UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION VII

IN THE MATTER OF: Colorado Avenue Subsite Operable Unit 01 Hastings Ground Water Contamination Site	ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR REMEDIAL INVESTIGATION/FEASIBILITY STUDY
Dravo Corporation Respondent	U.S. EPA Region VII CERCLA-07-2013-0011
	Proceeding Under Sections 104, 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§9604, 9607 and 9622.

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I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") is entered into voluntarily by the United States Environmental Protection Agency ("EPA") and Dravo Corporation ("Respondent"). The Settlement Agreement concerns i) the preparation and performance of a Remedial Investigation/Feasibility Study ("RI/FS") to support EPA's selection of a final remedy at the Colorado Avenue Subsite of the Hastings Ground Water Contamination Site so that acceptable risk levels for the Contaminants of Concern are achieved and ii) the reimbursement of Future Response Costs incurred by EPA for the Work to be performed by Respondent pursuant to this Settlement Agreement.

2. The Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9604, 9607 and 9622 ("CERCLA"). This authority was delegated to the Administrator of EPA on January 27, 1987, by Executive Order 12580, 52 Fed. Reg. 2926 (Jan. 29, 1987), and further delegated to the Regional Administrators on May 11, 1994, by EPA Delegation Nos. 14-14-C and 14-14-D. This authority was further redelegated by the Regional Administrator of EPA Region VII to the Director of the Superfund Division by R7-14-014-C and R7-14-014-D.

3. EPA and Respondent ("the Parties") recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Respondent in accordance with this Settlement Agreement do not constitute an admission of any liability. Respondent does not admit, and retains the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement Agreement, the validity of the findings of fact, conclusions of law and determinations in Sections V and VI of this Settlement Agreement. Respondent agrees to comply with and be bound by the terms of this Settlement Agreement and further agrees that it will not contest the basis or validity of this Settlement Agreement or its terms.

II. PARTIES BOUND

4. This Settlement Agreement applies to and is binding upon EPA and upon Respondent and its successors and assigns. Any change in ownership or corporate status of Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter Respondent's responsibilities under this Settlement Agreement.

5. Respondent shall ensure that its contractors and representatives receive a copy of this Settlement Agreement and comply with this Settlement Agreement. Respondent shall be responsible for any noncompliance of its contractors or representatives with this Settlement Agreement.

6. The undersigned representative of Respondent certifies that he or she is fully authorized to enter into the terms and conditions of this Settlement Agreement and to execute and legally bind Respondent to this Settlement Agreement.

III. STATEMENT OF PURPOSE

7. In entering into this Settlement Agreement, the objectives of EPA and Respondent are: a) to fully determine the nature and extent of contamination and any threat to the public health, welfare, or the environment caused by the release or threatened release of hazardous substances, pollutants or contaminants at or from the Colorado Avenue Subsite, by conducting a Remedial Investigation as more specifically set forth in the Statement of Work ("SOW") attached as Appendix A to this Settlement Agreement; (b) to identify and evaluate remedial alternatives to prevent, mitigate or otherwise respond to or remedy any release or threatened release of hazardous substances, pollutants, or contaminants at or from the Subsite, by conducting a Feasibility Study as more specifically set forth in the SOW; and (c) to recover Future Response Costs incurred by EPA with respect to this Settlement Agreement.

8. The Work conducted under this Settlement Agreement is subject to approval by EPA and shall provide all appropriate and necessary information to assess Subsite conditions and evaluate alternatives to the extent necessary to select a remedy that will be consistent with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300 ("NCP"). Respondent shall conduct all Work under this Settlement Agreement in compliance with CERCLA, the NCP, and all applicable EPA guidances, policies, and procedures.

IV. DEFINITIONS

9. Unless otherwise expressly provided herein, terms used in this Settlement Agreement that 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 Settlement Agreement or in appendices attached hereto and incorporated hereunder, the following definitions shall apply:

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

b. "Contaminants of Concern" or "COCs" are those contaminants listed in Table 3 of Appendix B.

c. "Day" shall mean a calendar day. In computing any period of time under this Settlement Agreement, 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.

d. "Effective Date" shall be the effective date of this Settlement Agreement as provided in Section XXIX.

e. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

f. "Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that EPA incurs from the effective date of this Settlement Agreement, verifying the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, Agency for Toxic Substances and Disease Registry ("ATSDR") costs, the costs incurred pursuant to Paragraph 40 (emergency response), Paragraph 53 (costs for gaining access) and Paragraph 80 (Work takeover) of this Settlement Agreement.

g. "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, 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.

h. "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.

i. "NDEQ" shall mean the Nebraska Department of Environmental Quality and any successor departments or agencies of the State.

j. "OU 1 Area" shall mean the area where the ground water plume associated with the Colorado Avenue Subsite comes to be located as depicted generally in the map in Appendix C.

k. "Paragraph" shall mean a portion of this Settlement Agreement identified by an Arabic numeral.

l. "Parties" shall mean EPA and Respondent.

m. "RCRA" shall mean the Resource Conservation and Recovery Act, also known as the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, *et seq.*

n. "Settlement Agreement" shall mean this Administrative Agreement on Consent, all appendices attached hereto (listed in Section XXVII) and all documents incorporated by reference into this document including without limitation EPA-approved submissions prepared by Respondent as required by this Settlement Agreement. EPA-approved submissions (other than progress reports) are incorporated into and become a part of the Settlement Agreement upon approval by EPA. In the event

of conflict between this Settlement Agreement and any appendix or other incorporated documents, this Settlement Agreement shall control.

o. "Section" shall mean a portion of this Settlement Agreement identified by a Roman numeral.

p. "Site" shall mean the Hastings Ground Water Contamination Superfund Site, located in and around Hastings, Adams County, Nebraska and depicted generally in the map in Appendix C.

q. "Statement of Work" or "SOW" shall mean the Statement of Work for development of a RI/FS for the Colorado Avenue Subsite as set forth in Appendix A. The Statement of Work is incorporated into this Settlement Agreement and is an enforceable part of this Settlement Agreement as are any modifications made thereto in accordance with this Settlement Agreement.

r. "Subsite" or "Colorado Avenue Subsite" shall mean the Colorado Avenue Subsite of the Hastings Ground Water Contamination Site, located in Hastings, Nebraska and depicted generally in the map in Appendix C. The Subsite includes the property located at 108 South Colorado Avenue, the soils between Kansas Avenue on the west, South Street on the south, Pine Avenue on the east and the Burlington Northern Santa Fe Railroad on the north (Operable Unit 9), and the ground water contamination plume emanating from 108 S. Colorado Avenue (Operable Unit 1).

s. "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) of CERCLA, 42 U.S.C. § 9601(33); (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27); and (4) any "hazardous waste" under Title 128, Chapters 2 and 3, Nebraska Department of Environmental Quality.

t. "Work" shall mean all activities Respondent is required to perform under this Settlement Agreement, except those required by Section XIV (Retention of Records).

V. FINDINGS OF FACT

10. Respondent is the former owner and operator of a manufacturing facility at 108 S. Colorado Avenue, Hastings, Nebraska, which is a source of soil and ground water contamination at the Colorado Avenue Subsite.

11. EPA began its investigation of ground water contamination at the Subsite in 1985 by installing monitoring wells and sampling them on a regular basis. In 1986, EPA conducted a Remedial Investigation (RI) at the Subsite which included soils, soil-gas and ground water data and a baseline risk assessment associated with contaminated ground water. The results of the RI were set forth in the 1987 Report of Investigation. The RI indicated that trichloroethene ("TCE"), 1,1,1- trichloroethane ("TCA"), and

tetrachloroethene ("PCE") were present in soils, soil-gas and ground water in concentrations exceeding health-based levels and 1,2-dichloroethane ("DCA"), 1,1-dichloroethene ("DCE"), and 1,2-DCE, degradation products of TCE, TCA, and tetrachloroethene ("PCE"), were found at lower concentrations.

12. EPA conducted additional soil and soil-gas sampling in 1987 and 1988 and published results in an Engineering Evaluation/Cost Analysis ("EE/CA"). EPA evaluated ground water data collected since the 1987 RI and in 1991, incorporated the data into a Feasibility Study ("FS") for the ground water operable unit ("Operable Unit 1 or OU 1").

13. EPA selected an Interim Remedy in a 1988 Record of Decision ("ROD") to address soil contamination ("Operable Unit 9 or OU 9") and selected an Interim Remedy to address ground water contamination in a 1991 ROD, which EPA amended in 1998. The RODs relied on the 1987 Report of Investigation, the 1988 EE/CA which identified the indicator chemicals having the highest concentrations at the Subsite and the 1991 FS. The goal of these RODs was to achieve a health-based risk level corresponding to 1×10^{-4} risk level for the contaminants of concern identified when the RODs were written.

14. In 1991, pursuant to a Unilateral Administrative Order ("UAO") for OU 9, Respondent began implementation of a soil vapor extraction system to remediate soils and soil-gas. As part of the system operation, Respondent analyzed soil and soil-gas samples collected from the Subsite.

15. In 1993, pursuant to a UAO for OU 1, Respondent began implementation of a ground water remedial action. In 1999, Respondent installed a ground water treatment system which uses the in-well aeration (IWA) technology. In 2002, Respondent installed additional IWA wells. As part of the operation of the system, Respondent analyzes ground water samples collected from the IWA wells.

16. Potentially responsible parties ("PRPs") at the FAR-MAR-CO Subsite, located downgradient of the Colorado Avenue Subsite (see Map - Appendix C), have been collecting ground water samples to support the remediation of the FAR-MAR-CO plume. The FAR-MAR-CO PRPs reported the analytical results in the FAR-MAR-CO RI Report, FS Report, Interim Remedial Action Report, and Quarterly Progress Report. The data, collected under EPA oversight, indicate the presence of TCE in the FAR-MAR-CO plume. EPA has reviewed the data concerning the TCE plume that has reached the FAR-MAR-CO Subsite and has concluded that TCE emanating from the Colorado Avenue Subsite has reached the FAR-MAR-CO plume.

17. PRPs at the North Landfill Subsite located downgradient of the Colorado Avenue Subsite (see Map - Appendix C), have been collecting ground water samples to support the remediation of the North Landfill plume. The North Landfill PRPs reported the analytical results in the North Landfill RI Report, FS Report, Interim Remedial Action Report, and Quarterly Progress Report. EPA has reviewed the data concerning

the TCE plume that has reached the North Landfill Subsite and has concluded that TCE emanating from the Colorado Avenue Subsite has reached the North Landfill plume.

18. In 2002, PRPs at the North Landfill Subsite published a report on the performance of Well D, specially designed to contain the North Landfill plume and partially contain the FAR-MAR-CO plume. The 2002 Well D Report and subsequent Well D Reports include ground water data indicating that TCE emanating from the Colorado Avenue Subsite is present in Well D.

19. Since 2006, Respondent has continued soil and ground water remediation pursuant to a Consent Decree (*U.S. v. Dravo Corporation,* 8:01 CV500). Pursuant to the Consent Decree, Respondent completed remediation of part of OU 9 (Zone 1) in 2013.

20. In 2007, Respondent entered in to an Administrative Settlement Agreement and Order on Consent, (Docket No. CERCLA-07-2007-0011) to define the extent of the Colorado Avenue Subsite plume where COCs are present at the 1×10^{-4} risk level and to define the capture zone of Well D. In 2011, the Parties amended that agreement to determine the vertical and horizontal extent of the TCE contamination at the maximum contaminant level ("MCL"), established under the Safe Drinking Water Act, 42 U.S.C. §§ 300f *et seq.*, at four transect locations.

21. In 2009, EPA compiled ground water analytical data collected at the Subsite and issued a comprehensive Technical Summary Report. In 2010, EPA amended the list of COCs, based on information collected since the RODs were issued. The basis for amending the list is set forth in Appendix B, which, among other things, identifies the health risks associated with contaminants found at the Subsite.

22. Reports prepared for the Colorado Avenue Subsite including, but not limited to, the 1987 RI, the 1991 FS, the 1988 EE/CA, the 2009 Technical Summary, the 2010 COC report, and the reports prepared for the FAR-MAR-CO and North Landfill Subsites referenced in Paragraphs 16, 17, and 18 herein, provide information on the history of the uses of the Subsite, its geologic, geographic, and hydrological features, the nature and extent of contamination emanating from the Subsite and human health risks associated with the COCs.

VI. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set forth above, EPA has determined that:

23. The Subsite is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

24. The COCs are "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

25. The conditions described in the Findings of Fact above constitute an actual and/or threatened "release" of a hazardous substance from the facility as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

26. Respondent is a "person" as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

27. Respondent is a responsible party under Sections 104, 107, and 122 of CERCLA, 42 U.S.C. §§ 9604, 9607, and 9622 and is liable for performance of response actions and response costs incurred and to be incurred at the Subsite. Respondent is a person who was an owner and operator of the facility at the time of disposal of hazardous substances at the facility, as defined by Section 101(20), and within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2).

28. The actions required by this Settlement Agreement are necessary to protect the public health, welfare or the environment, are in the public interest, 42 U.S.C. § 9622(a), are consistent with CERCLA and the NCP, 42 U.S.C. §§ 9604(a)(1), 9622(a), and will expedite effective remedial action and minimize litigation, 42 U.S.C. § 9622(a).

29. EPA has determined that Respondent is qualified to conduct the RI/FS within the meaning of Section 104(a) of CERCLA, 42 U.S.C. §9604(a), and will carry out the Work properly and promptly, in accordance with Sections 104(a) and 122(a) of CERCLA, 42 U.S.C. §§ 9604(a) and 9622(a), if Respondent complies with the terms of this Settlement Agreement.

VII. SETTLEMENT AGREEMENT AND ORDER

30. Based upon the foregoing Findings of Fact and Conclusions of Law and Determinations, it is hereby Ordered and Agreed that Respondent shall comply with all the provisions of this Settlement Agreement, including, but not limited to, all appendices to this Settlement Agreement and all documents incorporated by reference into this Settlement Agreement.

VIII. DESIGNATION OF CONTRACTORS AND PROJECT COORDINATORS

31. Selection of Contractors, Personnel. All Work performed under this Settlement Agreement shall be under the direction and supervision of qualified personnel. Within 30 days of the Effective Date of this Settlement Agreement, and before the Work outlined below and more fully described in the SOW begins, Respondent shall notify EPA in writing of the names, titles, and qualifications of the personnel, including contractors, subcontractors, consultants and laboratories to be used in carrying out such Work. Respondent has selected Brian Steffes of Michael Baker Jr., Inc. as its Supervising Contractor. In the event Respondent wishes to change its Supervising Contractor, Respondent shall demonstrate that the proposed contractor has a quality system which complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for

Quality Systems and Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995, or most recent version), 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 subsequently issued guidance or equivalent documentation as determined by EPA. The qualifications of the persons undertaking the Work for Respondent shall be subject to EPA's review, for verification that such persons meet minimum technical background and experience requirements. If EPA disapproves in writing of any person's technical qualifications, Respondent shall notify EPA of the identity and qualifications of the replacements within 30 days of written notice. If EPA subsequently disapproves of the replacement, EPA reserves the right to terminate this Settlement Agreement and to conduct the Work, and to seek reimbursement for costs and penalties from Respondent. During the course of the performance of the Work, Respondent shall notify EPA in writing of any changes or additions in the personnel used to carry out such Work, providing their names, titles, and qualifications. EPA shall have the same right to disapprove changes and additions to personnel as it has hereunder regarding the initial notification.

32. Respondent has designated David Swisher as its Project Coordinator, who shall be responsible for administration of all actions by Respondent required by this Settlement Agreement. To the greatest extent possible, the Project Coordinator shall be present at the Subsite or readily available during the Work. Respondent shall have the right to change its Project Coordinator, subject to EPA's right to disapprove. Respondent shall notify EPA at least 5 working days before such a change is made, unless impracticable, and in no event, no later than the actual day the change is made. Receipt by Respondent's Project Coordinator of any notice or communication from EPA relating to this Settlement Agreement shall constitute receipt by Respondent. Documents to be submitted to the Respondent shall be sent to David.Swisher@carmeusena.com or:

David Swisher, Project Coordinator
Dravo Corporation – Carmeuse Lime and Stone
11 Stanwix Street
Pittsburgh, Pennsylvania 15222

33. EPA has designated Laura Price as its Remedial Project Manager ("RPM"). EPA will notify Respondent of a change of its designated RPM. Except as otherwise provided in this Settlement Agreement, Respondent shall direct all submissions required by this Settlement Agreement to price.laura@epa.gov or:

Laura Price, Remedial Project Manager
U.S. Environmental Protection Agency, Region VII
11201 Renner Boulevard
Lenexa, Kansas 66219

34. EPA's RPM shall have the authority lawfully vested in a RPM and On-Scene Coordinator by the NCP. In addition, the RPM shall have the authority consistent

with the NCP, to halt any Work required by this Settlement Agreement, and to take any necessary response action when she determines that the conditions at the Site may present an immediate endangerment to public health or welfare or the environment. The absence of the RPM from the area under study pursuant to this Settlement Agreement shall not be cause for the stoppage or delay of the Work.

IX. WORK TO BE PERFORMED

35. Respondent shall conduct the Work in accordance with this Settlement Agreement, the SOW, CERCLA, the NCP and EPA guidance, listed in Attachment 1 to the SOW. The general activities that Respondent is required to perform are identified below, followed by a list of plans, reports and other deliverables. The tasks that Respondent must perform are described more fully in the SOW and guidances. The activities, plans, reports and other deliverables identified below shall be developed and submitted in accordance with the schedules herein or established in the SOW, and in full accordance with the standards, specifications, and other requirements, as initially approved or modified by EPA, and as may be amended or modified by EPA from time to time. Respondent shall submit all deliverables required pursuant to this Settlement Agreement to the RPM and to NDEQ. Upon request by EPA, Respondent shall submit in electronic form all portions of any plan, report or other deliverable Respondent is required to submit pursuant to provisions of this Settlement Agreement. All plans, reports and other deliverables will be reviewed and approved by EPA pursuant to Section X (EPA Approval of Plans and Other Submissions).

a. Compilation and Evaluation of Data Report. Within 90 days of the date that Respondent receives analytical results of samples from monitoring wells identified in Section III of the SOW, Respondent shall submit to EPA and NDEQ a Compilation and Evaluation of Data Report in accordance with Section IV of the SOW. EPA will review the report in accordance with Section X of this Settlement Agreement. If EPA, after consultation with NDEQ, determines that additional data needs to be collected to fully delineate the OU 1 plume at the 1×10^{-6} risk level, MCL or other risk level determined by EPA, EPA will notify Respondent to commence preparation for field work by performing the tasks set forth below.

b. Work Plan. Within 45 days after EPA notifies Respondent that field work is necessary, Respondent shall submit to EPA a Work Plan which includes a Field Sampling Plan, Quality Assurance Project Plan ("QAPP"), based on QAPP Guidance CIO 2106-G-05 QAPP, and an Investigation-Derived Waste Plan, consistent with Section V of the SOW. Upon its approval by EPA, pursuant to Section X (EPA Approval of Plans and Other Submissions), the Work Plan shall be incorporated into and become enforceable under this Settlement Agreement.

c. Health and Safety Plan. At the same time the Work Plan is submitted, Respondent shall submit a Health and Safety Plan ("HSP") that ensures the protection of on-site workers and the public during performance of on-site Work required under this Settlement Agreement. The HSP shall be prepared in accordance with EPA's

Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992 or subsequently issued guidance). In addition, the HSP shall comply with all currently applicable Occupational Safety and Health Administration ("OSHA") regulations found at 29 C.F.R. Part 1910. If EPA determines that it is appropriate, the HSP shall also include contingency planning. Respondent shall incorporate all changes to the HSP recommended by EPA and shall implement the HSP during the field work. In lieu of submitting a new HSP, Respondent may amend the Subsite HSP that was submitted for the Phase IV Investigation under Administrative Settlement Agreement and Order on Consent, (Docket No. CERCLA-07-2007-0011). EPA will provide comment on the HSP but does not approve the HSP.

d. Draft and Final RI Report. Within 90 days after collection of the last field sample required by the approved Work Plan, or within 90 days after EPA's approval of the Compilation and Evaluation of Data Report which concludes to EPA's and NDEQ's satisfaction that no additional field work is needed to define OU 1, Respondent shall submit to EPA for review and approval pursuant to Section X (EPA Approval of Plans and Other Submissions), a Draft RI Report consistent with Section VIII of the SOW. The Draft RI Report shall provide an analysis of the nature and extent of contamination based on the data referenced in the Compilation and Evaluation of Data Report and any additional data collected. Respondent shall submit the Final RI Report in accordance with Section X (EPA Approval of Plans and Other Submissions).

e. Baseline Ecological Risk Assessment. Respondent shall perform the Baseline Ecological Risk Assessment in accordance with Section VII of the SOW and applicable EPA guidance, including but not limited to: "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments" (ERAGS, EPA-540-R-97-006, OSWER Directive 9285.7-25, June 1997) or subsequently issued guidance.

f. Treatability Studies. If, after development and screening of alternatives, EPA determines that interim measures already undertaken and monitored natural attenuation by Respondent are not adequate treatment or Respondent determines that treatability studies are needed, Respondent shall conduct such studies as set forth in Paragraph 35g below, in accordance with Section IX of the SOW. In accordance with the schedules or deadlines established in this Settlement Agreement, the SOW and/or the EPA-approved plan, Respondent shall provide EPA with the following plans, reports, and other deliverables for review and approval pursuant to Section X (EPA Approval of Plans and Other Submissions):

(1) Candidate Technologies and Testing Needs Technical Memorandum.

(2) Treatability Testing Work Plan and Sampling and Analysis Plan.

(3) Treatability Study Site Health and Safety Plan, consistent with Paragraph 35e of this Settlement Agreement.

(4) Treatability Study Evaluation Report. Within 30 days after completion of any treatability testing, Respondent shall submit a treatability study evaluation report as described in Section IX of the SOW.

g. Development and Screening of Alternatives. Respondent shall develop an appropriate range of waste management options that will be evaluated through the development and screening of alternatives, as provided in Section X of the SOW. In accordance with the schedules or deadlines established in this Settlement Agreement, the SOW and/or the EPA-approved Work Plan, Respondent shall provide EPA with the following deliverables for review and approval pursuant to Section X of the Settlement Agreement (EPA Approval of Plans and Other Submissions):

(1) Remedial Action Objectives Technical Memorandum.

(2) Alternatives Screening Technical Memorandum.

Alternatively, Respondent may propose for EPA review and approval a focused Feasibility Study based on the interim remedy being employed by Respondent and monitored natural attenuation.

h. Detailed Analysis of Alternatives. Respondent shall conduct a detailed analysis of remedial alternatives, as described in Section XI of the SOW. In accordance with the deadlines or schedules established in this Settlement Agreement and the SOW, Respondent shall provide EPA with the following deliverables:

(1) Individual and Comparative Analysis of Alternatives Memorandum. Respondent shall present a report on comparative analysis to EPA. Within 30 days after receipt of EPA's comments on the Alternatives Screening Technical Memorandum, Respondent will submit a summary of the findings of the remedial investigation and remedial action objectives, and present the results of the nine criteria evaluation and comparative analysis, as described in the SOW.

(2) Draft FS Report. Within 60 days after receipt of EPA's comments on the Individual and Comparative Analysis of Alternatives Memorandum, Respondent shall submit a Draft FS Report for review and comment by EPA and NDEQ, which includes the findings in the Health and Ecological Risk Assessments.

36. Upon receipt of the draft FS report, EPA, in consultation with NDEQ, will evaluate, as necessary, the estimates of the risk to the public and environment that are expected to remain after a particular remedial alternative has been completed. In accordance with the timelines set forth in Section X of this Settlement Agreement, Respondent shall submit a final FS Report to EPA and NDEQ.

37. Modification/Additional Work.

a. If at any time during the implementation of the Work, Respondent

identifies a need for additional data, Respondent shall submit a memorandum documenting the need for additional data to the RPM within 14 days of identification. EPA, in its discretion, will determine whether the additional data collected by Respondent is needed and whether it will be incorporated into plans, reports and other deliverables.

b. In the event of unanticipated or changed circumstances at the Subsite, Respondent shall notify the RPM by telephone within 24 hours of discovery of unanticipated or changed circumstances at the Subsite. In the event that EPA determines that the immediate threat or the unanticipated or unchanged circumstances warrant changes to the Work planned, EPA shall notify Respondent in writing accordingly, provided, however that those modifications or amendments shall not substantively modify the Scope of Work unless agreed to by Respondent. Respondent shall perform the Work as modified or amended by EPA in its written notification.

c. EPA may determine in addition to tasks defined in the SOW, other additional Work may be necessary to develop an RI/FS for a final remedial action at the Subsite. Respondent agrees to perform these response actions in addition to those required by the SOW, including any approved modifications.

d. Respondent shall confirm its willingness to perform any additional Work requested by EPA pursuant to Paragraphs 37(b) in writing to EPA within 14 days of receipt of the EPA request. If Respondent objects to any modification determined by EPA to be necessary pursuant to this Paragraph, Respondent may seek dispute resolution pursuant to Section XV (Dispute Resolution). The SOW shall be modified in accordance with the final resolution of the dispute.

e. In the event that Respondent confirms its willingness to perform the additional Work requested by EPA pursuant to Paragraphs 37(b) and (c), Respondent shall complete the additional Work according to the standards, specifications, and schedule set forth or approved by EPA in an EPA-approved plan. EPA reserves the right to conduct the Work itself at any point, to seek reimbursement from Respondent, and/or to seek any other appropriate relief.

f. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions at the Subsite in accordance with applicable law.

38. Off-Site Shipment of Waste Material. Respondent shall, prior to any off-site shipment of Waste Material from the Subsite to an out-of-state waste management facility, provide written notification of such shipment of Waste Material to the appropriate state environmental official in the receiving facility's state and to EPA's RPM. However, this notification requirement shall not apply to any off-site shipments when the total volume of all such shipments will not exceed 10 cubic yards.

a. Respondent shall include in the written notification the following information: (1) the name and location of the facility to which the Waste Material is to be shipped; (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of transportation. Respondent shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

b. The identity of the receiving facility and state will be determined by Respondent following the award of the contract for performing the Work. Respondent shall provide the information required by subparagraphs (a) and (c) as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

c. Before shipping any hazardous substances, pollutants, or contaminants from the Subsite to an off-site location, Respondent shall obtain EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent shall only send hazardous substances, pollutants, or contaminants from the Subsite to an off-site facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.

39. Progress Reports. In addition to the plans, reports and other deliverables set forth in this Settlement Agreement, and in accordance with Section XII of the SOW, Respondent shall provide to EPA quarterly progress reports by the 10th day of the month, beginning three months after the Effective Date and annual reports, until EPA notifies Respondent that annual reports are no longer required. The fourth quarterly progress report submitted after the Effective Date and for each year thereafter shall serve as the annual report.

40. Emergency Response and Notification of Releases.

a. In the event of any action or occurrence during performance of the Work which causes or threatens a release of Waste Material from the Subsite that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondent shall immediately take all appropriate action. Respondent shall take these actions in accordance with all applicable provisions of this Settlement Agreement, including, but not limited to, the Health and Safety Plan, to prevent, abate or minimize each release or endangerment caused or threatened by the release. Respondent shall also notify the RPM, or in the event of his/her unavailability, the Regional Duty Officer at (913) 281-0991 of the incident or Subsite conditions within 24 hours. In the event that Respondent fails to take appropriate response action as required by this Paragraph, and EPA takes such action instead, Respondent shall reimburse EPA all costs of the response action not inconsistent with the NCP pursuant to Section XVIII (Payment of Response Costs).

b. In addition, in the event of any release of a hazardous substance from the Subsite, Respondent shall notify the RPM or Regional Duty Officer at (913) 281-0991 and the National Response Center at (800) 424-8802 within 24 hours. Respondent shall submit a written report to EPA within 7 days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-to-Know Act of 1986, 42 U.S.C. § 11004, *et seq.*

X. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

41. After review of any plan, report or other item that is required to be submitted for approval pursuant to this Settlement Agreement, in a notice to Respondent, EPA shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions consistent with the SOW; (c) modify the submission to cure the deficiencies consistent with the scope of the SOW; (d) disapprove, in whole or in part, the submission consistent with the scope of the SOW, directing that Respondent modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing Respondent at least one notice of deficiency and an opportunity to cure within 30 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.

42. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Paragraphs 41(a), (b), and (c), Respondent shall proceed to take any action required by the plan, report or other deliverable, as approved or modified by EPA subject only to its right to invoke the dispute resolution procedures set forth in Section XV (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 41 and the submission has a material defect, EPA retains its right to seek stipulated penalties, as provided in Section XX (Stipulated Penalties).

43. Resubmission.

a. Upon receipt of a notice of disapproval, Respondent shall, within 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 XVI, shall accrue during the Dispute Resolution period set forth in Section XV 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 41 and 42.

b. Notwithstanding the receipt of a notice of disapproval, Respondent shall proceed to take any action required by any non-deficient portion of the submission, unless otherwise directed by EPA. Implementation of any non-deficient portion of a submission shall not relieve Respondent of any liability for stipulated penalties under Section XVI (Stipulated Penalties).

c. Respondent shall not proceed further with any subsequent activities or tasks until receiving EPA approval, approval on condition or modification. While awaiting EPA approval, approval on condition or modification of these deliverables, Respondent shall proceed with all other tasks and activities which may be conducted independently of these deliverables, in accordance with the schedule set forth under this Settlement Agreement.

d. For all remaining deliverables not listed above in subparagraph 43c, Respondent shall proceed with all subsequent tasks, activities and deliverables without awaiting EPA approval on the submitted deliverable EPA reserves the right to stop Respondent from proceeding further, either temporarily or permanently, on any task, activity or deliverable at any point during the implementation of the Work.

44. If EPA disapproves a resubmitted plan, report or other deliverable, or portion thereof, EPA may again direct Respondent to correct the deficiencies. EPA shall also retain the right to modify or develop the plan, report or other deliverable consistent with the scope of the SOW. Respondent shall implement any such plan, report, or deliverable as corrected, modified or developed by EPA, subject only to Respondent's right to invoke the procedures set forth in Section XV (Dispute Resolution).

45. If upon resubmission, a plan, report, or other deliverable is disapproved or modified by EPA due to a material defect, Respondent shall be deemed to have failed to submit such plan, report, or other deliverable timely and adequately unless Respondent invokes the dispute resolution procedures in accordance with Section XV (Dispute Resolution) and EPA's action is revoked or substantially modified pursuant to a dispute resolution decision issued by EPA or superceded by an agreement reached pursuant to that Section. The provisions of Section XV (Dispute Resolution) and Section XVI (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 not otherwise revoked, substantially modified or superceded as a result of a decision or agreement reached pursuant to the dispute resolution process set forth in Section XV, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided by Section XVI.

46. In the event that EPA takes over some of the tasks, Respondent shall incorporate and integrate information supplied by EPA into the final reports.

47. All plans, reports, and other deliverables submitted to EPA under this Settlement Agreement shall, upon approval or modification by EPA, be incorporated into and enforceable under this Settlement Agreement. In the event EPA approves or

modifies a portion of a plan, report, or other deliverable submitted to EPA under this Settlement Agreement, the approved or modified portion shall be incorporated into and enforceable under this Settlement Agreement, subject only to Respondent's right to invoke the procedures set forth in Section XV (Dispute Resolution).

48. Neither failure of EPA to expressly approve or disapprove of Respondent's submissions within a specified time period nor the absence of comments shall be construed as approval by EPA.

XI. QUALITY ASSURANCE, SAMPLING, AND ACCESS TO INFORMATION

49. Quality Assurance. Respondent shall assure that Work performed, samples taken and analyses conducted conform to the requirements of the approved Work Plan, the QAPP and guidances identified therein. Respondent shall assure that field personnel used by Respondent are properly trained in the use of field equipment and in chain of custody procedures. Respondent shall only use laboratories which have a documented quality system that complies with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001) or equivalent documentation as determined by EPA.

50. Sampling.

a. All results of sampling, tests, or other data (including raw data) generated by Respondent, or on Respondent's behalf, during the period that this Settlement Agreement is effective, shall be submitted to EPA as set forth in the SOW. EPA will make available to Respondent validated data generated by EPA unless it is exempt from disclosure by any federal or state law or regulation.

b. Respondent shall verbally notify EPA and NDEQ at least 15 days prior to conducting significant field events as described in the Work Plan. At EPA's oral or written request, or the request of EPA's oversight assistant, Respondent shall allow split or duplicate samples to be collected by EPA (and its authorized representatives) of any samples collected in implementing this Settlement Agreement.

51. Access to Information.

a. Respondent shall provide to EPA, upon request, copies of all documents and information within its possession or control or that of its contractors or agents relating to the implementation of this Settlement Agreement, 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. Respondent shall also make available to EPA, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

b. Respondent may assert business confidentiality claims covering part or all of the documents or information submitted to EPA under this Settlement Agreement 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 it is submitted to EPA, or if EPA has notified Respondent that the documents or information is 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 Respondent. Respondent shall segregate and clearly identify all documents or information submitted under this Settlement Agreement for which Respondent asserts business confidentiality claims.

c. Respondent 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 Respondent asserts such a privilege in lieu of providing documents, it shall provide EPA 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 Respondent. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

d. No claim of confidentiality shall be made with respect to any date, 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.

52. In entering into this Settlement Agreement, Respondent waives any objections to any data gathered, generated, or evaluated by EPA, the State or Respondent in the performance of oversight of the Work that has been verified according to the quality assurance/quality control ("QA/QC") procedures required by the Settlement Agreement or any EPA-approved Work Plans.

XII. SITE ACCESS

53. Where any action under this Settlement Agreement is to be performed in areas owned by or in possession of someone other than Respondent, or where Respondent is required to sample wells not owned or controlled by Respondent, Respondent shall use its best efforts to obtain all necessary access agreements as specified in writing by the RPM. Respondent shall immediately notify EPA if, after using its best efforts, it is unable to obtain such agreements. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access. Respondent shall describe in writing its efforts to obtain access. If Respondent cannot obtain access agreements, EPA may either (i) obtain access for Respondent or assist Respondent in

gaining access, to the extent necessary to effectuate the response actions described herein, using such means as EPA deems appropriate; (ii) perform those tasks or activities with EPA contractors; or (iii) terminate the Settlement Agreement. Respondent shall reimburse EPA for all costs and attorney's fees incurred by the United States in obtaining such access, in accordance with the procedures in Section XVIII (Payment of Response Costs). If EPA performs those tasks or activities with EPA contractors and does not terminate the Settlement Agreement, Respondent shall perform all other tasks or activities not requiring access to that property, and shall reimburse EPA for all costs incurred in performing such tasks or activities. Respondent shall integrate the results of any such tasks or activities undertaken by EPA into its plans, reports, and other deliverables.

54. Notwithstanding any provision of this Settlement Agreement, EPA retains all of its access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XIII. COMPLIANCE WITH OTHER LAWS

55. Respondent shall comply with all applicable local, state and federal laws and regulations when performing the Work. No state, local, or federal permit shall be required for any portion of any action conducted entirely on-site, including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the Work is to be conducted off-site and requires a federal or state permit or approval, Respondent shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals. This Settlement Agreement is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

XIV. RETENTION OF RECORDS

56. During the pendency of this Settlement Agreement and for a minimum of 10 years after completion of the Work, Respondent shall preserve and retain all non-identical copies of documents, records, and other information (including documents, records, or other information 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, regardless of any corporate retention policy to the contrary. Until 10 years after completion of the Work, Respondent shall also instruct its contractors and agents to preserve all documents, records, and other information of whatever kind, nature or description relating to performance of the Work.

57. For up to 90 days following the expiration of this document retention period, EPA may request that Respondent deliver any such documents, records, or other information to EPA. Respondent 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 Respondent asserts such a privilege, it shall provide EPA with the following: 1) the title of the document, record, or other information; 2) the date

of the document, record, or other information; 3) the name and title of the author of the document, record, or other information; 4) the name and title of each addressee and recipient; 5) a description of the subject of the document, record, or other information; and 6) the privilege asserted by Respondent. However, no documents, records or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

58. Respondent 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 Subsite since notification of potential liability by EPA and that it has fully complied with any and all EPA requests for information pursuant to Sections 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.

XV. DISPUTE RESOLUTION

59. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally.

60. If Respondent objects to any EPA action taken pursuant to this Settlement Agreement, including billings for Future Response Costs, it shall notify EPA in writing of objection(s) within 15 business days of such action, unless the objection(s) has/have been resolved informally. EPA and Respondent shall have 30 days from EPA's receipt of Respondent's written objection(s) to resolve the dispute (the "Negotiation Period"). The Negotiation Period may be extended at the sole discretion of EPA. Such extension may be granted verbally but must be confirmed in writing. Any agreement reached by the Parties pursuant to this Section shall be in writing and shall, upon signature by the Parties, be incorporated into and become an enforceable part of this Settlement Agreement.

61. If the Parties are unable to reach an agreement within the Negotiation Period, the Parties may appeal the dispute to the EPA Region VII Superfund Division Director, who will issue a written decision following the written submission of each Party's position. EPA's decision shall be incorporated into and become and enforceable part of this Settlement Agreement. Respondent's obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondent shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or EPA's decision, whichever occurs, and regardless of whether Respondent agrees with the decision.

XVI. STIPULATED PENALTIES

62. Respondent shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraph 63 for failure to comply with any of the requirements of this Settlement Agreement specified below unless excused under Section XVII (Force Majeure). "Compliance" by Respondent shall include completion of the Work under this Settlement Agreement or any activities required by this Settlement Agreement, in accordance with the SOW and all applicable requirements of law, within the specified time schedules established by and approved under this Settlement Agreement.

63. Stipulated Penalty Amounts.

a. For failure to submit a timely or adequate RI Report (including Ecological Risk Assessment Attachment) or FS Report required by Paragraphs 35 d, e, g and Paragraph 36.

Penalty Per Violation Per Day	Period of Noncompliance
$1,000.00	1st through 14th day
$1,500.00	15th through 30th day
$3,500.00	31st day and beyond

b. For untimely or inadequate reports, memoranda, and other deliverables required by Paragraphs 39, 40, 50a, 51a, 56, and 57 of this Settlement Agreement and failure to comply with Paragraphs 37, 38, 39, 50b, 53, 55, 72, 74, 95, 96, and 97.

Penalty Per Violation Per Day	Period of Noncompliance
$500.00	1st through 14th day
$1,000.00	15th through 30th day
$2,000.00	31st day and beyond

c. For untimely or inadequate reports, memoranda, and other deliverables required by Paragraphs 35a, b, c, and f of this Settlement Agreement.

Penalty Per Violation Per Day	Period of Noncompliance
$350.00	1st through 14th day
$750.00	15th through 30th day
$ 1,500.00	31st day and beyond

d. For failing to perform Work adequately or timely to such extent that EPA takes over the Work pursuant to Paragraph 80, Respondent shall pay $120,000

as a stipulated penalty but may be reduced by EPA to reflect the Work remaining to be performed at the time of the Work Takeover.

64. 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 noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section X (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 Respondent of any deficiency; and (2) with respect to a decision by the EPA Superfund Division Director designated in Paragraph 61 of Section XV (Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the EPA Superfund Division Director issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.

65. Following EPA's determination that Respondent has failed to comply with a requirement of this Settlement Agreement, EPA may give Respondent written notification of the same and describe the noncompliance. EPA may send Respondent 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 Respondent of a violation.

66. All penalties accruing under this Section shall be due and payable to EPA within 30 days of Respondent's receipt from EPA of a demand for payment of the penalties, unless Respondent invokes the dispute resolution procedures in accordance with Section XV (Dispute Resolution). All payments to EPA under this Section shall be paid by certified or cashier's check(s) made payable to "EPA Hazardous Substances Superfund." shall be mailed to:

U.S. Environmental Protection Agency
P.O. Box 979076
St. Louis, Missouri 63197-9000

The check shall indicate that the payment is for stipulated penalties, and shall reference EPA Region VII and Site/Spill ID Number 07S2, the EPA CERCLA Docket Number CERCLA-07-2013-0011, and the name and address of Respondent. Copies of check(s) paid pursuant to this Section, and any accompanying transmittal letter(s) shall be sent to the RPM, as provided in Paragraph 33, and to Julius Teopaco, EPA Accountant, U.S. EPA Region VII, 11201 Renner Boulevard Lenexa, Kansas 66219.

67. The payment of penalties shall not alter in any way Respondent's obligation to complete performance of the Work required under this Settlement Agreement.

68. Penalties shall accrue as provided in Paragraph 64 during any dispute resolution period, but need not be paid until 15 days after the dispute is resolved by agreement or by receipt of EPA's decision.

69. If Respondent fails to pay stipulated penalties when due, EPA may institute proceedings to collect the penalties, as well as Interest. Respondent shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 66.

70. Nothing in this Settlement Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondent's violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(*l*) of CERCLA, 42 U.S.C. § 9622(*l*), and punitive damages pursuant to Section 107(c)(3), 42 U.S.C. § 9607(c)(3). Provided, however, that EPA shall not seek civil penalties pursuant to Section 122(*l*) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of willful violation of this Order or in the event that EPA assumes performance of a portion or all of the Work pursuant to Section XX (Reservation of Rights by EPA), Paragraph 80. Notwithstanding any provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

XVII. FORCE MAJEURE

71. Respondent agrees to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless performance is delayed by a *force majeure.* For purposes of this Settlement Agreement, *force majeure* is defined as any event arising from causes beyond the control of Respondent or of any entity controlled by Respondent, including but not limited to their contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite Respondent's best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work or increased cost of performance.

72. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a *force majeure*, Respondent shall notify EPA orally within 48 hours of when Respondent first knew that the event might cause a delay. Within five days thereafter, Respondent shall provide to EPA in writing 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; Respondent's rationale for attributing such delay to a *force majeure* if they intend to assert such a claim; and a statement as to whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the

above requirements shall preclude Respondent 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.

73. If EPA agrees that the delay or anticipated delay is attributable to a *force majeure*, the time for performance of the obligations under this Settlement Agreement that are affected by the *force majeure* will be extended by EPA for such a time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* shall not, of itself, extend the time for performance of any other obligation. IF EPA does not agree that the delay or anticipated delay has been or will be caused by a *force majeure*, EPA will notify Respondent in writing of the length of the extension, if any, for performance of the obligations affected by the *force majeure*.

XVIII. PAYMENT OF RESPONSE COSTS

74. Payment of Future Response Costs.

a. Respondent shall pay EPA all Future Response Costs not inconsistent with the NCP. On a periodic basis, EPA will send Respondent a bill requiring payment that includes a standard Regionally-prepared cost summary, which includes direct and indirect costs incurred by EPA and its contractors. Respondent shall make all payments within 30 days of receipt of each bill requiring payment, except as otherwise provided in Paragraph 75 of this Settlement Agreement. Respondent shall make all payments required by this Paragraph that are less than $25,000 by a certified or cashier's check or checks made payable to "EPA Hazardous Substance Superfund" referencing the name and address of Respondent and EPA Site/Spill ID number 07S2. Respondent shall send check(s) to:

U.S. Environmental Protection Agency
P.O. Box 979076
St. Louis, Missouri 63197-9000

Respondent shall make payments that are $25,000 or greater by wire transfer to the order of the Hazardous Substance Response Fund and shall annotate the transfer: Hastings Ground Water Contamination Site Colorado Avenue Subsite 07S2, bill number _____. The wire transfer shall be done through the Federal Reserve Bank of New York using the following information:

ABA=021030004
Account= 68010727
SWIFT Address = FRNYUS33
33 Liberty Street
New York, New York 10045

Field Tag 4200 of the Fedwire message should read:
D 68010727 Environmental Protection Agency

b. At the time of payment, Respondent shall send written notice that payment has been made to Mr. Julius Teopaco, EPA Accountant and to Ms. Laura Price, EPA Remedial Project Manager, both located at EPA Region VII, 11201 Renner Blvd., Lenexa, KS 66219.

c. The total amount to be paid by Respondent pursuant to Paragraph 74 shall be deposited in the Hastings Ground Water Contamination Site Special Account within the EPA Hazardous Substance Superfund 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.

75. If Respondent does not pay Future Response Costs within 30 days of Respondent's receipt of a bill, Respondent shall pay Interest on the unpaid balance of Future Response Costs. The Interest on unpaid Future Response Costs shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment. If EPA receives a partial payment, Interest shall accrue on any unpaid balance. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondent's failure to make timely payments under this Section, including but not limited to, payments of stipulated penalties pursuant to Section XVI.

76. Respondent may contest payment of any Future Response Costs under Paragraph 74 if it determines that EPA has made an accounting error (which would include EPA's improper characterization of costs as Future Response Costs) or if it believes EPA incurred excess costs as a direct result of an EPA action that was inconsistent with the NCP. Such objection shall be made in writing within 30 days of receipt of the bill and must be sent to the EPA Project Coordinator. Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection, Respondent shall, within the 30 day period, pay all uncontested Future Response Costs to EPA in the manner described in Paragraph 74. Simultaneously, Respondent shall establish an interest-bearing escrow account in a federally-insured bank and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Respondent shall send to the RPM a copy of the transmittal letter and check paying the uncontested 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, Respondent shall initiate the Dispute Resolution procedures in Section XV (Dispute Resolution). If EPA prevails in the dispute, within 5 business days of the resolution of the dispute, Respondent shall pay the sums due (with accrued interest) to EPA in the manner described in Paragraph 74. If Respondent prevails concerning any aspect of the contested costs, Respondent shall pay that portion of the costs (plus associated accrued

interest) for which it did not prevail to EPA in the manner described in Paragraph 74. Respondent 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 XV (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondent's obligation to reimburse EPA for its Future Response Costs.

XIX. COVENANT NOT TO SUE BY EPA

77. In consideration of the actions that will be performed and the payments that will be made by Respondent under the terms of this Settlement Agreement, and except as otherwise specifically provided in this Settlement Agreement, EPA covenants not to sue or to take administrative action against Respondent pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work and Future Response Costs as these terms are defined in this Settlement Agreement. This covenant not to sue shall take effect upon the Effective Date and is conditioned upon the complete and satisfactory performance by Respondent of all obligations under this Settlement Agreement, including, but not limited to, payment of Future Response Costs pursuant to Section XVIII. This covenant not to sue extends only to Respondent and does not extent to any other person.

XX. RESERVATIONS OF RIGHTS BY EPA

78. Except as specifically provided in this Settlement Agreement, nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Settlement Agreement, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law.

79. The covenant not to sue set forth in Section XIX above does not pertain to any matters other than those expressly identified therein. EPA reserves, and this Settlement Agreement is without prejudice to, all rights against Respondent with respect to all other matters, including, but not limited to:

a. claims based on a failure by Respondent to meet a requirement of this Settlement Agreement;

b. liability for costs not included within the definition of Future Response Costs;

c. liability for performance of response action other than the Work;

d. criminal liability;

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

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

g. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Subsite.

80. Work Takeover. In the event EPA determines that Respondent has ceased implementation of any portion of the Work, is seriously or repeatedly deficient or late in the performance of the Work, or is implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portion of the Work as EPA determines necessary. Respondent may invoke the procedures set forth in Section XV (Dispute Resolution) to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by EPA in performing the Work pursuant to this Paragraph shall be considered Future Response Costs that Respondent shall pay pursuant to Section XVIII (Payment of Response Costs). Notwithstanding any other provision of this Settlement Agreement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

XXI. COVENANT NOT TO SUE BY RESPONDENT

81. Respondent covenants not to sue and agrees not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, Future Response Costs, or this Settlement Agreement, including but not limited to:

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;

b. any claim arising out of the Work or arising out of the response actions for which the Future Response Costs have or will be incurred, including any claim under the United States Constitution, the Nebraska 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; or

c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. § 9607 and 9613, relating to the Work or payment of Future Response Costs.

82. These covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 67 and 68, but only to the extent that Respondent's claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

83. Nothing in this Agreement shall be deemed to constitute approval or 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).

XXII. OTHER CLAIMS

84. By issuance of this Settlement Agreement, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent.

85. Except as expressly provided in Section XIX (Covenant Not to Sue by EPA), nothing in this Settlement Agreement constitutes a satisfaction of or release from any claim or cause of action against Respondent or any person not a party to this Settlement Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

86. No action or decision by EPA pursuant to this Settlement Agreement shall give rise to any right to judicial review except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXIII. EFFECT OF SETTLEMENT/CONTRIBUTION

87. Nothing in this Settlement Agreement shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Settlement Agreement. Nothing in this Settlement Agreement diminishes the right of the United States, 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 action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

88. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), and that is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), or as may be otherwise provided by law, for "matters addressed" in this Settlement Agreement. The "matters addressed" in this Settlement Agreement are the Work and Future Response Costs. The Parties further agree that this Settlement Agreement constitutes an administrative

settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B), pursuant to which Respondent has, as of the Effective Date, resolved its liability to the United States for the Work and Future Response Costs.

89. Respondent shall, with respect to any suit or claim brought by it for matters related to this Settlement Agreement, notify EPA in writing no later than 60 days prior to the initiation of such suit or claim. Respondent also shall, with respect to any suit or claim brought against it for matters related to this Settlement Agreement, notify EPA in writing within 10 days after service of the complaint or claim upon it. In addition, Respondent shall notify EPA within 10 days after service or receipt of any Motion for Summary Judgment and within 10 days after receipt of any order from a court setting a case for trial, for matters related to this Settlement Agreement.

90. In any subsequent administrative or judicial proceeding initiated by EPA, or by the United States on behalf of EPA, for injunctive relief, recovery of response costs, or other relief relating to the Site, Respondent 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 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 covenant by EPA set forth in Section XIX.

91. Effective upon signature of this Settlement Agreement by Respondent, Respondent agrees that the time period commencing on the date of its signature and ending on the date EPA receives from Respondent the payment(s) required by Section XVIII (Payment of Response Costs) and, if any, Section XVI (Stipulated Penalties) shall not be included in computing the running of any statute of limitations potentially applicable to any action brought by the United States related to the "matters addressed" as defined in Paragraph 88 and that, in any action brought by the United States related to the "matters addressed," such Respondent will not assert, and may not maintain, any defense or claim based upon principles of statute of limitations, waiver, laches, estoppel, or other defense based on the passage of time during such period.

XXIV. INDEMNIFICATION

92. Respondent shall indemnify, save and hold harmless the United States, its officials, agents, contractors, subcontractors, employees and representatives from all claims or causes of action arising from, or on account of negligent or other wrongful acts or omissions of Respondent, their officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Settlement Agreement. In addition, Respondent agrees to pay the United States all costs incurred by the United States, 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 based on negligent or other wrongful acts or omissions of Respondent, 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 Settlement Agreement. The

United States shall not be held out as a party to any contract entered into by or on behalf of Respondent in carrying out activities pursuant to this Settlement Agreement. Neither Respondent nor any such contractor shall be considered an agent of the United States.

93. The United States shall give Respondent notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondent prior to settling such claim.

94. Respondent waives all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between Respondent and any person for performance of Work on or relating to the Site. In addition, Respondent shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Respondent and any person for performance of Work on or relating to the Site.

XXV. INSURANCE

95. At least 60 days prior to commencing any field work under this Settlement Agreement, Respondent shall secure, and shall maintain for the duration of this Settlement Agreement, comprehensive general liability insurance and automobile insurance with limits of two million dollars, combined single limit, naming the EPA as an additional insured. Within the same period, Respondent shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondent shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Settlement Agreement, Respondent 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 field work on behalf of Respondent in furtherance of this Settlement Agreement. If Respondent demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in equal or lesser amount, then Respondent needs to provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XXVI. FINANCIAL ASSURANCE

96. Respondent shall establish and maintain financial security for the benefit of EPA, in the amount of $120,000 in one or more of the forms listed below, to secure the full and final completion of Work by Respondent. Respondent shall send written evidence of the financial security established, within 60 days of the Effective Date. If, after review of the Compilation of Data and Evaluation Report, EPA determines field work not already specified herein or in the SOW is necessary, EPA will notify Respondent of the amount of financial assurance that will be necessary, taking into account an estimate of the cost of anticipated field work and the work already completed.

a. surety bond unconditionally guaranteeing payment and/or performance of the Work;

b one or more irrevocable letters of credit, payable to or at the direction of EPA, issued by financial institution(s) acceptable in all respects to EPA equaling the total estimated cost of Work;

c. a trust fund administered by a trustee acceptable in all respects to EPA; a policy of insurance issued by an insurance carrier acceptable in all respects to EPA, which ensures payment and/or performance of the Work;

e. a corporate guarantee to perform the Work provided by one or more parent corporations or subsidiaries of Respondent, or by one or more unrelated corporations that have a substantial business relationship with Respondent; including a demonstration that any such company satisfies the financial test requirements of 40 C.F.R. Part 264.143(f); and/or

f. a corporate guarantee to perform the Work by Respondent, including demonstration that Respondent satisfies the requirements of 40 C.F.R. Part 264.143(f).

97. Any and all financial assurance instruments provided pursuant to this Section shall be in form and substance satisfactory to EPA, determined in EPA's sole discretion. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section (including, without limitation, the instrument(s) evidencing such assurances) are inadequate, Respondent shall, within 30 days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 96 above. In addition, if at any time EPA notifies Respondent that the anticipated cost of completing the Work has increased (e.g. field work is required), then within 30 days of such notification, Respondent shall obtain and present to EPA for approval a revised form of financial assurance (otherwise acceptable under this Section) that reflects such cost increase. Respondent's inability to demonstrate financial ability to complete the Work shall in no way excuse performance of any activities required under this Settlement Agreement.

98. If Respondent seeks to ensure completion of the Work through a guarantee pursuant to Paragraphs 96(e) and (f) of this Settlement Agreement, Respondent shall (i) demonstrate to EPA's satisfaction that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f); and (ii) resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the Effective Date, to EPA. For the purposes of this Settlement Agreement, wherever 40 C.F.R. Part 264.143(f) references "sum of current closure and post-closure cost estimates and the current plugging and abandonment costs estimates," the current cost estimate of $120,000 for the Work at the Subsite shall be used in relevant financial test calculations.

99. If, after the Effective Date, Respondent can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 96 of this Section, Respondent may, on any anniversary date of the Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondent shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security after receiving written approval from EPA. In the event of a dispute, Respondent may seek dispute resolution pursuant to Section XV (Dispute Resolution). Respondent may reduce the amount of security in accordance with EPA's written decision resolving the dispute.

100. Respondent may change the form of financial assistance under this Section at any time, upon notice to and prior written approval by EPA, provided that EPA determines that the new form of assurance meets the requirements of this Section. In the event of a dispute, Respondent may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

XXVII. INTEGRATION/APPENDICES

101. This Settlement Agreement, its appendices and any deliverables, technical memoranda, specifications, schedules, documents, plans or reports that will be developed pursuant to this Settlement Agreement and become incorporated into and enforceable under this Settlement Agreement constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. The following appendices are attached to and incorporated into this Settlement Agreement.

"Appendix A" is the SOW.
"Appendix B" is the Report of Contaminants of Concern.
"Appendix C" is a Map depicting the Site and the Subsite.

XVIII. ADMINISTRATIVE RECORD

102. Respondent shall submit to EPA documents developed during the course of implementing the Work upon which selection of a response action may be based. Upon request of EPA, Respondent shall provide copies of plans, task memoranda for further action, quality assurance memoranda and audits, raw data, field notes, laboratory analytical reports and other reports. Upon request of EPA, Respondent shall additionally submit any previous studies conducted under state, local or other federal authorities relating to selection of a response action, and all communications between Respondent and state, local or other federal authorities concerning selection of a response action.

XXIX. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

103. This Settlement Agreement shall be effective on the date it is signed by the Director of the Superfund Division or his/her delegate. The Effective Date shall also serve as the date of termination of the Administrative Settlement Agreement and Order on Consent, Docket No. CERCLA 07-2007-0011 (Phase IV Settlement Agreement), as amended in 2011.

104. This Settlement Agreement may be amended by mutual agreement of EPA and Respondent. Amendments shall be in writing and shall be effective when signed by EPA. The RPM does not have the authority to sign amendments to the Settlement Agreement, except that with respect to a modification to the schedule set forth in the SOW, the RPM has such authority.

105. No informal advice, guidance, suggestion, or comment by the RPM or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondent shall relieve Respondent of its obligation to obtain any formal approval required by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement, unless it is formally modified.

XXX. NOTICE OF COMPLETION OF WORK

106. When EPA determines that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by this Settlement Agreement, including but not limited to, payment of Future Response Costs or record retention, EPA will provide written notice to Respondent. If EPA determines that any such Work has not been completed in accordance with this Settlement Agreement, EPA will notify Respondent, provide a list of the deficiencies, and require Respondent to correct such deficiencies, in accordance with Paragraph 37 (Modification /Additional Work).

AGREED this __ day of _____, 2013.

For Respondent Dravo Corporation

By: _____

Title: VP & General Counsel

Date: October 28, 2013

ORDERED AND AGREED this 28 day of October, 2013.

BY: _____ Date: 10/28/13
Cecilia Tapia, Director
Superfund Division
Region VII
U.S. Environmental Protection Agency

Audrey B. Asher Date: 10/28/13
Audrey B. Asher
Senior Counsel
Region VII
U.S. Environmental Protection Agency

APPENDIX A

APPENDIX A STATEMENT OF WORK
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
Hastings Ground Water Contamination Site, Colorado Avenue Subsite Operable Unit 1
Hastings, Nebraska

I. PURPOSE

The purpose of this Statement of Work ("SOW") is to set forth the requirements for completing the Remedial Investigation ("RI") and performing the Feasibility Study ("FS") for a final remedial action at the Colorado Avenue Subsite ("Subsite"), Operable Unit 1 ("OU 1") of the Hastings Ground Water Contamination Site located in Adams County, Nebraska ("the Site"). The Site is made up of seven subsites, within the city of Hastings and east of Hastings in Adams County. The source of the Colorado Avenue Subsite contamination is a former manufacturing property that had been located at 108 South Colorado Avenue. Soil remediation around that property, known as Zone 1, is complete. Soil remediation immediately east of the former manufacturing facility is presently ongoing (Zone 2). The ground water contaminant plume, OU 1, emanating from the source, is traveling generally eastward with the regional ground water flow and extends several miles to the vicinity of Maxon Avenue, Adams County.

To comply with the EPA's guidance cited in Attachment 1 to this SOW, an RI Report is required which fully evaluates the nature and extent of hazardous substances, pollutants or contaminants at and/or from the Subsite, includes an assessment of the risk which the hazardous substances, pollutants or contaminants present for human health and the environment, and provides sufficient data to develop and evaluate effective remedial alternatives. The FS Report shall evaluate alternatives for addressing the impact to human health and the environment from hazardous substances, pollutants or contaminants at the Subsite. The RI Report, the FS Report and additional deliverables as defined herein shall be provided by Respondent in conformance with the schedule in this SOW.

Respondent shall prepare the RI and FS Report in compliance with the Settlement Agreement, this SOW, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 C.F.R. Part 300) as amended, and all requirements and guidance for RI/FS studies and reports, including those listed in Attachment 1.

As specified in CERCLA Section 104(a)(1), as amended, EPA, with assistance from the Nebraska Department of Environmental Quality ("NDEQ"), will provide oversight of Respondent's activities throughout the RI and FS work, including all field activities. Respondent shall support EPA's initiation and conduct of activities related to the implementation of oversight activities, in consultation with the NDEQ. The parties will meet and confer on an as needed basis to resolve keys issues in advance of document development and completion.

II. REMEDIAL ACTION OBJECTIVES

The RI/FS shall support EPA's selection of a final remedial action for OU 01 of the Subsite. The final remedial action shall:

- Return the OU 1 ground water to its expected beneficial uses wherever practicable within a reasonable time frame;

- Prevent exposure to contaminated ground water above the maximum contaminant levels ("MCLs") established under the Safe Drinking Water Act, 42 U.S.C. §§ 300f *et seq.*, for the Contaminants of Concern ("COCs") set forth in Appendix B to the Settlement Agreement, or, if determined by EPA, after consultation with the State, that i) compliance with an MCL is demonstrated by Respondent to be technically impracticable from an engineering perspective, or if ii) an MCL is based on a State standard, requirement ,criteria or limitation which has not been consistently applied at other remedial actions within the State, such alternate concentration limit as meets the requirements of CERCLA Sections 121(4)(D) and/or (E) or where there is no MCL for a COC, the acceptable risk level; and

- Prevent or minimize further migration of the ground water contaminant plume and actual or potential impacts to drinking water supplies and/or ecosystems (e.g., ground water impacts to surface water, sediments, organisms and/or the food chain).

III. STRATEGY FOR ACHIEVING REMEDIAL OBJECTIVES

The strategy for achieving the remedial objectives in Section II above and for the general management of the work required by the Settlement Agreement shall include the following:

- Review ground water data collected in connection with this Subsite, with particular focus on trichloroethene ("TCE"); review the ground water data collected for the North Landfill Subsite and FAR-MAR-CO Subsite.

- Review the Human Health Risk Assessment to be conducted by EPA.

- Perform an Ecological Risk Assessment.

- Collect additional data as needed to develop the RI Report which shall fully characterize the nature and extent of the OU 1 ground water contamination, support the risk assessments, and provide sufficient data for the identification and evaluation of remedial alternatives for a final remedial action at this Subsite. Monitoring wells to

be sampled on a semi-annual basis to assist with delineation efforts include: DW-01D, DW-01M, DW-02D, DW-02M, DW-03D, DW-03M, DW-04D, DW-04M, DW-05D, DW-05M, MQ-10, MQ-11, MQ-12, MQ-13, MW2009-1S, MW2009-1D, GM-2S, GM-2D, MW-17, MW-27 (3 depth levels), MW-28R, and NP-001R. These monitoring wells will be sampled during the first year of sampling (two rounds). In addition, monitoring wells DW-01D, DW-01M, DW-02D, DW-02M, DW-03D, DW-03M, DW-04D, DW-04M, DW-05D, DW-05M, GM-2S, GM-2D, MW-17, MW-27, MW-28R, and NP-001R shall be sampled for 1,4-dioxane. If 1,4-dioxane is not present after the first year of sampling, no further sampling for 1,4-dioxane shall be required. If 1,4-dioxane is detected in any of the above listed monitoring wells, then additional monitoring wells associated with the North Landfill and FAR-MAR-CO subsites shall also be sampled for 1,4-dioxane in subsequent sampling events. After the first year of sampling, Dravo may present data to support a request that further sampling for 1,4-dioxane cease. EPA will determine whether and to what extent future sampling for 1,4-dioxane will be required. A monitoring report shall be submitted to EPA after each round of sampling.

- Perform a Feasibility Study that identifies and evaluates alternatives for a final remedial action to protect human health and the environment by preventing, eliminating, controlling or mitigating the release or threatened release of hazardous substances, pollutants, or contaminants at and from the Subsite.

IV. COMPILING AND EVALUATING EXISTING DATA

Within 90 days of the date that Respondent receives analytical results of samples from monitoring wells identified in Section III hereof, Respondent shall review existing historical, hydrogeologic and analytical data for this Subsite, referenced in Paragraphs 11 through 22 of the Settlement Agreement as well as all other data pertaining to OU 1. Respondent shall summarize data relating to the varieties and quantities of hazardous substances, pollutants and contaminants released at the Subsite, past disposal practices, the results of previous sampling activities, information about past response actions and information known about the extent of the Colorado Avenue Subsite plume after the Phase IV investigation concluded. Respondent shall submit a Compilation and Evaluation of Data Report which contains a narrative section summarizing the historical disposal practices and response actions; a section consisting of analytical data tables, site maps, monitoring well location maps, cross-sections maps, and groundwater concentration maps with references to the source documents to present the analytical data; and a final section which sets forth Respondent's conclusion as to whether or not the existing data presented fully delineates OU 1 and the reasons for that conclusion. EPA will review the report in accordance with Section X of the Settlement Agreement. If Respondent concludes that the existing data fully delineates OU 1, EPA will evaluate that position and if EPA agrees, Respondent shall proceed to draft the Baseline Ecological Risk Assessment, in accordance with Section VII of this SOW. If EPA concludes that additional data is necessary to delineate the OU 1 plume at the 1×10^{-6}, MCL level or other acceptable risk level, EPA will identify the additional data that needs to be collected. Respondent

shall proceed to collect data in accordance with procedures described in Sections V and VI of this SOW, and draft the Baseline Ecological Risk Assessment addressed in Section VII.

V. RI/FS PLANNING DOCUMENTS

In accordance with Section XII of this SOW, Schedule, Respondent shall submit draft RI and FS Planning Documents listed below to EPA, with copies to NDEQ. Respondent shall prepare the RI and FS Planning Documents as described in "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA," October, 1988. EPA will review the Work Plan in accordance with Section X of the Settlement Agreement, except for the Health and Safety Plan which EPA does not approve.

The Work Plan shall include:

- Field Sampling Plan ("FSP") to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols and that the data meet Data Quality Objectives. The FSP will include sampling objectives, sample location and frequency, sampling equipment and procedures, and sample handling and analysis. All sampling and analyses performed shall conform to EPA direction, approval, and guidance regarding sampling, quality assurance/quality control ("QA/QC"), data validation, and chain of custody procedures.

- Quality Assurance Project Plan ("QAPP") consistent with Paragraph 49 of the Settlement Agreement or with the Uniform Federal Policy for Implementing Environmental Quality Systems (UFP-QS), the Uniform Federal Policy for Quality Assurance Project Plans, (UFP-QAPP) Manual, the UFP-QAPP Workbook, and the UFP-QAPP Compendium to address sampling procedures, sample custody, analytical procedures, and data reduction, validation, reporting and personnel qualifications. The QAPP may include Field-Based Analytical Methods, if appropriate and scientifically defensible.

- Investigation-Derived Waste ("IDW") Plan to characterize and dispose of IDW in accordance with local, state, and federal regulations and guidance (see Guide to Management of Investigation-Derived Wastes, OSWER 9345.3-03FS, January 1992).

- Health and Safety Plan as described in Paragraph 35.c of the Settlement Agreement.

- Schedule for implementing each element of the Work Plan identified above.

At the same time the Work Plan is submitted, and after consulting with NDEQ, Respondent shall submit a list of state and federal applicable or relevant and appropriate requirements ("ARARs"), including chemical-specific, location-specific and action-specific, as appropriate. This list may be further refined in the FS.

EPA will review the Work Plan and list of ARARs, in accordance with Section X of the Settlement Agreement.

VI. IMPLEMENTATION OF FIELD WORK

Respondent shall collect additional data identified by EPA in its review of the Compilation and Evaluation of Data Report and shall follow the EPA-approved Work Plan, in accordance with the schedule agreed upon with EPA.

VII. ECOLOGICAL RISK ASSESSMENT

Simultaneous with the submittal of the RI Report, described in Section VIII below, Respondent shall submit a Baseline Ecological Risk Assessment Report to EPA and NDEQ, for review and approval by EPA. In the Ecological Risk Assessment Report, Respondent shall evaluate and assess the risk to the environment posed by the COCs. Respondent shall prepare the Ecological Risk Assessment Report in accordance with EPA guidance including, at a minimum: "Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments," (EPA-540-R-97-006, June 1997), OSWER Directive 9285.7-25 and shall follow the guidelines outlined below:

- Conceptual Exposure/Pathway Analysis. Critical exposure pathways (e.g., surface water) shall be identified and analyzed. The proximity of COCs to exposure pathways and their potential to migrate into critical exposure pathways shall be assessed.

- Characterization of Potential Receptors. Respondent shall identify and characterize environmental exposure pathways.

- Selection of Chemicals, Indicator Species, and End Points. In preparing the assessment, Respondent shall select representative chemicals, indicator species (species that are especially sensitive to environmental contaminants), and end points on which to concentrate.

- Exposure Assessment. Respondent shall identify the magnitude of actual or potential environmental exposures, the frequency and duration of these exposures, and the routes by which receptors are exposed. The exposure assessment shall include an evaluation of the likelihood of such exposures occurring and shall provide the basis for the development of acceptable exposure levels. In developing the exposure assessment, Respondent shall develop reasonable maximum estimates of exposure for both current land use conditions and potential land use conditions at the Subsite.

- Toxicity Assessment/Ecological Effects Assessment. Respondent shall address toxicity and ecological effects, assessing the types of adverse environmental effects

associated with chemical exposures, the relationships between magnitude of exposures and adverse effects, and the related uncertainties for contaminant toxicity (e.g., weight of evidence for a chemical's carcinogenicity).

- Risk Characterization. During risk characterization, Respondent shall compare chemical-specific toxicity information, combined with quantitative and qualitative information from the exposure assessment, to measured levels of contaminant exposure levels and the levels predicted through environmental fate and transport modeling. These comparisons shall determine whether concentrations of COCs at or near the Subsite are affecting or could potentially affect the environment.

- Identification of Limitations/Uncertainties. Respondent shall identify critical assumptions (e.g., background concentrations and conditions) and uncertainties in the report.

- Subsite Conceptual Model. Based on contaminant identification, exposure assessment, toxicity assessment, and risk characterization, Respondent shall develop a conceptual model of the Subsite.

VIII. RI REPORT

In accordance with the schedule approved by EPA, Respondent shall submit two paper copies and an electronic copy of a draft RI Report to EPA and NDEQ for review and approval by EPA. The draft RI Report shall accurately establish the extent of contamination and the physical boundaries of the contamination. The report shall include ground water analytical data in tables, cross-section maps and other maps that depict groundwater movement and concentration that were collected from i) Colorado Avenue ground water wells including wells installed by Respondent during its Phase IV investigation; ii) FAR-MAR-CO wells as reported in the FAR-MAR-CO 1993 RI Report, 2006 FS Report, 2011 Interim RA Report and 2012 Quarterly Progress Report; and iii) North Landfill wells as reported in the North Landfill RI Report (Volumes I and II), FS Report, Interim RA Report, 2012 (2nd Quarter) Progress Report, and the Well D Reports. Respondent shall refer to the RI/FS guidance for an outline of the report format and contents.

Respondent shall submit a draft RI Report to EPA for review and approval which includes the following:

- Executive Summary

- Subsite Background. Respondent shall assemble and review available facts about the regional conditions and conditions specific to the Colorado Avenue Subsite.

- Subsite Characteristics
  - Geology
  - Hydrogeology
  - Meteorology
  - Demographics and Land Use
  - Ecological Assessment
  - Hydrodynamics

- Nature and Extent of Contamination
  - Contaminant Sources
  - Contaminant Distribution and Trends

- Fate and Transport
  - Contaminant Characteristics
  - Transport Processes
  - Contaminant Migration Trends

- Human Risk Assessment (Conducted by EPA)

- Ecological Risk Assessment

  - Hazard Identification (sources)
  - Dose-Response Assessment
  - Prepare Conceptual Exposure/Pathway Analysis
  - Characterization of Site and Potential Receptors
  - Selection of Chemicals, Indicator Species, and End Points
  - Exposure Assessment
  - Toxicity Assessment/Ecological Effects Assessment
  - Risk Characterization
  - Identification of Limitations/Uncertainties
  - Site Conceptual Model

- Summary and Conclusions

Following comment by EPA, in accordance with Section X of the Settlement Agreement, Respondent shall prepare a final RI report which satisfactorily addresses EPA's comments.

IX. TREATABILITY STUDIES

If EPA or Respondent determines that treatability testing is necessary, Respondent shall conduct treatability studies as described in this section of the SOW. In addition, if applicable, Respondent shall use the testing results and operating conditions in the detailed design of the selected remedial technology. Respondent shall perform the following activities.

A. Determine Candidate Technologies and of the Need for Testing

Respondent shall submit a Candidate Technologies and Testing Needs Technical Memorandum, to EPA and NDEQ for review and approval by EPA, which identifies candidate technologies for a treatability studies program no later than at the time of submittal of the draft RI Report. The list of candidate technologies shall cover the range of technologies required for alternatives analysis. Respondent shall determine and refine the specific data requirements for the testing program during Subsite characterization and the development and screening of remedial alternatives.

Within the Candidate Technologies and Testing Needs Technical Memorandum, Respondent shall conduct a literature survey to gather information on the performance, relative costs, applicability, removal efficiencies, operation and maintenance (O&M) requirements, and implementability of candidate technologies. Respondent shall conduct treatability studies except where Respondent can demonstrate to EPA's satisfaction that they are not needed.

B. Treatability Testing and Deliverables

1. Treatability Testing Work Plan and Sampling and Analysis Plan ("SAP")

If EPA or Respondent determines that treatability testing is necessary, EPA will decide on the type of treatability testing to use (e.g., bench versus pilot). Within 30 days of a request of EPA, Respondent shall submit a paper copy and an electronic copy of the Treatability Testing Work Plan and a SAP, to EPA and NDEQ for review and approval by EPA, that describes the Subsite background, the remedial technology(ies) to be tested, test objectives, experimental procedures, treatability conditions to be tested, measurements of performance, analytical methods, data management and analysis, health and safety, residual waste management, and a schedule. Respondent shall document the Data Quality Objectives for treatability testing as well. If pilot scale treatability testing is to be performed, the Treatability Study Work Plan shall describe pilot plant installation and start-up, pilot plant operation and maintenance procedures, operating conditions to be tested, a sampling plan to determine pilot plant performance, and a detailed health and safety plan. If testing is to be performed off-site, the plans shall address all permitting requirements.

2. Treatability Study Health and Safety Plan

If the Health and Safety Plan is not adequate for defining the activities to be performed during the treatability tests, Respondent shall submit a separate or second amended Health and Safety Plan consistent with Paragraph 35.c of the Settlement Agreement. EPA, in consultation with NDEQ, reviews, but does not "approve" the Treatability Study Health and Safety Plan.

3. Treatability Study Evaluation Report

Following the completion of the treatability testing, Respondent shall analyze and interpret the testing results in a technical report to EPA with a copy to NDEQ. Respondent shall submit the treatability study report according to the schedule in the Treatability Study Work Plan. This report may be a part of the Site Characterization Technical Memorandum, the RI Report or submitted as a separate deliverable. The Treatability Study Evaluation Report shall evaluate each technology's effectiveness, implementability, cost, and actual results as compared with predicted results. The report shall also evaluate full scale application of the technology, including a sensitivity analysis identifying the key parameters affecting full-scale operation.

X. DEVELOPMENT AND SCREENING OF ALTERNATIVES

Respondent shall develop and screen an appropriate range of remedial alternatives that will be evaluated in the FS. This range of alternatives shall include, as appropriate, options in which treatment is used to reduce the toxicity, mobility, or volume of wastes, but which vary in the types of treatment, the amount treated, and the manner in which long-term residuals or untreated wastes are managed; options involving containment with little or no treatment; options involving both treatment and containment; and a no-action alternative. Respondent shall perform the activities as a function of the development and screening of remedial alternatives. Respondent shall prepare and submit a copy to EPA and NDEQ as a technical memorandum for this task.

A. Alternatives Development and Screening Deliverables

Respondent shall prepare and submit three technical memoranda for this task, listed below. These memos may be combined into a single memo as appropriate.

1. Remedial Action Objectives Technical Memorandum

Respondent shall submit a Remedial Action Objectives Technical Memorandum to EPA and NDEQ, for review and approval by EPA. Respondent shall submit the Remedial Action Objectives Technical Memorandum at the same time as the Draft RI Report. Based on the baseline human health and ecological risk assessments, Respondent shall refine the preliminary remedial action objectives, document the rationale for the refinement of the preliminary remedial

action objectives, and provide the Subsite-specific remedial action objectives for each chemical in each medium in a Remedial Action Objectives Technical Memorandum. The remedial action objectives shall specify the contaminants and media of concern, potential exposure pathways and receptors; and contaminant level or range of levels (at particular locations for each exposure route) that are protective of human health and the environment. The refined remedial action objectives shall be developed by considering the factors set forth in 40 C.F.R. § 300.430(e)(2)(i). Respondent shall incorporate EPA's comments on the Remedial Action Objectives Technical Memorandum in the Alternatives Screening Technical Memorandum.

2. Alternatives Screening Technical Memorandum

Respondent shall submit a paper copy and an electronic copy of the Alternatives Screening Technical Memorandum to EPA and NDEQ, for review and approval by EPA. The Alternatives Screening Technical Memorandum shall summarize the work performed and the results of each of the above tasks, and shall include an alternatives array summary. If required by EPA, Respondent shall modify the alternatives array to assure that the array identifies a complete and appropriate range of viable alternatives to be considered in the detailed analysis. The Alternatives Screening Technical Memorandum shall document the methods, the rationale and the results of the alternatives screening process.

Respondent shall incorporate EPA's comments on the Alternatives Screening Technical Memorandum in the Individual and Comparative Analysis of Alternatives Technical Memorandum. Respondent shall submit the Alternatives Screening Technical Memorandum within 45 days after receipt of EPA's comments on the Remedial Action Objectives Technical Memorandum.

a. Develop General Response Actions

In the Alternatives Screening Technical Memorandum, Respondent shall develop general response actions including containment, treatment, excavation, pumping, or other actions, singly or in combination, to satisfy the EPA-approved remedial action objectives.

b. Identify Areas or Volumes of Media

In the Alternatives Screening Technical Memorandum, Respondent shall identify areas or volumes of media to which the general response actions may apply, taking into account requirements for protectiveness as identified in the remedial action objectives. Respondent shall also take into account the chemical and physical characterization of the Site.

c. Identify, Screen, and Document Remedial Technologies

In the Alternatives Screening Technical Memorandum, Respondent shall identify and evaluate technologies applicable to each general response action to eliminate those that cannot be

implemented. Respondent shall refine applicable general response actions to specify remedial technology types. Respondent shall identify technology process options for each of the technology types concurrently with the identification of such technology types or following the screening of considered technology types. Respondent shall evaluate process options on the basis of effectiveness, implementability, and cost factors to select and retain one or, if necessary, more representative processes for each technology type. Respondent shall summarize and include the technology types and process options in the Alternatives Screening Technical Memorandum. Whenever practicable, the alternatives shall also consider the CERCLA preference for treatment over conventional containment or land disposal approaches.

In the Alternatives Screening Technical Memorandum, Respondent shall provide a preliminary list of alternatives to address the OU 1 contaminated ground water that shall include those listed in 40 C.F.R. § 300.430(e)(1)-(7). Respondent shall specify the reasons for eliminating any alternatives.

d. Assemble and Document Alternatives

Respondent shall assemble the selected representative technologies into alternatives for each affected medium or operable unit. Together, all of the alternatives shall represent a range of treatment and containment combinations that shall address OU 1. Respondent shall prepare a summary of the assembled alternatives and their related ARARs for the Alternatives Screening Technical Memorandum. As appropriate, the screening shall preserve the range of treatment and containment alternatives that was initially developed. Respondent shall specify the reasons for eliminating alternatives during the preliminary screening process.

e. Refine Alternatives

Respondent shall refine the remedial alternatives to identify the volumes of contaminated ground water addressed by the proposed processes and size critical unit operations as necessary. Respondent shall collect sufficient information for an adequate individual and comparative analysis of alternatives against each of the nine evaluation criteria set forth in 40 C.F.R. § 300.430(e)(9)(iii). Additionally, Respondent shall update ARARs as the remedial alternatives are refined.

3. Conduct and Document Screening Evaluation of Each Alternative

Respondent may perform a final screening process based on short and long term aspects of effectiveness, implementability, and relative cost. Generally, this screening process is only necessary when there are many feasible alternatives available for a detailed analysis. If necessary, Respondent shall conduct the screening of alternatives to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis. As appropriate, the screening shall preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives shall include options that use

treatment technologies and permanent solutions to the maximum extent practicable. Respondent shall prepare an Alternatives Screening Technical Memorandum that summarizes the results and reasoning employed in screening; arrays the alternatives that remain after screening; and identifies the action-specific ARARs for the alternatives that remain after screening.

XI. FEASIBILITY STUDY

Respondent shall conduct and present a detailed analysis of remedial alternatives to provide EPA with the information needed to select the OU 1 remedy.

A. Individual and Comparative Analysis of Alternatives Memorandum

Respondent shall conduct a detailed analysis of the remedial alternatives for OU 1. The detailed analysis shall include an analysis of each remedial option against each of the nine evaluation criteria set forth in 40 C.F.R. § 300.430(e)(9)(iii) and a comparative analysis of all options using the same nine criteria as a basis for comparison.

1. Apply Nine Criteria and Document Analysis

Respondent shall apply the nine evaluation criteria to each of the assembled remedial alternatives to ensure that the selected remedial alternative will protect human health and the environment and meet remedial action objectives; will comply with or include a waiver of ARARs; will be cost-effective; will utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element. The evaluation criteria include: (1) overall protection of human health and the environment and how the alternative meets each of the remedial action objectives; (2) compliance with ARARs; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume through treatment; (5) short-term effectiveness; (6) implementability; (7) cost; (8) state acceptance; and (9) community acceptance. (Note: Criteria 8 and 9 are considered after the RI/FS report has been released to the general public.) For each alternative the Respondent shall provide: (1) a description of the alternative that outlines the waste management strategy involved and identifies the key ARARs associated with each alternative, and (2) a discussion of the individual criterion assessment. If Respondent does not have direct input on criteria (8) state acceptance and (9) community acceptance, EPA will address these criteria.

2. Compare Alternatives Against Each Other and Document the Comparison of Alternatives

Respondent shall perform a comparative analysis between the remedial alternatives. That is, Respondent shall compare each alternative against the other alternatives using the evaluation criteria as a basis of comparison. EPA will identify and select the preferred alternative. Respondent shall prepare an Individual and Comparative Analysis of Alternatives Technical

Memorandum which summarizes the results of the analyses and fully and satisfactorily addresses and incorporates EPA's comments on the Alternatives Screening Technical Memorandum. Respondent shall incorporate EPA's comments on the Individual and Comparative Analysis of Alternatives Technical Memorandum in the draft FS Report. Respondent shall submit the Individual and Comparative Analysis of Alternatives Memorandum within 30 days after receipt of EPA's comments on the Alternatives Screening Technical Memorandum.

3. Alternatives Analysis for Institutional Controls

For any Alternative that relies on Institutional Controls, Respondent shall include in the Alternatives Screening Technical Memorandum, Individual and Comparative Analysis of Alternative Technical Memorandum and Feasibility Study an evaluation of the following: 1) *Overall Protection of Human Health and the Environment* including what specific institutional control components will ensure that the alternative will remain protective and how these specific controls will meet remedial action objectives; 2) *Compliance with ARARs;* 3) *Long Term Effectiveness* including the adequacy and reliability of institutional controls and how long the institutional control must remain in place; 4) *Short Term Effectiveness* including the amount of time it will take to impose the Institutional Control; 5) *Implementability* including research and documentation, including title and lien information that the proper entities are willing to enter into any necessary agreement or restrictive covenant with the proper entities and/or that laws governing the restriction exist or allow implementation of the institutional control; 6) *Cost* including the cost to implement, maintain, monitor and enforce the institutional control; and 7) *State and Community Acceptance* of the institutional control.

B. FS Report

Within 60 days after receipt of EPA's comments on the Individual and Comparative Analysis of Alternatives Technical Memorandum, Respondent shall prepare and submit a draft FS Report to EPA for its review, with a copy to NDEQ. The FS report shall summarize the development and screening of the remedial alternatives and present the detailed analysis of remedial alternatives. EPA will review the draft FS Report in accordance with Section X of the Settlement Agreement.

Following comment by EPA, in accordance with Section X of the Settlement Agreement, Respondent shall prepare a final RI report which satisfactorily addresses EPA's comments.

XII. PROGRESS REPORTS

A. Quarterly Progress Reports

Respondent shall submit quarterly written progress reports to EPA with copies to NDEQ, concerning actions undertaken pursuant to the Settlement Agreement and this SOW, by the 10th day of the month unless otherwise directed in writing by the RPM. These reports shall include, but not be limited to, a description of all significant developments during the preceding period,

including the specific work that was performed and any problems that were encountered; paper and electronic copies (formatted according to EPA specifications) and summary of the analytical data that was received during the reporting period; and the developments anticipated during the next reporting period, including a schedule of work to be performed, anticipated problems, and actual or planned resolutions of past or anticipated problems. The quarterly progress reports will summarize the field activities conducted each quarter including, but not limited to drilling and sample locations, depths and descriptions; boring logs; sample collection logs; field notes; problems encountered; solutions to problems; a description of any modifications to the procedures outlined in any part of the Work Plan, including the FSP, QAPP or Health and Safety Plan, with justifications for the modifications; a summary of all data received during the reporting period and the analytical results; and upcoming field activities. In addition, Respondent shall provide the RPM with all laboratory data within the quarterly progress reports.

B. Annual Progress Reports

Respondent shall submit Annual Progress Reports to EPA, with copies to NDEQ. These reports shall summarize overall progress in completing the Work required by this Settlement Agreement and SOW. The Annual Progress Reports are intended to be a concise summary of the progress of the OU 1 Work. These reports will continue until EPA notifies Respondent that such reports are no longer required.

XIII. SCHEDULE FOR DELIVERABLES

DELIVERABLE	DUE DATE
Compilation & Evaluation of Data Report	Within 90 days after Respondent receives the analytical results from sampling of wells.
Monitoring Report	Within 60 days after each sampling event.
Work Plan	Within 45 days after EPA notifies Respondent field work is necessary.
Health and Safety Plan	Within 45 days after EPA notifies Respondent field work is necessary.
Quality Assurance Project Plan	Within 45 days after EPA notifies Respondent field work is necessary.
Draft RI Report and Baseline Ecological Risk Assessment	Within 90 days after collection of last field sample required by approved Work Plan, or, if no field work is required, within 90 days of EPA's approval of Compilation & Evaluation of Data Report.
Final RI Report	Within 30 days of EPA disapproval of draft RI Report or such other time as specified by EPA.
Candidate Technologies and Testing Needs Technical Memorandum	Within 90 days after collection of the last field sample required by the EPA-approved Work Plan.
Draft Treatability Testing Work Plan and SAP	Within 30 days of request of EPA and no sooner than collection of the first field sample required by the EPA-approved Work Plan.
Final Treatability Testing Work Plan and SAP or Amendments to the Original RI/FS Work Plan, FSP and/or QAPP.	Within 30 days after receipt of EPA's notification of direction to modify pursuant to Section X of the Settlement Agreement.
Draft Treatability Testing Health and Safety Plan or Amendment to the Original Health and Safety Plan	Within 30 days of request of EPA and no sooner than collection of the first field sample required by the EPA-approved Work Plan.
Final Treatability Testing Health and Safety Plan or Amendment to the Original Health and Safety Plan	Within due 30 days after receipt of EPA's notification of direction to modify pursuant to Section X of the Settlement Agreement.

DELIVERABLE	DUE DATE
Draft Treatability Study Evaluation Report	With the RI Report if no field work is required or according to the schedule in the EPA-approved Work Plan.
Final Treatability Study Evaluation Report	Within 30 days of receipt of EPA's notification of direction to modify pursuant to Section XI of the Settlement Agreement.
Remedial Action Objectives Technical Memorandum	With the draft RI Report.
Alternatives Screening Technical Memorandum	Within 45 days of receipt of EPA's comments on the Remedial Action Objectives Technical Memorandum.
Individual and Comparative Analysis of Alternatives Technical Memorandum	Within 30 days of receipt of EPA's comments on the Alternatives Screening Technical Memorandum.
Draft FS Report	Within 60 days of receipt of EPA's comments on the Individual and Comparative Analysis of Alternatives Technical Memorandum.
Final FS Report	Within 30 days of receipt of EPA's comments or such other time as specified by EPA.
Memorandum Need for Additional Data	Within 14 days of identification by Respondent.
Written Notice of Unanticipated or Changed Circumstances	Within 24 hours of discovery by Respondent.
Written Confirmation of Willingness to Perform Additional Work	Within 14 days of EPA's request.
Quarterly Progress Reports	On the 10th day of each quarter beginning three months after the Effective Date.
Annual Progress Reports	On the anniversary of the Effective Date, and each year thereafter until notified to cease by EPA.
Report of Emergency Release of Hazardous Substance	Within 7 days of release.

DELIVERABLE	DUE DATE
Explanation and Description of Reasons for Delay in Performance	Within 5 days of oral notification to EPA.
Written notice to EPA that payment of bill for Future Response Costs has been made.	Within 30 days of receipt of bill from EPA.
Certificates of insurance and copy of insurance policies.	Within 60 days of start of field work.
Written Evidence of Financial Security	Within 60 days of the Effective Date or as otherwise notified by EPA in the event changes are made to form or amount.

ATTACHMENT 1 to SOW
REFERENCE DOCUMENTS

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RI/FS process. The majority of these guidance documents, and additional applicable guidance documents, may be downloaded from the following websites:

http://www.epa.gov/superfund/pubs.htm (General Superfund)
http://cluin.org (Site Characterization, Monitoring and Remediation)
http://www.epa.gov/ORD/NRMRL/Pubs (Site Characterization and Monitoring)
http://www.epa.gov/quality/qa_docs.html#guidance (Quality Assurance)
http://www.epa.gov/superfund/programs/risk/toolthh.htm (Risk Assessment - Human)
http://www.epa.gov/superfund/programs/risk/tooleco.htm (Ecological Risk Assessment)
http://www.epa.gov/superfund/programs/lead (Risk Assessment - Lead)
http://cfpub.epa.gov/ncea (Risk Assessment - Exposure Factors/Other)
http://www.epa.gov/nepis/srch.htm (General Publications Clearinghouse)
http://www.epa.gov/clariton/clhtml/pubtitle.html
http://www.epa.gov/superfund/programs/lead/products.htm(General Publications Clearinghouse)

1. The (revised) National Contingency Plan;

2. *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*, U.S. EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9355.3-01, EPA/540/G-89/004, October 1988.

3. *Implementing Presumptive Remedies*, U.S. EPA, Office of Emergency and Remedial Response, EPA-540-R-97-029, October 1997.

4. *Presumptive Response Strategy and Ex-Situ Treatment Technologies for Contaminated Ground Water at CERCLA Sites*, OSWER 9283.1-12, EPA-540-R-96-023, October 1996.

5. *Field Analytical and Site Characterization Technologies Summary of Applications*, U.S. EPA, EPA-542-F-97-024, November 1997.

6. *Field Sampling and Analysis Technology Matrix and Reference Guide*, U.S. EPA, EPA-542-F-98-013, July 1998.

7. *Subsurface Characterization and Monitoring Techniques: A Desk Reference Guide, Volumes 1 and 2*, U.S. EPA, EPA/625/R-93/003, May 1993.

8. *Use of Airborne, Surface, and Borehole Geophysical Techniques at Contaminated Sites: A Reference Guide*, U.S. EPA, EPA/625/R-92/007(a,b), September 1993.

9. *Innovations in Site Characterization: Geophysical Investigation at Hazardous Waste Sites*, U.S. EPA, EPA-542-R-00-003, August 2000.

10. *Innovative Remediation and Site Characterization Technology Resources*, U.S. EPA, OSWER, EPA-542-F-01-026b, January 2001.

11. *Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells*, U.S. EPA, EPA/600/4-89/034, 1991.

12. *Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers*, U.S. EPA, EPA-542-S-02-001, May 2002.

13. *Ground Water Issue: Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*, U.S. EPA, EPA/540/S-95/504, April 1996.

14. *Superfund Ground Water Issue: Ground Water Sampling for Metals Analysis*, U.S. EPA, EPA/540/4-89/001, March 1989.

15. *Resources for Strategic Site Investigation and Monitoring*, U.S. EPA, OSWER, EPA-542-F-010030b, September 2001.

16. *Ground Water Issue: Suggested Operating Procedures for Aquifer Pumping Tests*, U.S. EPA, OSWER, EPA/540/S-93/503, February 1993.

17. *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*, U.S. EPA, EPA/600/R-98/128, September 1998.

18. *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action and Underground Storage Tank Sites,* U.S. EPA, OSWER Directive 9200.4-17P, April 21, 1999.

19. *Ground Water Issue: Fundamentals of Ground-Water Modeling*, U.S. EPA, OSWER, EPA/540/S-92/005, April 1992.

20. *Assessment Framework for Ground-Water Model Applications*, U.S. EPA, OSWER Directive #9029.00, EPA-500-B-94-003, July 1994.

21. *Ground-Water Modeling Compendium - Second Edition: Model Fact Sheets, Descriptions, Applications and Cost Guidelines*, U.S. EPA, EPA-500-B-94-004, July 1994.

22. *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents*, U.S. EPA, Office of Solid Waste and Emergency Response, OSWER Directive No. 9200.1-23P, EPA 540-R-98-031, July 1999.

23. *Region 5 Instructions on the Preparation of A Superfund Division Quality Assurance Project Plan Based on EPA QA/R-5, Revision 0*, U.S. EPA Region 5, June 2000.

24. *Guidance for the Data Quality Objectives Process (QA-G-4)*, U.S. EPA, EPA/240/B-06/001, February 2006.

25. *Guidance for the Data Quality Objectives Process for Hazardous Waste Sites (QA/G-4HW)*, U.S. EPA, EPA/600/R-00/007, January 2000.

26. *Guidance for the Preparation of Standard Operating Procedures (QA-G-6)*, U.S. EPA, EPA/600/B-07/001, April 2007.

27. *EPA Requirements for Quality Management Plans (QA/R-2)*, U.S. EPA, EPA/240/B-01/002, March 2001.

28. *EPA Requirements for QA Project Plans (QA/R-5)*, U.S. EPA, EPA/240/B-01/003, March 2001.

29. *Guidance for Quality Assurance Project Plans (QA/G-5)*, U.S. EPA, EPA/600/R-98/018, February 1998.

30. *Technical Guidance Document: Quality Assurance and Quality Control for Waste Containment Facilities*, U.S. EPA, EPA/240/R-02/009, December 2002.

31. *Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part A),* U.S. EPA, EPA/540/1-89/002, December 1989.

32. *Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals)*, U.S. EPA, EPA/540/R-92/003, OSWER Publication 9285.7-01B, December 1991.

33. *Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part C - Risk Evaluation of Remedial Alternatives)*, U.S. EPA, Office of Emergency and Remedial Response, Publication 9285.7-01C, October, 1991.

34. *Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual (Part D - Standardized Planning, Reporting, and Review of Superfund Risk Assessments),* U.S. EPA, Office of Emergency and Remedial Response, Publication 9285.7-47, December 2001.

35. *Risk Assessment Guidance for Superfund: Volume III - Part A, Process for Conducting Probabilistic Risk Assessment*, U.S. EPA, OSWER Publication 9285.7-45, EPA-540-R-02-002, December 2001.

36. *Policy for Use of Probabilistic in Risk Assessment at the U.S. Environmental Protection Agency*, U.S. EPA, Office of Research and Development, 1997.

37. *Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors*, U.S. EPA, OSWER Directive 9285.6-03, March 25, 1991.

38. *Exposure Factors Handbook*, Volumes I, II, and III, U.S. EPA, EPA/600/P-95/002Fa,b,c, August 1997.

39. *Supplemental Guidance to RAGS: Calculating the Concentration Term*, U.S. EPA, OSWER Publication 9285.7-08I, May 1992.

40. *Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions*, U.S. EPA, OSWER Directive 9355.0-30, April 22, 1991.

41. *Supplemental Guidance on Performing Risk Assessments in Remedial Investigation Feasibility Studies (RI/FSs) Conducted by Potentially Responsible Parties (PRPs)*, OSWER Directive No. 9835.15(a), July 2, 1991.

42. *Role of Background in the CERCLA Cleanup Program*, U.S. EPA, OSWER 9285.6-07P, April 26, 2002.

43. *Soil Screening Guidance: User's Guide*, U.S. EPA, OSWER Publication 9355.4-23, July 1996.

44. *Soil Screening Guidance: Technical Background Document*, U.S. EPA, EPA/540/R95/128, May 1996.

45. *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites*, U.S. EPA, OSWER Publication 9355.4-24, December 2002.

46. *Ecological Risk Assessment Guidance for Superfund: Process for Designing & Conducting Ecological Risk Assessments*, U.S. EPA, OSWER Directive 9285.7-25, EPA-540-R-97-006, February 1997.

47. *Guidelines for Ecological Risk Assessment*, U.S. EPA, EPA/630/R-95/002F, April 1998.

48. *The Role of Screening-Level Risk Assessments and Refining Contaminants of Concern in Baseline Ecological Risk Assessments*, U.S. EPA, OSWER Publication 9345.0-14, EPA/540/F-01/014, June 2001.

49. *Ecotox Thresholds*, U.S. EPA, OSWER Publication 9345.0-12FSI, EPA/540/F-95/038, January 1996.

50. *Issuance of Final Guidance: Ecological Risk Assessment and Risk Management Principles for Superfund Sites*, U.S. EPA, OSWER Directive 9285.7-28P, October 7, 1999.

51. *Guidance for Data Usability in Risk Assessment (Quick Reference Fact Sheet)*, OSWER 9285.7-05FS, September, 1990.

52. *Guidance for Data Usability in Risk Assessment (Part A)*, U.S. EPA, Office of Emergency and Remedial Response, Publication 9285.7-09A, April 1992.

53. *Guide for Conducting Treatability Studies Under CERCLA*, U.S. EPA, EPA/540/R-92/071a, October 1992.

54. *CERCLA Compliance with Other Laws Manual, Two Volumes*, U.S. EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9234.1-01 and -02, EPA/540/G-89/009, August 1988.

55. *Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites*, U.S. EPA, Office of Emergency and Remedial Response, (Interim Final), OSWER Directive No. 9283.1-2, EPA/540/G-88/003, December 1988.

56. *Considerations in Ground-Water Remediation at Superfund Sites and RCRA Facilities - Update*, U.S. EPA, OSWER Directive 9283.1-06, May 27, 1992.

57. *Methods for Monitoring Pump-and-Treat Performance*, U.S. EPA, EPA/600/R-94/123, June 1994.

58. *Pump-and-Treat Ground-Water Remediation A Guide for Decision Makers and Practitioners*, U.S. EPA, EPA/625/R-95/005, July 1996.

59. *Ground-Water Treatment Technology Resource Guide*, U.S. EPA, OSWER, EPA-542-B-94/009, September 1994.

60. *Land Use in the CERCLA Remedy Selection Process*, U.S. EPA, OSWER Directive No. 9355.7-04, May 25, 1995.

61. *Reuse Assessments: A Tool To Implement The Superfund Land Use Directive*, U.S. EPA, OSWER 9355.7-06P, June 4, 2001.

62. *Reuse of CERCLA Landfill and Containment Sites*, U.S. EPA, OSWER 9375.3-05P, EPA-540-F-99-015, September 1999.

63. *Reusing Superfund Sites: Commercial Use Where Waste is Left on Site*, U.S. EPA, OSWER 9230.0-100, February 2002.

64. *Covers for Uncontrolled Hazardous Waste Sites*, U.S. EPA, EPA/540/2-85/002, 1985.

65. *Technical Guidance Document: Final Covers on Hazardous Waste Landfills and Surface Impoundments*, U.S. EPA, OSWER, EPA/530-SW-89-047, July 1989.

66. *Engineering Bulletin: Landfill Covers*, U.S. EPA, EPA/540/S-93/500, 1993.

67. *Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites*, U.S. EPA OSWER Directive 9285.6-08, February 12, 2002.

68. *Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups*, U.S. EPA, OSWER 9355.0-74FS-P, EPA/540-F-00-005, September 29, 2000.

69. *OSHA Regulations in 29 CFR 1910.120*, Federal Register 45654, December 19, 1986.

70. *Standard Operating Safety Guides*, PB92-963414, June 1992.

71. *Community involvement in Superfund: A Handbook*, U.S. EPA, Office of Emergency and Remedial Response, OSWER Directive No. 9230.0#3B June 1988; and OSWER Directive No. 9230.0-3C, January 1992.

APPENDIX B

APPENDIX B

DRAFT

LIST OF CONTAMINANTS OF CONCERN

HASTINGS GROUNDWATER CONTAMINATION SITE

OPERABLE UNITS 1 & 9
COLORADO AVENUE SUBSITE
HASTINGS, NEBRASKA

PREPARED BY:

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION VII
KANSAS CITY, KANSAS

Jan. 22, 2010

I. SITE NAME, LOCATION, and STATEMENT OF PURPOSE

Site Name and Location

Hastings Ground Water Contamination Site
Operable Units 1 and 9: Colorado Avenue Subsite
CERCLIS ID No. NED980862668

Location:	Adams County, Hastings, Nebraska
Lead Agency:	U.S. Environmental Protection Agency Region VII (EPA)
Support Agency:	Nebraska Department of Environmental Quality (NDEQ)

Statement of Purpose

The purpose of this document is to provide information not included in the records of decision (RODs) for the Colorado Avenue subsite. The RODs are based on the Administrative Records prepared by EPA for the Colorado Avenue subsite. The 1988 ROD, the 1991 ROD and the 1998 ROD Amendment are part of the Administrative Record file consistent with Section 300.825(a)(2) of the NCP

This document provides an amended list of contaminants of concern (CoCs) for Operable Units 1 and 9 (OU 1 & 9) of the Colorado Avenue Subsite, Hastings Ground Water Contamination Site, located in Hastings, Nebraska. The location of the subsite is shown on Figure 1.

II. SITE / SUBSITE DESCRIPTION

The Colorado Avenue Subsite is one of the seven subsites that constitute the Hastings Ground Water Contamination Site. The Site is located primarily in Adams County, Nebraska, and covers the central industrial area of the city of Hastings and adjacent areas outside of the city limits. The Subsite is part of a mixed commercial/industrial area along the south side of the Burlington Northern Santa Fe Railway (BNSF) right-of-way situated one block from the Hastings downtown business district. Located on the north side of the BNSF is the Second Street Subsite. Private residences are located on Minnesota Avenue and streets east of Minnesota Ave. The Well # 3 Subsite is located west of the Colorado Avenue Subsite and the remaining four subsites are located at or beyond the eastern Hastings city limits.. Additionally, an Underground Storage Tank (UST) property known as the Foote Oil Site is located northeast of the Subsite.

As a Superfund project, EPA divided the Subsite into two operable units (OUs): (1) OU 1 relates to efforts to cleanup the contaminated ground water including a plume that has traveled miles away from the Subsite source areas; and, (2) OU 9 relates to efforts to remove contaminants from soils located within source

areas of the Subsite. Contaminants found in Colorado Avenue Subsite monitoring wells are identified in the attached Table 1.

Historical operations included releases of wastes from industrial solvents to the environment causing contamination of soils and ground water. Ownership of the property is unclear due to a series of events that occurred since the manufacturing facility was vacated by Marshalltown Instruments Division of DESCO in 2000.

III. SITE HISTORY and SELECTED COLORADO AVENUE REMEDIES

Hastings Site History:

Complaints of poor water quality from the municipal water system were first filed in 1944, shortly after the installation of Municipal Well Number 18. City records indicate that Well Number 18 was taken out of service at that time. This well is located along the BNSF right-of way, just west of Elm Avenue at a distance of about 2,500 feet from the area later identified as the Second Street Subsite. In 1953, this well was again tested and found to be contaminated; it was not placed back into regular service. In 1983, the city fitted the well with a pump and attempted to place it back in service on an experimental basis. However, residents immediately reported a foul taste and odor in the municipal water supply. In March, April, and May 1983, water samples collected by the Nebraska Department of Health (NDOH) showed the presence of high levels of trichloroethylene (TCE) contamination and relatively lower levels of five other chlorinated solvent chemicals. In addition, the sample collected on May 24, 1983, also contained approximately four micrograms per liter (µg/l) of benzene.

Following the May 1983 sampling, NDOH and NDEQ began investigating wide-spread groundwater contamination in the Hastings area. Eventually, three city-operated water supply wells, Numbers 3, 10 and 12, were taken out of service and others were placed on standby status. A second public water supply system, run by Community Municipal Services, Inc. (CMS), supplied customers east of the city limits of Hastings. Two of the three CMS system supply wells were also taken out of service due to contamination.

The EPA began investigating sources of groundwater contamination in the Hastings area in 1984. Due to the high levels of volatile organic compounds (VOCs) found in three municipal wells, EPA designated the contaminated area as the Hastings Ground Water Contamination Site and proposed it for listing on the National Priorities List (NPL); placement on the NPL became final in 1986.

Hastings Site Institutional Controls: In November 2000, the city of Hastings, through City Ordinance Number 3754, created the Institutional Control Area (ICA). The controls established by the ICA include requirements for well registration, limited water usage from existing wells, and periodic analysis. The city administers the ICA program and provides results of laboratory testing and related information to property

owners. However, the ICA does nothing to limit the migration of the contaminated groundwater or restore this resource to a beneficial use. The area currently affected by the Colorado Avenue Subsite groundwater plume is believed to be located within the ICA. Implementation of the ICA is addressed by a Consent Decree covering the Hastings Operable Unit at the site.

Subsite History:

The EPA initiated field investigations in 1985 to identify source areas for volatile contaminants found in the ground water. A major TCE/TCA/PCE source area was identified south of the BNSF railroad tracks in the vicinity of Colorado Avenue Beginning in 1986, EPA installed groundwater monitoring wells to determine the nature and extent of ground water contamination for areas east of Colorado Avenue. During the remedial investigation, a monitoring well (MW-9) was constructed north of the BNSF ROW on the Union Pacific ROW. Due to the presence of high levels of benzene, toluene, ethyl benzene and xylene (collectively referred to as BTEX) and polycyclic aromatic hydrocarbon (PAH) compounds including naphthalene in the groundwater, this well became the basis for initiating a remedial investigation of the former manufactured gas plant (FMGP) property. The EPA refers to this project as the Second Street Subsite.

Source Control Interim Action: EPA prioritized source control actions to minimize further releases to the ground water. The first ROD was issued in 1988 as an interim action for OU 9 and identified SVE as the technology to be implemented.

The OU 9 interim action is designed to remove contaminant mass from the soils, thereby reducing the contaminant concentrations and minimizing the further contribution of contaminants migrating downward to the ground water. The Subsite contaminants are all volatile organic chemicals and respond to removal by SVE. Implementation of the SVE technology has demonstrated varying degrees of effectiveness based on the limited Phase I effort.

In 1996, Dravo Corporation, (Dravo), former owner and operator at the Subsite, installed eleven SVE wells and a SVE treatment system consisting of two large vacuum pumps and four large carbon canisters to treat air emissions. Initially, Dravo's SVE wells were found to be collecting contaminants attributable to the Second Street Subsite (FMGP). After EPA initiated a removal action at the Second Street Subsite on the north side of the B-N ROW, Dravo's SVE system operated cyclically until 2006. The EPA estimates that the OU 9 interim action has removed more than 4000 lbs. of volatile contaminants from the soils at the subsite. In 2009, Dravo installed a new SVE system. This SVE unit is connected to the original phase I SVE wells and 10 new SVE wells (phase II wells).

Ground Water Contamination and OU 1 Interim Action:

An Interim Action Record of Decision (ROD) was prepared in September 1991 by the

EPA in accordance with CERCLA of 1980, as amended, 42 U.S.C. §§ 9601 *et seq.*(CERCLA), and the National Contingency Plan, 40 C.F.R. Part 300 (NCP). The 1991 OU 1 ROD addressed contaminated ground water migrating from the Subsite. Table 2 contained in the 1991 ROD identified volatile contaminants found in ground water monitoring wells, the highest reported concentrations, the sample location and the number of locations having detectable concentrations of the contaminants. Based on availability of human toxicity data and published status for carcinogenicity of subsite contaminants, selected contaminants were listed in Table 1 of the 1991 ROD. The list of contaminants shown in Table 1 was utilized when EPA issued Unilateral Orders for the subsite. The Unilateral Orders required the respondents to perform interim actions as defined by the OU 1 and OU 9 RODs. The 1991 ROD was amended by EPA on May 20, 1998. The1998 OU 1 ROD amendment did not provide any changes to the list of subsite contaminants.

The 1991 ROD, as amended presents the OU 1 remedial actions selected in accordance with Section 117(a) of the CERCLA, as amended, and Section 300.435(c)(2)(ii) of the NCP.

Ground water quality data collected by EPA from Colorado Avenue subsite monitoring wells prior to the 1998 ROD Amendment revealed an area extending from the subsite source areas to the vicinity of Elm Avenue characterized by higher levels of TCE contamination in the ground water. This area was identified for the Phase I and II ground water remediation efforts to be conducted by Dravo Corporation. Areas east of Elm Avenue also exhibited significant contamination, but had not been adequately investigated prior to 1998. In 1998, further evaluation of data presented to EPA by other investigators demonstrated a connection between contaminants east of the Hastings city limits and the ground water contaminant plume emanating from the Colorado Avenue Subsite source area.

In December 1999, Dravo initiated operation of two in-well aeration (IWA) treatment wells on Pine Avenue. These wells are located approximately 1200 feet downgradient from Colorado Avenue (the vicinity of the source areas). A third IWA well was installed on East Park Street. Together the three IWA wells were referred to as the Phase II ground water remediation systems. Subsequently, in 2002, Dravo installed four IWA treatment wells approximately one mile east of Colorado Avenue in the vicinity of Sixth Avenue. The IWA wells installed in 2002 are known as the Phase III treatment systems. Implementation of the Phase I SVE remedial action and operation of the Phase II and III IWA ground water treatment wells have substantially reduced the concentrations of volatile contaminants in the groundwater.

The OU 1 remedy, as amended is an interim action designed to remove contaminant mass from the aquifer, thereby reducing the contaminant concentrations and limiting the ultimate extent of the OU 1 ground water contaminant plume. The contaminants identified in the 1991 ROD are all volatile organic chemicals. These contaminants can be removed from the ground water by aeration of the water. The treatment can be employed either by pumping the ground water to the surface or by

in-situ treatment processes. More specifically, the selected remedy involved extraction and treatment of the ground water whereas the 1998 ROD amendment expanded the technology options to allow ground water treatment by air sparging or in-well aeration. Both alternate technologies can be implemented without pumping ground water to the surface. The OU 1 remedy, as amended is expected to contribute to the long-term objective of ground water restoration to MCLs for the Subsite. Taken together, the remedial actions being implemented for the various Hastings subsites are expected to restore the regional aquifer to its beneficial use as a primary drinking water source.

Ground water data collected from areas east of Elm Avenue extending to areas east of the Hastings city limits have been evaluated and additional work is needed to adequately define the extent of the OU 1 TCE contaminant plume.

Nearby Foote Oil Site Actions:

During the early 1990s, Nebraska's Leaking Underground Storage Tank (LUST) program oversaw investigations of a gasoline service station located just to the east of the FMGP property. This LUST site is referred to as the Foote Oil site.

The Foote Oil site investigation confirmed the presence of gasoline contamination in soil and groundwater. Several of the constituents of gasoline, specifically BTEX, are also found in FMGP wastes. Therefore, the plumes have been difficult to distinguish, except that 1,2 - dichloroethane (1,2 - DCA) appears to be associated only with petroleum contamination (the Foote Oil Site), not with the FMGP property. Based on review of ground water quality data and more recent information, the EPA now believes that the presence of 1,2- DCA in monitoring wells associated with the Colorado Avenue Subsite is not sufficient to demonstrate that 1,2 - DCA originates at the Colorado Avenue Subsite.

In 1999, under the supervision of the NDEQ LUST Program, an action to remove vadose zone contaminants through SVE was initiated at the Foote Oil Site. Later in 2004, after free product (gasoline) was found in Foote Oil monitoring wells, the remediation system was upgraded to include dual phase extraction. Because excavations were needed to remove underground tanks, operation of the SVE system was suspended in 2008. The NDEQ replaced the buried SVE manifold lines and restarted the SVE system in 2009. The Nebraska LUST program, rather than EPA, is addressing the Foote Oil site contamination in part, because of the CERCLA petroleum exclusion.

Court Action: The United States on behalf of EPA settled a cost recovery action filed against Dravo relating to its CERCLA liability at the Colorado Avenue Subsite. The Consent Decree (Civil Action No. 8:01CV500) was entered by the Federal Court in May 2006. Under the terms of the Consent Decree, Dravo paid past costs and is performing the cleanup activities for OUs 1 & 9 that are described above.

IV. BASIS FOR THE DOCUMENT

Table 1 identifies the highest concentrations and sampling locations for chemical contaminants identified in samples collected from Colorado Avenue Subsite monitoring wells. Chemical contaminants associated with the Well # 3 OU 7 and OU 13 (carbon tetrachloride and chloroform) and Second Street Subsite (BTEX, PAHs and Styrene) have not been included in Table 1. The list of chemical contaminants was prepared from various documents listed in the table.

Consistent with NCP directive to address principal threats first through early actions, in 1988 and 1991, EPA prepared Interim Action RODs for this subsite. The RODs relied on the 1987 Report of Investigation and a 1988 Engineering Evaluation/Cost Analysis, which identified among other things, the "indicator chemicals" having the highest concentrations at the Subsite. EPA used those indicator chemicals which had published human health risk estimated parameters as the basis for calculations prepared to support remedy selection activities related to the proposed interim actions. The purpose of this document is to clarify earlier information and provide a complete list of subsite CoCs.

CONTAMINANTS OF CONCERN

The list of selected subsite contaminants shown in the OU 1 Interim Action ROD is not identical to the contaminants discussed in the Engineering Evaluation/Cost Analysis (PRC, 1988), the OU 9 ROD (EPA, 1988) and the OU 1 Feasibility Study (MK, 1991). Table 2 is based on the 1991 OU 1 ROD and contains only subsite contaminants utilized to prepare human health risk estimates presented in the ROD. Some additional contaminants listed in the referenced documents were present in ground water monitoring wells used to characterize the subsite. However, EPA had not proposed or adopted MCLs, the levels of concern for human exposure to groundwater were not known, or basic toxicological research was lacking to support human health risk calculations. Consequently, a number of chemicals were not included in tables presented in the EPA decision documents.

These compounds, which included 1,2 - dichloroethene, 1,1 – dichloroethane, 1,1,2,2 - tetrachloroethane, 1,1,2 – trichloroethane and chloroethane were not carried forward during the preparation of other subsite related documents. The above-listed chemical contaminants are being added to the list of subsite CoCs.

Although 1,2 - DCA was reported in early subsite data and reports, based on results of more recent investigations EPA has determined that the Foote Oil site is a source of 1,2 - DCA contamination. Therefore, 1,2 – DCA is not being included in the amended list of CoCs for the Colorado Avenue Subsite. Additionally, recent investigations have shown that 1,4 - dioxane is present in Colorado Avenue Subsite monitoring wells.

Table 3 contains the amended list of contaminants of concern (COCs) for the subsite based on more recent information.

SUMMARY OF SUBSITE RISKS

The baseline risk assessment information was presented in the Report of Investigations (Woodward-Clyde, 1987) and discussed in the RODs. This document provides an overview of risks associated with exposure to contaminated ground water. The 1987 site risk information for groundwater was updated by information presented in the 1991 FS. The baseline risk assessment estimates the risks the Subsite poses if no action were taken. It provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by the remedial action. This ESD provides supplemental information based on toxicological data for contaminants not addressed in the 1987 and 1991 reviews.

The Nebraska Department of Health (now the Nebraska Health and Human Services System (NHHSS)) completed a Human Health Baseline Risk Assessment for the Hastings Area-Wide Operable Unit of the Site in November 1997. This Risk Assessment contained estimates for subsite risks associated with potential exposure to contaminants in the ground water.

The 1997 Baseline Risk Assessment prepared by NHHSS used reasonable maximum exposure (RME) assumptions to estimate human health cancer risk values and Hazard Index (HI) numbers for noncarcinogenic effects. While other data treatments are sometimes used, the available data typically limit the options for calculating risk values.

The values shown in Table 1 reflect the highest values reported by analytical laboratories employed by EPA. Recent ground water quality data show a decline in the contaminant concentrations for wells MW -2, MW -22 and MLW – 2. EPA has not resampled well MP – 13D since 2005.

In general, EPA requires or undertakes remedial actions for Superfund sites when the excess carcinogenic (cancer) risk exceeds 1×10^{-4}. A risk of 1×10^{-4} represents an increase of one in ten thousand, or 1/10,000, for a reasonable maximum exposure (RME). This risk represents the lifetime risk of developing cancer as a result of releases from a Superfund site.

Remedial actions may also be conducted at Superfund sites when the HI equals or exceeds one for the RME scenario. The HI is a numeric expression of the noncarcinogenic risk to human health resulting from releases from a Superfund site.

Exposure Assessment

Exposure scenarios are developed using current exposure pathways given existing land uses and also exposures which might reasonably be predicted based upon expected or logical future land use assumptions. Currently a municipal water supply is available in Hastings and a city ordinance restricts the use of groundwater in the Subsite source areas, plume and areas located east of the Hastings city limits affected by the OU 1 TCE plume. Based on well inventories performed for the Hastings Site and information presented in Annual ICA reports prepared by Hasting Utilities as required by the Area-Wide Consent Decree, there is no evidence that anyone is currently being exposed to the contaminated groundwater originating from the OU 1 source area. Because the plumes continue to migrate, the possibility remains that in the future, exposure to contaminated groundwater could occur through ingestion, inhalation of volatilized contaminants while showering, and dermal exposure while bathing.

Risk Characterization

For carcinogens, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to the carcinogen. This is referred to as an "excess lifetime cancer risk" because it would be in addition to the risks of cancer individuals face from other exposures/unknown causes.

Excess lifetime cancer risk is calculated from the following equation:

$$Risk = CDI \times SF$$

where: risk = a unitless probability (e.g., 1×10^{-4}) of an individual developing cancer
CDI = chronic daily intake averaged over 70 years (mg/kg-day)
SF = slope factor, expressed as $(mg/kg\text{-}day)^{-1}$.

These risks are probabilities that usually are expressed in scientific notation (e.g., 1×10^{-4}). An excess cancer risk of 1×10^{-4} indicates that an individual experiencing the reasonable maximum exposure estimate has a 1 in 10,000 chance of developing cancer as a result of site-related exposure.

The NCP requires that EPA evaluate site conditions utilizing the following procedure: "The 10^{-6} risk level shall be used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure." 40 C.F.R. § 300.430 (e)(2)(i)(A)(2).

Based on the exposure assumptions excess cancer risks were calculated for adults and presented in the 1991 OU 1 FS. The results indicated that estimated

excess cancer risks for an adult were greater than of 1 x 10^{-4}. The excess cancer risk for adult residents and the state's Nebraska Title 118 (establishes MCLs) were the basis for the EPA's OU 1 ROD.

V. DESCRIPTION OF SIGNIFICANT DIFFERENCES

Risk assessment work performed by Clement Associates was included in the Colorado Avenue Subsite Report of Investigations (W-C, 1987). The available toxicity information was utilized to prepare human health risk calculations presented in the referenced report. The results of the risk calculations indicated a need for remedial action at the Subsite. The risk assessment information for the subsite was updated by ICF - Clement Associates and presented in the Colorado Avenue Subsite OU 1 Feasibility Study (MK, 1991).

Toxicity Assessment

The following is a discussion of human toxicity data for contaminants not included in the risk calculations performed in 1987 and 1991.

1,2 – DCE, total is a combination of two isomers. Important uses include as a commercial solvent and a chemical intermediate for production of chlorinated compounds. Some laboratories reported cis – 1,2 – DCE while other laboratories may have reported trans – 1,2 – DCE or total 1,2 – DCE sample results. Cis 1,2 – DCE when found in ground water is generally considered to be a breakdown product from anerobic degradation of TCE. Trans 1,2 – DCE may be present in commercial grade TCE as byproduct of the manufacturing process. EPA has rated cis – 1,2 – DCE as class D, not classifiable as to human carcinogenicity. EPA has not assessed trans – 1,2 – DCE and 1, 2 – DCE, total carcinogenicity data under the IRIS program.

1,1 – DCA is used as a chemical intermediate in the production of 1,1,1 – TCA. 1,1 – DCA can be produced by addition of hydrogen chloride to acetylene, a process used to produce chemical solvents. Other literature references suggest that 1,1 – DCA can be a breakdown product from degradation of commonly used chlorinated solvents, including 1,1,1 - TCA. EPA has rated 1,1 – DCA as class C, possible human carcinogen.

1,1,2,2 – tetrachloroethane is used as a chemical intermediate in the manufacture of trichloroethylene. EPA has rated 1,1,2,2 – tetrachloroethane as class C, possible human carcinogen. The American Conference of Governmental Industrial Hygienists (ACGIH) has rated 1,1,2,2 – tetrachloroethane as A3, confirmed animal carcinogen with unknown relevance to humans.

1,1,2 – TCA is an isomer of 1,1,1 – TCA and is used as a chemical intermediate in production of 1,1 – DCE (vinylidene chloride). EPA has rated 1,1,2 – TCA as class C, possible human carcinogen. The ACGIH has rated 1,1,2 – TCA as

A3, confirmed animal carcinogen with unknown relevance to humans.

Chloroethane (ethyl chloride) found in soils and anoxic ground water is presumed to be a break down product from microbial degradation of chlorinated solvents, including 1,1,1 - TCA. The primary use of chloroethane is as a chemical intermediate in the manufacture of chlorinated compounds. Ethyl chloride is used in the chemical synthesis of tetraethyl lead for the formulation of gasoline. EPA has not assessed ethyl chloride carcinogenicity data under the IRIS program. The ACGIH has rated ethyl chloride as A3, confirmed animal carcinogen with unknown relevance to humans.

1,4 – dioxane is used a stabilizer in 1,1,1 – TCA, which is commercial solvent used in vapor degreasing operations. Chlorinated solvents require stabilizers to inhibit corrosion of metal degreaser tanks and other equipment. Due to its high boiling point, 1,4 – dioxane may remain in the vapor degreaser, not be evaporated with the cleaning solvent and become concentrated in the waste stream. 1,4 – dioxane is highly miscible with water, difficult to remove and extremely mobile in the environment. Due to this high mobility, 1,4 – dioxane plumes are typically found in ground water out in front of the chlorinated solvent plumes. EPA has rated 1,4 – dioxane as a class B2, probable human carcinogen based on sufficient evidence of carcinogenicity in animals.

V. FUTURE ACTIONS

REMEDIATION GOALS

The local aquifer is a prolific source of ground water. Ground water is the primary source for drinking water utilized by the city of Hastings. EPA and the NDEQ anticipate continued use of the ground water as a drinking water source in the future. The state of Nebraska designated groundwater in the vicinity of the Subsite as a Class GA ground water supply. A Class GA Ground Water Supply is a groundwater supply which is currently being used as a public drinking water supply or is proposed to be used as a public drinking water supply. Contamination detected at the Subsite caused the NDEQ to designate the Hastings Site as Remedial Action Class 1 (RAC-1), requiring the "most extensive remedial action measures" to clean up the groundwater to drinking water quality suitable for all beneficial uses.

Under the NCP at 40 C F R 300 430(e)(2)(i)(B), federal Safe Drinking Water Act (SDWA) standards which are applicable at the tap are relevant and appropriate to a clean up of groundwater which is a current or potential source of drinking water. The SDWA's MCL is used for any contaminant whose MCLG is zero, otherwise the MCLG is used. The substantive requirements of Nebraska's Title 118 regulations are also applicable to this remedy including narrative and numerical requirements (which are also called MCLs) and groundwater classifications and clean up standards set forth in or derived from Appendix A of Title 118.

Information presented in Table 2 (from the 1991 ROD) provided the groundwater clean up levels derived for this Subsite cleanup either from numerical federal and/or state MCLs or using the other established remediation goals consistent with Title 118, Appendix A, Step 8. The final Subsite remediation goals will be established for the Amended List of Contaminants shown in the attached Table 3.

Under CERCLA §121 and the NCP, the lead Agency must select remedies that are protective of human health and the environment, comply with ARARs, are cost effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Table 4 identifies selected chemical specific ARARs for the Subsite remedial actions.

In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous wastes as a principal element. The final Subsite remediation goals will be established for the Amended List of Contaminants shown in the attached Table 3.

POTENTIAL COST IMPACTS

The remedial action cost impact related to amending the list of CoCs is not known at this time. Further work is needed to define the extent of the OU 1 plume. When a FS for the Phase IV action is developed, costs to remediate the complete list of CoCs will be defined. If the final remedy to be selected in the Final Colorado Avenue Subsite ROD indicates additional time is required to achieve compliance with the subsite cleanup criteria for contaminants not identified in earlier RODs, project costs may be increased. If amending the list of CoCs does not substantially increase the RA scope of work, the cost impact for this change may be small.

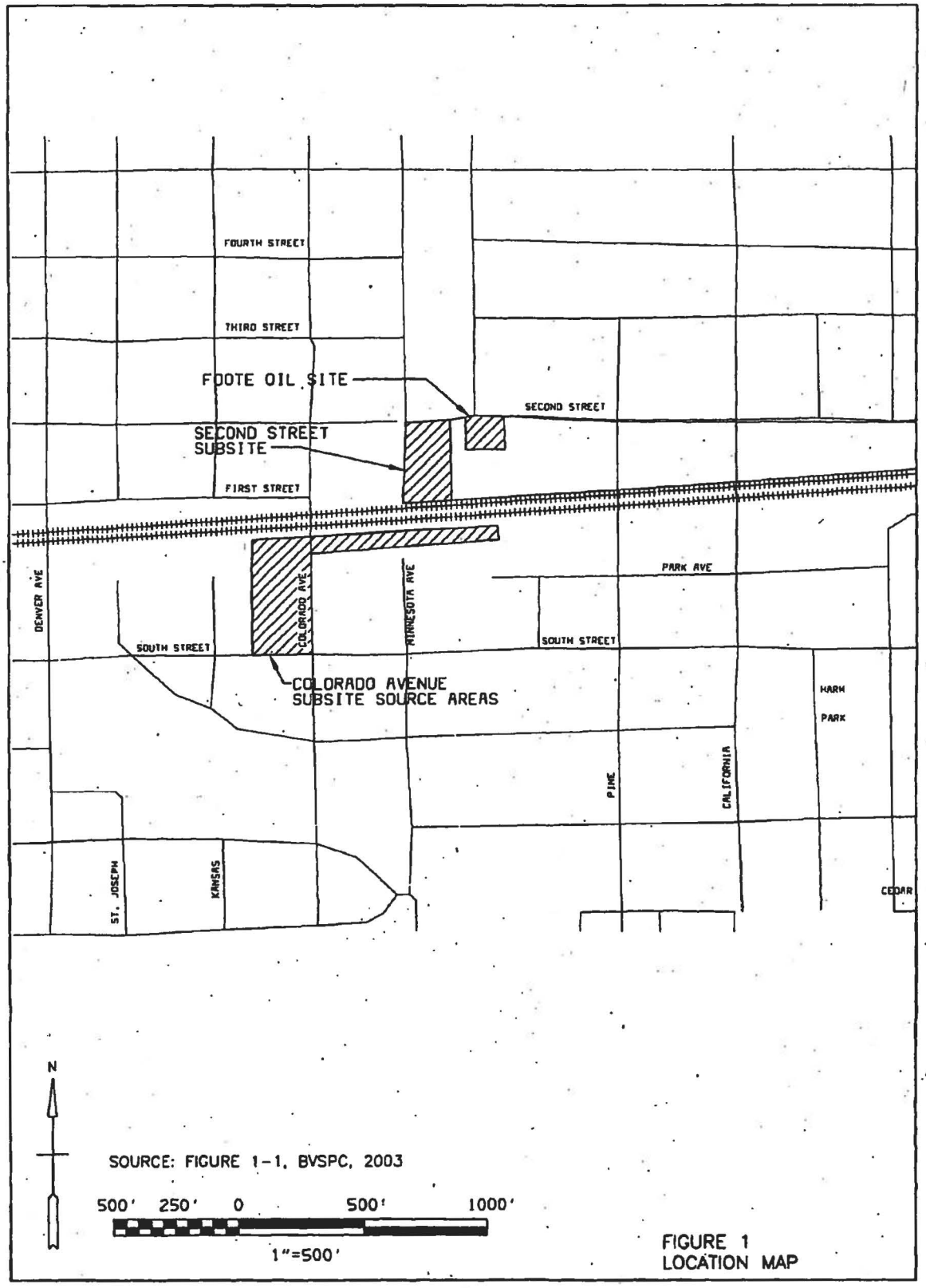


FIGURE 1
LOCATION MAP

TABLE 1

Colorado Avenue Subsite Compounds Detected in Ground Water 1986-2005

Chemical	Highest Concentration (ug/l)	Location
1,1 - Dichloroethene, DCE	1400 (1992)	MW-2, MW -22
1,2 - Dichloroethene, total	540 (1992)	MW - 22
1,1 – Dichloroethane, 1,1 – DCA	400 (1988)	MW - 22
1,2 – Dichloroethane, * 1,2 – DCA	120 (2002)	MLW - 2
Tetrachloroethene, PCE	1000 (1992)	MW - 2
1,1,2,2 - Tetrachloroethane,	36 J (1986)	MW - 4
1,1,1 – Trichloroethane, TCA	4000 (1988)	MW - 22
1,1,2 – Trichloroethane, TCA	15 (1992)	MW - 22
Trichloroethene, TCE	45,000 (1987)	MW - 2
chloroethane (ethylene chloride)	14 (J) (1989)	MW - 22
Dichloromethane (methylene chloride)	2200 (1988)	MW - 2
1,4 - Dioxane	17 (2005)	MP – 13D

Sources: Report of Investigations, Colorado Ave. Subsite, W-C, 1987; EE/CA, PRC, 1988; OU 1 ROD, EPA, 1991; Area-Wide RI, MK, 1996; Tabular Summary, B&V, 2004; and EPA lab data reports ASR 2324 (5/'04) and ASR 2589 (6/'05)

After concentration value: (Year sample collected by EPA)

* 1,2 – DCA found in Colorado Ave. wells and in Foote Oil site wells.

Table 2 — Groundwater Remediation Goals

Interim Action Target Concentrations for Groundwater Colorado Avenue Subsite			
Contaminant	10 -4 Cancer Risk Value* ug/liter	MCL ug/liter	Nebraska MCL ug/liter
1,1 - Dichloroethene, DCE	5	7	7
Tetrachloroethene, PCE	150	5	5
1,1,1 – Trichloroethane, TCA	N/A	200	200
Trichloroethene, TCE	290	5	5
1,2 – Dichloroethane, 1,2 – DCA	45	5	5
Dichloromethane (methylene chloride)	900	5	5

Source: Table 1, September 30. 1991 Colorado Avenue OU 1 Record of Decision
*10^{-4} concentrations calculated based on 30 year exposure, reference FS, June 1991

µg/l --- micrograms per liter
MCL --- federal and state Maximum Contaminant Level (SDWA)
Nebraska MCL -- state Maximum Contaminant Level (Ne. Title 118)

Table 3 – Amended List of Contaminants of Concern

Colorado Avenue Subsite		
Contaminant	**MCL ug/liter**	**Nebraska MCL ug/liter**
1,1 - Dichloroethene, DCE	7	7
1,1 – Dichloroethane, 1,1 – DCA	Not established	Not established
cis - 1,2 - Dichloroethene	70	70
trans - 1,2 - Dichloroethene	100	100
Tetrachloroethene, PCE	5	5
1,1,2,2 - Tetrachloroethane	Not established	Not established
1,1,1 – Trichloroethane, TCA	200	200
1,1,2 - Trichloroethane	5	5
Trichloroethene, TCE	5	5
chloroethane	Not established	Not established
Dichloromethane (methylene chloride)	5	5
1,4 - Dioxane	Not established	Not established

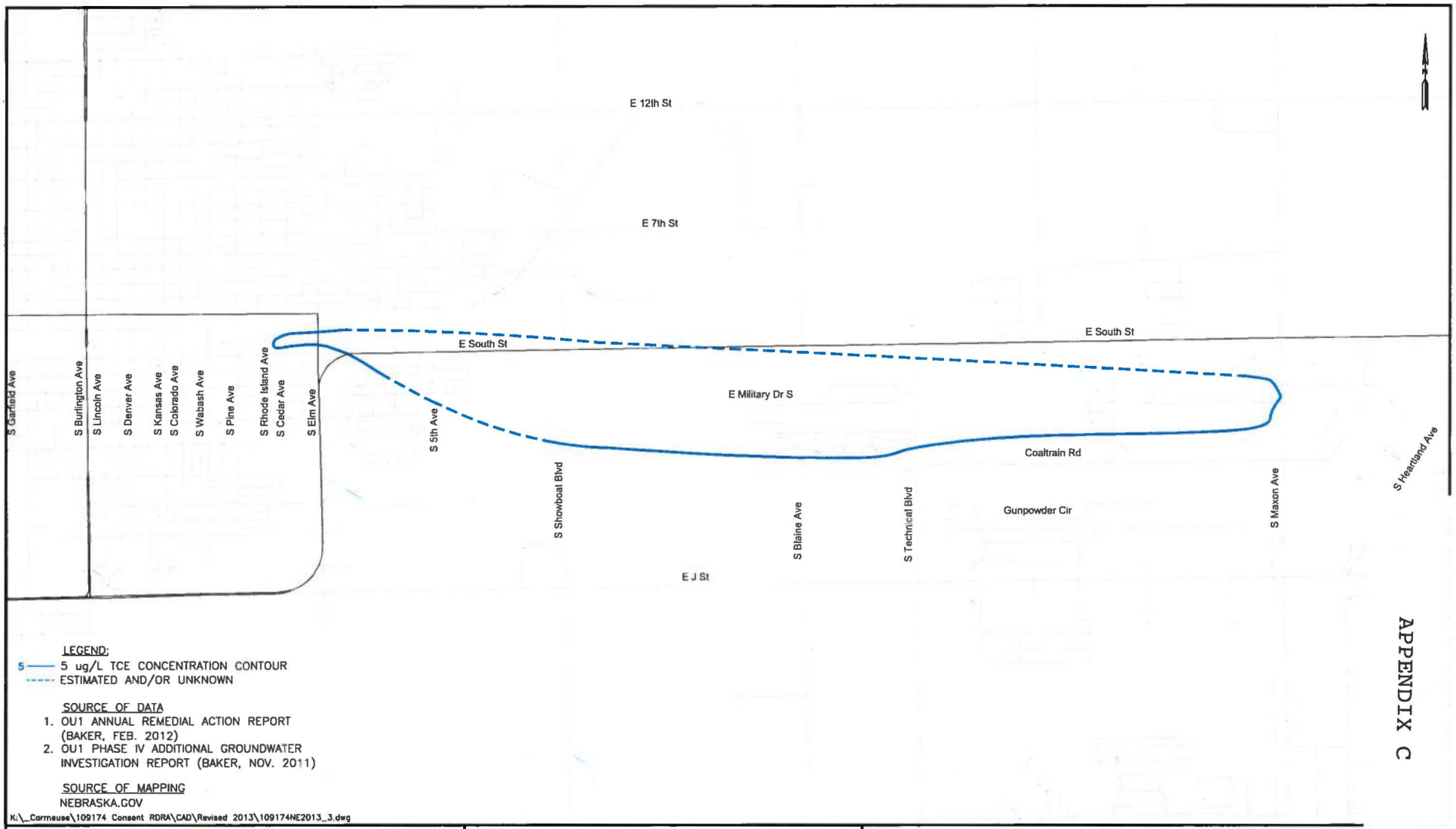
Sources: Table 2, September 30. 1991 Colorado Avenue OU 1 Record of Decision and EPA laboratory data reports ASR 2324 (5/2004) and ASR 2589 (6/2005).

Changes: omitted chloroform, carbon tetrachloride, bromodichloromethane, and 1,2 – DCA ; added 1,1 – DCA, 1,2 – dichloroethene, 1,1,2,2 – tetrachloroethane, 1,1,2 – trichloroethane, chloroethane, and 1,4 - dioxane

µg/l --- micrograms per liter
MCL --- federal and state Maximum Contaminant Level (SDWA)
Nebraska MCL --- state Maximum Contaminant Level (Ne. Title 118) t

Table 4 – Chemical-Specific ARARs

Selected Colorado Ave. Subsite ARARs for Ground Water and Water Discharge		
Standard, Requirement, Criteria, or Limitation	Citation	Comments
FEDERAL		
Identification and Listing of Hazardous Wastes and Standards Applicable to Generators of Hazardous Waste	40 CFR Parts 261-262	Applicable if a substance at the subsite is identified as a hazardous waste. Any wastes identified as hazardous wastes would have to be handled as such. These standards may apply as both chemical-specific and action-specific ARARs.
Safe Drinking Water Act (SDWA)	USC	Nebraska adopts Federal MCLs published by EPA under authority of the SDWA. This is consistent with the NCP, 40 CFR 300.430(e)(2)(i)(B).
Water Discharge		
Clean Water Act	33 USC §§ 1251 – 1376	
National Pollutant Discharge Elimination System (NPDES)	40 CFR Parts 122 – 125	Requires permits for the discharge of pollutants from any point source into the waters of the United States. A permit is not required for on-site CERCLA response actions, but the substantive requirements are applicable if an alternative involves discharge into a creek or other surface water on-site.
STATE		
Nebraska Environmental Protection Act	Neb. Rev. Statutes 81-1501 *et. seq.*	
Groundwater		
Groundwater Quality Standards and Use Classification	Title 118	Establishes procedures including anti-degradation clauses and numerical standards for contaminants introduced to groundwater. Requirements defined in Title 118 include contaminated soils to be cleaned up so that groundwater would not become contaminated above maximum contaminant level(s); or result in an excess cancer risk of greater than 1 x 10^{-6} or hazard index of greater than 1, whichever is less. These requirements are chemical-specific ARARs.



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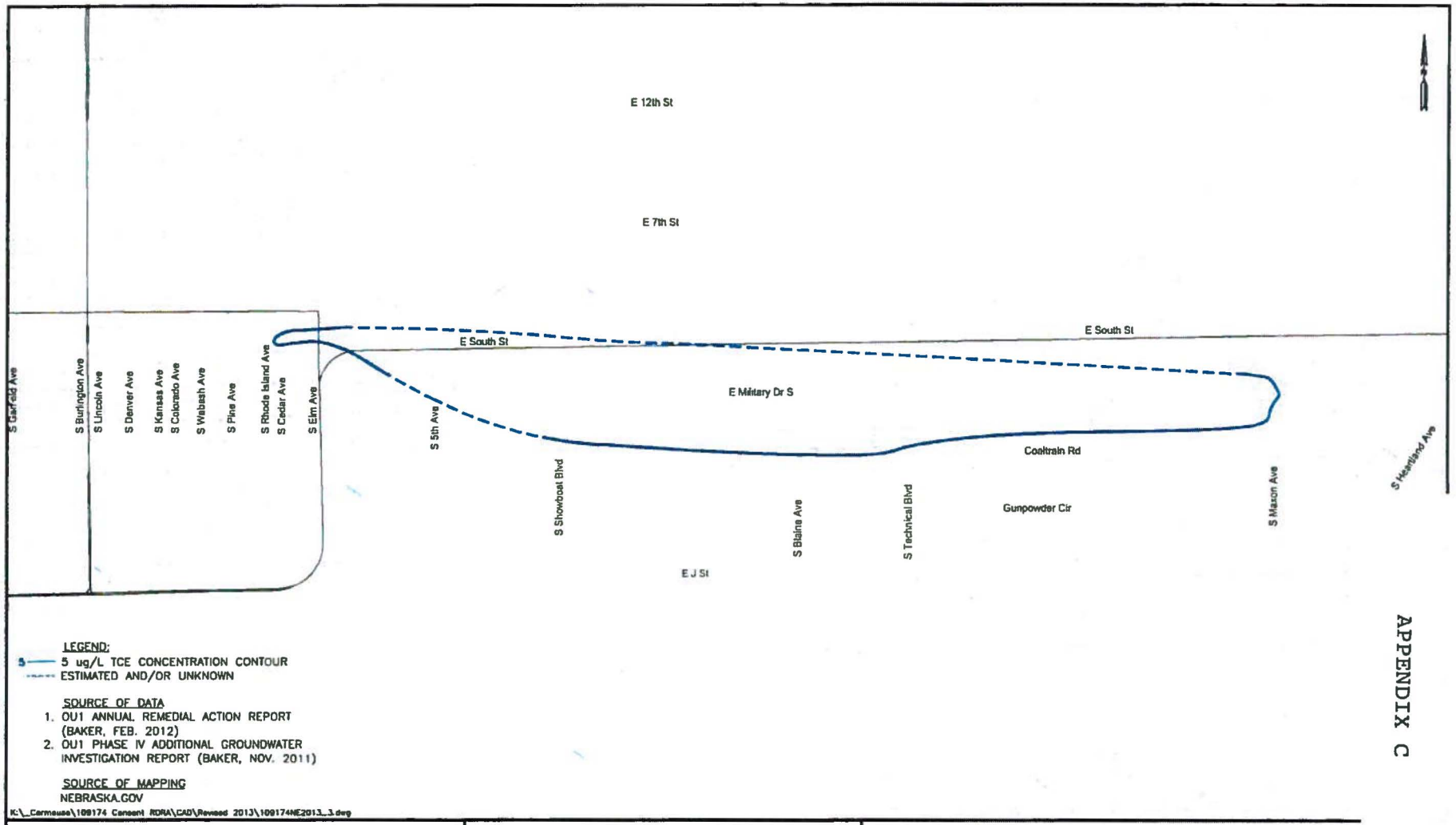
S.O. NO.:	109174	FILE:	NE2013_3
DSN/DWN:	BES/RRR	CHK:	BES

Baker MICHAEL BAKER Jr., INC.
MOON TOWNSHIP, PENNSYLVANIA

FIGURE 1
AREA OF GROUNDWATER CONTAMINATION
COLORADO AVENUE SUBSITE
HASTINGS, NEBRASKA

APPENDIX C

APPENDIX C



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DSN/DWN:	BES/RRR	CHK:	BES

Baker MICHAEL BAKER Jr., INC.
MOON TOWNSHIP, PENNSYLVANIA

FIGURE 1
AREA OF GROUNDWATER CONTAMINATION
COLORADO AVENUE SUBSITE
HASTINGS, NEBRASKA

APPENDIX C

IN THE MATTER OF Colorado Avenue Subsite; Operable Unit 01; Hastings Ground Water Contamination Site; Dravo Corporation, Respondent
Docket No. CERCLA-07-2013-0011

CERTIFICATE OF SERVICE

I certify that a true and correct copy of the foregoing Order was sent this day in the following manner to the addressees:

Copy by email to Attorney for Complainant:

asher.audrey@epa.gov

Copy by First Class Mail to Respondent:

Lawrence Demase, Esq.
Reed Smith LLP
Reed Smith Centre
225 Fifth Avenue
Pittsburgh, Pennsylvania 15222-2716

Dated: 10/28/13

Kathy Robinson
Hearing Clerk, Region 7