	Federal Regulatory Requirement	Safe Drinking Water Act (SDWA) - Maximum Contaminant Levels (MCLs) (40 CFR 141.11 – 141.16)	Applicable	MCLs have been promulgated for a number of common organic and inorganic contaminants. These levels regulate the concentration of contaminants in public drinking water supplies based on health effects and technical capabilities. MCLs may also be considered relevant and appropriate for groundwater aquifers potentially used for drinking water sources.
	Federal Criteria, Advisories, and Guidance	U.S. EPA Region 9 Human Health PRGs for Tap Water	To Be Considered	These values are non-promulgated guidance to be used as guidelines for evaluating Site investigation data. PRGs are based on potential adult worker exposure to water contaminants through incidental ingestion, inhalation and dermal absorption. PRGs correspond to a lifetime cancer risk of 1.0×10^{-6} for carcinogens (i.e., one person in one million), or a hazard quotient of 1 for noncarcinogens.
		RAGS Parts A, B, D, and E (U.S. EPA 1989, 1991, 2001a,b, 2004)	To Be Considered	RAGS provides a basis for determining levels of chemicals that can remain on-site and still be adequately protective of public health, taking into account Site conditions and land use.
		National Secondary Drinking Water Standards (40 CFR 143)	To Be Considered	These are welfare-based standards established to protect aesthetic quality (e.g., taste, odor, color) of public water supplies (Secondary MCLs).
	State Regulatory Requirement	Indiana Drinking Water Standards (327 IAC 2-11, 327 IAC 8)	Applicable	These rules establish MCLs in accordance with the SDWA (40 CFR 141.11), as well as groundwater classification methods and associated standards.
	State Criteria, Advisories, and Guidance	RISC	To Be Considered	RISC is IDEM's method for developing remediation objectives (risk-based and Site-specific) for contaminated soil and groundwater. These remediation objectives protect human health and take into account Site conditions and land use.

Table . Potential Chemical-Specific ARARs
Cam-Or Site, Westville, Indiana

Media	Authority	Requirement	Status	Requirement Synopsis
Surface Water	Federal Criteria, Advisories, and Guidance	Clean Water Act (33 USC 1314), Federal Ambient Water Quality Criteria (40 CFR 131)	Applicable	Ambient water quality criteria are developed for protection of freshwater and marine aquatic life and for protection of human health from the ingestion of water and/or organisms.
		U.S. EPA Office of Solid Waste and Emergency Response (OSWER) Ecological and Toxicological (EcoTox) Thresholds	To Be Considered	These screening values are not legally enforceable and are not default clean up goals. They may be used to refine the list of potential chemicals of concern at a Site, and to guide decisions regarding the need for, and focus of, Site-specific investigations of ecological risk.
	State Regulatory Requirement	Indiana Water Pollution Control Board Water Quality Standards (327 IAC 2-1)	Applicable	Ambient water quality criteria are developed for protection of freshwater aquatic life and for protection of human health from the ingestion of water and/or organisms. Criteria developed in 327 IAC 2-1 apply to all waters of the State of Indiana outside of the Great Lakes system.

Table . Potential Chemical-Specific ARARs
Cam-Or Site, Westville, Indiana

Media	Authority	Requirement	Status	Requirement Synopsis
Air	Federal Regulatory Requirement	Clean Air Act (CAA) – National Emission Standards for Hazardous Air Pollutants (HAP) (40 CFR 50, 40 CFR 61)	Relevant and Appropriate	This regulation sets emission standards for designated hazardous pollutants. Standards are applicable to stack emissions from stationary sources.
	State Regulatory Requirement	Indiana Air Pollution Control Board Emissions Standards for HAP (326 IAC 14)	Relevant and Appropriate	This rule adopts and incorporates the CAA (40 CFR 61). Standards are applicable to stack emissions from stationary sources.
		Indiana Air Pollution Control Board Standards for Ambient Air, Fugitive Dust, and VOC Emissions (326 IAC 1-3, 326 IAC 6-4, and 326 IAC 8-1)	Applicable	These rules establish standards for ambient air quality, fugitive dust emissions, and VOC emissions that may apply to remedial action; requirements would be considered during remedial design.
		Indiana Air Pollution Control Board Standards – Permit Review Rules (326 IAC 2-5)	Relevant and Appropriate	These rules establish limits at which registration or permitting may be required that may apply to remedial action; requirements would be considered during remedial design.
LNAPL	State Criteria, Advisories, and Guidance	RISC	To Be Considered	RISC is IDEM's method for developing remediation objectives (risk-based and Site-specific) for contaminated soil and groundwater including free-phase product. These remediation objectives protect human health and take into account Site conditions and land use.

Table . Potential Chemical-Specific ARARs
Cam-Or Site, Westville, Indiana

Notes:

ARARs = Applicable or Relevant and Appropriate Requirements

CAA = Clean Air Act

CFR = Code of Federal Regulations

EcoTox = Ecological and Toxicological

HAP = Hazardous Air Pollutants

IDEM = Indiana Department of Environmental Management

LNAPL = Light Non-Aqueous Phase Liquid

MCL = Maximum Contaminant Level

OSWER = Office of Solid Waste and Emergency Response

PRG = Preliminary Remediation Goals

RAGS = Risk Assessment Guidance for Superfund

RISC = Risk Integrated System of Closure

SDWA = Safe Drinking Water Act

USC = United States Code

U.S. EPA = U.S. Environmental Protection Agency

VOC = Volatile Organic Compound

U.S. EPA. 1989. Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part A). Interim Final. U.S. Environmental Protection Agency Office of Emergency and Remedial Response, Washington, DC. U.S. EPA/540/1-89/002. December.

U.S. EPA. 1991. Risk Assessment Guidance for Superfund: Volume I – Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals), Interim. PB92-963333. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC. December.

U.S. EPA. 2001a. Risk Assessment Guidance for Superfund: Volume I – Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments), Final. Publication 9285.7-47. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC. December.

U.S. EPA. 2001b. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC. September.

U.S. EPA. 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC. September.

Table . Potential Location-Specific ARARs
Cam-Or Site, Westville, Indiana

Authority	Requirement	Status	Requirement Synopsis
	Fish and Wildlife Coordination Act (16 USC 661 <i>et seq.</i> , 40 CFR 6.302)	Relevant and Appropriate	Actions that will impact fish and wildlife must include action to protect affected fish and wildlife resources. This law prohibits diversion, channeling, or other activity that modifies a stream or river and affects fish or wildlife.
	Migratory Bird Treaty Act (16 USC 703 <i>et seq.</i>)	Relevant and Appropriate	Actions taken or funded which result in the killing, hunting, taking, or capturing or any migratory birds, part, nest, or egg is unlawful.
State Regulatory Requirement	Indiana Wellhead Protection Program (327 IAC 2-11)	To be Considered	This rule establishes MCLs (40 CFR 141 and 327 IAC 8) as cleanup standards for impacted groundwater within established wellhead protection areas. The Site is not located within a wellhead protection area, but the location of wellhead protection areas will be considered during remedial design.

Notes:

ARARs = Applicable or Relevant and Appropriate Requirements

CFR = Code of Federal Regulations

MCL = Maximum Contaminant Level

RCRA = Resource Conservation and Recovery Act

USC = United States Code

Table 6. Potential Action-Specific ARARs
Cam-Or Site, Westville, Indiana

Authority	Requirement	Status	Requirement Synopsis
Federal Regulatory Requirement	Resource Conservation and Recovery Act (RCRA) - Identification and Listing of Hazardous Waste (40 CFR 261)	Applicable	These regulations establish requirements for identifying any hazardous wastes that may be generated in the course of the remedial action.
	RCRA - Standards Applicable to Generators of Hazardous Waste (40 CFR 262)	Applicable	These regulations establish requirements for the on-site management of any hazardous wastes that may be generated in the course of the remedial action.
	RCRA - Standards Applicable to Transporters of Hazardous Waste (40 CFR 263)	Applicable	These regulations establish requirements for the off-site transportation of any hazardous wastes that may be generated in the course of the remedial action.
	RCRA – Criteria for Municipal Solid Waste Landfills (Subtitle D) (40 CFR 258)	Relevant and Appropriate	These regulations establish requirements for operating solid waste disposal facilities and practices that are not regulated under subtitle C of RCRA. The remedial action being evaluated for the Site may involve disposal of waste on-site.
	National Primary and Secondary Ambient Air Quality Standards (40 CFR 50)	Relevant and Appropriate	Engineering controls are required to reduce emissions associated with excavation and transportation as needed to maintain ambient air quality standards.
	Toxic Substances Control Act (TSCA) (40 CFR 761)	Applicable	These regulations establish requirements for management of PCB remediation waste that may be generated in the course of the remedial action.
	National Pollution Discharge Elimination System (NPDES) (40 CFR 122 – 125)	Applicable	This regulation establishes requirements for storm water discharges associated with industrial activity, including waste disposal areas. Soil remediation may require consideration of storm water regulations.
	Underground Injection Control (40 CFR 144 – 147)	Applicable	These regulations protect groundwater sources of drinking water by imposing restrictions to underground injections. Groundwater remedial action may require injections.
	Occupational Safety & Health Administration (29 CFR 1910)	Applicable	These regulations specify requirements for health and safety protection for workers potentially exposed to contaminants in hazardous waste Site remediation.
Occupational Safety & Health Administration (29 CFR 1926)	Applicable	These regulations specify the type of safety equipment and procedures to be followed during construction activities, including earthwork construction.	

Table 6. Potential Action-Specific ARARs
Cam-Or Site, Westville, Indiana

Authority	Requirement	Status	Requirement Synopsis
State Regulatory Requirement	Hazardous Waste Management (329 IAC 3.1)	Applicable	This regulation establishes hazardous waste management programs consistent with federal RCRA regulations. The remedial actions being evaluated may require identifying, transporting or storing hazardous wastes.
	Non-Hazardous Waste Management (329 IAC 10)	Applicable	This regulation establishes requirements for handling and management of non-hazardous waste and for solid waste disposal facilities.
	Regulation of Wastes Containing PCBs (329 IAC 4.1)	Applicable	This regulation applies to disposal of solid or liquid waste containing PCBs. The remedial actions being evaluated may generate waste containing PCBs.
	NPDES General Permit Rule (327 IAC 15)	Relevant and Appropriate	This regulation is for point source discharges. The remedial actions being evaluated may require discharge of treated water. Discharge locations will be within the NCP definition of Site; therefore, substantive requirements must be met.
	Water Well Driller Licensing Requirements (312 IAC 13)	Applicable	This regulation provides for licensing of water well drillers. Installation of water wells (such as extraction wells) may be required under the selected remedy.
	Water Well Drilling Requirements (IC 25-39-4)	Applicable	This regulation establishes standards for the installation of water wells. The remedial alternatives being evaluated may require installation of water wells (such as extraction wells).
	Extraction Well Registration Requirements (IC 14-25-7-15)	Applicable	This regulation requires registration of groundwater extraction wells which have a combined capability of pumping greater than 70 gallons per minute. The remedial actions being evaluated may require installation of extraction wells with combined total capacity of 175 gallons per minute.
	Air Quality Standards (326 IAC 6-4-2, 6-4-4)	Applicable	This regulation establishes standards for fugitive dust and dust minimization that apply to soil removal and transportation. The remedial actions being evaluated may require removal and transportation of soil.
State Criteria, Advisories, and Guidance	IDEM Contained-In Policy Guidance for RCRA (NPD ID WASTE-0052)	To Be Considered	This non-rule policy document provides guidance in interpreting RCRA requirements for soil and groundwater management.

Notes

ARARs = Applicable or Relevant and Appropriate Requirements
 CFR – Code of Federal Regulations
 NPDES - National Pollution Discharge Elimination System
 PCB - Polychlorinated biphenyl
 RCRA – Resource Conservation and Recovery Act
 TSCA - Toxic Substances Control Act

APPENDIX C
Tables G1 -14 and Tables L1-4

Table G-1

Summary of Chemical of Concern and Medium-Specific Exposure Point Concentration

Scenario Timeframe: Future

Medium: Soil

Exposure Medium: Surface and Subsurface Soil (0-16')

Exposure Point	Chemical of Concern	Concentration Detected		Units	Frequency of Detection	Exposure Point Concentration	Exposure Point Concentration Units	Statistical Measure (1)
		Minimum	Maximum					
On-Property	Lead	2.8	3.4E+04	mg/kg	107 / 107	2998	mg/kg	95% UCL

Key

(1) Statistics: Maximum Detected Value (Max); 95% UCL (95% UCL); Arithmetic Mean (Mean)

The table represents the future chemical of concern (COC) and exposure point concentration (EPC) for the COC detected in soil (i.e., the concentrations that will be used to estimate the exposure and risk for the COC in soil). The table includes the range of concentrations detected for the COC, as well as the frequency of detection (i.e., the number of times the chemical was detected in the samples collected at the site), the EPC, and how the EPC was derived. This table indicates that lead is the only COC in soil at the site. The 95% UCL on the arithmetic mean was used as the EPC for lead.

Source: A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents (U.S. EPA, 1999)

Table G-2

Summary of Chemical of Concern and Medium-Specific Exposure Point Concentration

Scenario Timeframe: Future

Medium: Groundwater

Exposure Medium: Groundwater

Exposure Point	Chemical of Concern	Concentration Detected		Units	Frequency of Detection	Exposure Point Concentration	Exposure Point Concentration Units	Statistical Measure (1)
		Minimum	Maximum					
Nearer Portion of Plume								
	Benzene	1	140	ug/L	12 / 36	140	ug/L	Max
	cis-1,2-Dichloroethene	22	170	ug/L	3 / 28	170	ug/L	Max
	Dichloromethane	1	7	ug/L	12 / 36	7	ug/L	Max
	Tetrahydrofuran	2	160	ug/L	19 / 42	160	ug/L	Max
	Trichloroethene	5	33	ug/L	3 / 36	33	ug/L	Max
	Vinyl Chloride	0.74	14	ug/L	3 / 36	14	ug/L	Max
	1,4-Dioxane	2.3	11000	ug/L	38 / 58	11000	ug/L	Max
	bis(2-Chloroethyl)ether	2	6	ug/L	8 / 34	6	ug/L	Max
	bis(2-Ethylhexyl)phthalate	1	61	ug/L	5 / 34	61	ug/L	Max
	4,4'-DDT	0.01	0.22	ug/L	4 / 17	0.22	ug/L	Max
	alpha-BHC	0.01	0.03	ug/L	2 / 17	0.03	ug/L	Max
	beta-BHC	0.18	0.18	ug/L	1 / 17	0.18	ug/L	Max
	Chlordane	0.02	8	ug/L	3 / 17	8	ug/L	Max
	Dieldrin	0.1	0.1	ug/L	1 / 17	0.1	ug/L	Max
	Antimony	2.1	9.1	ug/L	9 / 11	9.1	ug/L	Max
	Arsenic	2.3	20	ug/L	8 / 11	20	ug/L	Max
	Iron	67	30000	ug/L	14 / 14	30000	ug/L	Max
	Thallium	2.5	6	ug/L	7 / 11	6	ug/L	Max

Key

(1) Statistics: Maximum Detected Value (Max); 95% UCL (95% UCL); Arithmetic Mean (Mean)

The table represents the future chemicals of concern (COCs) and exposure point concentrations (EPCs) for each of the COCs detected in groundwater near the property (i.e., the concentrations that will be used to estimate the exposure and risk for each COC in Nearer Portion of Plume groundwater). The table includes the range of concentrations detected for each COC, as well as the frequency of detection (i.e., the number of times the chemical was detected in the samples collected at the site), the EPC, and how the EPC was derived. This table indicates that the inorganic chemicals, antimony, arsenic, iron, manganese, and thallium, and the organic chemicals, 1,4-dioxane, benzene, dichloromethane, and tetrahydrofuran are the most frequently detected COCs in Nearer Portion of Plume groundwater. The maximum detected concentration was used as the EPC for each of the COCs detected in Nearer Portion of Plume groundwater.

Table G-3

Summary of Chemical of Concern and Medium-Specific Exposure Point Concentration

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical of Concern	Concentration Detected		Units	Frequency of Detection	Exposure Point Concentration	Exposure Point Concentration Units	Statistical Measure (1)
		Minimum	Maximum					
Further Portion of Plume								
	1,4-Dioxane	3	4300	ug/L	54 / 106	4300	ug/L	Max
	bis(2-Ethylhexyl)phthalate	1	130	ug/L	4 / 10	130	ug/L	Max
	Arsenic	2.1	7.9	ug/L	6 / 6	7.9	ug/L	Max
	Iron	190	10000	ug/L	6 / 6	10000	ug/L	Max
	Thallium	4	4	ug/L	2 / 6	4	ug/L	Max

Key

(1) Statistics: Maximum Detected Value (Max); 95% UCL (95% UCL); Arithmetic Mean (Mean)

The table represents the future chemicals of concern (COCs) and exposure point concentrations (EPCs) for each of the COCs detected in groundwater further downgradient of the property (i.e., the concentrations that will be used to estimate the exposure and risk for each COC in Further Portion of Plume groundwater). The table includes the range of concentrations detected for each COC, as well as the frequency of detection (i.e., the number of times the chemical was detected in the samples collected at the site), the EPC, and how the EPC was derived. This table indicates that the inorganic chemicals, arsenic and iron, and the organic chemical 1,4-dioxane are the most frequently detected COCs in Further Portion of Plume groundwater. The maximum detected concentration was used as the EPC for each of the COCs detected in Further Portion of Plume groundwater.

Table G-4

Cancer Toxicity Data Summary

Pathway: Ingestion, Dermal

Chemical of Concern	Oral Cancer Slope Factor	Dermal Cancer Slope Factor	Slope Factor Units	Weight of Evidence/Cancer Guideline Description	Source	Date (MM/DD/YYYY)
Benzene	5.5E-02	5.5E-02	(mg/kg-day)	A	IRIS	02/01/08
cis-1,2-Dichloroethene	N/A	N/A	N/A	D	IRIS	02/01/08
Dichloromethane	7.5E-03	7.5E-03	(mg/kg-day)	B2	IRIS	02/01/08
Tetrahydrofuran	7.6E-03	7.6E-03	(mg/kg-day)	N/A	USEPA Region 9	02/01/08
Trichloroethene	4.0E-01	4.0E-01	(mg/kg-day)	N/A	NCEA	02/01/08
Vinyl Chloride - adult	7.2E-01	7.2E-01	(mg/kg-day)	A	IRIS	02/01/08
Vinyl Chloride - lifetime	1.5E+00	1.5E+00	(mg/kg-day)	A	IRIS	02/01/08
1,4-Dioxane	1.1E-02	1.1E-02	(mg/kg-day)	B2	IRIS	02/01/08
bis(2-Chloroethyl)ether	1.1E+00	1.1E+00	(mg/kg-day)	B2	IRIS	02/01/08
bis(2-Ethylhexyl)phthalate	1.4E-02	1.4E-02	(mg/kg-day)	B2	IRIS	02/01/08
4,4'-DDT	3.4E-01	3.4E-01	(mg/kg-day)	B2	IRIS	02/01/08
alpha-BHC	6.3E+00	6.3E+00	(mg/kg-day)	B2	IRIS	02/01/08
beta-BHC	1.8E+00	1.8E+00	(mg/kg-day)	C	IRIS	02/01/08
Chlordanes	3.5E-01	3.5E-01	(mg/kg-day)	B2	IRIS	02/01/08
Dieldrin	1.6E+01	1.6E+01	(mg/kg-day)	B2	IRIS	02/01/08
Antimony	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	1.5E+00	1.5E+00	(mg/kg-day)	A	IRIS	02/01/08
Iron	N/A	N/A	N/A	N/A	N/A	N/A
Lead	N/A	N/A	N/A	B2	IRIS	02/01/08
Thallium	N/A	N/A	N/A	D	IRIS	02/01/08

Pathway: Inhalation

Chemical of Concern	Unit Risk	Units	Inhalation Cancer Slope Factor	Units	Weight of Evidence/Cancer Guideline Description	Source	Date (MM/DD/YYYY)
Benzene	7.8E-06	(ug/m ³) ⁻¹	2.7E-02	(mg/kg-day) ⁻¹	A	IRIS*	02/01/08
cis-1,2-Dichloroethene	N/A	N/A	N/A	N/A	D	IRIS	N/A
Dichloromethane	4.7E-07	(ug/m ³) ⁻¹	1.6E-03	(mg/kg-day) ⁻¹	B2	IRIS*	02/01/08
Tetrahydrofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethene	1.1E-04	(ug/m ³) ⁻¹	3.9E-01	(mg/kg-day) ⁻¹	N/A	NCEA	02/01/08
Vinyl Chloride - adult	4.4E-06	(ug/m ³) ⁻¹	1.5E-02	(mg/kg-day) ⁻¹	A	IRIS*	02/01/08
Vinyl Chloride - lifetime	8.8E-06	(ug/m ³) ⁻¹	3.1E-02	(mg/kg-day) ⁻¹	A	IRIS*	02/01/08
bis(2-Chloroethyl)ether	3.3E-04	(ug/m ³) ⁻¹	1.2E+00	(mg/kg-day) ⁻¹	B2	IRIS*	02/01/08

Key

N/A: Not applicable

IRIS: Integrated Risk Information System, U.S. EPA

NCEA = National Center for Environmental Assessment

EPA Group

A - Human carcinogen

B1 - Probable human carcinogen - indicates that limited human data are available

B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans

C - Possible human carcinogen

D - Not classifiable as a human carcinogen

E - Evidence of noncarcinogenicity

* - indicates slope factor calculated from unit risk, SF = 70 kg / 20 m³-d⁻¹ * UR

This table provides the carcinogenic risk information which is relevant to the contaminants of concern in groundwater. At this time, slope factors are not available for the dermal route of exposure. Thus, the dermal slope factors used in this assessment have been extrapolated from oral values. An adjustment factor is sometimes applied, and is dependent upon how well the chemical is absorbed via the oral route. Adjustments are particularly important for chemicals with less than 50% absorption via the ingestion route. However, adjustment is not necessary for the chemicals evaluated at this site. Therefore, the same values presented above were used as the dermal carcinogenic slope factors for these contaminants. Five of the COCs are also considered carcinogenic via the inhalation route. 1,4-Dioxane, bis(2-ethylhexyl)phthalate, 4,4'-DDT, alpha-BHC, beta-BHC, chlordanes, dieldrin, antimony, arsenic, iron, lead, and thallium as non-volatile contaminants, were not included in the evaluation of inhalation exposures.

Source: A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents (U.S. EPA, 1999)

Table G-5

Non-Cancer Toxicity Data Summary

Pathway: Ingestion, Dermal

Chemical of Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Dermal RfD	Dermal RfD Units	Primary Target Organ	Combined Uncertainty/ Modifying Factors	Sources of RfD: Target Organ	Dates of RfD: Target Organ (MM/DD/YYYY)
Benzene	Chronic	4.0E-03	mg/kg-day	4.0E-03	mg/kg-day	Immune System	300	IRIS	02/01/08
cis-1,2-Dichloroethene	Chronic	1.0E-02	mg/kg-day	1.0E-02	mg/kg-day	Blood	3000	PPRTV	02/01/08
Dichloromethane	Chronic	6.0E-02	mg/kg-day	6.0E-02	mg/kg-day	Liver	100	IRIS	02/01/08
Tetrahydrofuran	Chronic	2.1E-01	mg/kg-day	2.1E-01	mg/kg-day	Liver	N/A	USEPA Region 9	02/01/08
Trichloroethene	Chronic	3.0E-04	mg/kg-day	3.0E-04	mg/kg-day	Liver	N/A	NCEA	02/01/08
Vinyl Chloride	Chronic	3.0E-03	mg/kg-day	3.0E-03	mg/kg-day	Liver	30	IRIS	02/01/08
1,4-Dioxane	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
bis(2-Chloroethyl)ether	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
bis(2-Ethylhexyl)phthalate	Chronic	2.0E-02	mg/kg-day	2.0E-02	mg/kg-day	Liver	1000	IRIS	02/01/08
4,4'-DDT	Chronic	5.0E-04	mg/kg-day	5.0E-04	mg/kg-day	Liver	100	IRIS	02/01/08
alpha-BHC	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
beta-BHC	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlordanes	Chronic	5.0E-04	mg/kg-day	5.0E-04	mg/kg-day	Liver	300	IRIS	02/01/08
Dieldrin	Chronic	5.0E-05	mg/kg-day	5.0E-05	mg/kg-day	Liver	100	IRIS	02/01/08
Antimony	Chronic	4.0E-04	mg/kg-day	6.0E-05	mg/kg-day	Blood	1000	IRIS	02/01/08
Arsenic	Chronic	3.0E-04	mg/kg-day	3.0E-04	mg/kg-day	Skin	3	IRIS	02/01/08
Iron	Chronic	3.0E-01	mg/kg-day	3.0E-01	mg/kg-day	Liver and gastrointestinal	N/A	NCEA	02/01/08
Lead	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Thallium	Chronic	8.0E-05	mg/kg-day	8.0E-05	mg/kg-day	Liver	3000	IRIS	02/01/08

Pathway: Inhalation

Chemical of Concern	Chronic/ Subchronic	Inhalation RfC	Inhalation RfC Units	Inhalation RfD	Inhalation RfD Units	Primary Target Organ	Combined Uncertainty/ Modifying Factors	Sources of RfC: RfD: Target Organ	Dates (MM/DD/YYYY)
Benzene	Chronic	30	ug/m ³	0.009	mg/kg-day	Immune System	300	IRIS*	03/07/07
cis-1,2-Dichloroethene	Chronic	200	ug/m ³	0.06	mg/kg-day	Blood	N/A	PPRTV*	02/01/08
Dichloromethane	Chronic	3000	ug/m ³	0.9	mg/kg-day	Liver	100	HEAST*	1997
Tetrahydrofuran	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethene	Chronic	40	ug/m ³	0.01	mg/kg-day	Liver	N/A	NCEA*	02/01/08
Vinyl Chloride	Chronic	100	ug/m ³	0.03	mg/kg-day	Liver	30	IRIS*	02/01/08
bis(2-Chloroethyl)ether	Chronic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Key

N/A - No information available
 IRIS - Integrated Risk Information System, U.S. EPA
 PPRTV = Provisional Peer-Review Toxicity Values, obtained from Superfund Technical Support Center
 NCEA = National Center for Environmental Assessment
 HEAST = National Center for Exposure Assessment, Health Effects Assessment Summary Tables
 * - indicates RfD calculated from RfC; RfD = RfC * 20 m³-d⁻¹ / 70 kg

This table provides non-carcinogenic risk information which is relevant to the contaminants of concern in groundwater. Fourteen of the COCs have oral toxicity data indicating their potential for adverse non-carcinogenic health effects in humans. Chronic toxicity data available for the fourteen COCs for oral exposures have been used to develop chronic oral reference doses (RfDs), provided in this table. The available chronic toxicity data indicate that benzene affects the immune system, bis(2-ethylhexyl)phthalate, dichloromethane, tetrahydrofuran, trichloroethene, vinyl chloride, 4,4'-DDT, chlordanes, dieldrin, iron, and thallium affect the liver, cis-1,2-dichloroethene and antimony affect the blood, iron affects the gastrointestinal system, and arsenic affects the skin. Reference doses are not available for 1,4-dioxane, bis(2-chloroethyl)ether, alpha-BHC, beta-BHC, and lead. Dermal RfDs are not available for any of the COCs. As was the case for the carcinogenic data, dermal RfDs can be extrapolated from oral RfDs by applying an adjustment factor as appropriate. Oral RfDs were adjusted for COCs with less than 50% absorption via the ingestion route (antimony) to derive a dermal RfD for this COC. Inhalation reference concentrations (RfCs) are available for five volatile COCs evaluated via the inhalation pathway: 1,4-Dioxane, bis(2-ethylhexyl)phthalate, 4,4'-DDT, alpha-BHC, beta-BHC, chlordanes, dieldrin, antimony, arsenic, iron, lead, and thallium as non-volatile contaminants, were not included in this table.

Table G-6

Risk Characterization Summary - Carcinogens

Scenario Timeframe: Future
 Receptor Population: Resident
 Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total
Groundwater	Groundwater	Nearer Portion of Plume	Benzene	2E-04	2E-04	9E-06	--	4E-04
			Dichloromethane	1E-06	6E-07	2E-08	--	2E-06
			Tetrahydrofuran	2E-05	N/A	1E-07	--	2E-05
			Trichloroethene	3E-04	7E-04	1E-05	--	9E-04
			Vinyl Chloride	3E-04	2E-05	6E-06	--	3E-04
			1,4-Dioxane	2E-03	--	3E-06	--	2E-03
			bis(2-Chloroethyl)ether	1E-04	4E-04	9E-07	--	5E-04
			bis(2-Ethylhexyl)phthalate	2E-05	--	2E-06	--	2E-05
			4,4'-DDT	1E-06	--	2E-06	--	3E-06
			alpha-BHC	4E-06	--	4E-07	--	4E-06
			beta-BHC	6E-06	--	7E-07	--	7E-06
			Chlordanes	5E-05	--	8E-06	--	6E-05
			Dieldrin	3E-05	--	1E-06	--	3E-05
			Arsenic	6E-04	--	2E-06	--	6E-04
			Groundwater Risk Total =					
Total Risk =								5E-03

Key

-- Route of exposure is not applicable to this medium.

N/A - Toxicity criteria are not available to quantitatively address this route of exposure.

--- Route of exposure is not applicable to this medium.

This table provides risk estimates for the significant routes of exposure for the future child and adult resident exposed to Nearer Portion of Plume groundwater used as household water should groundwater COCs migrate to a potable well. These risk estimates are based on a reasonable maximum exposure and were developed by taking into account various conservative assumptions about the frequency and duration of a child's and adult's exposure to groundwater, as well as the toxicity of the COCs (1,4-dioxane, bis(2-chloroethyl)ether, bis(2-ethylhexyl)phthalate, benzene, dichloromethane, tetrahydrofuran, trichloroethene, vinyl chloride, 4,4'-DDT, alpha-BHC, beta-BHC, chlordanes, dieldrin, and arsenic). The total risk from direct exposure to contaminated groundwater at this site to a future resident, in the event that groundwater migrates from the Nearer Portion of the Plume to a potable well is estimated to be 5×10^{-3} . The COCs contributing most to this risk level are 1,4-dioxane, bis(2-chloroethyl)ether, benzene, trichloroethene, vinyl chloride, and arsenic in Nearer Portion of Plume groundwater. This risk level indicates that if no clean-up action is taken, an individual would have an increased probability of 5 in 1000 of developing cancer as a result of site-related exposure to these COCs in groundwater.

Table G-7

Risk Characterization Summary - Non-Carcinogens

Scenario Timeframe: Future
 Receptor Population: Resident
 Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Hazard Quotient			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Nearer Portion of Plume	Benzene	Immune System	3E+00	4E+00	2E-01	8E+00
			cis-1,2-Dichloroethene	Blood	2E+00	7E-01	4E-02	2E+00
			Trichloroethene	Liver	1E+01	8E-01	4E-01	1E+01
			Chlordanes	Liver	2E+00	--	2E-01	2E+00
			Antimony	Blood	2E+00	--	5E-02	2E+00
			Arsenic	Skin	6E+00	--	2E-02	6E+00
			Iron	Liver and gastrointestinal	1E+01	--	3E-02	1E+01
			Thallium	Liver	7E+00	--	2E-02	7E+00
Groundwater Hazard Index Total =							5E+01	
Gastrointestinal System Hazard Index =							1E+01	
Immune System Hazard Index =							8E+00	
Liver Hazard Index =							3E+01	
Blood Hazard Index =							5E+00	
Skin Hazard Index =							6E+00	

Key

N/A - Toxicity criteria are not available to quantitatively address this route of exposure.

-- Route of exposure is not applicable to this medium.

This table provides hazard quotients (HQs) for each route of exposure and the hazard index (sum of the hazard quotients) for all routes of exposure for the future resident exposed to Nearer Portion of Plume groundwater used as household water should groundwater COCs migrate to a potable well. The Risk Assessment Guidance (RAGS) for Superfund states that, generally, a hazard index (HI) of greater than 1 indicates the potential for adverse noncancer effects. The estimated target organ HIs between 5 and 30 indicate that the potential for adverse effects could occur from exposure to contaminated groundwater containing benzene, cis-1,2-dichloroethene, trichloroethene, chlordanes, antimony, arsenic, iron, and thallium.

Table G-8

Risk Characterization Summary - Carcinogens

Scenario Timeframe: Future
 Receptor Population: Resident
 Receptor Age: Young Ch Id/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total
Groundwater	Groundwater	Further Portion of Plume	1,4-Dioxane	9E-04	--	1E-06	--	9E-04
			bis(2-Ethylhexyl)phthalate	4E-05	--	3E-06	--	4E-05
			Arsenic	2E-04	--	9E-07	--	2E-04
Groundwater Risk Total =								1E-03
Total Risk =								1E-03

Key

-- Route of exposure is not applicable to this medium.
 N/A - Toxicity criteria are not available to quantitatively address this route of exposure.
 NE = Not evaluated

This table provides risk estimates for the significant routes of exposure for the future child and adult residents exposed to Further Portion of Plume groundwater used as household water. These risk estimates are based on a reasonable maximum exposure and were developed by taking into account various conservative assumptions about the frequency and duration of a child's and adult's exposure to groundwater, as well as the toxicity of the COCs (1,4-dioxane, bis(2-ethylhexyl)phthalate, and arsenic). The total risk from direct exposure to contaminated groundwater at this site to a future resident is estimated to be 1×10^{-3} . The COCs contributing most to this risk level are 1,4-dioxane and arsenic in Further Portion of Plume groundwater. This risk level indicates that if no clean-up action is taken, an individual would have an increased probability of 1 in 1000 of developing cancer as a result of site-related exposure to the COCs in Further Portion of Plume groundwater.

Source: A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents (U.S. EPA, 1999)

Table G-9

Risk Characterization Summary - Non-Carcinogens

Scenario Timeframe: Future
 Receptor Population: Resident
 Receptor Age: Young Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Hazard Quotient			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Further Portion of Plume	Arsenic	Skin	3E+00	--	8E-03	3E+00
			Iron	Liver and gastrointestinal	3E+00	--	1E-02	3E+00
			Thallium	Liver	5E+00	--	2E-02	5E+00
Groundwater Hazard Index Total =								1E+00
Gastrointestinal System Hazard Index =								3E+00
Liver Hazard Index =								8E+00
Skin Hazard Index =								3E+00

Key
 N/A - Toxicity criteria are not available to quantitatively address this route of exposure.
 -- Route of exposure is not applicable to this medium.
 NE = Not evaluated

This table provides hazard quotients (HQs) for each route of exposure and the hazard index (sum of the hazard quotients) for all routes of exposure for the future resident exposed to Further Portion of Plume groundwater used as household water. The Risk Assessment Guidance (RAGS) for Superfund states that, generally, a hazard index (HI) of greater than 1 indicates the potential for adverse noncancer effects. The estimated target organ HIs between 3 and 8 indicate that the potential for adverse effects could occur from exposure to contaminated groundwater containing arsenic, iron, and thallium.

Source: A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents (U.S. EPA, 1999)

Table G-10

**Occurrence, Distribution, and Selection of Chemicals of Concern (COPECs)
Cam-Or Site, Westville, Indiana**

Medium: Surface Water

Chemical ^{1, a, b}	Frequency of Detection	Maximum Detected Concentration (µg/L)	Screening Toxicity Value (µg/L)	Screening Toxicity Value Source	HQ	COPEC? ²	Reason for Exclusion
Acetone	5 / 8	10	1700	ESL	<1	No	BSV
Dichloromethane	1 / 8	1	140	ESL for chloroform	<1	No	BSV
Toluene	1 / 8	1	253	ESL	<1	No	BSV
1,4-Dioxane	20 / 24	600	22000	ESL	<1	No	BSV
delta-BHC	1 / 7	0.02	0.08	IWQS omza-cac for lindane	<1	No	BSV
Endrin ketone	1 / 8	0.01	0.0023	IWQS omza-cac for endrin	4	No	(c)
Aluminum	8 / 8	590	87	AWQC	7	No	(c)
Antimony	2 / 8	4	80	ESL	<1	No	BSV
Barium	8 / 8	74	220	ESL	<1	No	BSV
Beryllium	7 / 8	1.8	3.6	ESL	<1	No	BSV
Chromium	2 / 8	5.1	475	IWQS omza-cac	<1	No	BSV
Cobalt	8 / 8	2.2	24	ESL	<1	No	BSV
Copper	8 / 8	5.1	47	IWQS omza-cac	<1	No	BSV
Iron	8 / 8	4700	1000	AWQC	5	No	(c)
Manganese	8 / 8	210	NA	NA	NA	No	(c)
Nickel	8 / 8	3	416	IWQS omza-cac	<1	No	BSV
Thallium	7 / 8	4	10	ESL	<1	No	BSV
Vanadium	2 / 8	1.6	12	ESL	<1	No	BSV
Zinc	8 / 8	73	298	IWQS omza-cac	<1	No	BSV

Notes:

¹ Chemicals identified in the SERA with maximum detected concentrations exceeding screening criteria or considered bioaccumulative were evaluated in the BERA.

² Analytes were selected in the BERA as contaminants of potential ecological concern (COPECs) if the maximum HQ exceeded 1.0

- a. Hardness-dependant metals criteria (Cd, Cr, Cu, Pb, Ni, Zn) are calculated using the average study area hardness of 389 mg/L as CaCO₃.
 b. Total metal concentrations are reported.
 c. Not a chemical of potential ecological concern based on chemical-specific evaluation of toxicity and receptor species, as evaluated in the BERA COPEC refinement.

HQ - Hazard Quotient (ratio of the maximum detected concentration to the screening toxicity value)

COPEC - Contaminant of potential ecological concern

BSV - Below Screening Value

AWQC = USEPA Ambient Water Quality Criteria

IWQS omza-cac = Indiana Water Quality Standards, outside mixing zone aquatic life values

ESL = USEPA Region 5 Ecological Screening Level

NA = not available

Table G-11

**Occurrence, Distribution, and Selection of Chemicals of Concern (COPECs)
Cam-Or Site, Westville, Indiana**

Medium: Sediment:

Chemical ¹	Frequency of Detection	Maximum Detected Concentration (mg/kg)	Screening Toxicity Value (mg/kg)	Screening Toxicity Value Source ^a	HQ	Benthic Invertebrates		Wildlife	
						COPEC? ^{2, b}	Reason for Exclusion	COPEC? ^{2, c}	Reason for Exclusion
2,4-Dimethylphenol	1 / 9	0.26	0.304	ESL	<1	No	BSV	No	BSV
3-/4-Methylphenol	4 / 9	0.16	0.0202	ESL	8	No	(1)	No	(2)
4-Nitroaniline	1 / 9	0.2	NA	NA	NA	No	(1)	No	(2)
bis(2-Ethylhexyl)phthalate	5 / 9	34	0.182	ESL	187	No	(1)	No	(2)
Butyl benzyl phthalate	5 / 9	0.096	1.97	ESL	<1	No	BSV	No	BSV
Carbazole	2 / 9	0.095	NA	NA	NA	No	(1)	No	(2)
Diethyl phthalate	1 / 9	0.006	0.295	ESL	<1	No	BSV	No	BSV
Di-n-butylphthalate	4 / 9	0.12	1.114	ESL	<1	No	BSV	No	BSV
Di-n-octylphthalate	3 / 9	0.16	40.6	ESL	<1	No	BSV	No	BSV
Phenol	1 / 9	0.026	0.0491	ESL	<1	No	BSV	No	BSV
Total PAHs	12 / 12	48	2.9	ESL	17	Yes		No	(2)
Total PCBs	3 / 9	1.1	0.0598	ESL	18	No	(1)	No	(2)
4,4'-DDD	7 / 9	0.087	0.00488	ESL	18	No	(1)	No	(2)
4,4'-DDE	7 / 9	0.017	0.00316	ESL	5	No	(1)	No	(2)
4,4'-DDT	6 / 9	0.012	0.00416	ESL	3	No	(1)	No	(2)
Aldrin	4 / 9	0.035	0.002	ESL	18	No	(1)	No	(2)
alpha-Chlordane	6 / 9	0.034	0.00324	ESL	10	No	(1)	No	(2)
Dieldrin	8 / 9	0.017	0.0019	ESL	9	No	(1)	No	(2)
Endrin	5 / 9	0.055	0.00222	ESL	25	No	(1)	No	(2)
gamma-Chlordane	8 / 9	0.0055	0.00324	ESL	2	No	(1)	No	(2)

Table G-11

**Occurrence, Distribution, and Selection of Chemicals of Concern (COPECs)
Cam-Or Site, Westville, Indiana**

Medium: Sediment:

Chemical ¹	Frequency of Detection	Maximum Detected Concentration (mg/kg)	Screening Toxicity Value (mg/kg)	Screening Toxicity Value Source ^a	HQ	Benthic Invertebrates		Wildlife	
						COPEC? ^{2, b}	Reason for Exclusion	COPEC? ^{2, c}	Reason for Exclusion
Aluminum	9 / 9	7110	53000	SRV	<1	No	BSV	No	BSV
Antimony	5 / 9	4.5	1.3	SRV	3	No	(1)	No	(2)
Arsenic	9 / 9	16	25	SRV	<1	No	BSV	No	BSV
Barium	9 / 9	189	360	SRV	<1	No	BSV	No	BSV
Beryllium	9 / 9	1	0.8	SRV	1	No	BSV	No	BSV
Cadmium	2 / 9	1.5	0.96	SRV	2	Yes		No	(3)
Chromium	9 / 9	16	53	SRV	<1	No	BSV	No	BSV
Cobalt	9 / 9	5	12	SRV	<1	No	BSV	No	BSV
Copper	12 / 12	67	42	SRV	2	Yes		No	(2)
Iron	9 / 9	44300	51000	SRV	<1	No	BSV	No	BSV
Lead	12 / 12	500	47	SRV	11	Yes		No	(2)
Manganese	9 / 9	474	3000	SRV	<1	No	BSV	No	BSV
Mercury	4 / 12	0.73	0.12	SRV	6	Yes		No	(2)
Nickel	9 / 9	14	61	SRV	<1	No	BSV	No	BSV
Selenium	9 / 9	3.8	2.6	SRV	1	No	BSV	No	BSV
Silver	8 / 11	2.5	0.43	SRV	6	Yes		No	(2)
Thallium	9 / 9	5.7	4.7	SRV	1	No	BSV	No	BSV
Vanadium	9 / 9	14	40	SRV	<1	No	BSV	No	BSV
Zinc	12 / 12	520	190	SRV	3	Yes		Yes	

Table G-11

Occurrence, Distribution, and Selection of Chemicals of Concern (COPECs)
Cam-Or Site, Westville, Indiana

Medium: Sediment:

Chemical ¹	Frequency of Detection	Maximum Detected Concentration (mg/kg)	Screening Toxicity Value (mg/kg)	Screening Toxicity Value Source ^a	HQ	Benthic Invertebrates		Wildlife	
						COPEC? ^{2, b}	Reason for Exclusion	COPEC? ^{2, c}	Reason for Exclusion

Notes:

¹ Chemicals identified in the SERA with maximum detected concentrations exceeding screening criteria or considered bioaccumulative were evaluated in the BERA.

² Analytes were selected in the BERA as contaminants of potential ecological concern (COPECs) if the maximum HQ exceeded 1.0.

a. Screening values for metals are the maximum Sediment Reference Values (SRVs) from Ohio EPA (2003) for all eco-regions.

Screening values for organic compounds are USEPA Region 5 Ecological Screening Levels (ESLs).

b. Chemicals are selected as COPECs for benthic invertebrates if the maximum concentration exceeds background maximum and screening values, except as noted:

(1) Not a chemical of potential ecological concern based on chemical-specific evaluation of toxicity and receptor species, as evaluated in the BERA COPEC refinement.

c. Important bioaccumulative compounds are selected as COPECs for wildlife if the maximum concentration exceeds background maximum and screening values, except as noted:

(2) Chemical is eliminated as COPEC based on a site-specific wildlife exposure and effects model as evaluated in the BERA COPEC refinement.

(3) The mean concentration for the off-site study area does not exceed the screening value, and no subareas are identified as containing systematically higher concentrations.

PCBs - Polychlorinated Biphenyls

PAHs - Polycyclic Aromatic Hydrocarbons

HQ - Hazard Quotient (ratio of the maximum detected concentration to the screening toxicity value)

COPEC - Contaminant of potential ecological concern

BSV - Below Screening Value

NA = not available

Table G-12

**Occurrence, Distribution, and Selection of Chemicals of Concern (COPECs)
Cam-Or Site, Westville, Indiana**

Medium: Soil

Chemical ¹	Frequency of Detection	Maximum Detected Concentration (mg/kg)	Screening Toxicity Value (mg/kg)	Screening Toxicity Value Source	HQ	COPEC? ^{2, a}	Reason for Exclusion ^a
1,1,1-Trichloroethane	1 / 5	4.9	29.8	ESL	<1	No	BSV
1,1-Dichloroethane	1 / 5	1.5	20.1	ESL	<1	No	BSV
1,2,4-Trimethylbenzene	1 / 3	0.12	10	ESL for xylenes	<1	No	BSV
2-Butanone (MEK)	1 / 5	8.5	89.6	ESL	<1	No	BSV
Acetone	1 / 5	0.14	2.5	ESL	<1	No	BSV
cis-1,2-Dichloroethene	1 / 5	4.7	0.784	ESL for trans-1,2-dichloroethene	6	No	(3)
Dichloromethane	1 / 5	1.6	4.05	ESL	<1	No	BSV
Ethylbenzene	1 / 5	8.5	5.16	ESL	2	No	(3)
Tetrachloroethene	1 / 5	59	9.92	ESL	6	No	(3)
Toluene	1 / 5	14	5.45	ESL	3	No	(3)
Trichloroethene	1 / 5	16	12.4	ESL	1	No	BSV
Xylenes, total	1 / 5	33	10	ESL	3	No	(3)
1,2-Dichlorobenzene	1 / 43	0.049	0.546	ESL	<1	No	BSV
2,4-Dimethylphenol	3 / 40	0.088	0.01	ESL	9	No	(3)
2-Methylphenol	2 / 40	0.023	40.4	ESL	<1	No	BSV
3-/4-Methylphenol	4 / 40	0.42	7.95	ESL	<1	No	BSV
Butyl benzyl phthalate	1 / 40	0.034	0.239	ESL	<1	No	BSV
bis(2-Ethylhexyl)phthalate	16 / 40	3	0.925	ESL	3	No	(3)
Carbazole	4 / 40	0.067	NA	NA	NA	No	(3)
Di-n-butylphthalate	16 / 40	0.64	0.15	ESL	4	No	(3)
Phenol	4 / 40	0.89	120	ESL	<1	No	BSV

Table G-12

**Occurrence, Distribution, and Selection of Chemicals of Concern (COPECs)
Cam-Or Site, Westville, Indiana**

Medium: Soil

Chemical ¹	Frequency of Detection	Maximum Detected Concentration (mg/kg)	Screening Toxicity Value (mg/kg)	Screening Toxicity Value Source	HQ	COPEC? ^{2, a}	Reason for Exclusion ^a
1-Methylnaphthalene	1 / 2	0.011	3.24	ESL for 2-methylnaphthalene	<1	No	BSV
2-Methylnaphthalene	18 / 42	1.7	3.24	ESL	<1	No	BSV
Acenaphthene	1 / 42	0.056	682	ESL	<1	No	BSV
Acenaphthylene	1 / 42	0.2	682	ESL	<1	No	BSV
Anthracene	4 / 42	0.098	1480	ESL	<1	No	BSV
Benzo(a)anthracene	10 / 42	0.5	5.21	ESL	<1	No	BSV
Benzo(a)pyrene	9 / 42	1.4	1.52	ESL	<1	No	BSV
Benzo(b)fluoranthene	9 / 42	0.91	59.8	ESL	<1	No	BSV
Benzo(e)pyrene	2 / 2	0.1	1.52	ESL for benzo(a)pyrene	<1	No	BSV
Benzo(g,h,i)perylene	24 / 42	2.1	119	ESL	<1	No	BSV
Benzo(k)fluoranthene	7 / 42	0.69	148	ESL	<1	No	BSV
Chrysene	13 / 42	0.71	4.73	ESL	<1	No	BSV
Dibenzo(a,h)anthracene	3 / 42	0.16	18.4	ESL	<1	No	BSV
Fluoranthene	12 / 42	1.1	122	ESL	<1	No	BSV
Fluorene	3 / 42	0.47	122	ESL	<1	No	BSV
Indeno(1,2,3-cd)pyrene	17 / 42	0.84	109	ESL	<1	No	BSV
Naphthalene	11 / 45	0.64	0.099	ESL	6	No	(3)
Perylene	1 / 2	0.016	119	ESL for benzo(g,h,i)perylene	<1	No	BSV
Phenanthrene	15 / 42	1.2	45.7	ESL	<1	No	BSV
Pyrene	17 / 42	0.99	78.5	ESL	<1	No	BSV
Total PCBs	27 / 46	3.3	0.000332	ESL	9940	Yes (1)	
4,4'-DDD	4 / 41	0.0053	0.758	ESL	<1	No	BSV
4,4'-DDE	7 / 41	0.0065	0.596	ESL	<1	No	BSV
4,4'-DDT	15 / 41	0.028	0.0035	ESL	8	Yes (1)	
Aldrin	1 / 41	0.00047	0.00332	ESL	<1	No	BSV
alpha-BHC	1 / 41	0.0082	0.0994	ESL	<1	No	BSV

Table G-12

**Occurrence, Distribution, and Selection of Chemicals of Concern (COPECs)
Cam-Or Site, Westville, Indiana**

Medium: Soil

Chemical ¹	Frequency of Detection	Maximum Detected Concentration (mg/kg)	Screening Toxicity Value (mg/kg)	Screening Toxicity Value Source	HQ	COPEC? ^{2, a}	Reason for Exclusion ^a
alpha-Chlordane	8 / 41	0.018	0.224	ESL for chlordane	<1	No	BSV
Dieldrin	19 / 41	0.021	0.00028	EcoSSL-mammal	75	No	(3)
Endosulfar I	1 / 41	0.00032	0.119	ESL	<1	No	BSV
Endosulfar II	1 / 41	0.0043	0.119	ESL	<1	No	BSV
Endosulfar Sulfate	1 / 41	0.0043	0.0358	ESL	<1	No	BSV
Endrin	13 / 41	0.031	0.0101	ESL	3	Yes (1)	
Endrin Aldehyde	8 / 41	0.016	0.0105	ESL	2	Yes (1)	
Endrin Ketone	5 / 41	0.0055	0.0101	ESL for endrin	<1	No	BSV
gamma-BHC (lindane)	2 / 41	0.00057	0.005	ESL	<1	No	BSV
gamma-Chlordane	6 / 41	0.0061	0.224	ESL for chlordane	<1	No	BSV
Heptachlor Epoxide	7 / 41	0.002	0.152	ESL	<1	No	BSV
Methoxychlor	6 / 41	0.016	0.0199	ESL	<1	No	BSV
Aluminum	41 / 41	33000	Narrative ^b	EcoSSL	NA	No	(b)
Antimony	29 / 41	10	0.29	EcoSSL-mammal	34	No	(3)
Arsenic	46 / 46	34	5.7	ESL	6	Yes	
Barium	41 / 41	1795	2000	EcoSSL-mammal	<1	No	BSV
Beryllium	41 / 41	11	21	EcoSSL-mammal	<1	No	BSV
Cadmium	37 / 46	5.5	0.38	EcoSSL-mammal	14	Yes	
Chromium	41 / 41	82	0.4	ESL	205	No	(3)
Cobalt	41 / 41	32	190	EcoSSL-avian	<1	No	BSV
Copper	46 / 46	280	5.4	ESL	52	Yes	
Lead	46 / 46	17460	16	EcoSSL-avian	1091	Yes	
Manganese	41 / 41	NA	NA	NA	NA	No	(3)
Mercury	24 / 41	2.4	0.1	ESL	24	No	(3)
Nickel	41 / 41	94	13.6	ESL	7	No	(3)
Selenium	19 / 46	26	0.03	ESL	867	Yes	
Silver	3 / 41	0.39	4.04	ESL	<1	No	BSV

Table G-12

**Occurrence, Distribution, and Selection of Chemicals of Concern (COPECs)
Cam-Or Site, Westville, Indiana**

Medium: Soil

Chemical ¹	Frequency of Detection	Maximum Detected Concentration (mg/kg)	Screening Toxicity Value (mg/kg)	Screening Toxicity Value Source	HQ	COPEC? ^{2, a}	Reason for Exclusion ^a
Thallium	17 / 41	5.7	0.06	ESL	95	No	(3)
Vanadium	41 / 41	280	1.59	ESL	176	No	(3)
Zinc	46 / 46	1300	6.62	ESL	196	Yes	

Notes:

¹ Chemicals identified in the SERA with maximum detected concentrations exceeding screening criteria or considered bioaccumulative were evaluated in the BERA.

² Analytes were selected in the BERA as contaminants of potential ecological concern (COPECs) if the maximum HQ exceeded 1.0.

a. Important bioaccumulative compounds are selected as COPECs if the maximum on-site concentration exceeds the screening and maximum background values, except as noted:

- (1) Chemical is identified as a COPEC for insectivorous wildlife only.
- (2) Chemical is eliminated as COPEC based on evaluation of importance as a bioaccumulative compound and site-specific evaluation in the BERA COPEC refinement.
- (3) Chemical is eliminated as COPEC based on a site-specific wildlife exposure and effects model as evaluated in the BERA COPEC refinement.

b. Aluminum is not of concern if soil pH exceeds 5.5.

HQ - Hazard Quotient (ratio of the maximum detected concentration to the screening toxicity value)

COPEC - Contaminant of potential ecological concern

BSV - Below Screening Value

PCBs - Polychlorinated Biphenyls

EcoSSL = USEPA Ecological Soil Screening Level, lower of avian and mammalian values

ESL = USEPA Region 5 Ecological Screening Level

NA = not available

Table G-13

Ecological Exposure Pathways of Concern

Exposure Media	Sensitive Environment Flag Y or N	Receptor	Endangered/Threatened Species Flag Y or N	Exposure Routes	Assessment Endpoints	Measurement Endpoints
AQUATIC HABITAT						
Sediment	N	Benthic Invertebrates	N	Ingestion and direct contact with chemicals in sediment	Survival and growth of local populations of benthic invertebrates	- Comparison of sediment COPC concentrations to concentrations associated with adverse effects on macroinvertebrates
Surface water	N	Fish populations	N	Ingestion and direct contact with chemicals in surface water	Fish Community Structure and Function	- Comparison of surface water COPC concentrations to concentrations associated with adverse effects to fish
TERRESTRIAL HABITAT						
Soils, Prey	N	Terrestrial herbivorous bird populations	N	Dietary exposures of COPCs	Sustainability (survival and reproduction) of local populations of herbivorous birds	- Comparison of estimated dietary doses of herbivorous birds (northern bobwhite quail) with TRVs using site-specific plant tissue data
Soils, Prey	N	Terrestrial herbivorous mammal populations	N	Dietary exposures of COPCs	Sustainability (survival and reproduction) of local populations of herbivorous mammals	- Comparison of estimated dietary doses of herbivorous mammals (meadow vole) with TRVs using site-specific plant tissue data
Soils, Prey	N	Terrestrial insectivorous bird populations	N	Dietary exposures of COPCs	Sustainability (survival and reproduction) of local populations of insectivorous birds	- Comparison of estimated dietary doses of insectivorous birds (American robin) with TRVs using site-specific earthworm tissue data
Soils, Prey	N	Terrestrial insectivorous mammal populations	N	Dietary exposures of COPCs	Sustainability (survival and reproduction) of local populations of insectivorous mammals	- Comparison of estimated dietary doses of insectivorous mammals (short-tail shrew) with TRVs using site-specific earthworm tissue data

Notes:

COPC - Chemical of Potential Concern
 TRVs - Toxicity reference values

Table G-14

COC Concentrations Expected to Provide Adequate Protection of Ecological Receptors

Habitat Type Name	Exposure Medium	COC	Protective Level	Units	Basis	Assessment Endpoint
Terrestrial	Soil, Frey	DDT ¹	*			- Sustainability (survival and reproduction) of local populations of insectivorous birds (robin)
	Soil, Frey	Endrin ¹	*			- Sustainability (survival and reproduction) of local populations of insectivorous birds (robin)
	Soil, Frey	Lead	330	mg/kg	NOAEL TRV, HQ = 1	- Sustainability (survival and reproduction) of local populations of insectivorous birds (robin)
	Soil, Frey	Lead	360	mg/kg	NOAEL TRV, HQ = 1	- Sustainability (survival and reproduction) of local populations of insectivorous mammals (shrew)
	Soil, Frey	Selenium	*			- Sustainability (survival and reproduction) of local populations of insectivorous birds (robin)
	Soil, Frey	Selenium	*			- Sustainability (survival and reproduction) of local populations of insectivorous mammals (shrew)
	Soil, Frey	Zinc	*			- Sustainability (survival and reproduction) of local populations of insectivorous birds (robin)
Semi-aquatic	Sediment, Soil, Frey	Zinc ¹	*			- Sustainability (survival and reproduction) of local populations of insectivorous and aquatic birds

Notes:

¹ Based on screening-level calculations

* No protective level concentration was developed for this COC, because it was not determined to pose an unacceptable ecological risk as part of the risk management decision in the Feasibility Study (Arcadis, 2007).

HQ - Hazard Quotient

COC - Chemical of Concern

TRV - Toxicity Reference Value

NOAEL - No observed adverse effects level

Table L-1: Soil Cleanup Levels for the Protection of Site Worker and Resident Direct Contact Exposures

On-Property, Surface and Subsurface Soil (0-16')

Non-Carcinogenic Chemical of Concern	Target Endpoint	Interim Cleanup Level (mg/kg)	Basis ⁽¹⁾	RME Hazard Quotient
Lead	Central Nervous System	800	EPA Commercial/Industrial Screening Level	N/A
Lead	Central Nervous System	400	EPA Residential Screening Level	N/A

Key

(1) For adult site workers, the FRG is based on the commercial/industrial screening level of 800 mg/kg, protective of all subpopulations including pregnant workers. For future residents, the PRG is based on the residential screening level of 400 mg/kg, developed by EPA using the Integrated Exposure Uptake Biokinetic Model specifically for evaluating lead exposures in young children.

Table L-2: Interim Groundwater Cleanup Levels - Residential Scenario

Carcinogenic Chemical of Concern	Cancer Classification	Interim Cleanup Level (ug/L)	Basis	RME Risk
Benzene	A	5	MCL	1E-05
Dichloromethane	B2	5	MCL	1E-06
Tetrahydrofuran	N/A	6.9	Risk	1E-06
Trichloroethene	Highly Likely	5	MCL	1E-04
Vinyl Chloride	A	2	MCL	4E-05
1,4-Dioxane	B2	4.8	Risk	1E-06
bis(2-Chloroethyl)ether	B2	5	Reporting Limit	4E-04
bis(2-Ethylhexyl)phthalate	B2	6	MCL	2E-06
Pentachlorophenol	B2	1	MCL	2E-06
4,4'-DDT	B2	0.1	Reporting Limit	1E-06
alpha-BHC	B2	0.05	Reporting Limit	7E-06
beta-BHC	C	0.05	Reporting Limit	2E-06
Chlordanes	B2	2	MCL	2E-05
Dieldrin	B2	0.1	Reporting Limit	3E-05
Arsenic	A	10	MCL	3E-04
Non-Carcinogenic Chemical of Concern	Target Endpoint	Interim Cleanup Level (ug/L)	Basis	RME Hazard Quotient
1,1,1-Trichloroethane	Liver	200	MCL	6E-02
Benzene	Immune System	5	MCL	3E-01
cis-1,2-Dichloroethene	Blood	70	MCL	1E+00
Dichloromethane	Liver	5	MCL	9E-03
Tetrahydrofuran	Liver	6.9	Risk	3E-03
Trichloroethene	Liver	5	MCL	2E+00
Vinyl Chloride	Liver	2	MCL	8E-02
bis(2-Ethylhexyl)phthalate	Liver	6	MCL	3E-02
Pentachlorophenol	Liver/Kidney	1	MCL	9E-04
4,4'-DDT	Liver	0.1	Reporting Limit	4E-02
Chlordanes	Liver	2	MCL	4E-01
Dieldrin	Liver	0.1	Reporting Limit	2E-01
Antimony	Cardiovascular	6	MCL	1E+00
Arsenic	Skin	10	MCL	3E+00
Iron	Liver and gastrointestinal	3118	HQ = 1	1E+00
Thallium	Lung	2	MCL	2E+00

Key
 Health Advisory - Lifetime Health Advisory presented in EPA-822-R-04-005; Winter 2004
 MCL - Maximum Contaminant Level
 HQ - Hazard Quotient
 NA - Not applicable
 1) This contaminant did not exceed a hazard quotient of 1 during calculations. However, the maximum detected concentration exceeded MCLs. Therefore, the interim cleanup level has been established as the MCL.

Table L-3: Soil Cleanup Levels for the Protection of Ecological Receptors

On-Property, Surface Soil

Chemical of Concern	Receptor	Interim Cleanup Level (mg/kg)	Basis
Lead	Insectivorous Birds	330	NOEL TRV, HQ = 1
Lead	Insectivorous Mammals	360	NOEL TRV, HQ = 1

Key

HQ - Hazard Quotient

TRV - Toxicity Reference Value

NOAEL - No observed adverse effects level

Table L-4: Cleanup Levels by Media

Chemical of Concern	Cleanup Level (mg/kg)	Basis
On-Property, Surface and Subsurface Soil (0-16')		
Lead	800	EPA Commercial/Industrial Screening Level
On-Property, Surface Soil (0-1')		
Lead	330 ¹	NOAEL TRV, HQ = 1 (Insectivorous Birds)
Groundwater - Residential Scenario		
Benzene	5	MCL
cis-1,2-Dichloroethene	70	MCL
Dichloromethane	5	MCL
Tetrahydrofuran	6.9	Risk
1,1,1-Trichloroethane	200	MCL
Trichloroethene	5	MCL
Vinyl Chloride	2	MCL
1,4-Dioxane	4.8	Risk
bis(2-Chloroethyl)ether	5	Reporting Limit
bis(2-Ethylhexyl)phthalate	6	MCL
Pentachlorophenol	1	MCL
4,4'-DDT	0.1	Reporting Limit
alpha-BHC	0.05	Reporting Limit
beta-BHC	0.05	Reporting Limit
Chlorocanes	2	MCL
Dieldrin	0.1	Reporting Limit
Antimony	6	MCL
Arsenic	10	MCL
Iron	3118	HQ = 1
Thallium	2	MCL

Notes and Abbreviations:

- The lead exposure point concentration across the Site is to be reduced to below 330 mg/kg in the top one foot below grade.
- MCL - Maximum Contaminant Level
 HQ - Hazard Quotient
 TRV - Toxicity Reference Value
 NOAEL - No observed adverse effects level

APPENDIX D
Detailed Cost Analysis of Remedy

Table . Estimate of Probable Cost for Soil Remedial Alternative, S3: Excavation and On-Site Consolidation
Cam-Di Site, Westville, Indiana

	Qty	Unit	Unit Cost	Total Cost
Excavation				
Demolish Existing Building Slabs	150	CY	\$90	\$14,000
Mobilization/Demobilization	1	LS	\$5,750	\$6,000
Excavate	6,500	CY	\$2	\$13,000
Geotextile Cover	3,900	SY	\$2	\$8,000
Backfill and Compaction	6,500	CY	\$16	\$104,000
Dust Suppressant	1	LS	\$5,000	\$5,000
Air Monitoring	1	LS	\$2,000	\$2,000
Survey	1	LS	\$2,300	\$2,000
			SUBTOTAL	\$154,000
Consolidating Excavated Material				
Geotextile Cover	9,800	SY	\$2	\$20,000
Place Excavated Soil between NE & NW Areas	6,650	CY	\$5	\$33,000
Place Cover Material	4,900	CY	\$16	\$78,000
Rough Grading	5,900	SY	\$6	\$35,000
Place Topsoil	1,000	CY	\$46	\$46,000
Final Grading	5,900	SY	\$4	\$24,000
Hydroseeding	1.2	Acre	\$941	\$1,000
Survey	1	LS	\$2,300	\$2,000
			SUBTOTAL	\$239,000
			Construction Subtotal	\$393,000
Contingencies (30% of Construction Subtotal)				\$118,000
			SUBTOTAL	\$118,000
			Construction Total	\$511,000
Deed Restriction and Soil Management Plan				\$25,000
Permitting and Legal (2% of Construction Total)				\$10,000
Construction Management (10% of Construction Total)				\$51,000
			SUBTOTAL	\$86,000
			Implementation Total	\$597,000
Pre-Design Investigation				\$50,000
Post-Excavation Sampling				\$25,000
Engineering Design (10% of Implementation Costs)				\$60,000
			TOTAL CAPITAL COSTS	\$732,000
Annual Cover Maintenance				
Cover Inspections	2	EA	\$2,500	\$5,000
Mowing	5	Acre	\$1,150	\$6,000
Cover Repair Allowance	1	LS	\$5,000	\$5,000
			SUBTOTAL	\$16,000
Contingencies (15% of Monitoring Subtotal)				\$3,000
			SUBTOTAL	\$3,000
			Annual Cover Maintenance Total	\$19,000
			NET PRESENT VALUE OF O&M (30 years, 5%)	\$293,000

NET PRESENT VALUE OF REMEDIAL ALTERNATIVE S3: \$1,028,000

**Table . Estimate of Probable Cost for Soil Remedial Alternative, S3: Excavation and On-Site Consolidation
Cum-Or Site, Westville, Indiana**

Assumptions

Volume of Existing Building Slab 150 cy

Excavation

Continuous excavation.

No sheeting/shoring or sideslopes are required for this depth of excavation.

Shallow Excavation Surface Area 88,400 sf

Shallow Excavation Depth 2 ft

Excavation Volume 6,500 cy

Consolidation

Surface Area of Consolidated material (0.6*SA) 53,000 sf

Depth of Cover Material (not including top soil) 2.5 ft

Volume of Cover Material (not including top soil) 4,900 cy

Depth of Top Soil 0.5 ft

Volume of Top Soil 1,000 cy

O&M

Covers include the Northeast and Northwest Area caps and the newly placed covers over the consolidated soils and the subsurface soils in the southeastern portion of the Site.

Covers will be inspected bi-annually and mowed annually. Inspection costs include report.

Table 5. Estimate of Probable Cost for Groundwater Remedial Alternative, G4: Mass Removal (Longer Duration) with Ex-Situ Treatment Followed by Long-term Monitoring, Cam-Or Site, Westville, Indiana

	Qty	Unit	Unit Cost	Total Cost
Mobilization	1	LS	\$10,000	\$10,000
Extraction Wells				
Extraction Wells	1	LS	\$318,596	\$319,000
Submersible Pump	8	EA	\$3,883	\$31,000
			SUBTOTAL	\$350,000
Piping				
Trenching	3,300	CY	\$2	\$7,000
Pipe Bed	230	CY	\$55	\$13,000
Backfill	3,070	CY	\$2	\$6,000
Influent Piping (2" HDPE)	14,325	LF	\$11	\$158,000
Effluent Piping (4" HDPE)	450	LF	\$16	\$7,000
Check Valves (well head)	8	EA	\$138	\$1,000
Control Valves (building)	12	EA	\$1,000	\$12,000
Process Piping (building)	100	LF	\$52	\$5,000
Flow Meters & Other Instrumentation	1	LS	\$5,000	\$5,000
Electrical Conduit to Wells	5,150	LF	\$5	\$26,000
			SUBTOTAL	\$240,000
Building				
Driveway	500	SY	\$40	\$20,000
Parking Lot	200	SY	\$40	\$8,000
Fence	220	LF	\$54	\$12,000
Gate	1	EA	\$986	\$1,000
Excavation for slab	1	LS	\$1,000	\$1,000
Concrete Slab	1,145	SF	\$12	\$14,000
Pre-engineered Metal Buildings	900	SF	\$35	\$32,000
Building Insulation	1	LS	\$10,000	\$10,000
Roll-up Door	1	EA	\$2,500	\$3,000
Man Door	1	EA	\$1,500	\$2,000
			SUBTOTAL	\$103,000
Equipment				
Equalization Tank	1	EA	\$7,147	\$7,000
Pretreatment	1	LS	\$100,000	\$100,000
Backwash Tank	1	LS	\$7,147	\$7,000
Solids Storage Tank	1	EA	\$1,380	\$1,000
UV Oxidation System (Including H ₂ O ₂)	1	LS	\$430,000	\$430,000
Mixer	1	EA	\$2,645	\$3,000
Transfer Pump	2	EA	\$5,265	\$11,000
			SUBTOTAL	\$559,000
Electric				
Electrical Service (3P, 277/480, 200A)	1	LS	\$51,750	\$52,000
Interior/Exterior Lighting	1	LS	\$2,000	\$2,000
HVAC	1	LS	\$3,500	\$4,000
Telephone	1	LS	\$1,500	\$2,000
Motor Control Center	1	LS	\$20,000	\$20,000
Programmable Logic Controller	1	LS	\$10,000	\$10,000
Electric Controls Wiring	1	LS	\$3,000	\$3,000
			SUBTOTAL	\$93,000
			Construction Subtotal	\$1,355,000
			Contingency (30% of Construction Subtotal)	\$407,000
			Construction Total	\$1,762,000
			Groundwater Use Restrictions	\$50,000
			Permitting and Legal (5% of Construction Total)	\$88,000
			Construction Management (10% of Construction Total)	\$176,000
			SUBTOTAL	\$314,000
			Implementation Total	\$2,076,000
			Pre-Design Groundwater Investigation	\$400,000
			Pre-Design Aquifer Test	\$75,000
			Bench-scale Treatability Test	\$5,000
			Emerging Technologies Pilot Study for Enhancement of Natural Attenuation Processes	\$250,000
			Engineering Design (10% of Implementation Costs)	\$208,000
			TOTAL CAPITAL COSTS	\$3,014,000

**Table 5. Estimate of Probable Cost for Groundwater Remedial Alternative,
 C4: Mass Removal (Longer Duration) with Ex-Situ Treatment Followed by Long-term Monitoring,
 Cam-Or Site, Westville, Indiana**

	Qty	Unit	Unit Cost	Total Cost
<u>Annual Treatment System O&M</u>				
Power, H ₂ O ₂ , Pretreatment, UV Lamps	91,980	kgal	\$3.00	\$276,000
Electric (Not including UV ox unit)	313,791	kW-hr	\$0.08	\$25,000
Operator	1,040	hr	\$75	\$78,000
Solids Transportation & Disposal	25,000	gal	\$1	\$25,000
Annual Equipment Maintenance	1	LS	\$10,000	\$10,000
Influent/Effluent Analytical	24	EA	\$265	\$6,000
			SUBTOTAL	\$420,000
Contingency (15% of Monitoring Subtotal)				\$63,000
			Annual Treatment System O&M Total	\$483,000
<hr/>				
<u>Groundwater Monitoring Well Sampling Event</u>				
Monitoring Well Sampling (1,4-dioxane)	30	EA	\$138	\$4,000
Monitoring Well Sampling (other COPCs)	10	EA	\$483	\$5,000
Sampling Equipment	1	LS	\$2,500	\$3,000
Sampling Personnel	100	hr	\$75	\$8,000
Validation and Reporting	1	LS	\$20,000	\$20,000
			SUBTOTAL	\$40,000
Contingency (15% of Monitoring Subtotal)				\$6,000
			Groundwater Monitoring Well Sampling Event Total	\$46,000
<hr/>				
<u>Periodic Monitoring Well Installation</u>				
Monitoring Well Installation	4	EA	\$20,000.00	\$80,000
Contingency (15% of Monitoring Subtotal)				\$12,000
			Construction Total	\$92,000
Permitting and Legal (2% of Construction Total)				\$2,000
Construction Management (10% of Construction Total)				\$9,000
			SUBTOTAL	\$11,000
			Implementation Total	\$103,000
Engineering Design (10% of Implementation Costs)				\$10,300
			Periodic Monitoring Well Installation Total	\$113,000

Table 5. Estimate of Probable Cost for Groundwater Remedial Alternative, G4: Mass Removal (Longer Duration) with Ex-Situ Treatment Followed by Long-term Monitoring, Cam-Dr Site, Westville, Indiana

	Qty	Unit	Unit Cost	Total Cost
SUMMARY OF ANNUAL COSTS				
Year	Annual O&M	Monitoring Well Sampling	Monitoring Well Installation	Total Annual O&M Costs
1	\$483,000	\$184,000		\$667,000
2	\$483,000	\$184,000		\$667,000
3	\$483,000	\$92,000		\$575,000
4	\$483,000	\$92,000		\$575,000
5	\$483,000	\$46,000		\$529,000
6	\$483,000	\$46,000		\$529,000
7	\$483,000	\$46,000		\$529,000
8	\$483,000	\$46,000		\$529,000
9	\$483,000	\$46,000		\$529,000
10	\$483,000	\$46,000		\$529,000
11	\$483,000	\$46,000		\$529,000
12	\$483,000	\$46,000		\$529,000
13	\$483,000	\$46,000		\$529,000
14	\$483,000	\$46,000		\$529,000
15	\$483,000	\$46,000		\$529,000
16		\$46,000		\$46,000
17		\$46,000		\$46,000
18		\$46,000		\$46,000
19		\$46,000		\$46,000
20		\$46,000	\$113,000	\$159,000
21		\$46,000		\$46,000
22		\$46,000		\$46,000
23		\$46,000		\$46,000
24		\$46,000		\$46,000
25		\$46,000	\$113,000	\$159,000
26		\$46,000		\$46,000
27		\$46,000		\$46,000
28		\$46,000		\$46,000
29		\$46,000		\$46,000
30		\$46,000	\$113,000	\$159,000
			SUBTOTAL	\$9,332,000
			NET PRESENT VALUE OF O&M (30 years, 5%)	\$6,157,000
NET PRESENT VALUE OF REMEDIAL ALTERNATIVE G4				\$9,171,000

Table 5. Estimate of Probable Cost for Groundwater Remedial Alternative, G4: Mass Removal (Longer Duration) with Ex-Situ Treatment Followed by Long-term Monitoring, On-Or Site, Westville, Indiana

	Qty	Unit	Unit Cost	Total Cost
Assumptions				
Does not include lease or purchase costs of farm field				
<u>Extraction Wells</u>				
10-in. sonic borehole				
6-in. well, 150-ft deep, carbon steel riser				
60-ft screen, stainless steel				
Number of wells	8			
<u>Tranquility and Piping</u>				
Individual lines to treatment building				
French Length	5600	lf		
French Width	2	ft		
Side slope (sand)	2			
French Depth	4	ft		
French Volume	3,300	cy		
Pipe Berding Depth	0.5	ft		
Pipe Berding Volume	230	cy		
Pipe Length, Influent (Individual Lines)	14325	lf		
Pipe Length, Effluent	450	lf		
<u>Buildings</u>				
Location - Farmers Field				
Driveway Distance	300	ft		
Driveway Width	15	ft		
Fence Perimeter	220	ft		
Parking Lot	200	sq		
Building Area	900	sf		
Tank Slabs	245	sf		
<u>Utility</u>				
Treated Groundwater (175 gpm)	91,980	kgal/yr		
Operator (1/2 time)	1,040	hrs/yr		
Treatment Samples - Influent/Effluent Monthly	24	samples		
1,4-dioxane, bromate, formaldehyde				
Number of Wells periodically installed	4	wells		
Sampling Event	100	hrs/yr		
Years 1 to 2 Sampling Frequency	4	(quarterly)		
Years 3 to 4 Sampling Frequency	2	(biannual)		
Years 5 to 30 Sampling Frequency	1	(annual)		
Annual Monitoring Event (1,4-Dioxane)	30	samples		
Annual Monitoring Event (other COPCs)	10	samples		

For all groundwater alternatives (G2, G3 and G4), deed restrictions will be necessary on the Site and are anticipated to be necessary on Parcels 48-09-29-126-001, 48-09-29-151-002, 48-09-29-176-007, 48-09-29-176-008, 48-09-29-176-009, 48-09-29-506, 49-09-29-201-001, 49-09-29-202-001, 49-09-29-202-002, 49-09-29-176-001, 49-09-29-176-002, 49-09-29-176-003, 49-09-29-176-004, 49-09-29-178-005, 49-09-29-506-001, 49-09-29-506-002, 49-09-29-177-001, 49-09-29-152-002, 49-09-29-153-001, 49-09-29-153-002, 49-09-29-153-005, 49-09-29-153-006, 49-09-29-155-001, 49-09-29-155-002, 49-09-29-155-003, 49-09-29-155-004, 49-09-29-300-003, 49-09-29-300-005, 49-09-29-300-006, 49-09-29-300-007, 49-09-29-300-008, 49-09-29-300-009, and 49-09-29-505-003.

For groundwater alternative G4 with a 1,4-dioxane evaluation level of 480 ug/l, deed restrictions (in addition to those for all groundwater remedies) are also anticipated to be necessary on Parcel 49-09-30-400-008.

For groundwater alternative G4 with a 1,4-dioxane evaluation level of 48 ug/l, deed restrictions (in addition to those for all groundwater remedies) are also anticipated to be necessary on Parcels 49-09-30-400-008, 49-09-31-200-004, 48-09-31-200-002, and 48-09-31-200-003.

Table 6. Estimate of Probable Cost for LNAPL Remedial Alternative, L2: Dual Phase Recovery, Cam-Cr Site, Westville, Indiana

	Qty	Unit	Unit Cost	Total Cost
Product Recovery Wells				
Product Recovery Well	10	EA	\$4,000	\$40,000
Product Skimmer	10	EA	\$1,696	\$17,000
Submersible Pump	10	EA	\$4,340	\$43,000
			SUBTOTAL	\$100,000
Trenching and Piping				
Trenching and Piping/Air Hose	1200	LF	\$17	\$20,000
Process Piping, Valves & Instrumentation	1	LS	\$15,000	\$15,000
			SUBTOTAL	\$35,000
Equipment				
Air Compressor	1	EA	\$2,000	\$2,000
Equalization Tank	1	EA	\$1,656	\$2,000
Pretreatment	1	EA	\$30,000	\$30,000
Solids Sludge Tank	1	EA	\$820	\$1,000
Backwash Tank	1	EA	\$820	\$1,000
Granular Activated Carbon Vessels	1	LS	\$40,000	\$40,000
Transfer Pump	1	EA	\$1,540	\$2,000
LNAPL Storage Tank	1	EA	\$1,520	\$2,000
			SUBTOTAL	\$80,000
Building				
Excavation for slab	1	LS	\$1,000	\$1,000
Concrete Slab	160	SF	\$12	\$2,000
Pre-engineered Metal Buildings	160	SF	\$35	\$6,000
Building Insulation	1	LS	\$4,000	\$4,000
Man Door	1	EA	\$1,500	\$2,000
			SUBTOTAL	\$15,000
Electric				
Transformer	1	EA	\$17,700	\$18,000
Terminal Structure	1	EA	\$2,340	\$2,000
Interior/Exterior Lighting	1	LS	\$1,500	\$2,000
FVAC	1	LS	\$1,500	\$2,000
Telephone/SCADA	1	LS	\$1,500	\$2,000
MCC/PLC	1	LS	\$17,000	\$17,000
Electric Controls Wiring	1	LS	\$1,000	\$1,000
			SUBTOTAL	\$44,000
			Construction Subtotal	\$274,000
			Contingencies (30% of Construction Subtotal)	\$82,000
			Construction Total	\$356,000
			Permitting and Legal (2% of Construction Total)	\$7,000
			Construction Management (10% of Construction Total)	\$36,000
			SUBTOTAL	\$43,000
			Implementation Total	\$399,000
			Pre-Design Investigation	\$50,000
			Engineering Design (10% of Implementation Costs)	\$40,000
			TOTAL CAPITAL COSTS	\$489,000

Table 6. Estimate of Probable Cost for LNAPL Remedial Alternative, L2: Dual Phase Recovery, Carwash Site, Westville, Indiana

Annual Treatment System O&M				
GAC Change Out (new carbon, disposal of spent)	48,000	lb	\$1.50	\$72,000
Electric	124,100	kW-hr	\$0.08	\$10,000
Operator	560	hr	\$75	\$42,000
POTW User Fee	26,280	kgal	\$0.44	\$12,000
Solids Transportation & Disposal	7,300	gal	\$1	\$7,000
LNAPL Transportation & Disposal	1	LS	\$20,000	\$20,000
Annual Equipment Maintenance	1	LS	\$2,000	\$2,000
Influent/Effluent Analytical	24	EA	\$357	\$9,000
			SUBTOTAL	\$174,000
Contingencies (15% of Monitoring Subtotal)				\$26,000
			Annual O&M Total	\$200,000
			NET PRESENT VALUE OF O&M (3 years, 5%)	\$545,000

NET PRESENT VALUE OF REMEDIAL ALTERNATIVE L2	\$1,034,000
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Assumptions

Number of Product Recovery Wells	10
Trenching and Piping	
Pipe Length, Influent 1"	1000 ft
Pipe Length, Effluent 2"	200 ft
Groundwater Extraction Rate	50 gpm
Building Slab	160 sf
O&M	
GAC Usage	135 lb/day
Number of Change-outs per year (4,000 lb/change out)	12
Treated Groundwater	26,280 kgal/yr
Operator (1/4 time)	520 hrs/yr
Sludge Generated (Backwash)	7,300 gal/yr
Bi-Annual DTP Measurement Event	40 hrs/yr
Treatment Samples - Influent/Effluent Monthly	24 samples
VOCs, SVOCs	

For all LNAPL alternatives (L2 and L3), deed restrictions will be necessary on the Site and are anticipated to be necessary on Parcels 49-09-29-201-001, 49-09-29-202-002, 49-09-29-505-003, 49-09-29-227-003, 49-09-29-227-006, 49-09-29-227-007, 49-09-29-227-008, 49-09-29-227-009, 49-09-29-227-010, 49-09-29-228-001, 49-09-29-228-002, 49-09-29-228-003, 49-09-29-228-006, 49-09-29-228-007, 49-09-29-228-010, 49-09-29-231-003, 49-09-29-231-007, and 49-09-29-232-001.

Table 7. Estimate of Probable Cost for LNAPL Remedial Alternative, L3: Total Fluids Recovery, Cam-Or Site, Westville, Indiana

	Qty	Unit	Unit Cost	Total Cost
<u>Product Recovery Wells</u>				
Product Recovery Well	6	EA	\$4,000	\$24,000
Submersible Pump	6	EA	\$4,340	\$26,000
			SUBTOTAL	\$50,000
<u>Trenching and Piping</u>				
Trenching and Piping	1200	LF	\$15	\$18,000
Process Piping, Valves & Instrumentation	1	LS	\$10,000	\$10,000
			SUBTOTAL	\$28,000
<u>Equipment</u>				
Oil-Water Separator	1	EA	\$24,000	\$24,000
Equilization Tank	1	EA	\$3,680	\$4,000
Pretreatment	1	EA	\$50,000	\$50,000
Solids Sludge Tank	1	EA	\$817	\$1,000
Backwash Tank	1	EA	\$817	\$1,000
Granular Activated Carbon Vessels	1	LS	\$80,000	\$80,000
Transfer Pump	2	EA	\$1,540	\$3,000
LNAPL Storage Tank	1	EA	\$1,520	\$2,000
			SUBTOTAL	\$165,000
<u>Building</u>				
Excavation for slab	1	LS	\$1,000	\$1,000
Concrete Slab	320	SF	\$12	\$4,000
Pre-engineered Metal Buildings	320	SF	\$35	\$11,000
Building Insulation	1	LS	\$4,000	\$4,000
Man Door	1	EA	\$1,500	\$2,000
			SUBTOTAL	\$22,000
<u>Electric</u>				
Transformer	1	EA	\$17,700	\$18,000
Terminal Structure	1	EA	\$2,340	\$2,000
Interior/Exterior Lighting	1	LS	\$1,500	\$2,000
HVAC	1	LS	\$1,500	\$2,000
Telephone/SCADA	1	LS	\$1,500	\$2,000
MCC/PLC	1	LS	\$17,000	\$17,000
Electric Controls Wiring	1	LS	\$1,000	\$1,000
			SUBTOTAL	\$44,000
			Construction Subtotal	\$309,000
Contingencies (33% of Construction Subtotal)				\$93,000
			Construction Total	\$402,000
Permitting and Legal (2% of Construction Total)				\$8,000
Construction Management (10% of Construction Total)				\$40,000
			SUBTOTAL	\$48,000
			Implementation Total	\$450,000
Pre-Design Investigation				\$50,000
Engineering Design (10% of Implementation Costs)				\$45,000
			TOTAL CAPITAL COSTS	\$545,000

Table 7. Estimate of Probable Cost for LNAPL Remedial Alternative, L3: Total Fluids Recovery, Cam-Dr Site, Westville, Indiana

Annual Treatment System O&M				
GAC Change Out (new carbon, disposal of spent)	88,000	lb	\$1.50	\$132,000
Electric	124,100	kW-hr	\$0.08	\$10,000
Operator	560	hr	\$75	\$42,000
POTW User Fee	47,300	1,000 gal	\$0.44	\$21,000
Solids Transportation & Disposal	12,800	gal	\$1	\$13,000
LNAPL Transportation & Disposal	1	LS	\$20,000	\$20,000
Annual Equipment Maintenance	1	LS	\$3,000	\$3,000
Influent/Effluent Analytical	24	EA	\$357	\$9,000
			<u>SUBTOTAL</u>	<u>\$250,000</u>
Contingencies (15% of Monitoring Subtotal)				\$38,000
			Annual O&M Total	\$288,000
			NET PRESENT VALUE OF O&M (3 years, 5%)	\$784,000

NET PRESENT VALUE OF REMEDIAL ALTERNATIVE L3: \$1,329,000

Assumptions:

Number of Product Recovery Wells	6
Trenching and Piping	
Pipe Length, Influent 1"	1000 ft
Pipe Length, Effluent 2"	200 ft
Groundwater Extraction Rate	90 gpm
Building Slab	320 sf
O&M	
GAC Usage	240 lb/day
Number of Change-outs per year (8,000 lb/change out)	11
Treated Groundwater	47,300 kgal/yr
Operator (1/4 time)	520 hrs/yr
Sludge Generated (Backwash)	12,800 gal/yr
Bi-Annual DTP Measurement Event	40 hrs/yr
Treatment Samples - Influent/Effluent Monthly	24 samples
VOCs, SVOCs	

For all LNAPL alternatives (L2 and L3), deed restrictions will be necessary on the Site and are anticipated to be necessary on Parcels 49-09-29-201-001, 49-09-29-202-002, 49-09-29-505-003, 49-09-29-227-003, 49-09-29-227-006, 49-09-29-227-007, 49-09-29-227-008, 49-09-29-227-009, 49-09-29-227-010, 49-09-29-228-001, 49-09-29-228-002, 49-09-29-228-003, 49-09-29-228-006, 49-09-29-228-007, 49-09-29-228-010, 49-09-29-231-003, 49-09-29-231-007, and 49-09-29-232-001.

Appendix E
State Letter of Concurrence



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

April 18, 2008

Ms. Mary A. Gade
Regional Administrator, Region 5
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

RECEIVED

APR 29 2008

U.S. EPA REGION 5
OFFICE OF REGIONAL ADMINISTRATOR

Dear Ms. Gade:

Re: Record of Decision (ROD)
Cam-Or Superfund Site
Westville, Indiana

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

- Soil Remedial Alternative S3: Excavation and On-Site Consolidation (\$1,025,000).
 - Institutional controls restricting future use of the property to commercial use. Redevelopment plans must be consistent with this use and will limit future invasive activities in the areas where lead impacted soil has been capped.
 - Soil Management Plan that would establish procedures for handling and disposing of impacted soil and control exposure to impacted soil.
 - Excavation and on-site consolidation of surface soil (0 to 2 feet below ground surface) exceeding the EPA commercial standard for lead of 800 mg/kg. A geotextile fabric layer would be placed over the consolidated soil to separate impacted soil from clean backfill. The consolidated soil would be graded to enhance surface drainage and prevent future erosion. Post-excavating sampling will be conducted to confirm the calculated exposure point concentration of lead left in place in surface soil (0 to 1 foot below ground surface) is below the ecological clean up goal of 330 mg/kg.
 - Capping of the consolidated soil an any lead impacted subsurface soils remaining in-place with vegetative soil cover (2 feet of soil plus 6 inches of topsoil, seeded). Grading the soil cover to promote surface drainage and prevent erosion.

- Groundwater Remedial Alternative G4: Mass Removal (Longer Duration) with Ex-Situ Treatment Followed by Long-Term Monitoring (\$9,171,000).

- Pump groundwater to remove contaminant mass until the 1,4-dioxane concentration is reduced below 500 ppb in the aquifer. The actual length of time necessary to operate the extraction and treatment system will be determined through evaluation of the system progress during the cleanup period.
 - Long-Term groundwater monitoring of the contaminant plume until the 1,4-dioxane (the main contaminant) and other Contaminants of Potential Concern (COPCs) have attenuated and met the clean up goals presented in the ROD.
 - Implement institutional controls such as Environmental Restrictive Covenants combined with either a groundwater use ordinance or enforceable permit process to restrict groundwater use within contaminant plume area.
- Light Non-Aqueous Phase Liquid (LNAPL) Remedial Alternatives L2 (Dual Phase Recovery - \$1,034,000) and L3 (Total Fluids Recovery - \$1,329,000) are comparable and both will be considered during the remedial design.
- Pump LNAPL from recovery wells and send off-site for incineration. Treat extracted groundwater and discharge to Town of Westville Wastewater Treatment Plant (WWTP).
 - Implement institutional controls and a Soil Management Plan to prevent direct contact with LNAPL on-site. Institutional control a on adjacent properties where LNAPL pool extends off-site to prevent property owners from excavating to the depth of LNAPL.

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

Please be assured that IDEM is committed to accomplish remediation 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,

Bruce H Palin
Assistant Commissioner
Office of Land Quality

BP:RLR:jts

cc: Rex Osborn, IDEM
Resa Ramsey, IDEM
Bruce Oertel, IDEM
Michael Aylesworth, IDEM

Appendix F
Administrative Record Index

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

ADMINISTRATIVE RECORD
FOR
CAM-OR SITE
WESTVILLE, LAPORTE COUNTY, INDIANA

UPDATE #1
NOVEMBER 29, 2007

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	07/00/03	ARCADIS	U.S. EPA	Remedial Investigation/ Feasibility Study Support Sampling Plan	
2	10/31/03	Barber, T., ARCADIS	Campbell, J., Engineering Management, Inc.	Addendum to the RI/FS Support Sampling Plan	
3	12/19/03	ARCADIS	U.S. EPA	Groundwater Investigation Plan	
4	01/05/04	Molitor, P., U.S. EPA	Campbell, J., Engineering Management, Inc.	Letter re: U.S. EPA Agreement to Install an Additional Off-Site VAS Point and Deferment of Decision Regarding No Further On-Site Investigation	
5	04/28/04	Campbell, J., Engineering Management, Inc.	Molitor, P., U.S. EPA	Letter re: Cam-Or Site Extended PRP Group Request for an Extension of 60 Days Following Collection of the Last Sample for Meeting with U.S. EPA/ IDEM	
6	05/07/04	Molitor, P., U.S. EPA	Campbell, J., Engineering Management, Inc.	Letter re: U.S. EPA Approval of Request for an Extension of 60 Days Following Collection of the Last Sample for Meeting with U.S. EPA/ IDEM	
7	06/21/04	Campbell, J., Engineering Management, Inc.	Molitor, P., U.S. EPA	Letter re: Groundwater Investigation Plan Phase II	
8	06/30/04	Molitor, P., U.S. EPA	Campbell, J., Engineering Management, Inc.	Letter re: U.S. EPA Approval for the Ground- water Investigation Plan Phase II	
9	09/16/04	Campbell, J., Engineering Management, Inc.	Molitor, P., U.S. EPA	Letter re: Groundwater Investigation Plan Phase III	

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
10	09/29/04	Molitor, P., U.S. EPA	Campbell, J., Engineering Management, Inc.	Letter re: U.S. EPA Approval for the Ground- water Investigation Plan Phase III	
11	11/01/04	Campbell, J., Engineering Management, Inc.	Molitor, P., U.S. EPA	Letter Forwarding Table of Historical Groundwater Elevations for Each of the Four Hydrogeologic Zones at the Cam-Or Site	
12	11/24/04	Molitor, P., U.S. EPA	Campbell, J., Engineering Management, Inc.	Letter re: U.S. EPA Request for Current Site Map	
13	12/03/04	Campbell, J., Engineering Management, Inc.	Molitor, P., U.S. EPA	Letter re: Results of Vertical Aquifer Sampling (VAS) at the Cam-Or Site	
14	12/08/04	Molitor, P., U.S. EPA	Campbell, J., Engineering Management, Inc.	Letter re: U.S. EPA Approval of Installation of Two Monitoring Wells and Collection of Ground- water Samples from Existing Wells	
15	02/08/05	ARCADIS	U.S. EPA	Soil Vapor Investigation Plan	
16	04/08/05	Campbell, J., Engineering Management, Inc.	Ramsey, R., IDEM	Letter re: Analytical Data for Light Non- Aqueous Phase Samples	
17	06/07/05	Campbell, J., Engineering Management, Inc.	Molitor, P., U.S. EPA	Letter re: Additional Groundwater and Surface Water Investigation	
18	06/13/05	Campbell, J., Engineering Management, Inc.	Molitor, P., U.S. EPA	Letter Report: Soil Vapor Investigation	
19	06/20/05	Campbell, J., Engineering Management, Inc.	Molitor, P., U.S. EPA	Letter re: Request to Split the RI/FS into Separate Deliverables	
20	06/00/05	Molitor, P., U.S. EPA	Campbell, J., Engineering Management, Inc.	Letter re: U.S. EPA Approval to Split the RI/FS Report into Separate Deliverables	

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
21	08/24/05	Molitor, P., U.S. EPA	Campbell, J., Engineering Management, Inc.	Letter re: U.S. EPA Review of the June 13, 2005 Soil Vapor Report	
22	00/00/07	Molitor, P., U.S. EPA	File	Memorandum re: Cam-Or Site Extended PRP Group Objection to Certain Modifications to the Final Feasibility Study Required by U.S. EPA	
23	05/00/07	ARCADIS	Cam-Or Site Extended Group	Remedial Investigation Report: Volume 1 of 7 (Text, Tables and Figures)	
24	05/00/07	ARCADIS	Cam-Or Site Extended Group	Remedial Investigation Report: Volume 2 of 7 (Appendices A-G)	
25	05/00/07	ARCADIS	Cam-Or Site Extended Group	Remedial Investigation Report: Volume 3 of 7 (Appendix H)	
26	05/00/07	ARCADIS	Cam-Or Site Extended Group	Remedial Investigation Report: Volume 4 of 7 (Appendices I-N)	
27	05/00/07	ARCADIS	Cam-Or Site Extended Group	Remedial Investigation Report: Volume 5 of 7 (Appendices O-Q)	
28	05/00/07	ARCADIS	Cam-Or Site Extended Group	Remedial Investigation Report: Volume 6 of 7 (Appendices R-S)	
29	05/00/07	ARCADIS	Cam-Or Site Extended Group	Remedial Investigation Report: Volume 7 of 7 (Appendix T)	
30	07/05/07	Molitor, P., U.S. EPA	Campbell, J., Engineering Management, Inc.	Letter re: U.S. EPA Approval of the Remedial Investigation Report	
31	08/27/07	ARCADIS	U.S. EPA	Feasibility Study Report	
32	10/11/07	Molitor, P., U.S. EPA	Campbell, J., Engineering Management, Inc.	Letter re: U.S. EPA Approval of the Final Feasibility Study	

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

ADMINISTRATIVE RECORD
FOR
CAM-OR SITE
WESTVILLE, LAPORTE COUNTY, INDIANA

UPDATE #2
JUNE 4, 2008

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	11/00/07	U.S. EPA	Public	Fact Sheet: EPA Proposes Cleanup Plan for Refinery Property	10
2	12/06/07	Westville Indicator	Public	News Release: EPA Hosting Public Meeting on Proposed Cleanup Plan for Cam-Or Site on Dec. 12 at the Westville Public Library	1
3	12/10/07	Laporte County Herald-Argus	Public	News Release: EPA Hosting Public Meeting on Proposed Cleanup Plan for Cam-Or Site on Dec. 12 at the Westville Public Library	1
4	12/12/07	Marilyn M. Jones & Associates, Ltd.	U.S. EPA	Transcript: December 12, 2007 U.S. EPA Hearing on the Proposed Plan for the Cam-Or Site	61
5	05/14/08	Karl, R., U.S. EPA	Palin, B., IDEM	Letter re: IDEM's Concurrence with U.S. EPA's Record Of Decision for the Cam-Or Site	1

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

ADMINISTRATIVE RECORD
FOR
CAM-OR SITE
WESTVILLE, LAPORTE COUNTY, INDIANA

UPDATE #3
JUNE 6, 2008

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	00/00/00	Concerned Citizen	U.S. EPA	Public Comment Sheet: Comments on the Proposed Cleanup Plan for the Cam-Or Refinery Site	1
2	01/08/08	Campbell, J., Engineering Management, Inc.	Bouchee, Y., U.S. EPA	Letter re: Cam-Or Site Extended Group Comments on the November 2007 Proposed Cleanup Plan for the Former Cam-Or Waste Oil Refinery Site	5
3	01/11/08	Mayes, J., Westville Town Council	U.S. EPA	E-Mail Transmission re: Comments of the Proposed Plan for the Cam-Or Site	1
4	00/00/00	U.S. EPA	Public	Record of Decision for the Cam-Or Site (PENDING)	

APPENDIX B- STATEMENT OF WORK (SOW)

APPENDIX B

STATEMENT OF WORK FOR THE REMEDIAL DESIGN AND REMEDIAL ACTION

at

**The Cam-Or Superfund Site,
Westville, Indiana
LaPorte County**

I. PURPOSE

The purpose of this Statement of Work (SOW) is to set forth requirements for implementation of the Remedial Action set forth in the Record of Decision (ROD), which was signed by the Director of the Superfund Division of Environmental Protection Agency (EPA) Region 5 on June 10, 2008, for the Cam-Or Site (the Site). The Settling Work Parties shall follow the ROD, the SOW, the approved Remedial Design Work Plan ("RD Work Plan"), the approved Remedial Action Work Plan ("RA Work Plan"), EPA Superfund Remedial Design and Remedial Action Guidance and any additional guidance provided by EPA in submitting deliverables for designing and implementing the Remedial Action at the Cam-Or Site.

II. DESCRIPTION OF THE REMEDIAL ACTION/PERFORMANCE STANDARDS

The Settling Work Parties shall design, implement, and maintain the Remedial Action to meet the Performance Standards and specifications set forth in the ROD and this SOW. Performance Standards shall include cleanup standards, standards of control, quality criteria and other substantive requirements, criteria or limitations including all Applicable or Relevant and Appropriate Requirements (ARARs) set forth in the ROD, SOW, and/or Consent Decree.

A. Site Security

The Settling Work Parties shall install and maintain a fence around the Cam-Or Property to prevent access and vandalism to the Cam-Or Property. The fencing shall consist of a chain link fence around the perimeter which is a minimum six-foot high with a minimum three-strand barbed wire. The exact location of the fence will be as approved by EPA. Warning signs shall be posted at 200-foot intervals along the fence and at all gates. The warning signs shall advise that the area is hazardous due to chemicals in the soils and groundwater which pose a risk to public health through direct contact. The signs shall also provide a telephone number to call for further information. The existing fence and gate will also be maintained until EPA determines, in consultation with IDEM, that the fence and gate are no longer needed.

B. Construction and Operation of a Soil Containment System

1. Excavation of Soils on Cam-Or Property

The Settling Work Parties shall excavate (to a depth of two feet below ground surface) all soils on the Cam-Or Property that exceed 800 mg/kg of lead. The Settling Work Parties shall place these excavated soils against and between the existing Northwest area and Northeast area caps. Post-excavation sampling will be conducted and the results evaluated to confirm that the calculated exposure point concentration of lead left in place in surface soil (0-1 ft) is below the ecological clean up goal of 330 milligrams per kilogram (“mg/kg”), and surface soil (0-2 feet) is below the EPA commercial/industrial clean up level of 800 mg/kg. If post-excavation sampling shows that the clean up goal has not been met, additional excavation shall be performed to achieve the clean up goal.

2. Vegetative Soil Cover

After consolidation of any on-site contaminated soils, the Settling Work Parties shall cover the soil using a vegetative soil cover to prevent exposure to the consolidated soils. Subsurface soils below two feet remaining in-place which exceed 800 mg/kg lead will also be covered using a vegetative soil cover. At a minimum the vegetative soil cover shall consist of a visual identification barrier and two feet of clean organic material topped with six (6) inches of topsoil. The Settling Work Parties shall seed the topsoil to revegetate the area. The Settling Work Parties shall develop and implement a Soil Management Plan (See Section II.G.4.c, *infra*) that shall, among other things, effectively maintain the consolidation area and cover system, along with the vegetative cover over the subsurface soils in the Southeast portion of the Cam-Or Property and the Northeast and Northwest Area caps. O&M requirements will include periodic inspections, grass cutting and maintenance of the vegetative cover, as necessary.

C. Design, Installation, Operation, Suspension and Completion of the Groundwater Pump and Treat System

1. Groundwater Extraction and Treatment System for Table L-4 COCs

The Settling Work Parties shall design, install, operate, and maintain a groundwater extraction and treatment system (“Groundwater System”) to effectively capture, remove and treat Site groundwater contaminated with the COCs listed in Table L-4 of the ROD. The Groundwater System shall restore Site groundwater to the Interim Performance Standards for the COCs contained in Table L-4, and any Final Performance Standards or additional Performance Standards that may be added to Table L-4 during performance of the Remedial Design/Remedial Action. The Settling Work Parties shall operate the Groundwater System to remove mass such that the maximum 1,4-dioxane concentration in the groundwater is reduced to less than 500 micrograms per liter (“ug/l”). The actual length of time necessary to operate the Groundwater System will be determined through evaluating the System’s progress in reducing levels of COCs. During operation of the Groundwater System, the Settling Work Parties shall evaluate the System’s performance and shall optimize its operations on an on-going basis. The Settling Work Parties shall evaluate contaminant concentrations, extraction rates, capture zones, mass removal rates, and plume configuration. System optimization, as defined in this subsection, means modification of the extraction/containment system so as to maximize removal of 1,4-dioxane and other the COCs from the groundwater plume. System optimization may include, but is not limited to, changing pumping rates, suspension or restart of existing containment/extraction well,

and installation of new containment/extraction wells. The Settling Work Parties shall not optimize system operations without EPA approval, in consultation with IDEM. EPA, in consultation with IDEM, may require the Settling Work Parties to perform system optimization as warranted by performance data. As determined by EPA in consultation with IDEM, “reasonable” downtime for equipment failure, maintenance, and sampling will not constitute modification/optimization of the system or suspension of operations, provided that the Settling Work Parties use best efforts to promptly restore the system to operation. There will be prior notice to EPA and IDEM of downtime for system maintenance and sampling, and there will be prompt notification of equipment failures, and consequential plans to restore operation.

Regarding the groundwater treatment process, pre-design studies shall be conducted to identify the most effective process in accordance with the ROD and the approved Remedial Design and RA Work Plans. Once constructed, treatment system performance shall be evaluated based on influent concentrations, removal efficiency, effluent concentrations, unit process performance and maintenance requirements. Effluent shall meet all applicable federal, state and local requirements whether the discharge is to a water of the State of Indiana or to the Town of Westville’s wastewater treatment plant (“WWTP”), or otherwise disposed of. If the Settling Work Parties intend to discharge the treatment plant effluent to a water of the State of Indiana, and if a National Pollution Discharge Elimination System (“NPDES”) permit is required, the Settling Work Parties shall obtain such a permit from IDEM. If an NPDES permit is not required, but compliance with terms and conditions similar to an NPDES permit is required by IDEM, the Settling Work Parties shall comply with those terms and conditions. If the Settling Work Parties intend to discharge the treatment plant effluent to a sewer collection system serving the Town of Westville or another municipality, the Settling Work Parties shall contact the Town of Westville (or the other municipality) and IDEM to determine what additional requirements, if any, may be necessary prior to such discharge.

2. Study of Background Concentrations, and Adjustments or Additions to the List of COCs and Performance Standards in Table L-4.

The ROD for the Cam-Or Site anticipated that additional study of background concentrations of contaminants would occur at the time of Remedial Design, to make adjustments, if needed, to the Performance Standards for antimony, arsenic, iron, thallium, 4,4-DDT, alpha-BHC, beta-BHC, chlordanes, and dieldrin in Table L-4. The Settling Work Parties shall submit any proposed study of background concentrations to EPA for approval, in consultation with IDEM. Further, the Settling Work Parties shall submit any final report on background concentrations with any recommendations on adjustment to the Performance Standards for the above-mentioned contaminants for EPA approval, in consultation with IDEM.

If groundwater sampling confirms that additional Site-related compounds (not already listed in Table L-4) are present in Site groundwater 1) above background concentrations, and 2) above the Federal Safe Drinking Water Act Maximum Contaminant Levels (“MCLs”) or, if there are no MCLs, health-based standards, those additional compounds shall be added as COCs to Table L-4, and EPA shall establish a Performance Standard for each new COC, in consultation with IDEM.

If the Performance Standards for the Site need to be revised (as explained above), the revised Performance Standards (Table L-4) shall be included in the RA Work Plan.

3. Suspension of Operation of Individual Extraction Wells and Containment Wells in the Groundwater System

Individual mass removal extraction wells located within the plume- When the 1,4-dioxane concentration in the groundwater being removed from an extraction well falls below 500 ug/l for two consecutive monitoring periods, the Settling Work Parties may request that EPA, in consultation with IDEM, approve the suspension of operation of that extraction well. Consideration of suspending operation of these wells must be supported by statistical and/or modeling analysis showing that the portion of the plume with concentrations of 1,4-dioxane above 500 ug/l (and/or concentrations of other COCs above their Performance Standards) will not expand after the mass removal well is suspended. Operation of a mass removal well will not be suspended without prior EPA approval, in consultation with IDEM

Individual containment wells at the perimeter of the 1,4-dioxane plume- Individual containment wells at the perimeter of the 1,4-dioxane plume may be considered for suspension when the level of 1,4-dioxane within all monitoring wells within the zone of influence of that extraction well are shown to be below 500 ug/l for two consecutive monitoring periods. Consideration of suspending operation of these wells must be supported by statistical and modeling analysis showing that the portion of the plume with concentrations of 1,4-dioxane above 500 ug/l (and/or concentrations of other COCs above their Performance Standards) will not expand after the containment well is suspended. The Settling Work Parties may request that EPA, in consultation with IDEM, approve suspension of operation of the containment well. Operation of a containment well will not be suspended without prior EPA approval, in consultation with IDEM.

Additional Wells- If an individual well is not performing effectively, the Settling Work Parties may petition that EPA, in consultation with IDEM, approve suspension of operation of the well, and/or the installation or use of another well to supplement or replace the non-performing well.

4. Suspension of Operation of the Entire Groundwater System

When the level of 1,4-dioxane falls below 500 ug/l throughout the entire plume, the Settling Work Parties may petition EPA to approve the suspension of operation of the entire Groundwater System. Such a petition must be supported by statistical and modeling analysis showing that the 1,4-dioxane will remain below 500 ug/l and that all COCs at the Site have either: 1) already reached their then-applicable Performance Standards; or 2) will continue to attenuate and will meet their then-applicable Performance Standards, without the continued operation of the Groundwater System. In evaluating the Settling Work Parties' petition, EPA, in consultation with IDEM, will examine the remaining groundwater conditions and will determine whether further mass reduction is necessary to ensure that the then-applicable Performance Standards for the Site COCs will be reached and maintained. The entire Groundwater System will not be suspended without prior EPA approval, in consultation with IDEM.

5. Reactivation of Individual Wells in the Groundwater System

Individual mass removal extraction wells located within the plume- If groundwater monitoring data suggest that the 1,4-dioxane concentration in the groundwater in the capture field of a suspended extraction well would be above 500 ug/l, then that well will be considered for reactivation. Within 60 days of a request by EPA, the Settling Work Parties shall submit to EPA for approval, in consultation with IDEM, a reactivation evaluation report which will include but is not limited to results of an operation test to determine if extracted groundwater contains 1,4-dioxane at concentrations above 500 ug/l. The Settling Work Parties shall reactivate the extraction well(s) in question within 30 days of receipt of EPA's direction to do so, in consultation with IDEM.

Individual containment wells at the toe of the 1,4-dioxane plume- If statistical evaluation of groundwater monitoring data suggested that the portion of the plume with concentrations of 1,4-dioxane above 500 ug/l is, or could be, expanding, then the containment well(s) at the perimeter of the plume will be considered for renewed operation. Within 60 days of a request from EPA, the Settling Work Parties shall submit to EPA for approval, in consultation with IDEM, a renewed operation evaluation report containing statistical and modeling evaluation of the 1,4-dioxane plume. The Settling Work Parties shall reactivate the containment well(s) in question within 30 days of receipt of EPA's direction to do so.

6. Reactivation of the Entire Groundwater System

After the Settling Work Parties have suspended operation of the entire Groundwater System EPA, in consultation with IDEM, may require the Settling Work Parties to reactivate the Groundwater System if any groundwater monitoring indicates that, prior to achieving the then-applicable Performance Standard(s), 1,4-dioxane concentrations and/or concentration of any of the other COCs at the Site are no longer exhibiting a statistically significant trend downward, as defined by the Mann-Kendall Method, or an equivalent statistical method approved by EPA, in consultation with IDEM. In addition, if concentrations of any of the COCs plateau (hit a flat line) and do not resume a downward trend within a two year period, EPA, in consultation with IDEM, may require the Settling Work Parties to reactivate the Groundwater System. Within 60 days of a request from EPA, the Settling Work Parties shall submit a reactivation evaluation report to EPA for approval, in consultation with IDEM, which will include statistical and modeling evaluation of the plume. The Settling Work Parties shall reactivate the Groundwater System within 30 days of receipt of EPA's direction to do so. The decision to reactivate the Groundwater System shall be subject to dispute resolution.

7. Enhancement and/or Acceleration of the Natural Attenuation Process through In-Situ Cleanup Technologies

At any time EPA, in consultation with IDEM, may request, or the Settling Work Parties may submit a report examining and recommending an alternative for in-situ treatment (including, but not limited to chemical oxidation via catalyzed sodium persulfate and aerobic biodegradation), to enhance and/or accelerate the natural attenuation process for 1,4-dioxane and the other COCs at the Site. EPA shall, in consultation with IDEM, respond to the recommendation or request from

the Settling Work Parties. If EPA requests or approves an in-situ treatment technology, the Settling Work Parties shall submit within 60 days of receipt of EPA's request or approval a schedule for design and implementation of the in-situ treatment technology. If EPA requests an in-situ treatment technology, the Settling Work Parties shall submit within 60 days of receipt of EPA's request a schedule for evaluation of the technology in accordance with Superfund practices. Once approved by EPA, in consultation with IDEM, the Settling Work Parties shall promptly implement the in-situ groundwater treatment technology.

8. Completion of the Groundwater Remedy

The Groundwater Remedy will be considered completed when groundwater monitoring data collected from all plume monitoring wells, supported by statistical and modeling analysis, show that the concentrations of 1,4-dioxane and all other COCs have remained at or below the then-applicable Performance Standards for each compound for a minimum of two consecutive groundwater monitoring periods. At that time the Settling Work Parties shall submit to EPA a request for Certification of Completion of the Remedial Action. The groundwater remedy will not be completed until EPA has issued the Certification of Completion in accordance with the Consent Decree.

D. Installation, Operation, Maintenance of an LNAPL Remediation System

The Settling Work Parties shall install, operate and maintain an LNAPL remediation system ("LNAPL System") that shall consist of a network of extraction points, including, but not limited to, wells, trenches, or other means of extraction designed to capture and remove LNAPL to the maximum extent practicable. The Settling Work Parties will conduct pre-design investigations to determine the most efficient means of LNAPL remediation in accordance with Superfund practices, including possible use of in-situ remedial additives that may improve LNAPL removal and/or treatment.

During operation of the LNAPL System, the Settling Work Parties shall evaluate the System's performance by examining, among other things, LNAPL thickness, LNAPL extraction rates, capture zones, and LNAPL plume configuration. Based upon the performance criteria, the Settling Work Parties shall perform system optimization during the LNAPL System's operation. System optimization, as used in this subsection, means modification of the LNAPL System so as to maximize or enhance removal of LNAPL. System optimization includes, but is not limited to, changing pumping rates, and installation or suspension of extraction points, and possible use of in-situ remedial additives to improve LNAPL removal and/or treatment. The Settling Work Parties shall obtain EPA approval, in consultation with IDEM, prior to optimizing the LNAPL System. After reviewing performance data for the LNAPL System, EPA, in consultation with IDEM, may require the Settling Work Parties to take steps to optimize the System.

Reasonable downtime for the entire LNAPL System, or individual LNAPL extraction points may be necessary due to equipment failure, routine maintenance, and monitoring. Downtime for equipment failure, maintenance, and monitoring will require prompt notification of EPA and IDEM along with an estimate of down time, but will not require approval provided that the Settling Work Parties use best efforts to promptly restore the system to operation. If included in

the approved Operation and Maintenance Plan (“O&M Plan”), intermittent operation (i.e. cycling on and off) of LNAPL extraction points is not considered downtime, and prior notification to EPA is not required. Shutdown for system optimization, or suspension of individual extraction points shall be approved by EPA, in consultation with IDEM. The Settling Work Parties shall report results of monitoring events to both Agencies within 60 days of each monitoring event.

The Settling Work Parties may petition EPA, in consultation with IDEM, to approve the suspension of an individual LNAPL extraction point upon a showing that LNAPL at that location has been extracted to the maximum extent practicable. Operation of an LNAPL extraction point shall not be suspended without prior EPA approval, in consultation with IDEM. If an individual extraction point is not performing effectively, the Settling Work Parties may petition EPA to approve suspension of operation of the extraction point, and the installation or use of another extraction point to supplement or replace the non-performing extraction point.

The Settling Work Parties may petition EPA for approval to suspend the LNAPL extraction system after demonstrating that the LNAPL has been reduced to the maximum extent practicable and will not migrate. As used in this paragraph, the term “suspend the extraction system” means the turning off of all of the LNAPL extraction points at the Site. The specific terms of this demonstration shall be developed during Remedial Design and should address, but not be limited to, amounts of LNAPL recovered, LNAPL thickness in extraction points, and LNAPL recoverability. The LNAPL extraction system may be suspended after EPA, in consultation with IDEM, has approved the Settling Work Parties’ petition to suspend.

After suspending operation of the entire LNAPL extraction system, EPA, in consultation with IDEM, may require the Settling Work Parties to reactivate some or all of the LNAPL System if any groundwater/LNAPL monitoring indicates that a recoverable amount of LNAPL exists in a location.

Regarding the treatment and/or disposal processes for the extracted LNAPL and associated groundwater, pre-design studies shall be conducted to identify the most effective process for treating and/or handling both the LNAPL and the groundwater. If the Settling Work Parties intend to transport the LNAPL (and/or the associated groundwater) off-site for disposal, treatment and/or recycling, they shall ensure that all necessary permits and documentation required by federal, state and local laws are obtained and completed. If the Settling Work Parties intend themselves to treat and/or recycle the LNAPL (and/or the associated groundwater), they shall ensure that the effluent from such treatment processes meets all applicable federal, state and local requirements whether the effluent(s) discharged are to a water of the State of Indiana or to the Town of Westville’s wastewater treatment plant (“WWTP”). If a National Pollution Discharge Elimination System (NPDES) permit is required, the Settling Work Parties shall obtain such a permit. If the Settling Work Parties intend to discharge treated effluent to a publicly owned wastewater treatment plant’s (“POTW”) collection system, they shall contact the operator of the POTW to ensure that they are meeting all requirements prior to discharge.

E. Points of Compliance

In order to monitor and evaluate the RA throughout the Site, certain groundwater monitoring

wells shall be selected as "points of compliance" for meeting groundwater Performance Standards, pursuant to Section II.C.1 of the SOW, and they shall be identified in the RA Work Plan and the O&M Plan. Wells designated as representing the points of compliance, shall be sampled in accordance with the approved Remedial Design, RA Work Plan and O&M Plan. Points of compliance shall be located to ensure that compliance with Performance Standards contained in Table L-4 of the ROD unless otherwise modified by pre-design/background studies approved by EPA, in consultation with IDEM, shall be achieved throughout the entire plume. The wells will be divided into two groups: wells for detection monitoring and wells for compliance monitoring, as defined in accordance with the approved Remedial Design, RA Work Plan and O&M Plan. If any of these wells are destroyed or in any way become unusable, the Settling Work Parties shall repair or replace such wells. Additional wells may be included during the development or update of the O&M Plan. If a well is no longer needed, a written request to properly abandon the well may be submitted to EPA, and EPA will then act on the request, after consultation with IDEM. The location of any additional wells installed pursuant to the Consent Decree or this SOW shall be approved by the EPA, after consultation with IDEM. Detection monitoring shall be conducted in accordance with the approved RD Work Plan, RA Work Plan and O&M Plan, and consistent with the Consent Decree.

Evidence of groundwater contamination migration beyond existing points of compliance may require alterations to the established monitoring and extraction well network, including but not limited to installation of additional extraction wells in new locations, if needed, to pump and treat the extended areas of the plume. If the groundwater plume moves at any time during the implementation of the Consent Decree, the Settling Work Parties shall define the updated location and extent of the plume, and shall install extraction wells in new locations, if needed, to pump and treat the extended areas of the plume. Additional wells shall be designated as points of compliance if the plume migrates beyond existing points of compliance.

Compliance monitoring shall be conducted in accordance with the approved RD Work Plan and O&M Plan and consistent with the Consent Decree. The locations of the wells will be identified in the RD Work Plan, the RA Work Plan and O&M Plan. During the design phase, EPA, after consultation with IDEM, shall approve the frequency of sampling and the parameters sampled during detection and compliance monitoring including, but not limited to, those parameters listed in Table L-4 of the ROD or otherwise modified by pre-design background studies approved by EPA, in consultation with IDEM.

F. Installation and Operation of a Monitoring Program for Remedial Action

The Settling Work Parties shall implement monitoring program(s) to evaluate and ensure that the construction and implementation of the Remedial Action comply with approved plans and design documents and Performance Standards. The Settling Work Parties shall submit monitoring programs as part of the Remedial Design, RA Work Plan, and O&M Work Plan which shall address the specific components of the Remedial Action listed below. Each sample collected from the monitoring network shall be analyzed for a list of parameters approved by EPA in consultation with IDEM during Remedial Design, Remedial Action and O&M including, but not limited to, those listed in Table L-4 of the ROD unless otherwise modified by pre-design background studies approved by EPA, after consultation with IDEM. Additionally, pre-design

groundwater sampling and background studies will be conducted during the remedial design phase to aid in selection of the final COCs and make any adjustments to the cleanup levels, if necessary.

1. Groundwater Monitoring

The Settling Work Parties shall implement a groundwater monitoring program as identified in the RD Work Plan, RA Work Plan and the O&M Plan, or as required by EPA, in consultation with IDEM. The Settling Work Parties shall design a groundwater monitoring program to detect changes in the chemical concentration of the groundwater at and adjacent to the Site as well as to detect changes in the location of the groundwater plume at and adjacent to the Site.

The Settling Work Parties shall sample the monitoring wells in accordance with the approved RD Work Plan, RA Work Plan and O&M Plan and analyze the samples for a list of parameters approved by EPA in consultation with IDEM during design including, but not limited to, those listed in Table L-4 of the ROD unless otherwise modified by pre-design/background studies approved by EPA, after consultation with IDEM.

During construction and operation of the Groundwater System, the Settling Work Parties shall sample and analyze groundwater in accordance with the approved RD Work Plan, RA Work Plan and O&M Plan at the locations identified in the RD Work Plan, the RA Work Plan and the O&M Plan, and analyze for a list of parameters approved by EPA in consultation with IDEM, during design including, but not limited to, those listed in Table L-4 of the ROD, unless modified by pre-design/background studies approved by EPA in consultation with IDEM.

For monitoring results during treatment operation, as well as for sampling conducted following suspension of operation of the Groundwater System, the Settling Work Parties shall perform and report Mann-Kendal statistical test, or other statistical method approved by EPA in consultation with IDEM, to evaluate significance of temporal concentration trends.

After suspension of the entire Groundwater System, the Settling Work Parties shall continue sampling and analysis of groundwater at and adjacent to the Site in accordance with the approved O&M Plan at the locations identified in the O&M Plan and analyze for a list of parameters approved by EPA in consultation with IDEM during design including, but not limited to, those listed in Table L-4 of the ROD, to ensure that Performance Standards in Table L-4 continue to be attained unless modified by pre-design/background studies approved by EPA in consultation with IDEM. Groundwater monitoring shall continue until the Settling Work Parties demonstrate that all then applicable groundwater Performance Standards (including 1,4-dioxane) have been met throughout the plume. The demonstration shall consist of two years of consecutive quarterly monitoring followed by three years of semi-annual monitoring during which no confirmed COC detection, including 1,4-dioxane, exceeds any performance standard or concentrations of any COC exhibit a statistically significant increase over this time. At the end of this time period the monitoring program (locations, frequency of sampling, constituents, etc.) will be evaluated by the Settling Parties.

If additional information indicates that the groundwater monitoring program is inadequate, EPA

in consultation with IDEM may require additional groundwater monitoring wells and laboratory analysis of additional parameters. Monitoring wells designated for sampling are in accordance with the approved Remedial Design, RA Work Plan and O&M Plan.

2. Groundwater Extraction/Treatment System Monitoring

The Settling Work Parties shall implement a monitoring program for the extraction/treatment system as identified in the O&M Plan or as required by EPA in consultation with IDEM. The monitoring program shall be designed to detect any conditions that may interfere with the proper operation and function of the system. System monitoring shall include collection and field/laboratory analysis of effluent samples to determine the effectiveness of the treatment system. Sampling shall occur on a monthly basis, for a period of one year; thereafter the Settling Work Parties may petition EPA for less frequent sampling. The requirements of system monitoring shall be developed during Remedial Design. Once the Remedial Action is determined to be both operational and functional, the Settling Work Parties shall follow the sampling procedures and frequencies established in the O&M Plan.

3. Monitoring of the LNAPL System

The Settling Work Parties shall implement a monitoring program for the LNAPL system as outlined in the O&M Plan or as required by EPA in consultation with IDEM. The monitoring program shall be designed to detect any conditions that may interfere with the proper operation and function of the system, to confirm compliance with any applicable discharge standards, and to confirm that the system has met its performance objective of capture and removal of LNAPL to the maximum extent practicable. The requirements of system monitoring shall be developed during Remedial Design. Once the Remedial Action is determined to be both operational and functional, the Settling Work Parties shall follow the sampling procedures and frequencies established in the O&M Plan.

G. Institutional Control Implementation and Assurance Plan

The Settling Work Parties shall initially submit a draft ICIAP to EPA and IDEM sixty (60) days after receipt of EPA's comments on the pre-final design. The final ICIAP shall be submitted to EPA and IDEM no later than the pre-final construction inspection. The ICIAP shall be subject to approval by EPA, in consultation with IDEM. The ICIAP shall include plans to implement and maintain Institutional Controls over areas that do not support unlimited use/unrestricted exposure (UU/UE) at the Site. "Institutional Controls," as defined in Paragraph 4.i. include "Proprietary Controls" as defined in Paragraph 4.v. of the U.S. v. ALCOA, Inc. et al consent decree, and Government Controls as defined in Paragraph 4.j. of the Consent Decree. The Settling Work Parties shall implement Institutional Controls to impose the activity and use limitations required by the ROD as follows:

1. Activity and Use Limitations on Areas that Do Not Support the UU/UE:

- a. Containment Systems on Cam-Or Property: The Settling Work Parties shall use "best efforts" (as described in paragraph 27 of the Consent Decree) to

implement restrictive covenants to prohibit interference with the containment systems set forth in Section II of this SOW. The Settling Work Parties shall use best efforts to implement restrictive covenants that prohibit interference with the vegetative cover required under Section II. of this SOW. The Settling Work Parties shall survey the area covered by the final containment systems and shall install “capped iron (set)” permanent markers placed at the boundaries of the containment systems. The Settling Work Parties shall use best efforts to implement restrictive covenants that are enforceable by the Parties to this Consent Decree in substantially the form set forth in Appendix G to the Consent Decree. . If EPA, in consultation with IDEM, determines that the Settling Work Parties have been unable to obtain restrictive covenants, despite their use of best efforts, the Settling Work Parties shall then use their best efforts to obtain Government Controls (e.g., zoning restrictions, ordinances and/or building permit requirements) on the Cam-Or Property.

b. Limited Commercial or Industrial Use: The Settling Work Parties shall use best efforts to implement restrictive covenants to prohibit all uses of the Cam-Or Property except those compatible with commercial or industrial land use. Examples of land uses that are prohibited on either a temporary or permanent basis include: residential uses, occupancy on a 24-hour basis; and uses to house, educate or provide care for children, the elderly, infirm or other sensitive subpopulations. The Settling Work Parties shall use best efforts to implement restrictive covenants that are enforceable by the Parties to the Consent Decree and shall be substantially in the form set forth in Appendix G to the Decree. If EPA, in consultation with IDEM, determines that the Settling Work Parties have been unable to obtain restrictive covenants, despite their use of best efforts, the Settling Work Parties shall then use their best efforts to obtain Government Controls (e.g., zoning restrictions, ordinances and/or building permit requirements) on the Cam-Or Property.

c. Limited Groundwater Use: The Settling Work Parties shall use best efforts to implement restrictive covenants to prohibit construction of wells and to prohibit any activity that extracts, consumes, or otherwise uses any groundwater at the Site, except for the purposes of an EPA approved response activity until groundwater Performance Standards are achieved throughout the plume. The restrictive covenants shall be enforceable by the Parties to the Consent Decree which shall be substantially in the form set forth in Appendix G of the Decree. The Settling Work Parties shall use best efforts to obtain restrictive covenants on all properties overlaying the contaminated groundwater plume to prevent construction of drinking water wells or use of existing wells for potable purposes. If EPA, in consultation with IDEM, determines that the Settling Work Parties have been unable to obtain restrictive covenants, despite their use of best efforts, the Settling Work Parties shall use their best efforts to obtain an Environmental Restrictive Ordinance, as defined in IC 13-11-2-71.2, on the Site that EPA, in consultation with IDEM, determines is adequate to prevent human exposure to the contaminated groundwater.

d. LNAPL Areas: The Settling Work Parties shall use best efforts to obtain restrictive covenants prohibiting excavation of soils to the depth of the LNAPL, the drilling of groundwater wells and/or the use of groundwater on all properties located over the LNAPL plume. Where LNAPL remains at the Site, the Soil Management Plan shall be consistent with these prohibitions. The restrictive covenants shall be enforceable by the Parties to the Consent Decree, and shall be substantially in the form set forth in Appendix G to the Decree. The Soil Management Plan shall be consistent with this prohibition. If EPA, in consultation with IDEM, determines that the Settling Work Parties have been unable to obtain restrictive covenants, despite their use of best efforts, the Settling Work Parties shall use their best efforts to obtain an Environmental Restrictive Ordinance, as defined in IC 13-11-2-71.2, or other Governmental Controls on the Site that EPA, in consultation with IDEM, determines is adequate to prevent human exposure to the LNAPL.

e. Soil Management Areas: The Settling Work Parties shall use best efforts to implement, monitor, and enforce Proprietary Controls to limit future use of property to uses consistent with the potential risk posed by contamination remaining at the Site, including but not limited to the requirements of the Soil Management Plan regarding utility installation and repair, foundation installation, construction of buildings and soil excavation. These controls would also limit the redevelopment of the Site to appropriate uses and would also limit future invasive activities in the areas where lead-impacted soil has been capped, and where LNAPL remains, consistent with the ROD. If EPA, in consultation with IDEM, determines that the Settling Work Parties have been unable to obtain restrictive covenants, despite their use of best efforts, the Settling Work Parties shall use their best efforts to obtain Governmental Controls on the Site that EPA, in consultation with IDEM, determines is adequate to prevent human exposure to the contaminated soil.

f. The Groundwater System and the LNAPL System: The Settling Work Parties shall use best efforts to implement restrictive covenants to prohibit interference with the Groundwater and LNAPL Systems set forth in Section II C.-D. of this SOW.

g. Monitoring Systems: The Settling Work Parties shall use best efforts to implement restrictive covenants to prohibit interference with the Site Monitoring Systems set forth in Section II F. of this SOW. The Settling Work Parties shall use best efforts to obtain Proprietary or other Institutional Controls to prohibit interference with Site monitoring wells.

2. **Demonstration that Institutional Controls cover all physical areas that do not support UU/UE**: The ICIAP shall require a demonstration that Institutional Controls cover all physical areas that do not support UU/UE based on current conditions for the entire Site. The ICIAP shall include a methodology for identifying and mapping of all

non-UU/UE areas during and after completion of construction, and during operation and maintenance of the remedy, including preparing final survey maps and legal descriptions of non-UU/UE areas.

3. Proprietary Controls: For Proprietary Controls, the ICIAP shall:

- a. include a current title insurance commitment from a title insurance company in a form acceptable to EPA, after consultation with IDEM, which shows title to the non-UU/UE areas to be free and clear of all prior liens and encumbrances. If the Settling Work Parties request that EPA waive this requirement pursuant to Section IX (Access and Institutional Controls) of the Consent Decree, the Settling Work Parties must demonstrate and certify that such pre-existing liens, encumbrances or other property interests will not interfere with the remedy or cause undue exposure. Such a demonstration must include: i) copies of encumbrances referenced in the Title commitment; ii) identification of encumbrances that impact the non-UU/UE areas; iii) copies of requests for subrogation agreements for such encumbrances; iv) identification of the encumbrances on maps that depict parcel numbers and the area impacted by the encumbrance; and v) discussion of how use of existing encumbrances will impact the Site;
- b. arrange for the execution and recording of such executed restrictive covenants with the LaPorte County Recorder in accordance with the Consent Decree.

4. Long-Term Stewardship: The ICIAP shall provide for long term stewardship of the Institutional Controls. The Settling Work Parties shall use best efforts to maintain and ensure compliance with all Institutional Controls at the Site. The ICIAP shall require inclusion of the following information in the ICIAP annual report:

- a. Inspections and Certification: The Settling Work Parties shall inspect the Site at least annually and certify compliance with the activity and use limitations set forth in this section in the ICIAP annual report;
- b. Groundwater IC requirements: The ICIAP shall require annual submittal of the following information regarding compliance with groundwater use limitations:

- a map showing the boundaries of the restricted groundwater area in the city ordinance and/or restrictive covenants;
- a map showing the location of existing and any new wells located in and around the Site;
- the current boundaries of the contaminated groundwater plume detected above Performance Standards and the LNAPL plume;
- comparison of the current boundaries of the two plumes and the boundaries of the restricted area in the institutional controls;
- discussion of whether the boundaries of restricted areas under the ICs are sufficient to prevent exposure to contaminated groundwater and/or LNAPL;
- contingency plans if the ICs are not sufficient to prevent exposure to

contaminated groundwater and/or LNAPL;
-a survey of wells that may be located within the plume areas and any migration pathway.

c. Soil Management Plan Requirements: As part of the Final Design submittal the Settling Work Parties shall submit to EPA for review and approval a Soils Management Plan (SMP). The SMP shall identify the process for ensuring that future land-use at the Site, including utility installation and repair and foundation installation, is protective of human health and the environment. The SMP shall establish standardized procedures for any future construction at the Cam-Or Property. The SMP shall identify the volumes and locations of soil that require management and establish management procedures for handling (excavating, grading, etc.) and disposing of impacted soil. The SMP shall also control exposure to construction workers during future work that may involve handling impacted soil by establishing engineering controls and other health and safety procedures. The Settling Work Parties shall develop the SMP and submit it to the EPA for review. Once the EPA in consultation with IDEM approves the SMP, the Settling Work Parties shall implement the plan in accordance with the approved RD Work Plan schedule.

III. SCOPE OF REMEDIAL DESIGN AND REMEDIAL ACTION

The Remedial Design/Remedial Action shall consist of six tasks. All plans are subject to EPA and IDEM review. All plans are subject to approval by EPA in consultation with IDEM.

Task 1: RD Work Plan

Task 2: Remedial Design Phases

- A. Preliminary Design
- B. Pre-final Design/ Final Design

Task 3: Remedial Action Work Plan

Task 4: Remedial Action/Construction

- A. Preconstruction Meeting
- B. Pre-final Inspection
- C. Final Inspection
- D. Reports
 - 1. Final Construction Report
 - 2. Completion of Remedial Action Report

Task 5: Operation and Maintenance

Task 6: Performance Monitoring

Task 1: Remedial Design Work Plan

The Settling Work Parties shall submit a Work Plan that shall document the overall management strategy for performing the design, construction, operation, maintenance and monitoring of the Remedial Action for EPA review and approval, in consultation with IDEM. The plan shall document the responsibility and authority of all organizations and key personnel involved with the implementation, and shall include a description of qualifications of key personnel directing the Remedial Design, including contractor personnel. The RD Work Plan shall also contain a schedule of Remedial Design activities. The Settling Work Parties shall submit an RD Work Plan in accordance with Paragraph 10 of the Consent Decree and Section V of this SOW.

The RD Work Plan shall include, at a minimum, a schedule, a pre-design QAPP, Health and Safety Plan, Field Sampling Plan, and a plan for a pre-design/background study to provide information necessary to fully implement the Remedial Design and Remedial Action. The pre-design studies may include further delineation of the 1,4-dioxane and other COC concentrations in groundwater, treatability testing for groundwater treatment technologies, and/or evaluation of locations where LNAPL might be recoverable and the most efficient means of LNAPL removal. Pre-design studies will also evaluate if the time to reach groundwater Performance Standards and necessary to extract LNAPL to the maximum extent practicable can be reduced, not inconsistent with the NCP, through in-situ treatment.

The Settling Work Parties shall implement the pre-design work in accordance with the final RD Work Plan. The results of the pre-design studies shall be included with the 30% design submittal to the EPA and IDEM.

Task 2: Remedial Design Phases

The Settling Work Parties shall prepare construction plans and specifications to implement the Remedial Action at the Site as described in the ROD and this SOW. Plans and specifications shall be submitted in accordance with the schedule set forth in Section V below. Subject to approval by EPA, in consultation with IDEM, the Settling Work Parties may submit more than one set of design submittals reflecting different components of the Remedial Action. All plans and specifications shall be developed in accordance with EPA's Superfund Remedial Design and Remedial Action Guidance (OSWER Directive No. 9355.0-4A) and shall demonstrate that the Remedial Action shall meet all objectives of the ROD, the CD and this SOW, including all Performance Standards. The Settling Work Parties shall meet regularly with EPA and IDEM to discuss design issues.

A. Preliminary Design

The Settling Work Parties shall submit the Preliminary Design when the design effort is approximately 30% complete. The Preliminary Design submittal shall include or discuss,

at a minimum, the following:

- Preliminary plans, drawings, and sketches, including design calculations;
- Results of pre-design and background studies including any treatability studies and additional investigation work approved by EPA, in consultation with IDEM;
- Design assumptions and parameters, including design restrictions, process performance criteria, appropriate unit processes for the treatment trains for the Groundwater System and the LNAPL System, and expected removal or treatment efficiencies for both the process and waste (concentration and volume);
- Proposed cleanup verification methods, including compliance with Applicable or Relevant and Appropriate Requirements (ARARs);
- Outline of required specifications;
- Proposed siting/locations of processes/construction activity;
- Expected long-term monitoring and operation requirements;
- Real estate, easement, and permit requirements;
- Preliminary construction schedule, including contracting strategy.

B. Pre-final and Final Designs

The Settling Work Parties shall submit the Pre-final Design when the design effort is 95% complete, and shall submit the Final Design when the design effort is 100% complete. The Pre-final Design shall fully address all written comments made to the preceding design submittal. The Final Design shall fully address all written comments made to the Pre-final Design, and shall include reproducible drawings and specifications, including electronic copies, suitable for bid advertisement. The Pre-final Design shall serve as the Final Design if EPA, in consultation with IDEM, has no further written comments and issues the notice to proceed.

The Pre-final Design submittal shall include those elements listed for the Preliminary Design, as well as, the following:

- Draft Performance Standard Verification Plan, including the Draft QAPP, Draft Health and Safety Plan, Draft Contingency Plan, and Draft Field Sampling Plan;
- Draft Construction Quality Assurance Plan;

The Final Design submittal shall include those elements listed for the Preliminary Design, as well as, the following:

- Final Performance Standard Verification Plan, including the Final QAPP/Final Health and Safety Plan/Final Contingency Plan/Final FSP;
- Draft Final Construction Quality Assurance Plan;
Draft Final Table L-4 Groundwater Performance Standards;
- Draft Operation and Maintenance Plan;
- Draft Institutional Control Implementation and Assurance (ICIAP) Plan (see Section II., Section G. of this SOW);
- Draft Soil Management Plan;
- Capital and Operation and Maintenance Cost Estimate. This cost estimate shall refine the FS cost estimate to reflect the detail presented in the Final Design;
- Final Project Schedule for the construction and implementation of the Remedial Action which identifies timing for initiation and completion of all critical path tasks. The final project schedule submitted as part of the Final Design shall include specific dates for completion of the project and major milestones.

Task 3: Remedial Action Work Plan

The Settling Work Parties shall submit a RA Work Plan which includes a detailed description of the remediation and construction activities. The RA Work Plan shall include a project schedule for each major activity and submission of deliverables generated during the Remedial Action.

The Settling Work Parties shall submit a RA Work Plan in accordance with Paragraph 11 of the Consent Decree and Section V of this SOW. The RA Work Plan shall incorporate the following:

- Soil Management Plan;
- The Final Table L-4 Groundwater Performance Standards; and
- Construction Quality/Assurance Plan.

Task 4: Remedial Action Construction

The Settling Work Parties shall implement the Remedial Action as detailed in the approved Final Design. The following activities shall be completed in constructing the Remedial Action.

A. Pre-construction inspection and meeting:

The Settling Work Parties shall participate with the EPA and the State in a pre-construction inspection and meeting to:

1. Review methods for documenting and reporting inspection data;
2. Review methods for distributing and storing documents and reports;
3. Review work area security and safety protocol;
4. Discuss any appropriate modifications of the construction quality assurance plan to ensure that site-specific considerations are addressed; and
5. Conduct a Site walk-around to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

The pre-construction inspection and meeting shall be documented by a designated person and minutes shall be transmitted to all parties.

B. Pre-final Inspection:

Within 15 days after the Settling Work Parties make a preliminary determination that construction is complete, the Settling Work Parties shall notify the EPA and IDEM for the purposes of conducting a pre-final inspection. The pre-final inspection shall consist of a walk-through inspection of the entire Facility with EPA and IDEM. The inspection is to determine whether the project is complete and consistent with the contract documents and the Remedial Action. Any outstanding construction items discovered during the inspection shall be identified and noted. Additionally, treatment equipment shall be operationally tested by the Settling Work Parties. The Settling Work Parties shall certify that the equipment has performed to meet the purpose and intent of the specifications. Retesting shall be completed where deficiencies are revealed. The pre-final inspection report shall outline the outstanding construction items, actions required to resolve items, completion date for these items, and a proposed date for final inspection.

C. Final Inspection:

Within 15 days after completion of any work identified in the pre-final inspection report, the Settling Work Parties shall notify the EPA and IDEM for the purposes of conducting a final inspection. The final inspection shall consist of a walk-through inspection of the Facility by EPA, IDEM, and the Settling Work Parties. The pre-final inspection report shall be used as a checklist with the final inspection focusing on the outstanding construction items identified in the pre-final inspection. Confirmation shall be made that outstanding items have been resolved.

D. Reports

1. Final Construction Report

Within 30 days of a successful final inspection, the Settling Work Parties shall submit a Construction Completion Report. In the report, a registered professional engineer and the Settling Work Parties' Project Coordinator shall state that the Remedial Action has been constructed in accordance with the design and specifications. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall contain the following statement, signed by a responsible corporate official of a Settling Work Party or the Settling Work Parties' Project Coordinator:

"To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

2. Completion of Remedial Action Report

Within 60 days of the Pre-certification Inspection pursuant to paragraph 52 of the CD, the Settling Work Parties shall submit a Completion of Remedial Action Report. In the report, a registered professional engineer and the Settling Work Parties' Project Coordinator shall state the Remedial Action has been completed in full satisfaction of the requirements of this Consent Decree and that all Performance Standards have been achieved. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall demonstrate that all elements of the performance standard verification plan have been met, and that all Performance Standards have been achieved. The report shall contain the following statement, signed by a responsible corporate official of a Settling Work Party or the Settling Work Parties' Project Coordinator:

"To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Task 5: Operation and Maintenance

The Settling Work Parties shall prepare an Operation and Maintenance (O&M) Plan to cover both implementation and long term maintenance of the Remedial Actions. An initial Draft O&M Plan shall be submitted as a Final Design Document submission. The interim O&M Plan shall be submitted to EPA and IDEM prior to the pre-final construction inspection, in accordance with the approved construction schedule. The Final O&M Plan shall be submitted to EPA and IDEM within twelve (12) months after the Final inspection. The plan shall be composed of the following elements:

- A. Description of normal Operation and Maintenance:
1. Description of tasks for operation;
 2. Description of tasks for maintenance;
 3. Description of prescribed treatment or operation conditions; and
 4. Schedule showing frequency of each O&M task.
- B. Description of potential operating problems:
1. Description and analysis of potential operation problems;
 2. Sources of information regarding problems; and
 3. Common and/or anticipated remedies.
- C. Description of routine monitoring and laboratory testing:
1. Description of monitoring tasks;
 2. Description of required data collection, laboratory tests and their interpretation;
 3. Required quality assurance, and quality control;
 4. Schedule of monitoring frequency and procedures for a petition to EPA to reduce the frequency of or discontinue monitoring; and
 5. Description of verification sampling procedures if Cleanup or Performance Standards are exceeded in routine monitoring.
- D. Description of alternate O&M:
1. Should systems fail, alternate procedures to prevent release or threatened releases of hazardous substances, pollutants or contaminants which may endanger public health and the environment or exceed Performance Standards; and
 2. Analysis of vulnerability and additional resource requirement should a failure occur.
- E. Corrective Action:
1. Description of corrective action to be implemented in the event that cleanup or Performance Standards are exceeded; and
 2. Schedule for implementing these corrective actions.
- F. Safety Plan:
1. Description of precautions, of necessary equipment, etc.,

- for Site personnel; and
2. Safety tasks required in event of systems failure.

G. Description of Equipment:

1. Equipment identification;
2. Installation of monitoring components;
3. Maintenance of Site equipment; and
4. Replacement schedule for equipment and installed components.

H. Records and reporting mechanisms required.

1. Daily operating logs;
2. Laboratory records;
3. Records for operating costs;
4. Mechanism for reporting emergencies;
5. Personnel and maintenance records;
6. Monthly/annual reports to State agencies, and
7. ICIAP Annual Report

I. Institutional Control Implementation and Assurance Plan– Long Term Stewardship (see Section II, G.).

Task 6: Performance Monitoring

Performance monitoring shall be conducted to ensure that all Performance Standards are met.

A. Performance Standard Verification Plan

The purpose of the Performance Standard Verification Plan is to provide a mechanism to ensure that both short-term and long-term Performance Standards for the Remedial Action are met. The Draft Performance Standards Verification Plan shall be submitted with the Pre-final Design. Once approved, the Performance Standards Verification Plan shall be implemented on the approved schedule. The Performance Standards Verification Plan shall include:

1. Quality Assurance Project Plan
2. Health and Safety Plan, and
3. Field Sampling Plan

The RI/FS approved QAPP and Health and Safety Plan may be modified to address the RD/RA activities.

IV. CONTENT OF SUPPORTING PLANS

The documents listed in this section -- the Quality Assurance Project Plan, the Field Sampling Plan, the Health and Safety Plan, the Contingency Plan and the Construction Quality Assurance Plan -- are documents which must be prepared and submitted as outlined in Section III of this SOW. The following section describes the required contents of each of these supporting plans.

A. Quality Assurance Project Plan

The Settling Work Parties shall develop a Site specific Quality Assurance Project Plan (QAPP), covering sample analysis and data handling for samples collected in all phases of future Site work, based upon the Consent Decree and guidance provided by EPA (<http://www.epa.gov/quality/qs-docs/g5-final.pdf>). The QAPP shall be consistent with the requirements of the EPA Contract Lab Program (CLP) for laboratories proposed outside the CLP. The QAPP shall at a minimum include:

Project Description:

- Facility Location History
- Past Data Collection Activity
- Project Scope
- Sample Network Design
- Parameters to be Tested and Frequency
- Project Schedule

Project Organization and Responsibility:

Quality Assurance Objective for Measurement Data:

- Level of Quality Control Effort
- Accuracy, Precision and Sensitivity of Analysis
- Completeness, Representativeness and Comparability

Sampling Procedures

Sample Custody:

- Field Specific Custody Procedures
- Laboratory Chain of Custody Procedures

Calibration Procedures and Frequency:

- Field Instruments/Equipment
- Laboratory Instruments

Analytical Procedures:

- Non-Contract Laboratory Program
Analytical Methods
- Field Screening and Analytical Protocol
- Laboratory Procedures

Internal Quality Control Checks:

- Field Measurements
- Laboratory Analysis

Data Reduction, Validation, and Reporting:

- Data Reduction
- Data Validation
- Data Reporting

Performance and System Audits:

- Internal Audits of Field Activity
- Internal Laboratory Audit
- External Field Audit
- External Laboratory Audit

Preventive Maintenance:

- Routine Preventative Maintenance Procedures
and Schedules
- Field Instruments/Equipment
- Laboratory Instruments

Specific Routine Procedures to Assess Data Precision
Accuracy and Completeness:

- Field Measurement Data
- Laboratory Data

Corrective Action:

- Sample Collection/Field Measurement
- Laboratory Analysis

Quality Assurance Reports to Management:

The Settling Work Parties shall attend a pre-QAPP meeting with EPA. The Settling Work Parties shall submit a draft QAPP to EPA for review and approval in consultation with IDEM.

B. Health and Safety Plan

The Settling Work Parties shall develop a health and safety plan which is designed to protect on-site personnel and area residents from physical, chemical and all other hazards posed by this Remedial Action. The safety plan shall develop the performance levels and criteria necessary to address the following areas.

- Facility Description
- Personnel
- Levels of protection
- Safe work practices and safe guards
- Medical surveillance
- Personal and environmental air monitoring
- Personal protective equipment
- Personal hygiene
- Decontamination - personal and equipment
- Site work zones
- Contaminant control
- Contingency and emergency planning, and
- Logs, reports and record keeping

The safety plan shall follow EPA guidance and all OSHA requirements as outlined in 29 C.F.R. §§ 1910 and 1926.

Contingency Plan included as part of the Health & Safety Plan

The Settling Work Parties shall submit a Contingency Plan describing procedures to be used in the event of an accident or emergency at the Site. The draft Contingency Plan shall be submitted with the Pre-final Design and the Final Contingency Plan shall be submitted with the Final Design. The Contingency Plan shall include, at a minimum, the following:

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. First aid medical information;
4. Air Monitoring Plan (if applicable); and
5. Spill Prevention, Control, and Countermeasures (SPCC) Plan (if

applicable), as specified in 40 CFR Part 109 describing measures to prevent and contingency plans for potential spills and discharges from materials handling and transportation.

C. Field Sampling Plan

The Settling Work Parties shall develop a field sampling plan (as described in "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," October 1988). The Field Sampling Plan should supplement the QAPP and address all sample collection activities, including soils, groundwater, and treatment system influent/effluent water quality monitoring.

D. Construction Quality Assurance Plan

The Settling Work Parties shall submit a Construction Quality Assurance Plan (CQAP) which describes the Site specific components of the quality assurance program which shall ensure that the completed project meets or exceeds all design criteria, plans, and specifications. The draft CQAP shall be submitted with the Pre-final Design and the draft final CQAP shall be submitted with the Final Design. The final CQAP shall be submitted prior to the start of construction in accordance with the approved RA Work Plan schedule. The CQAP shall contain, at a minimum, the following elements:

1. Responsibilities and authorities of all organizations and key personnel involved in the design and construction of the Remedial Action.
2. Qualifications of the Quality Assurance Official to demonstrate he possesses the training and experience necessary to fulfill his identified responsibilities.
3. Protocols for sampling and testing used to monitor construction.
4. Identification of proposed quality assurance sampling activities including the sample size, locations, frequency of testing, acceptance and rejection data sheets, problem identification and corrective measures reports, evaluation reports, acceptance reports, and final documentation. A description of the provisions for final storage of all records consistent with the requirements of the Consent Decree shall be included.
5. Reporting requirements for CQAP activities shall be described in detail in the CQAP. This shall include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation. Provisions for the final storage of all records shall be presented in the CQAP.

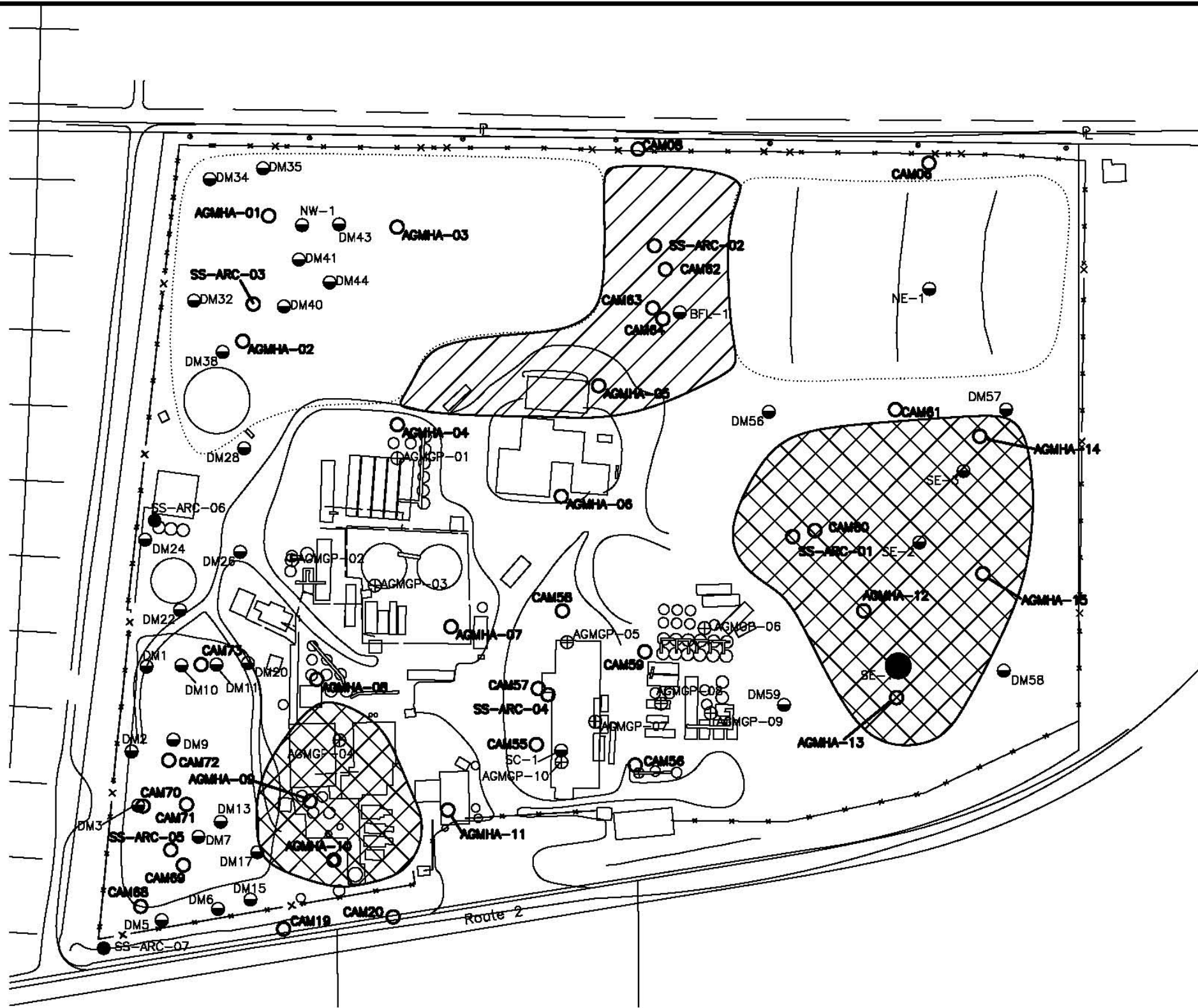
V. SUMMARY OF MAJOR DELIVERABLES/SCHEDULE

A summary of the project schedule and reporting requirements contained in this SOW is presented below:








<u>Submission</u>	<u>Due Date</u>
1. Identify Supervising Contractor Candidates	Ten (10) days after lodging of CD
2. Identify Project Coordinator	Thirty (30) days after lodging of CD
3. Identify Supervising Contractor	Thirty (30) days after lodging of CD
4. RD Work Plan	Forty Five (45) days after Notice of Authorization to proceed with RD, as described in the CD
5. Preliminary Design (30%)	Ninety (90) days after completion of pre-design/background and/or treatability studies
6. Draft ICIAP Plan	Sixty (60) days after receipt of EPA's written comments on the Pre-final Design
7. Pre-final Design (95%)	Ninety (90) days after receipt of EPA's written comments on the Preliminary Design (30%)
8. Final Design (100%)	Sixty (60) days after receipt of EPA's written comments on the Pre-final Design
9. Draft O&M Plan	Sixty (60) days after receipt of EPA's written comments on the Pre-final Design
10. RA Work Plan	Thirty (30) days after receipt of EPA's approval of the Final Design
11. Award RA Contract(s)	One hundred twenty (120) days after receipt of EPA's Approval of the Final Design
12. Pre-Construction Inspection and Meeting	Fifteen (15) days after Award of RA Contract(s)
13. Initiate Construction of RA	Thirty (30) days after Pre-Construction

		Inspection and meeting
14.	Completion of Construction	Twelve (12) months after receipt of EPA's authorization to proceed with RA or as approved by EPA in the RA construction schedule.
15.	Pre-final Inspection	No later than (30) days after completion of construction
16.	Interim Final O&M Plan	No later than Pre-final Inspection
17.	Final ICIAP Plan	No later than Pre-final Inspection
18.	Pre-final Inspection Report	Fifteen (15) days after completion of work identified in Pre-final Inspection
19.	Final Inspection	Fifteen (15) days after work in Pre-final Inspection Report is completed under schedule approved by EPA
20.	Construction Completion Report	Thirty (30) days after Final Inspection
21.	Final O&M Plan	Twelve (12) months after Final Inspection
22.	Completion of Remedial Action Report	Within Sixty (60) days of the precertification inspection pursuant to Paragraph 51 of the CD.

**APPENDIX C – THREE MAPS OF THE CAM-OR SITE AND
THE CAM-OR, INC. PROPERTY**



LEGEND

-  SUBSURFACE SOIL SAMPLE LOCATIONS
-  SURFACE AND SUBSURFACE SOIL SAMPLE LOCATIONS
-  SURFACE SOIL SAMPLE LOCATIONS
-  FINGERPRINT SOIL SURFACE SAMPLE
-  SOIL CONSOLIDATION AREA
-  LEAD IMPACTED SURFACE SOIL
-  LEAD IMPACTED SUBSURFACE SOIL



NO.	DATE	REVISION DESCRIPTION	BY	CHKD	NO.	DATE	REVISION DESCRIPTION	BY	CHKD

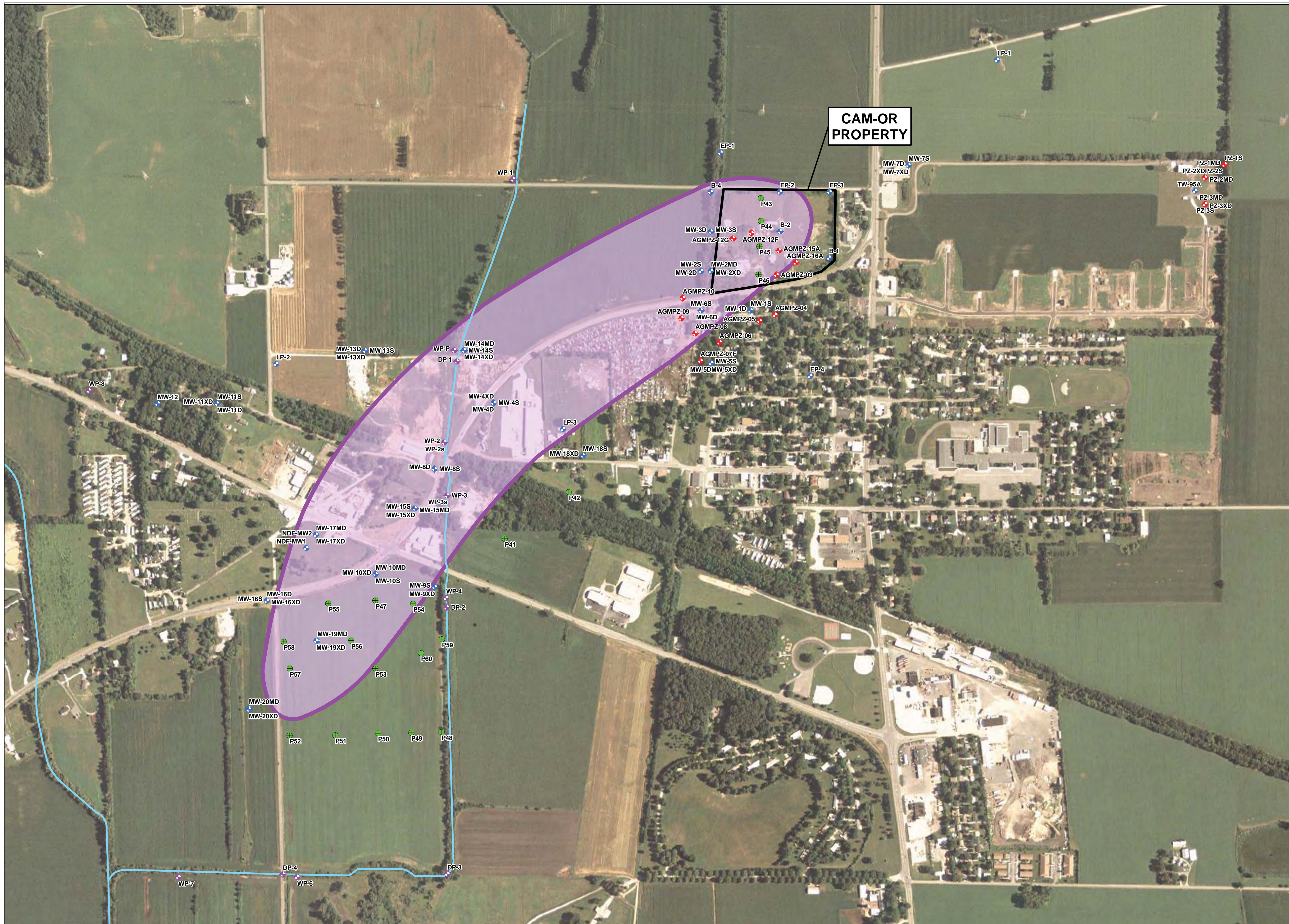


35 East Wacker Drive, Suite 1000
Chicago, IL 60601
Tel: (312)263-6703 Fax: (312)263-7897

CAM-OR SITE
ORIGINAL CAM-OR PROPERTY
WESTVILLE, INDIANA

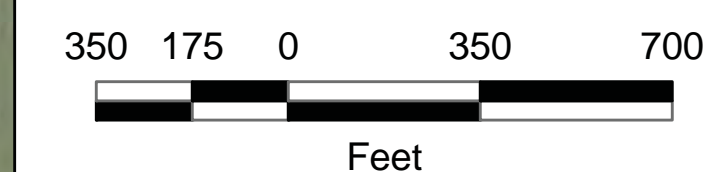
Checked By J. KRATZMEYER	Drawing Date 8/25/2010
Drawn BY AP	Project Manager J. KRATZMEYER

File Name SITEPLAN8-2010.DWG	File Location C:\PROJECT\CAM-OR
Project Number CI001144.0005	Figure



Legend

- Vertical Aquifer Sampling Points
- ◆ Monitoring Wells
- ◆ Piezometers
- ◆ Well Points
- Ditch
- Extent of Groundwater Containing 1,4-Dioxane



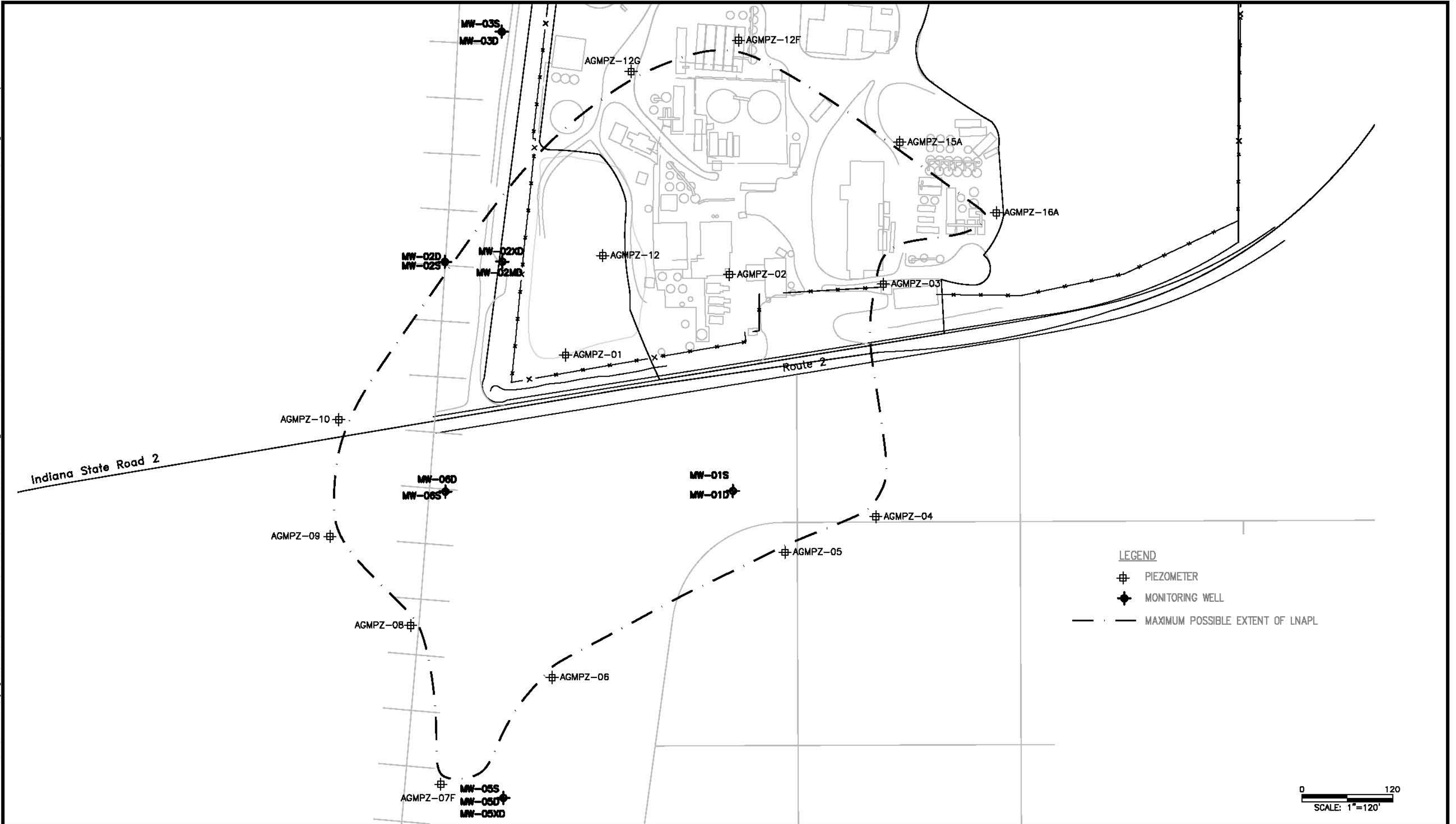
Aerial Photo Source: Photographed summer 2003 by the USDA/FSA Aerial Photography Field Office and mosaicked to county wide tiles for publication on September 18, 2003.



35 East Wacker Drive, Suite 1000
Chicago, IL 60601
Tel (312)263-6703 Fax (312)263-7897

CAM-OR SITE
GROUNDWATER PLUME
Westville, Indiana

Map Date: 9/2/2010 Figure:



NO.	DATE	REVISION DESCRIPTION	BY	CKD	NO.	DATE	REVISION DESCRIPTION	BY	CKD

ARCADIS
 35 East Wacker Drive, Suite 1000
 Chicago, IL 60601
 Tel: (312) 263-6703 Fax: (312) 263-7897

CAM-OR SITE
MAXIMUM POSSIBLE EXTENT OF LNAPL
 WESTVILLE, INDIANA

Checked By
 J. KRATZMEYER
 Drawn BY
 AP

Drawing Date
 8/25/2010
 Project Manager
 J. KRATZMEYER

File Name
 SITEPLANLNAPL.DWG
 Project Number
CI001144.0005

File Location
 C:\PROJECT\CAM-OR
 Figure

APPENDIX D - LIST OF SETTLING WORK PARTIES

APPENDIX D – LIST OF SETTLING WORK PARTIES

Alcoa Inc.

ANR Pipeline Company

C. Stoddard & Sons, Inc.

Clean Harbors Environmental Services, Inc. (as indemnitor for, and on behalf of, Oil Services Company or OSCO)

Consolidated Rail Corporation

CSX Transportation, Inc.

Ford Motor Company

Imperial Oil Limited

Ingersoll-Rand Company (f/k/a Clark Equipment Company)

Northern Indiana Public Service Company

Rockwell Automation (f/k/a Allen Bradley Corp. and Rockwell Intl. Corp.)

Tennessee Gas Pipeline Company

United States Steel Corporation (f/k/a USX Corporation)

**APPENDIX E – LIST OF PARTIES WHO MAY BE ELIGIBLE
TO JOIN THIS CONSENT DECREE
AS OTHER SETTLING PARTIES**

APPENDIX E

List of Prior Settlers with the Settling Work Parties Who May be Eligible to Participate as “Other Settling Parties” in this Consent Decree

Allegheny Ludlum Corporation
Allied Signal
Alumax, Inc.
AT&T
A&W Oil Express
Bill's Sunoco Service
Bob's Shell Service
Breslube-Penn, Inc.
Bridgestone-Firestone
Burlington Northern Railroad Company
Butch's Super Shell, Inc.
Castleton Shell
Central Oil Service, Inc.
Chuck Mann Sunoco
Clark's Phillips 66 Service Center
CNG Transmission Corporation
Cold Metal Products Company, Inc.
Commonwealth Aluminum
Consolidated Aluminum Corporation
Cooper Industries, Inc.
Corning Incorporated f/k/a Corning Glass Works
Cummins Mid-State Power, Inc.
Cummins Ohio, Inc.
Custom Blended Oils, Inc.
John Deere-Waterloo Works of Deere & Company
Dinger Sunoco Service
Drury Oil Company
Duke's Oil Service, Inc.
Emerton Shell
Essex Group, Inc.
F&D Shell
Gary Transfer Company, Inc.
General Electric Turbine
Gene's Sunoco Service
Goodyear Tire & Rubber Company
Goshen Iron & Metal
GTE North Inc.
Indiana Harbor Belt Railroad Company
Indiana Power & Light Company
Indiana Slag
Inland Water Pollution Control

Jiffy Lube International
Joey Minton Shell
John Sexton & Co.
Kaiser Aluminum & Chemical Corporation
Kellberg Waste Oil Co., Inc.
Koontz-Wagner Electric Company, Inc.
Kyana Oil, Inc.
Lenz Oil Service
LTV Vehicle Corporation
Lucas Arco Service (Atlantic Richfield for)
Lynn's Shell, Inc.
M&M Sunoco
McGill Manufacturing Company, Inc.
Mobil Oil Corporation
Modine Manufacturing Company
Montgomery Ward & Co.
Nalco Chemical Company
Newell Company
North American Van Lines, Inc.
Oil Express- Calumet City (Don Stultz & Donna Tonkovich d/b/a)
Oil Express-Highland (Art Lukowski d/b/a)
Oil Express-South Holland (Art Lukowski d/b/a)
Oil Express- Merrillville
Phillip's Drill
Portage Sunoco
Roll Coater, Inc. (Arvin)
Rustboldt Shell
SAFCO (Custom Blend)
Sears, Roebuck and Co.
Shell Oil Company
South Bend Lathe (for Cass Corp.)
Sundstrand Corporation (f/k/a Sullair Corp.)
Textron (for Excello)
Torrington Company
Triwell Service Centers, Inc.
Union Carbide
Union Street Sunoco
United Parcel Service, Inc.
Usher Oil Service
Wenino Service Station
Westinghouse Electric Corporation
Williams Service Station

APPENDIX F – SAMPLE PERFORMANCE GUARANTEE DOCUMENTS:

F1 – GUARANTEE AGREEMENT

F2a – PERFORMANCE BOND

F2b – PAYMENT BOND

F3 – IRREVOCABLE STANDBY LETTER OF CREDIT

F4- CFO AND CPA LETTERS

F5 – TRUST AGREEMENT

APPENDIX F1

[CERCLA Financial Assurance Sample Guarantee Agreement: Draft of March 2006]

GUARANTEE AGREEMENT

This GUARANTEE AGREEMENT, dated as of [_____], 200 (this “Guarantee”), is made by [_____], a [_____] organized and existing under the laws of the State of [_____] (“Guarantor”), to and for the benefit of the United States Environmental Protection Agency, an agency of the federal government of the United States of America (“EPA”). This Guarantee is made on behalf of [_____] (“Settling Defendant”), which is an [affiliate] of Guarantor.

RECITALS

WHEREAS, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9607 et seq. (“CERCLA”), Settling Defendant has entered into a Consent Decree with EPA, dated [_____], 2010, Docket No. _____ (the “Consent Decree”), for certain environmental remediation work to be performed at the Cam-Or site (the “Site”) near Westville, Indiana;

WHEREAS, Section XIII of the Consent Decree requires that Settling Defendant provide financial assurance to EPA that funds or other resources will be available as and when needed to ensure completion of the work required to be conducted by Settling Defendant under the Consent Decree;

WHEREAS, in order to provide part of such financial assurance required by the Consent Decree, Settling Defendant has agreed to provide EPA with a guarantee, issued by Guarantor, of Settling Defendant’s obligations arising under the Consent Decree, all as set forth more fully in this Guarantee;

WHEREAS, Settling Defendant is a [wholly-owned direct subsidiary] of Guarantor, and the Guarantor will receive substantial benefits from the agreements made by and between EPA and Settling Defendant as set forth in the Consent Decree; and

WHEREAS, Guarantor has agreed to, among other things, guarantee payment and performance in full of the Guaranteed Obligations (as hereinafter defined) and undertake such other commitments to EPA or for EPA’s benefit as set forth in this Guarantee.

AGREEMENT

NOW, THEREFORE, in consideration of the promises contained herein, and to induce EPA to enter into the Consent Decree and to settle with Settling Defendant under CERCLA as contemplated thereby, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Guarantor hereby agrees with EPA as follows:

ARTICLE I.
DEFINITIONS

1.1 Defined Terms. The following terms (whether or not underscored) when used in this Guarantee, including its preamble and recitals, shall have the following meanings:

“Affiliate” means, when used with respect to a specified entity, another entity that directly, or indirectly through one or more intermediaries, Controls or is Controlled by or is under common Control with the entity specified.

“Annual Audited Financial Statements” means an entity’s annual audited financial statements prepared in accordance with U.S. Generally Accepted Accounting Procedures.

“Control” means the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of an entity, whether through the ownership or control of voting securities, partnership interests or other equity interests, by contract, or otherwise, and “Controlling” and “Controlled” shall have meanings correlative thereto.

“EPA” has the meaning given in the preamble to this Guarantee.

“Guaranteed Obligations” means and includes all obligations and liabilities, howsoever arising, owed by Settling Defendant to EPA of every kind and description (whether or not for the payment of money), direct or indirect, absolute or contingent, due or to become due, now existing or hereafter arising, pursuant to the terms of the Consent Decree.

“Guarantor” has the meaning given in the preamble to this Guarantee.

“Guarantee” has the meaning given in the preamble to this Guarantee.

“Site” has the meaning given in the preamble to this Guarantee.

General Definitions. Unless otherwise defined herein or unless the context otherwise requires, capitalized terms used in this Guarantee, including its preamble and recitals, have the meanings provided in the Consent Decree

ARTICLE II.
GUARANTEE

2.1 Guarantee.

(a) Guarantor, as primary obligor and not merely as surety, hereby unconditionally and irrevocably guarantees to EPA the prompt payment in full and the prompt performance in full of the Guaranteed Obligations.

(b) Guarantor agrees that if for any reason Settling Defendant shall fail to pay or perform, as the case may be, when due any of the Guaranteed Obligations, Guarantor shall promptly pay or perform, as the case may be, the same forthwith on the date such payment or performance of such Guaranteed Obligation is due or required, without regard to any exercise

or non-exercise by Guarantor, Settling Defendant, or EPA of any right, remedy, power or privilege under or in respect of the Consent Decree, and that in the case of any extension of time of the payment, performance, or renewal of any of the Guaranteed Obligations, the same will be promptly paid or performed, as the case may be, in full when due in accordance with the terms of such extension or renewal.

(c) Without limiting the foregoing, Guarantor acknowledges and agrees that, upon the occurrence and during the continuance of a “Work Takeover” as specified in Section 92 of the Consent Decree, at the election of EPA, Guarantor shall immediately upon written demand from EPA deposit into an account specified by EPA, in immediately available funds and without setoff, counterclaim, or condition of any kind, a cash amount up to but not exceeding the estimated cost of the remaining Work to be performed as of such date, as determined by EPA..

2.2 Obligations Absolute and Unconditional.

(a) The obligations of Guarantor hereunder are primary obligations of Guarantor and constitute an absolute, unconditional, continuing and irrevocable guarantee of payment and performance of the Guaranteed Obligations and the other obligations of Guarantor hereunder and not of collectibility, and are in no way conditioned on or contingent upon any attempt to enforce in whole or in part Settling Defendant’s liabilities and obligations to EPA. Each failure by Guarantor to pay or perform, as the case may be, a Guaranteed Obligation or any other obligation hereunder shall give rise to a separate cause of action hereunder, and separate suits may be brought hereunder as each cause of action arises.

(b) EPA may, at any time and from time to time (whether or not after revocation or termination of this Guarantee) without the consent of or notice to Guarantor, except such notice as may be required by the Consent Decree or applicable law which cannot be waived, without incurring responsibility to Guarantor, without impairing or releasing the obligations of Guarantor hereunder, upon or without any terms or conditions and in whole or in part:

(i) change the manner, place and terms of payment or performance of, or renew or alter, any Guaranteed Obligation or any obligations and liabilities (including any of those hereunder) incurred directly or indirectly in respect thereof or hereof, or in any manner modify, amend or supplement the terms of the Consent Decree or any documents, instruments or agreements executed in connection therewith, in each case with the consent of Settling Defendant (in each case, as and to the extent required by the Consent Decree), and the agreements and guarantees herein made shall apply to the Guaranteed Obligations or such other obligations as changed, extended, renewed, modified, amended, supplemented or altered in any manner;

(ii) exercise or refrain from exercising any rights against Settling Defendant or others (including Guarantor) or otherwise act or refrain from acting;

(iii) add or release any other guarantor from its obligations without affecting or impairing the obligations of Guarantor hereunder;

(iv) settle or compromise any Guaranteed Obligations or any obligations and liabilities incurred directly or indirectly in respect thereof;

(v) consent to or waive any breach of, or any act, omission or default under, the Consent Decree or otherwise amend, modify or supplement (with the consent of Settling Defendant, as and to the extent required by the Consent Decree) the Consent Decree or any of such other instruments or agreements; and/or

(viii) act or fail to act in any manner referred to in this Guarantee which may deprive Guarantor of its right to subrogation against Settling Defendant to recover full indemnity for any payments or performances made pursuant to this Guarantee or of its right of contribution against any other party.

(c) No invalidity, irregularity or unenforceability of the Guaranteed Obligations or invalidity, irregularity, unenforceability or non-perfection of any collateral therefor, shall affect, impair or be a defense to this Guarantee, which is a primary obligation of Guarantor.

(d) This is a continuing Guarantee and all obligations to which it applies or may apply under the terms hereof shall be conclusively presumed to have been created in reliance hereon. In the event that, notwithstanding the provisions of Section 2.2(a) above, this Guarantee shall be deemed revocable in accordance with applicable law, then any such revocation shall become effective only upon receipt by EPA of written notice of revocation signed by Guarantor. To the extent permitted by applicable law, no revocation or termination hereof shall affect, in any manner, rights arising under this Guarantee with respect to Guaranteed Obligations arising prior to receipt by EPA of written notice of such revocation or termination. Any such revocation or termination without EPA's prior written consent shall be deemed to be a violation of the Consent Decree.

ARTICLE III. REPRESENTATIONS AND WARRANTIES

3.1 Guarantor Representations and Warranties. Guarantor represents and warrants to and in favor of EPA, as of the date of this Guarantee, that:

3.1.1 Existence. Guarantor is duly organized and validly existing under the laws of the jurisdiction of its incorporation and is qualified to do business in such jurisdiction and in each other jurisdiction in which the conduct of its business requires such qualification.

3.1.2 Power and Authorization. Guarantor has full power and authority to enter into and execute this Guarantee. This Guarantee has been duly authorized, executed and delivered by Guarantor.

3.1.3 No Conflict. The execution, delivery and performance by Guarantor of this Guarantee and the execution, delivery, and performance by Settling Defendant of the Consent Decree do not and will not (a) violate any provision of (i) any legal requirement applicable to Guarantor, (ii) the organizational and other corporate governance documents of Guarantor or (iii) any order, judgment or decree of any court or agency or governmental instrumentality binding on Guarantor, (b) conflict with, result in a breach of, or constitute a default under any material contractual obligation of Guarantor, (c) result in or require the creation or imposition of any lien upon any of the properties or assets of Guarantor, or (d) require any approval or consent of any person or entity, except for such approvals or consents which will be obtained on or before the date of this Guarantee and which have been disclosed in writing to EPA.

3.1.4 Enforceable Obligations. This Guarantee constitutes a legal, valid and binding obligation of Guarantor, enforceable in accordance with its terms, except to the extent that enforceability may be limited by applicable bankruptcy, insolvency, moratorium, reorganization or other similar laws affecting the enforcement of creditors' rights generally.

3.1.5 Compliance with Law; Fraud.

(a) Guarantor (i) is not in violation of any applicable legal requirements in any material respect and (ii) is not subject to or in default in any material respect with respect to any final judgments, writs, injunctions, decrees, rules or regulations of any court or any federal, state, municipal or other governmental department, commission, board, bureau, agency or instrumentality, domestic or foreign, in the case of either (i) or (ii) which would have a material adverse effect on the ability of Guarantor to perform its obligations under this Guarantee.

(b) Guarantor is not executing this Guarantee with any intention to hinder, delay or defraud any present or future creditor or creditors of Guarantor.

3.1.6 Relationship To Settling Defendant. Guarantor [is the owner of a direct or indirect interest in] [has a "substantial business relationship" (as defined in 40 C.F.R. § 264.141(h)) with] Settling Defendant.

3.1.7 No Bankruptcy Filing. Guarantor is not contemplating either the filing of a petition by it under any state or federal bankruptcy or insolvency laws or the liquidation of all or a major portion of its assets or property, and Guarantor has no knowledge of any person contemplating the filing of any such petition against it.

ARTICLE IV.
COVENANTS

Guarantor hereby covenants and agrees for the benefit of EPA, until this Guarantee is terminated pursuant to Section 6.16, as follows:

4.1 Maintenance of Corporate Existence. Guarantor shall maintain and preserve its existence and all material rights, privileges and franchises necessary in the normal conduct of its business. Guarantor shall notify EPA in writing within 60 days after any change in its name or place of business or chief executive office, or change in its type of organization or jurisdiction of organization.

4.2 Compliance with Laws. Guarantor shall promptly comply, or cause compliance, in all material respects with all legal requirements to the extent any noncompliance with such legal requirements could have a material adverse effect on the ability of Guarantor to perform and discharge its obligations under this Guarantee.

4.3 Notice of Bankruptcy or Insolvency, Etc. Guarantor shall notify EPA within 10 days after the occurrence of any of the following: filing by the Guarantor of a petition seeking to take advantage of any laws relating to bankruptcy, insolvency, reorganization, winding up or composition or adjustment of debts; Guarantor's consent to (or failure to contest in a timely manner) any petition filed against it in an involuntary case under such bankruptcy or other laws; Guarantor's application for (or consent to or failure to contest in a timely manner) the appointment of, or the taking of possession by, a receiver, custodian, trustee, liquidator, or the like of itself or of all or a substantial part of its assets; Guarantor's making a general assignment for the benefit of creditors; or Guarantor's taking any corporate action for the purpose of effecting any of the foregoing

4.4 Further Assurances. Guarantor shall promptly provide EPA with such information and other documents related to this Guarantee and the Guaranteed Obligations that EPA may reasonably request.

4.5 Compliance with Financial Measures. Guarantor shall at all times during the term of this Guarantee comply with and satisfy the financial measures and conditions set forth in either Exhibit A or Exhibit B attached hereto. Guarantor shall also notify EPA immediately if, at any time during the term hereof, Guarantor fails or has reason to believe that it may fail any of the financial measures set forth in Exhibit A or Exhibit B, as the case may be.

4.6 Submission of Documents. For so long as this Guarantee is in effect, within 90 days after the close of each fiscal year of Guarantor, Guarantor shall submit to EPA:

(a) a letter signed by Guarantor's Chief Financial Officer certifying Guarantor's compliance with the financial conditions and measures set forth in either Exhibit A or Exhibit B, which letter shall be substantially in the form of Exhibit C attached hereto; and

(b) a copy of Guarantor's audited financial statements for its latest completed fiscal year, and a copy of the Guarantor's independent certified public accountant's

report on examination of such financial statements, which report on examination shall be unqualified or, if qualified, shall have been approved in writing by EPA; and

(c) a special report from Guarantor's independent certified public accountant to Guarantor attesting to Guarantor's compliance with the financial conditions and measures set forth in either Exhibit A or Exhibit B, which special report shall be substantially in the form of Exhibit D hereto.

ARTICLE V.
SUBROGATION; ETC.

5.1 Waiver. Guarantor hereby unconditionally and irrevocably waives and relinquishes, to the maximum extent permitted by applicable legal requirements, all rights and remedies accorded to sureties or guarantors and agrees not to assert or take advantage of any such rights or remedies, including:

(a) any right to require EPA to proceed against Settling Defendant or any other person or to pursue any other remedy in EPA's power before proceeding against Guarantor;

(b) any defense that may arise by reason of the incapacity, lack of power or authority, dissolution, merger, or termination of Guarantor, Settling Defendant, or any other person or the failure of EPA to file or enforce a claim against the estate (in administration, bankruptcy or any other proceeding) of Guarantor or Settling Defendant, or any other person;

(c) promptness, diligence, demand, presentment, protest and notice of any kind, including notice of the existence, creation or incurring of any new or additional indebtedness or obligation or of any action or non-action on the part of Settling Defendant or EPA;

(d) any defense based upon an election of remedies by EPA, which destroys or otherwise impairs the subrogation rights of Guarantor, the right of Guarantor to proceed against Settling Defendant or another person for reimbursement, or both;

(e) any defense based on any offset against any amounts which may be owed by any person to Guarantor for any reason whatsoever;

(f) any defense based on any act, failure to act, delay or omission whatsoever on the part of Settling Defendant or the failure by Settling Defendant to do any act or thing or to observe or perform any covenant, condition or agreement to be observed or performed by it under the Consent Decree;

(g) any defense based upon any statute or rule of law which provides that the obligation of a surety must be neither larger in amount nor in other respects more burdensome than that of the principal;

(h) any defense, setoff or counterclaim which may at any time be available to or asserted by Settling Defendant against EPA or any other person under the Consent Decree;

(i) any duty on the part of EPA to disclose to Guarantor any facts EPA may now or hereafter know about Settling Defendant or the Site, regardless of whether EPA has reason to believe that any such facts materially increase the risk beyond that which Guarantor intends to assume, or have reason to believe that such facts are unknown to Guarantor, or have a reasonable opportunity to communicate such facts to Guarantor, since Guarantor acknowledges that Guarantor is fully responsible for being and keeping informed of the financial condition of Settling Defendant and of all circumstances bearing on the risk of non-payment or non-performance of any Guaranteed Obligation;

(j) any defense based on any change in the time, manner or place of any payment or performance under, or in any other term of, the Consent Decree, or any other amendment, renewal, extension, acceleration, compromise or waiver of or any consent or departure from the terms of the Consent Decree;

(k) any right to assert the bankruptcy or insolvency of Settling Defendant or any other person as a defense hereunder or as the basis for rescission hereof and any defense arising because of EPA's institution of any proceeding under the Federal Bankruptcy Code; and

(l) any other circumstance (including any statute of limitations), any act or omission by Settling Defendant, or any existence of or reliance on any representation by Settling Defendant or EPA that might otherwise constitute a defense available to, or discharge of, any guarantor or surety.

5.2 Subrogation. Until this Guarantee is terminated in accordance with Section 6.16 below, neither Guarantor nor Settling Defendant shall exercise any right of subrogation or enforce any remedy which it now may have or may hereafter have against any person in respect of the Guaranteed Obligations, whether or not such claim, right or remedy arises in equity, under contract, by statute, under common law or otherwise.

5.3 Bankruptcy.

(a) The obligations of Guarantor under this Guarantee shall not be altered, limited or affected by any proceeding, voluntary or involuntary, involving the bankruptcy, reorganization, insolvency, receivership, liquidation or arrangement of Settling Defendant or any Affiliate thereof, or by any defense which Settling Defendant or any Affiliate thereof may have by reason of any order, decree or decision of any court or administrative body resulting from any such proceeding.

(b) Guarantor hereby irrevocably waives, to the extent it may do so under applicable legal requirements, any protection against enforcement of this Guarantee to which it may be entitled under the Federal Bankruptcy Code or equivalent provisions of the laws or regulations of any other jurisdiction with respect to any proceedings, or any successor provision of law of similar import, in the event of any bankruptcy event with respect to Settling

Defendant. Specifically, in the event that the trustee (or similar official) in a bankruptcy event with respect to Settling Defendant or the debtor-in-possession takes any action (including the institution of any action, suit or other proceeding for the purpose of enforcing the rights of Settling Defendant under this Guarantee), Guarantor shall not assert any defense, claim or counterclaim denying liability hereunder on the basis that this Guarantee or the Consent Decree is an executory contract or a “financial accommodation” that cannot be assumed, assigned or enforced or on any other theory directly or indirectly based on the Federal Bankruptcy Code, or equivalent provisions of the law or regulations of any other jurisdiction with respect to any proceedings or any successor provision of law of similar import. If a bankruptcy event with respect to Settling Defendant shall occur, Guarantor agrees, after the occurrence of such bankruptcy event, to reconfirm in writing, to the extent permitted by applicable legal requirements and at EPA’s written request, its pre-petition waiver of any protection to which it may be entitled under the Federal Bankruptcy Code or equivalent provisions of the laws or regulations of any other jurisdiction with respect to proceedings and, to give effect to such waiver, Guarantor consents to the assumption and enforcement of each provision of this Guarantee by the debtor-in-possession or Settling Defendant’s trustee in bankruptcy, as the case may be.

5.4 Reinstatement. This Guarantee and the obligations of Guarantor hereunder shall continue to be effective or be automatically reinstated, as the case may be, if and to the extent that for any reason any payment or performance by or on behalf of Guarantor in respect of the Guaranteed Obligations is rescinded or otherwise restored to Guarantor or Settling Defendant, whether as a result of any proceedings in bankruptcy or reorganization or otherwise, all as if such payment or performance had not been made, and Guarantor agrees that it will indemnify EPA on demand for all reasonable costs and expenses (including reasonable fees of counsel) incurred by EPA in connection with any such rescission or restoration.

ARTICLE VI. MISCELLANEOUS

6.1 Obligations Secured. Without limiting the generality of the foregoing, this Guarantee secures the payment and performance when due of all Guaranteed Obligations. If, notwithstanding the representation and warranty set forth in Section 3.1.4 or anything to the contrary herein, enforcement of the liability of Guarantor under this Guarantee for the full amount of the Guaranteed Obligations would be an unlawful or voidable transfer under any applicable fraudulent conveyance or fraudulent transfer law or any comparable law, then the liability of Guarantor hereunder shall be reduced to the highest amount for which such liability may then be enforced without giving rise to an unlawful or voidable transfer under any such law.

6.2 Successions or Assignments. This Guarantee is binding upon Guarantor and its successors and permitted assigns. Guarantor may not assign any of its obligations hereunder without the prior written consent of EPA (and any purported assignment in violation of this Section shall be void).

6.3 Other Waivers. No delay or omission on the part of EPA in exercising any of its rights (including those hereunder) and no partial or single exercise thereof and no

action or non-action by EPA, with or without notice to Guarantor, Settling Defendant, or any other person, shall constitute a waiver of any rights or shall affect or impair this Guarantee.

6.4 Headings. The headings in this Guarantee are for convenience of reference only and shall not constitute a part of this Guarantee for any other purpose or be given any substantive effect.

6.5 Remedies Cumulative. Each and every right and remedy of EPA hereunder shall be cumulative and shall be in addition to any other right or remedy given hereunder or under the Consent Decree, or now or hereafter existing at law or in equity.

6.6 Severability. Any provision of this Guarantee that may be determined by competent authority to be prohibited or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof, and any such prohibition or unenforceability in any jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

6.7 Amendments. This Guarantee may be amended, waived or otherwise modified only with the written consent of the parties hereto, the written consent of EPA and otherwise in accordance with the terms of the Consent Decree.

6.8 Jurisdiction. Guarantor agrees that any legal action or proceeding by or against Guarantor or with respect to or arising out of this Guarantee may be brought by the United States in or removed to the United States District Court for the Northern District of Indiana. By execution and delivery of this Guarantee, Guarantor accepts, for itself and in respect of its property, generally and unconditionally, the non-exclusive jurisdiction of the aforesaid court. Guarantor irrevocably consents to the service of process out of the aforementioned court in any manner permitted by law. Any such process or summons in connection with any such action or proceeding may also be served by mailing a copy thereof by certified or registered mail, or any substantially similar form of mail, addressed to Guarantor as provided for notices hereunder. Guarantor hereby waives any right to stay or dismiss any action or proceeding under or in connection with this Guarantee or the Consent Decree brought before the foregoing court on the basis of *forum non-conveniens*. Nothing herein shall affect the right of EPA to bring legal action or proceedings in any other competent jurisdiction.

6.9 Governing Law. This Guarantee and the rights and obligations of EPA and Guarantor shall be governed by, and construed in accordance with, the law of the State of [_____] without reference to principles of conflicts of law.

6.10 Integration of Terms. This Guarantee, together with the Consent Decree, is intended by the parties as a final expression of their agreement and is intended as a complete and exclusive statement of the terms and conditions thereof.

6.11 Notices. Any communications between the parties hereto or notices provided herein to be given may be given to the following addresses:

If to Guarantor: _____

Attention: _____
Telephone: _____
Facsimile: _____

If to EPA: EPA Regional Administrator or Regional Superfund Director for
EPA Region 5 (or any of their designees)

Attention: _____
Telephone: _____
Facsimile: _____

With a copy to: [ORC Contact; RPM]

Attention: _____
Telephone: _____
Facsimile: _____

All notices or other communications required or permitted to be given hereunder shall be in writing and shall be considered as properly given (a) if delivered in person, (b) if sent by overnight delivery service (including Federal Express, UPS and other similar overnight delivery services), (c) if mailed by first class United States Mail, postage prepaid, registered or certified with return receipt requested, (d) if sent by facsimile or (e) if sent via other electronic means (including electronic mail). Notice so given shall be effective upon receipt by the addressee, except that communication or notice so transmitted by facsimile or other direct written electronic means shall be deemed to have been validly and effectively given on the day on which it is transmitted if transmitted before 4:00 p.m., recipient's time, and if transmitted after that time, on the next following Banking Day; provided, however, that (i) if any notice is tendered to an addressee and the delivery thereof is refused by such addressee, such notice shall be effective upon such tender, and (ii) with respect to any notice given via facsimile or other electronic means, the sender of such message shall promptly provide the addressee with an original copy of such notice by any of the means specified in clauses (a), (b) or (c) above. Any party shall have the right to change its address for notice hereunder to any other location within the continental United States by giving five days' notice to the other parties in the manner set forth above.

6.12 Collection Expenses.

(a) Without regard to any limitation set forth in this Guarantee, if EPA is required to pursue any remedy against Guarantor hereunder, Guarantor shall pay to EPA upon demand therefore, all reasonable attorneys' fees and all other costs and expenses incurred by

EPA in enforcing this Guarantee (and such fees, costs and expenses shall be deemed to be part of the Guaranteed Obligations).

6.13 Counterparts. This Guarantee and any amendments, waivers, consents or supplements hereto or in connection herewith may be executed in any number of counterparts and by different parties hereto in separate counterparts, each of which when so executed and delivered shall be deemed an original, but all such counterparts together shall constitute one and the same agreement.

6.14 Limitations on Liability. No claim shall be made by Guarantor against EPA or any of its employees, attorneys or agents for any loss of profits, business or anticipated savings, special or punitive damages or any indirect or consequential loss whatsoever in respect of any breach or wrongful conduct (whether or not the claim therefor is based on contract, tort or duty imposed by law), in connection with, arising out of or in any way related to the transactions contemplated by this Guarantee or the Consent Decree or any act or omission or event occurring in connection therewith; and Guarantor hereby waives, releases and agrees not to sue upon any such claim for any such damages, whether or not accrued and whether or not known or suspected to exist in their favor.

6.15 Time. Time is of the essence of this Guarantee.

6.16 Termination. Subject to Section 5.4, this Guarantee and all of the obligations of Guarantor hereunder shall terminate upon the earlier of (a) payment and performance in full of all Guaranteed Obligations in accordance with the Consent Decree and (b) the substitution of a different financial assurance mechanism in accordance with Section 50(b) of the Consent Decree as consented to in writing by EPA. Unless earlier terminated pursuant to the foregoing sentence, this Guarantee shall survive any foreclosure proceedings instituted, commenced, or completed against Settling Defendant.

6.17 Consent Decree. Guarantor acknowledges that it has been provided with a copy of the Consent Decree and has read and is familiar with the provisions of the Consent Decree.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties hereto, by their authorized representatives duly authorized, intending to be legally bound, have caused this Guarantee to be duly executed and delivered as of the date first above written.

[INSERT NAME OF GUARANTOR],
a _____ corporation,
as Guarantor

By: _____
Name:
Title:

[NOTARY BLOCK]

EXHIBIT A

(Referenced in Section 4 on Financial Conditions)

As calculated from the data contained in Guarantor's Annual Audited Financial Statement, the Guarantor must:

- (A) Satisfy two of the following three ratios: (1) a ratio of total liabilities to Net Worth less than 2.0; (2) a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and (3) a ratio of current assets to current liabilities greater than 1.5; and
- (B) Have a Net Working Capital and Tangible Net Worth each at least six times the Total Value of Environmental Obligations; and
- (C) Have a Tangible Net Worth of at least \$10 million; and
- (D) Have assets located in the United States amounting to at least 90 percent of total assets or at least six times the Total Value of Environmental Obligations.

Defined Terms for Exhibit A and Exhibit B

"Net Working Capital" means current assets minus current liabilities.

"Net Worth" means total assets minus total liabilities.

"Tangible Net Worth" means the value of tangible assets included in the calculation of Net Worth; this value would not include the value of intangibles such as goodwill and rights to patents or royalties.

"Total Value of Environmental Obligations" means the sum of:

(a) of the dollar amount of financial assurance required by Paragraph 45 of the Consent Decree;

(b) the total dollar amount of financial assurance provided by the Guarantor to EPA through the use of a financial test and/or a guarantee for CERCLA settlements other than that embodied in the Consent Decree; and

(c) the total dollar amount of financial assurance provided by the Guarantor to EPA through the use of a financial test and/or a guarantee for purposes of any facility regulated under federal environmental programs other than CERCLA, including but not limited to hazardous waste Treatment, Storage, and Disposal ("TSD") facilities under 40 CFR parts 264 and 265, Municipal Solid Waste Landfill ("MSWLF") facilities under 40 CFR part 258, Underground Injection Control ("UIC") facilities under 40 CFR part 144, Underground Storage Tank ("UST") facilities under 40 CFR part 280, and Polychlorinated Biphenyl ("PCB") storage facilities under 40 CFR part 761.

EXHIBIT B

(Referenced in Section 4.5 on Financial Conditions)

The Guarantor must have:

- (A) A current rating for its most recent bond issuance 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
- (B) Tangible Net Worth at least six times the Total Value of Environmental Obligations; and
- (C) Tangible Net Worth of at least \$10 million; and
- (D) Assets located in the United States amounting to at least 90 percent of total assets or at least six times the Total Value of Environmental Obligations.

Defined Terms for Exhibit A and Exhibit B

"Net Working Capital" means current assets minus current liabilities.

"Net Worth" means total assets minus total liabilities.

"Tangible Net Worth" means the value of tangible assets included in the calculation of Net Worth; this value would not include the value of intangibles such as goodwill and rights to patents or royalties.

"Total Value of Environmental Obligations" means the sum of:

(a) of the dollar amount of financial assurance required by Paragraph 45 of the Consent Decree

(b) the total dollar amount of financial assurance provided by the Guarantor to EPA through the use of a financial test and/or a guarantee for CERCLA settlements other than that embodied in the Consent Decree; and

(c) the total dollar amount of financial assurance provided by the Guarantor to EPA through the use of a financial test and/or a guarantee for purposes of any facility regulated under federal environmental programs other than CERCLA, including but not limited to hazardous waste Treatment, Storage, and Disposal ("TSD") facilities under 40 CFR parts 264 and 265, Municipal Solid Waste Landfill ("MSWLF") facilities under 40 CFR part 258, Underground Injection Control ("UIC") facilities under 40 CFR part 144, Underground Storage Tank ("UST") facilities under 40 CFR part 280, and Polychlorinated Biphenyl ("PCB") storage facilities under 40 CFR part 761.

EXHIBIT C

Form CFO Letter

EXHIBIT D

Form Auditors' Letter

APPENDIX F2a

[CERCLA Financial Assurance Sample Performance Bond: Draft of July 2005]

[Letterhead of Bond Issuer]

PERFORMANCE BOND

Surety's Performance Bond Number: _____
Date of Execution of Performance Bond: _____
Effective Date of Performance Bond: _____
Total Dollar Amount of Performance Bond: _____

Principal:

Legal Name and Address: [name and business address of PRP/Settling Defendant(s)]
Type of Organization: [insert "individual," "partnership," "limited liability company," "corporation," etc.]
State of Organization:

Surety:

Legal Name and Address: [name and business address of surety providing the bond]
Type of Organization: [insert "individual," "partnership," "limited liability company," "corporation," etc.]
State of Organization:

Beneficiary:

Legal Name and Address: EPA Regional Administrator or Regional Superfund Director for EPA Region 5 (or any of their designees)
[insert address]

Site Information:

Name and Location of Site: Cam-Or Superfund Site, Westville, LaPorte County, Indiana
EPA Identification Number: 058K
Agreement Governing Site Work: That certain Consent Decree dated _____, 2010, by and among the United States of America, the State of Indiana, and the Settling Work Parties, as defined therein (the "Agreement")]

KNOW ALL PERSONS BY THESE PRESENTS, THAT:

WHEREAS, said Principal is required, under the above-described Agreement entered pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended ("CERCLA"), to perform the "Work" as defined in such Agreement (hereinafter, the "Work") and to fulfill its other obligations as set forth therein; and

WHEREAS, said Principal is required by the Agreement to provide financial assurance securing its full and final completion of the Work.

NOW, THEREFORE, in consideration of the foregoing, and for other good and valuable consideration the receipt of which is hereby acknowledged, the parties hereto agree as follows:

1. The Principal and Surety hereto are firmly bound to the United States Environmental Protection Agency (hereinafter, "EPA")[, **in the above Total Dollar Amount,**] for the performance of the Work, which we, the Principal and Surety, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, subject to and in accordance with the terms and conditions hereof. **[Add proviso if there are multiple sureties: ";provided that, where the Sureties are acting as co-sureties, we, the Sureties, bind ourselves in such [sum and] performance "jointly and severally" for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the performance of the Work only as is set forth in Schedule 1 attached hereto, but if no bifurcation of the Work is indicated, the limit of liability shall be the full performance of the Principal's Work obligations under the Agreement"]**.

2. The conditions of the Surety's obligation hereunder are such that if the Principal shall promptly, faithfully, fully, and finally complete the Work in accordance with the terms of the Agreement, the Surety's obligation hereunder shall be null and void; otherwise it is to remain in full force and effect.

3. The Surety shall become liable on the obligation evidenced hereby only when the Principal fails to perform all or any part of the Work pursuant to and in accordance with the terms of the Agreement. At any time and from time to time upon notification by the EPA Regional Administrator or Regional Superfund Director for EPA Region 5(or any of their designees) that the Principal has failed to perform all or any part of the Work, the Surety shall promptly (and in any event within fifteen (15) days after receiving such notification):

- (a) Commence to complete the Work to be done under the Agreement in accordance with its terms and conditions; or
- (b) Pay funds up to the Total Dollar Amount in such amounts and to such person(s), account(s), or otherwise as the EPA Regional Administrator or

Regional Superfund Direction (or their designee) may direct.

If the Surety does not render such performance set forth above within the specified 15-day period, the Surety shall be deemed to be in default of this Performance Bond and EPA shall be entitled to enforce any remedy available to it at law, in equity, or otherwise; provided, however, that if such default is susceptible of cure but cannot reasonably be cured within such fifteen (15) day period and provided further that Surety shall have commenced to cure such default within such fifteen (15) day period and thereafter diligently proceeds to perform the same, such fifteen (15) day period shall be extended for such time as is reasonably necessary for Surety in the exercise of due diligence to cure such default, such additional period not to exceed ninety (90) days.

4. The liability of the Surety shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the Total Dollar Amount of this Performance Bond, but in no event shall the aggregate obligation of the Surety hereunder exceed the amount of said sum.

5. The Surety may cancel this Performance Bond only by sending notice of cancellation to the Principal and to the EPA Regional Administrator for EPA Region 5, provided, however, that no such cancellation shall be effective during the 120-day period beginning on the date of receipt of the notice of cancellation by both the Principal and the EPA Regional Administrator. If after ninety (90) days of such 120-day period, the Principal has not established a replacement financial assurance mechanism pursuant to and in accordance with the terms of the Agreement, EPA shall have the right to enforce performance and/or draw upon the full amount of this Performance Bond.

6. The Principal may terminate this Performance Bond only by sending written notice of termination to the Surety and to the EPA Regional Administrator for EPA Region 5, provided, however, that no such termination shall become effective unless and until the Surety receives written authorization for termination of this Performance Bond by the EPA Regional Administrator (or his or her designee).

7. Any modification, revision, or amendment which may be made in the terms of the Agreement or in the Work to be done thereunder, or any extension of the Agreement, or other forbearance on the part of either the Principal or EPA to the other, shall not in any way release the Principal and the Surety, or either of them, or their heirs, executors, administrators, successors or assigns from liability hereunder. The Surety hereby expressly waives notice of any change, revision, or amendment to the Agreement or to any related obligations between the Principal and EPA.

8. The Surety will immediately notify EPA of any of the following events: (a) the filing by the Surety of a petition seeking to take advantage of any laws relating to bankruptcy, insolvency, reorganization, winding up or composition or adjustment of debts; (b) the Surety's

consent to (or failure to contest in a timely manner) any petition filed against it in an involuntary case under such bankruptcy or other laws; (c) the Surety's application for (or consent to or failure to contest in a timely manner) the appointment of, or the taking of possession by, a receiver, custodian, trustee, liquidator, or the like of itself or of all or a substantial part of its assets; (d) the Surety's making a general assignment for the benefit of creditors; or (e) the Surety's taking any corporate action for the purpose of effecting any of the foregoing.

9. Any provision in this Performance Bond that conflicts with CERCLA or any other applicable statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or legal requirement shall be deemed incorporated herein.

10. All notices, consents, approvals and requests required or permitted hereunder shall be given in writing and shall be effective for all purposes if hand delivered or sent by (a) certified or registered United States mail, postage prepaid, return receipt requested or (b) expedited prepaid delivery service, either commercial or United States Postal Service, with proof of attempted delivery, to the address shown on this first page of this Performance Bond.

All notices, elections, requests and demands under this Performance Bond shall be effective and deemed received upon the earliest of (a) the actual receipt of the same by personal delivery or otherwise, (b) one (1) business day after being deposited with a nationally recognized overnight courier service as required above, or (c) three (3) business days after being deposited in the United States mail as required above. Rejection or other refusal to accept or the inability to deliver because of changed address of which no notice was given as herein required shall be deemed to be receipt of the notice, election, request, or demand sent.

11. The Surety hereby agrees that the obligations of the Surety under this Performance Bond shall be in no way impaired or affected by any winding up, insolvency, bankruptcy or reorganization of the Principal or by any other arrangement or rearrangement of the Principal for the benefit of creditors.

12. No right of action shall accrue on this Performance Bond to or for the use of any person other than EPA or the executors, administrators, successors or assigns of EPA.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the Principal and Surety have executed this Performance Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby represent, warrant, and certify that they are authorized to execute this Performance Bond on behalf of the Principal and Surety, respectively.

PRINCIPAL: [_____],
a [corporation/partnership/limited liability company] organized and in good standing in the State of [_____]

Attest: _____
Name: _____

By: _____
Name: _____
Title: _____

SURETY: [_____],
a [corporation/partnership/limited liability company] organized and in good standing in the State of [_____]

Attest: _____
Name: _____

By: _____
Name: _____
Title: _____

CORPORATE ACKNOWLEDGMENTS

STATE OF _____)

SS:

COUNTY OF _____)

On _____, 2010, before me, the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person on behalf of which the individual(s) acted, executed the instrument.

Notary Public

STATE OF _____)

SS:

COUNTY OF _____)

On _____, 2010, before me, the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person on behalf of which the individual(s) acted, executed the instrument.

Notary Public

APPENDIX F2b

[CERCLA Financial Assurance Sample Payment Bond: Draft of July 2005]

[Letterhead of Bond Issuer]

PAYMENT BOND

Surety's Payment Bond Number: _____
Date of Execution of Payment Bond: _____
Effective Date of Payment Bond: _____
Total Dollar Amount of Payment Bond: _____

Principal:

Legal Name and Address: [name and business address of PRP/Settling Defendant(s)]
Type of Organization: [insert "individual," "partnership," "limited liability company,"
"corporation," etc.]
State of Organization:

Surety:

Legal Name and Address: [name and business address of surety providing the bond]
Type of Organization: [insert "individual," "partnership," "limited liability
company," "corporation," etc.]
State of Organization:

Beneficiary:

Legal Name and Address: EPA Regional Administrator or Regional Superfund
Director for EPA Region 5 (or any of their designees)
[insert address]

Site Information:

Name and Location of Site: Cam-Or Superfund Site, Westville, LaPorte County, Indiana
EPA Identification Number: 058K,
Agreement Governing Site Work: That certain Consent Decree dated _____, 2010, by and among the United States of America, the State of Indiana, and the Settling Work Parties, as defined therein (the "Agreement")]

KNOW ALL PERSONS BY THESE PRESENTS, THAT:

WHEREAS, said Principal is required, under the above-described Agreement entered pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended ("CERCLA"), to perform the "Work" as defined in such Agreement (hereinafter, the "Work") and to fulfill its other obligations as set forth therein; and

WHEREAS, said Principal is required by the Agreement to provide financial assurance securing its full and final completion of the Work.

NOW, THEREFORE, in consideration of the foregoing, and for other good and valuable consideration the receipt of which is hereby acknowledged, the parties hereto agree as follows:

1. The Principal and Surety hereto are firmly bound to the United States Environmental Protection Agency (hereinafter, "EPA"), in the above Total Dollar Amount, for the payment of which we, the Principal and Surety, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, subject to and in accordance with the terms and conditions hereof. **[Add proviso if there are multiple sureties: "provided that, where the Sureties are acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the Total Dollar Amount."]**

2. The conditions of the Surety's obligation hereunder are such that if the Principal shall promptly, faithfully, fully, and finally complete the Work in accordance with the terms of the Agreement, the Surety's obligation hereunder shall be null and void; otherwise it is to remain in full force and effect.

3. The Surety shall become liable on the obligation evidenced hereby only upon the commencement of any Work Takeover (as such term is defined in the Agreement) pursuant to and in accordance with the terms of the Agreement. At any time and from time to time upon notification by the EPA Regional Administrator or Regional Superfund Director for EPA Region 5 (or any of their designees) that a Work Takeover has commenced, the Surety shall promptly (and in any event within fifteen (15) days after receiving such notification) pay funds up to the Total Dollar Amount in such amounts and to such person(s), account(s), or otherwise as the EPA Regional Administrator or Regional Superfund Direction (or their designee) may direct. If the Surety does not render such payment within the specified 15-day period, the Surety shall be deemed to be in default of this Payment Bond and EPA shall be entitled to enforce any remedy available to it at law, in equity, or otherwise.

4. The liability of the Surety shall not be discharged by any payment or succession

of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the Total Dollar Amount of this Payment Bond, but in no event shall the aggregate obligation of the Surety hereunder exceed the amount of said sum.

5. The Surety may cancel this Payment Bond only by sending notice of cancellation to the Principal and to the EPA Regional Administrator for EPA Region 5, provided, however, that no such cancellation shall be effective during the 120-day period beginning on the date of receipt of the notice of cancellation by both the Principal and the EPA Regional Administrator. If after ninety (90) days of such 120-day period, the Principal has not established a replacement financial assurance mechanism pursuant to and in accordance with the terms of the Agreement, EPA shall have the right to draw upon the full amount of this Payment Bond.

6. The Principal may terminate this Payment Bond only by sending written notice of termination to the Surety and to the EPA Regional Administrator for EPA Region 5, provided, however, that no such termination shall become effective unless and until the Surety receives written authorization for termination of this Payment Bond by the EPA Regional Administrator (or his or her designee).

7. Any modification, revision, or amendment which may be made in the terms of the Agreement or in the Work to be done there under, or any extension of the Agreement, or other forbearance on the part of either the Principal or EPA to the other, shall not in any way release the Principal and the Surety, or either of them, or their heirs, executors, administrators, successors or assigns from liability hereunder. The Surety hereby expressly waives notice of any change, revision, or amendment to the Agreement or to any related obligations between the Principal and EPA.

8. The Surety will immediately notify EPA of any of the following events: (a) the filing by the Surety of a petition seeking to take advantage of any laws relating to bankruptcy, insolvency, reorganization, winding up or composition or adjustment of debts; (b) the Surety's consent to (or failure to contest in a timely manner) any petition filed against it in an involuntary case under such bankruptcy or other laws; (c) the Surety's application for (or consent to or failure to contest in a timely manner) the appointment of, or the taking of possession by, a receiver, custodian, trustee, liquidator, or the like of itself or of all or a substantial part of its assets; (d) the Surety's making a general assignment for the benefit of creditors; or (e) the Surety's taking any corporate action for the purpose of effecting any of the foregoing.

9. Any provision in this Payment Bond that conflicts with CERCLA or any other applicable statutory or legal requirement shall be deemed deleted herefrom and provisions

conforming to such statutory or legal requirement shall be deemed incorporated herein.

10. All notices, consents, approvals and requests required or permitted hereunder shall be given in writing and shall be effective for all purposes if hand delivered or sent by (a) certified or registered United States mail, postage prepaid, return receipt requested or (b) expedited prepaid delivery service, either commercial or United States Postal Service, with proof of attempted delivery, to the address shown on this first page of this Payment Bond.

All notices, elections, requests and demands under this Payment Bond shall be effective and deemed received upon the earliest of (a) the actual receipt of the same by personal delivery or otherwise, (b) one (1) business day after being deposited with a nationally recognized overnight courier service as required above, or (c) three (3) business days after being deposited in the United States mail as required above. Rejection or other refusal to accept or the inability to deliver because of changed address of which no notice was given as herein required shall be deemed to be receipt of the notice, election, request, or demand sent.

11. The Surety hereby agrees that the obligations of the Surety under this Payment Bond shall be in no way impaired or affected by any winding up, insolvency, bankruptcy or reorganization of the Principal or by any other arrangement or rearrangement of the Principal for the benefit of creditors.

12. No right of action shall accrue on this Payment Bond to or for the use of any person other than EPA or the executors, administrators, successors or assigns of EPA.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the Principal and Surety have executed this Payment Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby represent, warrant, and certify that they are authorized to execute this Payment Bond on behalf of the Principal and Surety, respectively.

PRINCIPAL:

[_____] ,
a [corporation/partnership/limited liability
company] organized and in good standing in
the State of [_____]

Attest: _____
Name: _____

By: _____
Name: _____
Title: _____

SURETY:

[_____] ,
a [corporation/partnership/limited liability
company] organized and in good standing in
the State of [_____]

Attest: _____
Name: _____

By: _____
Name: _____
Title: _____

CORPORATE ACKNOWLEDGMENTS

STATE OF _____)

SS:

COUNTY OF _____)

On _____, 2010, before me, the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person on behalf of which the individual(s) acted, executed the instrument.

Notary Public

STATE OF _____)

SS:

COUNTY OF _____)

On _____, 2010, before me, the undersigned, a Notary Public in and for said State, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person on behalf of which the individual(s) acted, executed the instrument.

Notary Public

APPENDIX F3

[Letterhead of Issuing Bank]

IRREVOCABLE STANDBY LETTER OF CREDIT NUMBER:

[_____]

ISSUANCE DATE: [_____]

MAXIMUM AMOUNT: [U.S.\$_____]

BENEFICIARY:

U.S. Environmental Protection Agency
c/o Richard Karl
Director, Superfund Division, EPA Region 5
77 West Jackson Blvd.
(Mail Code S-6J)
Chicago, IL 60604

APPLICANT:

[Name of Settling Defendant]
[Title if applicable]
[Address]

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. [____] in your favor, at the request and for the account of the Applicant, [Insert name of Settling Defendant], in the amount of exactly [in words] U.S. dollars (\$XX.XX) (the "Maximum Amount"). We hereby authorize you, the U.S. Environmental Protection Agency (the "Beneficiary"), to draw at sight on us, [Insert name and address of issuing bank], an aggregate amount equal to the Maximum Amount upon presentation of:

(1) your sight draft, bearing reference to this Letter of Credit No. [____] (which may, without limitation, be presented in the form attached hereto as Exhibit A); and

(2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to *United States and State of Indiana v. Alcoa Inc., et al*, dated _____, 2010, by and among the United States, the State of Indiana, Alcoa Inc. and twelve other companies, entered into in accordance with the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)."

This letter of credit is effective as of [insert issuance date] and shall expire on [a date at least one year later], but such expiration date shall be automatically extended for a period of [at least one year] on [the date which is at least one year later] and on each successive expiration date, unless,

at least one hundred twenty (120) days before the current expiration date, we notify both you and [enter name of Settling Defendant posting the letter of credit] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall immediately thereupon be available to you upon presentation of your sight draft for a period of at least 120 days after the date of receipt by both you and [enter name of Settling Defendant posting the letter of credit] of such notification, as shown on signed return receipts.

Multiple and partial draws on this letter of credit are expressly permitted, up to an aggregate amount not to exceed the Maximum Amount. Whenever this letter of credit is drawn on, under, and in compliance with the terms hereof, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft in immediately available funds directly into such account or accounts as may be specified in accordance with your instructions.

All banking and other charges under this letter of credit are for the account of the Applicant.

This letter of credit is subject to the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce.

Very Truly Yours,

[Name and address of issuing institution]

[Signature(s), name(s), and title(s) of official(s) of issuing institution]

[Date]

Exhibit A - Form of Sight Draft

United States Environmental Protection Agency

Sight Draft

TO: [Insert name of Issuing Bank]
 [Insert address of Issuing Bank]

RE: Letter of Credit No. [_____]

DATE: [Insert date that draw is made]

TIME: [Insert time of day that draw is made]

This draft is drawn under your Irrevocable Letter of Credit No. [_____]. Pay to the order of the United States Environmental Protection Agency, in immediately available funds, the amount of [in words] U.S. Dollars (U.S.\$[_____]) or, if no amount certain is specified, the total balance remaining available under your Irrevocable Letter of Credit No. [_____].

Pay such amount as is specified in the immediately preceding paragraph by FedWire Electronic Funds Transfer ("EFT") to the Cam-Or Superfund Site Special Account within the EPA Hazardous Substance Superfund in accordance with current EFT procedures available to the Settling Work Parties from U.S. EPA Region 5, referencing File Number [_____], EPA Region 5 and Site Spill ID Number 058K, and DOJ Case Number 90-11-3-609/1.

This Sight Draft has been duly executed by the undersigned, an authorized representative or agent of the United States Environmental Protection Agency, whose signature hereupon constitutes an endorsement.

By: _____ [signature]
 _____ [name]
 _____ [title]

APPENDIX F4

**CERCLA Financial Assurance Financial Test:
Sample CFO Letter (for Test Alternative 1)**

[PRP Letterhead]

[Address Block]

[Date]

Dear [_____]:

I am the chief financial officer of [name and address of PRP] (the “Company”). This letter is in support of the Company’s use of a financial test to demonstrate financial assurance for the obligations of the Company under that certain Consent Decree (the “Consent Decree”), dated _____, _____, Docket No. [_____], between the Company and EPA, entered pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 U.S.C. § 9607 et seq. (“CERCLA”). This letter confirms the Company’s satisfaction of certain financial criteria, as set forth more fully below, that makes the Company eligible to utilize the financial test as financial assurance under the Consent Decree.

1. The dollar amount of financial assurance required by Paragraph 45 of the Consent Decree and covered by the Company’s use of the financial test is [\$_____].
2. The Company is a signatory to the following CERCLA settlements (other than the Consent Decree) under which the Company is providing financial assurance to EPA through the use of a financial test. The total dollar amount of such financial assurance covered by a financial test is equal, in the aggregate, to [\$_____], and is shown for each such settlement as follows:
3. The Company is the owner and/or operator of the following facilities for which the Company has demonstrated financial assurance through a financial test, including but not limited to hazardous waste Treatment, Storage, and Disposal (“TSD”) facilities under 40 CFR parts 264 and 265, Municipal Solid Waste Landfill (“MSWLF”) facilities under 40 CFR part 258, Underground Injection Control (“UIC”) facilities under 40 CFR part 144, Underground Storage Tank (“UST”) facilities under 40 CFR part 280, and Polychlorinated Biphenyl (“PCB”) storage facilities under 40 CFR part 761. The total dollar amount of such financial assurance covered by a financial test is equal, in the aggregate, to [\$_____], and is shown for each such facility as follows:

4. The Company guarantees the CERCLA settlement obligations and/or the MSWLF, TSD, UIC, UST, PCB, and/or other facility obligations of the following guaranteed parties. The total dollar amount of such CERCLA settlement and regulated facility obligations so guaranteed is equal, in the aggregate, to [\$_____], and is shown for each such settlement and/or facility as follows:

5. The Company [insert “is required” or “is not required”] to file a Form 10K with the Securities and Exchange Commission (“SEC”) for the Company’s latest fiscal year.

6. The Company’s fiscal year ends on [month, day]. I hereby certify that the figures for the following items marked with an asterisk are derived from the Company’s independently audited, year-end financial statements for its latest completed fiscal year, ended [date], and further certify as follows:

A. The aggregate total of the dollar amounts shown in Paragraphs 1 through 4 above equals [\$_____].

*B. Company’s total liabilities equal [if any portion of the aggregate dollar amount from line A is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines C and D]: [\$_____]

*C. Company’s tangible net worth equals: [\$_____]

*D. Company’s net worth equals: [\$_____]

*E. Company’s current assets equal: [\$_____]

*F. Company’s current liabilities equal: [\$_____]

G. Company’s net working capital [line E minus line F] equals: [\$_____]

*H. Sum of Company’s net income plus depreciation, depletion, and amortization equals: [\$_____]

*I. Company’s total assets in the U.S. equal (required only if less than 90% of Company’s assets are located in the U.S.): [\$_____]

J. Is line C at least \$10 million? (Yes/No): [_____]

K. Is line C at least 6 times line A? (Yes/No): [_____]

L. Is line G at least 6 times line A? (Yes/No): [_____]

*M. Are at least 90% of Company’s assets located in the U.S.? (Yes/No): [_____]
If “No,” complete line N.

N. Is line I at least 6 times line A? (Yes/No): [____]

O. Is line B divided by line D less than 2.0? (Yes/No): [____]

P. Is line H divided by line B greater than 0.1? (Yes/No): [____]

Q. Is line E divided by line F greater than 1.5? (Yes/No): [____]

I hereby certify that, to the best of my knowledge after thorough investigation, the information contained in this letter is 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.

_____ [Signature]

_____ [Name]

_____ [Title]

_____ [Date]

[NOTARY BLOCK]

**CERCLA Financial Assurance Financial Test:
Sample CFO Letter (for Test Alternative 2)**

[PRP Letterhead]

[Address Block]

[Date]

Dear [_____]:

I am the chief financial officer of [name and address of PRP] (the “Company”). This letter is in support of the Company’s use of a financial test to demonstrate financial assurance for the obligations of the Company under that certain Consent Decree (the “Consent Decree”), dated _____, _____, Docket No. [_____], between the Company and EPA, entered pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 U.S.C. § 9607 et seq. (“CERCLA”). This letter confirms the Company’s satisfaction of certain financial criteria, as set forth more fully below, that makes the Company eligible to utilize the financial test as financial assurance under the Consent Decree.

[Fill out the following five paragraphs regarding CERCLA settlements, RCRA facilities, TSCA facilities, SDWA facilities, and associated financial assurance requirements. If the Company has no CERCLA settlement or RCRA/TSCA/SDWA facility obligations that belong in a particular paragraph, write “None” in the space indicated. For each settlement and facility, include its settlement Docket No. or EPA Identification Number, as the case may be, and the financial assurance dollar amount associated with such settlement and/or facility.]

1. The dollar amount of financial assurance required by Paragraph 45 of the Consent Decree and covered by the Company’s use of the financial test [\$_____].
2. The Company is a signatory to the following CERCLA settlements (other than the Consent Decree) under which the Company is providing financial assurance to EPA through the use of a financial test. The total dollar amount of such financial assurance covered by a financial test is equal, in the aggregate, to [\$_____], and is shown for each such settlement as follows:
3. The Company is the owner and/or operator of the following facilities for which the Company has demonstrated financial assurance through a financial test, including but not limited to hazardous waste Treatment, Storage, and Disposal (“TSD”) facilities under 40 CFR parts 264 and 265, Municipal Solid Waste Landfill (“MSWLF”) facilities under

40 CFR part 258, Underground Injection Control (“UIC”) facilities under 40 CFR part 144, Underground Storage Tank (“UST”) facilities under 40 CFR part 280, and Polychlorinated Biphenyl (“PCB”) storage facilities under 40 CFR part 761. The total dollar amount of such financial assurance covered by a financial test is equal, in the aggregate, to [\$_____], and is shown for each such facility as follows:

4. The Company guarantees the CERCLA settlement obligations and/or the MSWLF, TSD, UIC, UST, PCB, and/or other facility obligations of the following guaranteed parties. The total dollar amount of such CERCLA settlement and regulated facility obligations so guaranteed is equal, in the aggregate, to [\$_____], and is shown for each such settlement and/or facility as follows

5. The Company [insert “is required” or “is not required”] to file a Form 10K with the Securities and Exchange Commission (“SEC”) for the Company’s latest fiscal year.

6. The Company’s fiscal year ends on [month, day]. I hereby certify that the figures for the following items marked with an asterisk are derived from the Company’s independently audited, year-end financial statements for its latest completed fiscal year, ended [date], and further certify as follows:

A. The aggregate total of the dollar amounts shown in Paragraphs 1 through 4 above equals [\$_____].

B. The current rating of the Company’s senior unsecured debt is [AAA, AA, A, or BBB] as issued by Standard and Poor’s [-or- [Aaa, Aa, A or Baa] as issued by Moody’s Investor Services].

*C. Company’s tangible net worth equals: [\$_____]

*D. Company’s total assets in the U.S. equal (required only if less than 90% of Company’s assets are located in the U.S.): [\$_____]

E. Is line C at least 6 times line A? (Yes/No): [_____]

F. Is line C at least \$10 million? (Yes/No): [_____]

G. Are at least 90% of Company’s assets located in the U.S.? (Yes/No): [_____]
If “No,” complete line H.

H. Is line D at least 6 times line A? (Yes/No): [_____]

I hereby certify that, to the best of my knowledge after thorough investigation, the information contained in this letter is 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.

_____ [Signature]

_____ [Name]

_____ [Title]

_____ [Date]

[NOTARY BLOCK]

**CERCLA Financial Assurance Financial Test:
Sample CPA Report (for Test Alternative 1)**

[CPA Letterhead]

**Independent Accountants' Report
on Applying Agreed-Upon Procedures**

To the Board of Directors and Management of [_____]:

We have performed the procedures outlined below, which were agreed to by [PRP] (the "Company"), to assist the Company in confirming selected financial data contained in the attached letter from [_____], the Company's Chief Financial Officer, dated [_____], to the Regional Administrator, United States Environmental Protection Agency, Region 5 (the "CFO Letter"). We have been advised by the Company that the CFO Letter has been or will be submitted to the United States Environmental Protection Agency ("EPA") in support of the Company's use of a financial test to demonstrate financial assurance for the Company's obligations under that certain Consent Decree (the "Consent Decree"), dated _____, _____, Docket No. [_____], between the Company and EPA. The procedures outlined below were performed solely to assist the Company in complying with the financial assurance requirements contained in the Consent Decree.

This agreed-upon procedures engagement was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. The sufficiency of these procedures is solely the responsibility of those parties specified in this report. Consequently, we make no representation regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

The procedures we performed and our associated findings are as follows:

1. We confirm that we have audited the consolidated financial statements of the Company as of and for the fiscal year ended [Insert date] in accordance with U.S. generally accepted accounting principles (such audited, consolidated financial statements, the "Audited Financials"). Our report dated [_____], with respect thereto, is included in the Company's [200_] Annual Report on Form 10-K.
2. Using data set forth in the Audited Financials, we calculated the amount of the Company's total liabilities as of [insert date] as [\$_____], by [adding total current liabilities of [\$_____] to total non-current liabilities of [\$_____]]. We compared the amount of the Company's total liabilities as so calculated with the amount set forth in Line 6(B) of the CFO Letter ("Total Liabilities"), and found such amounts to be in agreement.

3. Using data set forth in the Audited Financials, we calculated the amount of the Company's tangible net worth as of [Insert date] as [\$_____], by [subtracting the amount of net intangible assets of [\$_____] from the amount of total stockholders' equity of [\$_____]]. We compared the amount of the Company's tangible net worth as so calculated with the amount set forth in Line 6(C) of the CFO Letter ("Tangible Net Worth"), and found such amounts to be in agreement.
4. We compared the amount of the Company's net worth as of [Insert date], as defined and set forth in the Audited Financials and as calculated therein as [\$_____], with the amount set forth in Line 6(D) of the CFO Letter ("Net Worth"), and found such amounts to be in agreement.
5. We compared the amount of the Company's total current assets as of [Insert date], as defined and set forth in the Audited Financials and as calculated therein as [\$_____], with the amount set forth in Line 6(E) of the CFO Letter ("Current Assets"), and found such amounts to be in agreement.
6. We compared the amount of the Company's total current liabilities as of [Insert date], as defined and set forth in the Audited Financials and as calculated therein as [\$_____], with the amount set forth in Line 6(F) of the CFO Letter ("Current Liabilities"), and found such amounts to be in agreement.
7. Using data set forth in the Audited Financials, we calculated the amount of the Company's net working capital as of [Insert date] as [\$_____], by [subtracting total current liabilities of [\$_____] from total current assets of [\$_____]]. We compared the amount of the Company's net working capital as so calculated with the amount set forth in Line 6(G) of the CFO Letter ("Net Working Capital"), and found such amounts to be in agreement.
8. Using data set forth in the Audited Financials, we calculated the sum of the Company's net income plus depreciation, depletion, and amortization as of [Insert date] as [\$_____], by [adding depreciation, depletion, and amortization of property and intangibles of [\$_____] to net income of [\$_____]]. We compared the sum of the Company's net income plus depreciation, depletion, and amortization as so calculated with the amount set forth in Line 6(H) of the CFO Letter ("Net Income Plus Depreciation, Depletion, and Amortization"), and found such amounts to be in agreement.

9. We compared the amount of the Company's total assets located in the United States as of [Insert date] of [\$_____] (as such amount was derived by the Company from its underlying accounting records that support the Audited Financials and notified to us in writing) with the amount set forth in Line 6(I) of the CFO Letter, and found such amounts to be in agreement. **OR** We calculated the percentage of Company assets located in the United States as of [Insert date] by dividing the amount of the Company's total assets located in the United States of [\$_____] (as such amount was derived by the Company from its underlying accounting records that support the Audited Financials and notified to us in writing) by the amount of the Company's total assets as defined and set forth in the Audited Financials, and found such percentage to be greater than 90%.

10. Our calculation of the amount of the Company's tangible net worth (as set forth in Line 3 above) is [greater to or equal than] [less than] \$10 million.

11. The dollar amount identified in Line 6(A) of the CFO Letter is hereinafter referred to as the "Financial Assurance Amount." Our calculation of the amount of the Company's tangible net worth (as set forth in Line 3 above) is [greater to or equal than] [less than] an amount calculated as six times the Financial Assurance Amount.

12. Our calculation of the amount of the Company's net working capital (as set forth in Line 7 above) is [greater to or equal than] [less than] an amount calculated as six times the Financial Assurance Amount.

13. [Complete Line 13 only if less than 90% of Company's assets are located in the United States] Our calculation of the amount of the Company's total assets located in the United States (as set forth in Line 9 above) is [greater to or equal than] [less than] an amount calculated as six times the Financial Assurance Amount.

14. Our calculation of the amount of the Company's total liabilities (as set forth in Line 2 above) divided by our calculation of the amount of the Company's net worth (as set forth in Line 4 above) is [greater than] [less than] 2.0.

15. Our calculation of the sum of the Company's net income plus depreciation, depletion, and amortization (as set forth in Line 8 above) divided by our calculation of the amount of the Company's total liabilities (as set forth in Line 2 above) is [greater than] [less than] 0.1.

16. Our calculation of the amount of the Company's total current assets (as set forth in Line 5 above) divided by our calculation of the amount of the Company's total current liabilities (as set forth in Line 6 above) is [greater than] [less than] 1.5.

The foregoing agreed-upon procedures do not constitute an audit of the Company's financial statements or any part thereof, the objective of which is the expression of

opinion on the financial statements or a part thereof. Accordingly, we do not express such an opinion. Had be performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for the information and use of the Board of Directors and Management of the Company and is not intended to be and should not be used by anyone other than these specified parties; provided, however, that we acknowledge and agree that the Company may provide this report to the United States Environmental Protection Agency in support of the Company's financial assurance demonstration under the Consent Decree.

_____ [Signature]

_____ [Name]

_____ [Date]

**CERCLA Financial Assurance Financial Test:
Sample CPA Report (for Test Alternative 2)**

[CPA Letterhead]

**Independent Accountants' Report
on Applying Agreed-Upon Procedures**

To the Board of Directors and Management of [_____]:

We have performed the procedures outlined below, which were agreed to by [PRP] (the "Company"), to assist the Company in confirming selected financial data contained in the attached letter from [_____], the Company's Chief Financial Officer, dated [_____], to the Regional Administrator, United States Environmental Protection Agency, Region 5 (the "CFO Letter"). We have been advised by the Company that the CFO Letter has been or will be submitted to the United States Environmental Protection Agency ("EPA") in support of the Company's use of a financial test to demonstrate financial assurance for the Company's obligations under that certain Consent Decree (the "Consent Decree"), dated _____, _____, Docket No. [_____], between the Company and EPA. The procedures outlined below were performed solely to assist the Company in complying with the financial assurance requirements contained in the Consent Decree.

This agreed-upon procedures engagement was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. The sufficiency of these procedures is solely the responsibility of those parties specified in this report. Consequently, we make no representation regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

The procedures we performed and our associated findings are as follows:

1. We confirm that we have audited the consolidated financial statements of the Company as of and for the fiscal year ended [Insert date] in accordance with U.S. generally accepted accounting principles (such audited, consolidated financial statements, the "Audited Financials"). Our report dated [_____], with respect thereto, is included in the Company's [200_] Annual Report on Form 10-K.
2. Using data set forth in the Audited Financials, we calculated the amount of the Company's tangible net worth as of [Insert date] as [\$_____], by [subtracting the amount of net intangible assets of [\$_____] from the amount of total stockholders' equity of [\$_____]]. We compared the amount of the Company's tangible net worth as so calculated with the amount set forth in Line 6(C) of the CFO Letter ("Tangible Net Worth"), and found such amounts to be in agreement.

3. We compared the amount of the Company's total assets located in the United States as of [Insert date] of [\$_____] (as such amount was derived by the Company from its underlying accounting records that support the Audited Financials and notified to us in writing) with the amount set forth in Line 6(D) of the CFO Letter, and found such amounts to be in agreement. **OR** We calculated the percentage of Company assets located in the United States as of [Insert date] by dividing the amount of the Company's total assets located in the United States of [\$_____] (as such amount was derived by the Company from its underlying accounting records that support the Audited Financials and notified to us in writing) by the amount of the Company's total assets as defined and set forth in the Audited Financials, and found such percentage to be greater than 90%.

4. Our calculation of the amount of the Company's tangible net worth (as set forth in Line 2 above) is [greater to or equal than] [less than] \$10 million.

5. The dollar amount identified in Line 6(A) of the CFO Letter is hereinafter referred to as the "Financial Assurance Amount." Our calculation of the amount of the Company's tangible net worth (as set forth in Line 2 above) is [greater to or equal than] [less than] an amount calculated as six times the Financial Assurance Amount.

6. [Complete Line 6 only if less than 90% of Company's assets are located in the United States] Our calculation of the amount of the Company's total assets located in the United States (as set forth in Line 3 above) is [greater to or equal than] [less than] an amount calculated as six times the Financial Assurance Amount.

The foregoing agreed-upon procedures do not constitute an audit of the Company's financial statements or any part thereof, the objective of which is the expression of opinion on the financial statements or a part thereof. Accordingly, we do not express such an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for the information and use of the Board of Directors and Management of the Company and is not intended to be and should not be used by anyone other than these specified parties; provided, however, that we acknowledge and agree that the Company may provide this report to the United States Environmental Protection Agency in support of the Company's financial assurance demonstration under the Consent Decree.

_____ [Signature]

_____ [Name]

_____ [Date]

Attachment C
to CERCLA Financial Assurance Tip Sheet on the Corporate Financial Test:
Sample Standby Funding Commitment

[Address Block for EPA]

[Date]

Re: Standby Funding Commitment

Dear Sir or Madam:

[Name of PRP] (the “Company”) hereby establishes this Irrevocable Standby Funding Commitment in favor of the United States Environmental Protection Agency (“EPA”) in the amount of exactly [in words] U.S. dollars (\$XX.XX) (the “Financial Assurance Amount”). The Financial Assurance Amount is equal to the financial assurance the Company has agreed to establish and maintain pursuant to Paragraph 45 of that certain Consent Decree for the Cam-Or Superfund Site, dated _____, 2010 (the “Consent Decree”), as further described in the letter dated [date], from the Company’s Chief Financial Officer, [name], to EPA. The Company is establishing this Irrevocable Standby Funding Commitment in consideration of the mutual promises and covenants contained in the Consent Decree.

Pursuant to this Irrevocable Standby Funding Commitment, upon the occurrence of any “Work Takeover” by EPA under Paragraph 92 of the Consent Decree and at the request and direction of an authorized representative of EPA, the Company agrees to pay to or at the direction of EPA an amount up to but not exceeding the Financial Assurance Amount in immediately available funds and without setoff, counterclaim, or condition of any kind. Amounts drawn by EPA under the immediately preceding sentence shall be deposited by EPA into a Special Account, trust fund, or other designated vehicle and thereafter applied by EPA to continue and complete the “Work” in accordance with the Consent Decree. This Irrevocable Standby Funding Commitment shall continue in full force and effect until the earlier to occur of (a) the termination of the Consent Decree in accordance with its terms and (b) the establishment by the Company of alternative financial assurance consistent with and as permitted by the Consent Decree.

_____ [Signature]

_____ [Name]

_____ [Title]

_____ [Date]

[NOTARY BLOCK]

APPENDIX F5

TRUST AGREEMENT

Cam-Or Superfund Site

Dated: _____, _____, _____

This Trust Agreement (this “Agreement”) is entered into as of [date] by and between [name of entity funding the trust], a [insert “corporation,” “limited liability company,” “partnership,” etc.] organized and existing under the laws of the State of [_____] (the “Grantor”), and [name of trustee], a [insert “corporation,” “banking organization,” “association,” etc.] organized and existing under the laws of the State of [_____] (the “Trustee”).

Whereas, the United States Environmental Protection Agency (“EPA”), an agency of the United States federal government, and the Grantor have entered into a Consent Decree, *United States and State of Indiana v. Alcoa Inc., et al.*, Civil Action No. [_____] , for the Cam-Or Superfund Site (hereinafter the “Consent Decree”);

Whereas, the Consent Decree provides that the Grantor shall provide assurance that funds will be available as and when needed for performance of the Work required by the Consent Decree;

Whereas, in order to provide such financial assurance, Grantor has agreed to establish and fund the trust created by this Agreement; and

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee has agreed to act as trustee hereunder.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term “Beneficiary” shall have the meaning assigned thereto in Section 3 of this Agreement.

(b) The term “Business Day” means any day, other than a Saturday or a Sunday, that banks are open for business in Chicago, Illinois, USA.

(c) The term “Claim Certificate” shall have the meaning assigned thereto in Section 4(a) of this Agreement.

(d) The term “Fund” shall have the meaning assigned thereto in Section 3 of this Agreement.

(e) The term “Grantor” shall have the meaning assigned thereto in the

first paragraph of this Agreement.

(f) The term “Objection Notice” shall have the meaning assigned thereto in Section 4(b) of this Agreement.

(g) The term “Site” shall have the meaning assigned thereto in Section 2 of this Agreement.

(h) The term “Trust” shall have the meaning assigned thereto in Section 3 of this Agreement.

(i) The term “Trustee” shall mean the trustee identified in the first paragraph of this Agreement, along with any successor trustee appointed pursuant to the terms of this Agreement.

(j) The term “Work” shall have the meaning assigned thereto in the Consent Decree.

Section 2. Identification of Facilities and Costs. This Agreement pertains to costs for Work required at the Cam-Or Superfund Site in Westville, LaPorte County, Indiana (the “Site”), pursuant to the above referenced Consent Decree.

Section 3. Establishment of Trust Fund. The Grantor and the Trustee hereby establish a trust (the “Trust”), for the benefit of EPA (the “Beneficiary”), to assure that funds are available to pay for performance of the Work in the event that Grantor fails to conduct or complete the Work required by, and in accordance with the terms of, the Consent Decree. The Grantor and the Trustee intend that no third party shall have access to monies or other property in the Trust except as expressly provided herein. The Trust is established initially as consisting of funds in the amount of no less than Six Million U.S. Dollars (\$6,000,000.00). Such funds, along with any other monies and/or other property hereafter deposited into the Trust, and together with all earnings and profits thereon, are referred to herein collectively as the “Fund.” The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor owed to the United States.

Section 4. Payment for Work Required Under the Consent Decree. The Trustee shall make payments from the Fund in accordance with the following procedures.

(a) From time to time, no more often than quarterly, the Grantor and/or its representatives or contractors may request that the Trustee make payment from the Fund for Work performed and previously paid for under the Consent Decree by delivering to the Trustee and EPA written invoices and certificate (together, a “Claim Certificate”) signed by an officer of the Grantor (or the relevant representative or contractor) and certifying:

(i) that the invoices are for Work performed at the Site in

accordance with the Consent Decree;

(ii) that the Work performed is properly described, the amount of the claim is correct, and payment has been remitted to the indicated payee(s);

(iii) that a comparison of the amount spent for the Work to date and the amount budgeted for the same Work demonstrates that the invoices for which payment is sought are within budget, or that if the comparison demonstrates that the Work is over budget, the amount requested has been reduced to an amount consistent with the budget;

(iv) that the payment sought has been reduced by the ratio of the Performance Guarantee specified in the Consent Decree satisfied by this Trust to the full amount of the Performance Guarantee; and

(v) that the Grantor has sent a copy of such Claim Certificate to EPA, both to the EPA attorney and the EPA RPM at their respective addresses shown in this Agreement, the date on which such copy was sent, and the date on which such copy was received by EPA as evidenced by a return receipt (which return receipt may be written, as in the case of overnight delivery, certified mail, or other similar delivery methods, or electronic, as in the case of e-mail, facsimile, or other similar delivery methods).

(b) EPA may object to any payment requested in a Claim Certificate submitted by the Grantor (or its representatives or contractors), in whole or in part, by delivering to the Trustee a written notice (an "Objection Notice") within thirty (30) days after the date of EPA's receipt of the Claim Certificate as shown on the relevant return receipt. An Objection Notice sent by EPA shall state (i) whether EPA objects to all or only part of the payment requested in the relevant Claim Certificate; (ii) the basis for such objection, (iii) that EPA has sent a copy of such Objection Notice to the Grantor and the date on which such copy was sent; and (iv) the portion of the payment requested in the Claim Certificate, if any, which is not objected to by EPA, which undisputed portion the Trustee shall proceed to distribute in accordance with Section 4(d) below. EPA may object to a request for payment contained in a Claim Certificate only on the grounds that the requested payment is either (x) not for the costs of Work under the Consent Decree or (y) otherwise inconsistent with the terms and conditions of the Consent Decree.

(c) If the Trustee receives a Claim Certificate and does not receive an Objection Notice from EPA within the time period specified in Section 4(b) above, the Trustee shall, after the expiration of such time period, promptly make the payment from the Fund requested in such Claim Certificate.

(d) If the Trustee receives a Claim Certificate and also receives an Objection Notice from EPA within the time period specified in Section 4(b) above, but which Objection Notice objects to only a portion of the requested payment, the Trustee shall, after the expiration of such time period, promptly make payment from the Fund of the uncontested amount as requested in the Claim Certificate. The Trustee shall not make any payment from the Fund for the portion of the requested payment to which EPA has objected in its Objection Notice.

(e) If the Trustee receives a Claim Certificate and also receives an Objection Notice from EPA within the time period specified in Section 4(b) above, which Objection Notice objects to all of the requested payment, the Trustee shall not make any payment from the Fund for amounts requested in such Claim Certificate.

(f) If, at any time during the term of this Agreement, EPA implements a “Work Takeover” pursuant to the terms of the Consent Decree and intends to direct payment of monies from the Fund to pay for performance of Work during the period of such Work Takeover, EPA shall notify the Trustee in writing of EPA’s commencement of such Work Takeover. Upon receiving such written notice from EPA, the disbursement procedures set forth in Sections 4(a)-(e) above shall immediately be suspended, and the Trustee shall thereafter make payments from the Fund only to such person or persons as the EPA may direct in writing from time to time for the sole purpose of providing payment for performance of Work required by the Consent Decree. Further, after receiving such written notice from EPA, the Trustee shall not make any disbursements from the Fund at the request of the Grantor, including its representatives and/or contractors, or of any other person except at the express written direction of EPA. If EPA ceases such a Work Takeover in accordance with the terms of the Consent Decree, EPA shall so notify the Trustee in writing and, upon the Trustee’s receipt of such notice, the disbursement procedures specified in Sections 4(a)-(e) above shall be reinstated.

(g) While this Agreement is in effect, disbursements from the Fund are governed exclusively by the express terms of this Agreement.

Section 5. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with directions which the Grantor may communicate in writing to the Trustee from time to time, except that:

(a) securities, notes, and other obligations of any person or entity shall not be acquired or held by the Trustee with monies comprising the Fund, unless they are securities, notes, or other obligations of the U.S. federal government or any U.S. state government or as otherwise permitted in writing by the EPA;

(b) the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent such deposits are insured by an agency of the U.S. federal or any U.S. state government; and

(c) the Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 6. Commingling and Investment. The Trustee is expressly authorized in its discretion to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions hereof and thereof, to be commingled with the assets of other trusts participating therein.

Section 7. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(b) to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. federal government or any U.S. state government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund; and

(c) to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the U.S. federal government.

Section 8. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund shall be paid from the Fund. All other expenses and charges incurred by the Trustee in connection with the administration of the Fund and this Trust shall be paid by the Grantor.

Section 9. Annual Valuation. The Trustee shall annually, no more than thirty (30) days after the anniversary date of establishment of the Fund, furnish to the Grantor and to the Beneficiary a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The annual valuation shall include an accounting of any fees or expenses levied against the Fund. The Trustee shall also provide such information concerning the Fund and this Trust as EPA may request from time to time.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder; provided, however, that any counsel retained by the Trustee for such purposes may not, during the period of its representation of the Trustee, serve as counsel to the Grantor.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing with the Grantor and

as notified in writing to the Beneficiary.

Section 12. Trustee and Successor Trustee. The Trustee and any replacement Trustee must be approved in writing by EPA and must not be affiliated with the Grantor. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee approved in writing by EPA and this successor accepts such appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to EPA or a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the Fund and the Trust in a writing sent to the Grantor, the Beneficiary, and the present Trustee by certified mail no less than 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 8.

Section 13. Instructions to the Trustee. All instructions to the Trustee shall be in writing, signed by such persons as are empowered to act on behalf of the entity giving such instructions. The Trustee shall be fully protected in acting without inquiry on such written instructions given in accordance with the terms of this Agreement. The Trustee shall have no duty to act in the absence of such written instructions, except as expressly provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended only by an instrument in writing executed by the Grantor and the Trustee, and with the prior written consent of EPA.

Section 15. Irrevocability and Termination. This Trust shall be irrevocable and shall continue until terminated upon the earlier to occur of (a) the written direction of EPA to terminate, consistent with the terms of the Consent Decree and (b) the complete exhaustion of the Fund comprising the Trust as certified in writing by the Trustee to EPA and the Grantor. Upon termination of the Trust pursuant to Section 15(a), all remaining trust property (if any), less final trust administration expenses, shall be delivered to the Grantor.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the EPA issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct made by the Trustee in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of _____.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

Section 19. Notices. All notices and other communications given under this agreement shall be in writing and shall be addressed to the parties as follows or to such other address as the parties shall by written notice designate:

(a) If to the Grantor, to [_____].

(b) If to the Trustee, to [_____].

(c) If to EPA, to [EPA Region ____, Remedial Project Manger for the Site] and [EPA Region ____, Office of Regional Counsel contact for the Site], at [_____].

[Remainder of page left blank intentionally.]

In Witness Whereof, the parties hereto have caused this Agreement to be executed by their respective officers duly authorized and attested as of the date first above written:

GRANTOR

[Signature of Grantor]
[Name and Title]

State of _____
County of _____

On this [date], before me personally came [name of Grantor official], to me known, who, being by me duly sworn, did depose and say that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; and that she/he signed her/his name thereto.

[Signature of Notary Public]

TRUSTEE

[Signature of Trustee]
[Name and Title]

State of _____
County of _____

On this [date], before me personally came [name of Trustee official], to me known, who, being by me duly sworn, did depose and say that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; and that she/he signed her/his name thereto.

[Signature of Notary Public]

APPENDIX G – ENVIRONMENTAL RESTRICTIVE COVENANT

APPENDIX G

Environmental Protection Easement
And
Environmental Restrictive Covenant

1. This Environmental Protection Easement and Environmental Restrictive Covenant (“Covenant”) is made this ____ day of _____, 2010, by and between the _____, (“Grantors(s)”) having and address of _____, and _____ (“Grantee(s)”) having and address of _____.

WITNESSETH:

2. WHEREAS, Grantor is the owner of certain real property located in the County of LaPorte, State of Indiana, which real property is more particularly described in Exhibit A, which is attached hereto and incorporated herein (the “Real Estate”), and as previously recorded in the Office of Recorder for LaPorte County, Indiana, in plat book _____, page _____, on [date]. This real estate is also identified as parcel number [insert 18 digit county parcel number];

3. WHEREAS, the Real Estate is located above a plume of contaminated groundwater (“Contaminated Groundwater”) emanating from the Cam-Or Property which is part of the Cam-Or Site (“the Site”) that the U.S. Environmental Protection Agency (“EPA”), pursuant to Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act, (“CERCLA”), 42 U.S.C. § 9605, placed on the national priorities list set forth at 40 C.F.R. Part 300, Appendix B., by publication in the Federal Register on March 6, 1998, Vol. 63, No. 44 Fed Reg. 11332-11337;

4. WHEREAS, in a Record Of Decision (“ROD”) dated June 10, 2008, the Regional Administrator for EPA Region Five selected a “Remedial Action” for the Site which provides for installation and operation of a groundwater pump and treat system, removal of light non-aqueous phase liquid (LNAPL) from the soils and groundwater beneath the Site, monitoring and sampling of groundwater and LNAPL, performance of a soil management plan, and the implementation of institutional controls to restrict certain land and water use on the Site;

5. WHEREAS, Grantees have entered into a Consent Decree with the United States and the Indiana Department of Environmental Management (“IDEM”), entered as a judgment by the Federal District Court for the Northern District of Indiana, *United States and State of Indiana v. Alcoa, Inc., et al*, C.A. No. _____, whereby the Grantees have committed to perform the remedial action for the Site, as set forth in the June 10, 2008 ROD (the “Remedial Action”);

6. WHEREAS, Grantor(s) agrees to grant a permanent right of access over the Real Estate to the Grantee(s) for the purposes of implementing, facilitating, and monitoring the Remedial Action;

7. WHEREAS, the Grantor(s) have agreed to impose a restrictive covenant on the Real Estate's use that will run with the land in perpetuity for the purpose of protecting human health and the environment;

8. WHEREAS, Grantor and Grantee intend this instrument to be a restrictive covenant pursuant to the Indiana Code § 13-11-12-193.5 that IDEM may enforce in a court action pursuant to Indiana Code § 13-14-2-6 or other applicable law; and

9. WHEREAS, the ROD and Consent Decree are incorporated herein by reference and may be examined at the offices of IDEM, which is located at 100 N. Senate Ave., Indiana Government Center North, Indianapolis, Indiana, in the public file; they may also be available for view electronically through IDEM's virtual file cabinet on IDEM's Web site (currently located at <http://www.in.gov/idem>).

NOW THEREFORE, Grantor(s) in consideration for the promises contained herein and other valuable consideration, impose restrictions on the Real Estate and the parties covenant and agree that:

10. GRANT: Grantor(s), on behalf of his/her/their successors and assigns, in consideration of the terms of the Consent Decree entered by the United States District Court for the Northern District of Indiana, in *United States and State of Indiana v. Alcoa, Inc., et al.*, C.A. No. _____, does hereby covenant and declare that the Real Estate shall be subject to the provisions of this Covenant, including the restrictions on use set forth below, and does give, grant and convey to the Grantee(s) and their assigns with general warranties of title: 1) perpetual right to enforce said use restrictions, and 2) an environmental protection easement of the nature and character and for the purposes hereinafter set forth with respect to the Real Estate. Grantor and Grantee intend this instrument to be a restrictive covenant pursuant to the Indiana Code § 13-11-2-193.5 and enforceable by IDEM or EPA.

11. PROPERTY CONVEYANCE-CONTINUANCE OF PROVISIONS: Any conveyance of title, easement, or other interest in the Real Estate shall be subject to compliance and restrictions described in paragraph 16, below.

12. EPA AND IDEM – THIRD-PARTY BENEFICIARIES: Grantor(s) on behalf of itself and his/her/their successors, transferees, and assigns, and Grantee(s) on behalf of themselves and their successors, transferees, and assigns, hereby agree that the EPA and IDEM and their successors and assigns shall be third party beneficiaries under this Covenant.

13. Grantor(s) grants to IDEM, EPA, and their designated representatives the right to enter upon the Real Estate at reasonable times for the following purposes: (a) determining whether the land use restrictions described in paragraph 16 are being followed and implemented in a manner that ensures the protection of public health, safety, or welfare and the environment; (b) taking samples; (c) monitoring compliance with the ROD, Consent Decree, this Covenant; and (d) performing reviews pursuant to applicable statutes and regulations.

14. RESTRICTIONS TO RUN WITH THE LAND: The restrictions described in this Covenant shall run with the land and be binding upon the Grantor(s) and its/their successors, assigns, heirs, and lessees, their authorized agents, employees, contractors, representatives, agents, lessees, licensees, invitees, guests, or person acting under their direction or control, and shall continue as a servitude running in perpetuity with the Real Estate. Any transfer, mortgage, lease, license, easement, or other conveyance of any interest in all or part of the Real Estate by any person shall be subject to this Covenant.

15. BINDING UPON FUTURE OWNERS: By taking title to the Real Estate, any future owner agrees to comply with the restrictions in the terms of this Covenant.

16. RESTRICTIONS ON USE: The following conditions and restrictions apply to use of the Real Estate, run with the land for the benefit of the Grantee(s), and are binding upon the Grantor(s), his/her/their successors, transferees, assigns and other persons acquiring any interest in the Property, as well as his/her/their authorized agents, employees or persons acting under its direction and control.

- a. Other than any buildings existing as of the date on which this Covenant is made, there shall be no construction, installation or use of any buildings, wells, pipes, roads, ditches or any other structures –fixtures or otherwise– on the Real Estate that may interfere with or affect the construction, physical integrity, operation and maintenance of the work undertaken pursuant to the Consent Decree including without limitation, any groundwater or LNAPL wells, trenches or extraction points, and/or any groundwater pump and treat systems, unless such construction, installation or use is approved in advance by IDEM and EPA; [NOTE: RESTRICTIONS PARTICULAR TO GROUNDWATER OR LNAPL CONTAMINATION OR INVOLVING THE SOIL MANAGEMENT PLAN SHALL BE INSERTED, AS APPROPRIATE FOR EACH PARCEL.]

- b. There shall be no withdrawal, consumption, or other use of the underlying groundwater at the Real Estate except as provided for in the course of the Grantee(s), IDEM's or EPA's carrying out or reviewing the adequacy of the remedial action;
- c. There shall be no excavation, grading or other activity involving movement of the soil below ___ feet from ground surface, without prior notice and approval by IDEM, and [THE SETTLING WORK PARTIES SHALL SUBMIT TO EPA AND IDEM DATA ON APPROPRIATE DEPTH RESTRICTIONS, FOR PARCELS SITUATED OVER THE LNAPL.]
- d. There shall be no interference of any sort, by any person, with construction, operation, maintenance, monitoring, and efficacy of any components, structures, and improvements resulting from or relating to the Work implemented pursuant to the Consent Decree.

17. **MODIFICATION OF RESTRICTIONS:** The above restrictions may be modified, or terminated in whole or in part, in writing, by the Grantee(s) and Grantor(s), but only after receiving approval from IDEM and EPA. Any modification or termination shall be executed by the Grantor(s) and properly recorded.

18. **ENVIRONMENTAL PROTECTION EASEMENT:** Grantor(s) hereby grants to the Grantee(s) an irrevocable, permanent and continuing right of access to the Real Estate at all reasonable times (unless terminated or modified pursuant to paragraph 25 to the Real Estate for purposes of:

- a. Verifying compliance with the terms of this Covenant; and
- b. Conducting the Remedial Action and monitoring its effectiveness including, without limitation, the obtaining of samples of soil, air, groundwater or surface waters at the Real Estate.

19. **RESERVED RIGHTS OF GRANTORS:** Grantor(s) hereby reserve unto his/her/themselves, their successors and assigns, all rights and privileges in and to the use of the Real Estate which are not incompatible with the restrictions, rights and easements granted herein.

20. **NO PUBLIC ACCESS AND USE:** No right of access or use by the general to any portion of the Real Estate is conveyed by this Covenant.

21. NOTICE REQUIREMENT: Grantor(s) shall include the following notice provision in any instrument conveying any interest in any portion of the Real Estate, including but not limited to, deeds, leases and subleases (excluding mortgages, liens, similar financing interests, and other possessory encumbrances):

NOTICE: THE INTEREST CONVEYED HEREBY IS SUBJECT TO AN ENVIRONMENTAL PROTECTION EASEMENT AND ENVIRONMENTAL RESTRICTIVE COVENANT, DATED _____, 2010, RECORDED IN THE OFFICE OF RECORDER OF LAPORTE COUNTY ON _____, 2010, INSTRUMENT NUMBER _____ (OR OTHER IDENTIFYING REFERENCE) IN FAVOR OF AND ENFORCEABLE BY THE GRANTEES SPECIFIED THEREIN, AND THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT AND THE UNITED STATES OF AMERICA (AS THIRD-PARTY BENEFICIARIES).

Grantor shall provide written notice to Grantees, IDEM and EPA, no later than thirty (30) days after any conveyance of any ownership interest in the Real Estate. Grantor shall provide Grantees, IDEM and EPA with a certified copy of the instrument conveying any interest in any portion of the Real Estate and its recording reference if it has been recorded. Such notice shall include the name and address of the transferee.

22. EPA AND IDEM ENTRY, ACCESS AND RESPONSE AUTHORITY: Nothing in this document shall limit or otherwise affect EPA's and IDEM's rights of entry and access or EPA's and IDEM's authority to take response actions under CERCLA, the National Contingency Plan ("NCP"), or other federal and state law. The Grantor(s) and Grantee(s) hereby consent to officers, employees, contractors, and authorized representatives of EPA and IDEM entering and having continued access to this Real Estate for the purposes described in paragraph 13.

23. ENFORCEMENT: The Grantee, and the EPA and IDEM as third party beneficiaries, shall be entitled to enforce, individually or jointly, the terms of the Covenant and request specific performance and/or immediate injunctive relief. IDEM shall also be entitled to enforce the terms and conditions herein pursuant to Indiana Code § 13-14-2-6 and any other applicable law. The Grantor(s) and Grantee(s) acknowledge that the restrictions in this Covenant are enforceable and agree not to challenge the provisions or the appropriate court's jurisdiction. All remedies herein shall be in addition to remedies at law or equity including remedies available through CERCLA.

24. TERM: This Covenant shall apply until EPA and IDEM determine that the Contaminated Groundwater and/or LNAPL beneath the Real Estate no longer presents an unacceptable risk to the public health, safety, or welfare or to the environment.

25. **MODIFICATION AND TERMINATION:** This Covenant shall not be amended, modified, or terminated except by prior written approval of the Grantee(s), EPA and IDEM. Within ten (10) days of executing an approved amendment, modification, or termination of the Covenant, such amendment, modification, or termination shall be recorded with the Office of the Recorder of LaPorte County, and within ten (10) days after recording, a true copy of the recorded amendment, modification, or termination shall be presented to the Grantee(s), EPA, and IDEM.

26. **WAIVER:** No failure on the part of the Grantee(s), EPA, or IDEM at any time to require performance by any person or any term of this Covenant shall be taken or held to be a waiver of such term or in any way affect the Grantee(s), EPA or IDEM's right to enforce such term. No waiver on the part of the EPA or IDEM of any term hereof shall be taken or held to be a waiver of any other term hereof or the breach thereof. Grantor hereby waives any defense of laches, estoppel, or prescription.

27. **CONTROLLING LAW:** The interpretation and performance of this Covenant shall be governed by, and construed and enforced according to, the law of the State of Indiana, except for provisions relating to EPA's remedy, access, and enforcement, which shall be governed by federal laws including CERCLA, 42 U.S.C. 9601, *et seq.*

28. **SEVERABILITY:** If any provision of this Covenant, or the application of it to any person or circumstance, is found to be invalid, the remainder of the provisions of this Covenant, or the application of such provisions to persons or circumstances other than those to which it is found to be invalid, as the case may be, shall not be affected thereby.

29. **CONFLICT AND COMPLIANCE WITH LAWS:** If any provision of this Covenant is also the subject of any law or regulation established by any federal, state, or local government, the strictest standard or requirement shall apply. Compliance with this Covenant does not relieve the Grantee(s) from complying with any other applicable laws.

30. **CHANGE IN LAW OR REGULATION:** In the event the Risk Integrated System of Closure ("RISC") is adopted by rule in Indiana, or in the event of any other change in applicable federal or state law, regulations, or EPA's and/or IDEM's remediation policies, this Covenant shall be interpreted so as to ensure the continuing validity and enforceability of the restrictions listed in paragraph 16. In no event shall this Covenant be rendered unenforceable if federal or state laws, regulations, cleanup guidelines, or policies for environmental restrictive covenants, remediation, or institutional or engineering controls change as to form or content. All statutory references include any successor provisions.

31. **LIBERAL CONSTRUCTION:** Any general rule of construction to the contrary notwithstanding, this Covenant shall be liberally construed in favor of Grantee(s) to effect the

purpose of the Covenant and the purposes of CERCLA and IC 13 per IC 13-12-2-1. If any provision of this Covenant is found to be ambiguous, an interpretation consistent with the purpose of this Covenant that would render the provision valid shall be favored over any interpretation that would render it invalid.

32. ENTIRE AGREEMENT: This Covenant sets forth the entire agreement of the parties with respect to rights and restrictions created hereby, and supersedes all prior discussions, negotiations, understandings, or agreements relating thereto, all of which are merged herein.

33. NO FORFEITURE: Nothing contained herein will result in a forfeiture or reversion of Grantor's title in any respect.

34. JOINT OBLIGATION: If there are two or more parties identified as Grantor(s) and Grantee(s) herein, the obligations imposed by this Covenant upon them shall be joint and several.

35. NOTICES: Any notice, demand, request, consent, approval or communication that any person desires or is required to give to another pursuant to this Covenant shall be in writing and shall either be served personally or sent by first class mail, postage prepaid, addressed as follows:

To Grantor(s):

To Grantee(s):

To IDEM :

Attn: Section Chief
IDEM, Office of Land Quality
Federal Programs
100 N. Senate Ave.
Mail Code 66-31, IGCN Room 1101
Indianapolis, IN 46204-2251

TO EPA:

U.S. Environmental Protection Agency
Superfund Division Director
77 West Jackson Boulevard
MC S-6J
Chicago, IL 60604

Any entity may change its address or the individual to whose attention a notice is to be sent by giving written notice in compliance with this paragraph.

36. **AUTHORITY TO EXECUTE AND RECORD:** The undersigned person executing this Covenant on behalf of the Grantor represents and certifies that he or she is the Owner of the Real Estate and is duly authorized and has been fully empowered to execute, record, and deliver this Covenant. The undersigned person executing this Covenant for and on behalf of the Grantee represents and certifies that he or she is duly authorized and has been fully empowered to execute this Covenant.

IN WITNESS WHEREOF, the said Grantor(s) has (have) caused this Environmental Protection Easement and Environmental Restrictive Covenant to be executed on this ____ day of _____, 20__.

Grantor(s):

By: _____
(printed name & title)

(signature)
STATE OF INDIANA)
)
COUNTY OF LAPORTE)

