

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF NEW YORK

United States of America,)
Plaintiff,)
v.) AMENDMENT TO
Amphenol Corporation¹) CONSENT DECREE
Amphenol Interconnect Products Corp.) Civil Action No. 3:01-CV-0637
Ashland Inc.)
Arkema Inc. (f/k/a Atofina Chemicals, Inc.))
BASF Corporation)
Bristol-Myers Squibb Company)
Bronstein Container Company, Inc.)
Carrier Corporation)
Chemcoat, Inc.)
Cooper Industries, LLC (successor to Cooper Industries, Inc.))
Crash's Auto Parts and Sales, Inc.)
Drake Oil Company, Inc.)
E.I. du Pont de Nemours & Company)
Emerson Power Transmission Corp.)
General Electric Company)
Hexion Inc. (f/k/a Borden, Inc.))
Honeywell International Inc.)
International Business Machines Corporation)
International Paper Company)
JCI Jones Chemicals, Inc. (f/k/a Jones Chemicals, Inc.))
KCC Holding, Inc. (f/k/a Kaplan Container Corporation))
Malchak Salvage Company, Inc.)
Masonite Corporation)
Newton Falls LLC (successor to Newton Falls Inc.))
PPG Industries, Inc.)
Rocky Brands, Inc. (successor to EJ Footwear LLC))
SI Group, Inc. (f/k/a Schenectady International, Inc.))
Sonoco Flexible Packaging, Co., Inc. (successor to Sonoco)
Flexible Packaging, Inc.))
Gary F. Warner)
Yawga Energy Products, LLC (f/k/a Agway Energy)
Products, LLC),)
Defendants.)

¹ Names of defendants in the caption in this Amendment to Consent Decree may differ from those in the caption in the original Consent Decree because certain defendants have gone out of business, had name changes, etc. The reasons for any such change are provided in the Whereas clauses in this Amendment to Consent Decree.

AMENDMENT TO CONSENT DECREE

WHEREAS, the United States of America on behalf of the Administrator of the United States Environmental Protection Agency (“United States”), as Plaintiff, and Agway, Inc., Agway Energy Products LLC, Amphenol Corporation, Amphenol Interconnect Products Corp., Ashland Inc., Atofina Chemicals, Inc., Azon Corporation, BASF Corporation, BMC Industries, Inc., Borden, Inc., Bristol-Myers Squibb Company, Bronstein Container Company, Inc., Carrier Corporation, Champion International Corporation, Chemcoat, Inc., Cooper Industries, Inc., Crash's Auto Parts and Sales, Inc., Daimler Chrysler Corporation, Drake Oil Company, Inc., E.I. du Pont de Nemours & Company, EJ Footwear L.L.C., Emerson Power Transmission Corp., General Electric Company, General Motors Corporation, Honeywell International Inc., Inmont Corporation, International Business Machines Corporation, International Paper Company, Jones Chemicals, Inc., Kaplan Container Corporation, Malchak Salvage Company, Inc., Masonite Corporation, Newton Falls Inc., Potter Paint Co., Inc., PPG Industries, Inc., Rome Cable Corporation, Schenectady International, Inc., Sonoco Flexible Packaging, Inc., Tri-Cities Barrel Co., Inc., Underwood Industries of New York, Inc., Wainwright Oil Co., Inc., Francis Warner, and Gary F. Warner, as defendants (“Original Settling Defendants”), entered into a consent decree in this action concerning the Tri-Cities Barrel Superfund Site located in the Town of Fenton, Broome County, New York (“Site”), such consent decree having been approved and filed by this court on August 8, 2001 (“Original Consent Decree”); and

WHEREAS, the Consent Decree resolves certain claims of the United States under Sections 106 and 107(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (“CERCLA”), 42 U.S.C. §§ 9606 and 9607(a), in connection with the performance of the remedial design and remedial action (“RD/RA”) selected for the Site by the United States Environmental Protection Agency (“EPA”) in a Record of Decision executed March 31, 2000 (“2000 ROD”) and the reimbursement of response costs; and

WHEREAS, the remedy selected in the 2000 ROD called for excavation and off-site treatment and/or disposal of unsaturated soils and sediments, backfilling and revegetation of excavated areas, extraction and on-site treatment of contaminated groundwater followed by discharge to surface water, restoration of wetlands impacted by the remedial activities, implementation of institutional controls, and long-term groundwater, surface water, and nearby residential well monitoring; and

WHEREAS, following the issuance of the 2000 ROD, Settling Defendants submitted a work plan to EPA for the design of the remedial action at the Site which addressed contaminated soils and sediments as Remedial Work Element I and addressed contaminated groundwater as Remedial Work Element II (“2001 RD Work Plan”). Upon its approval by EPA, the 2001 RD Work Plan was incorporated into and became enforceable under the Consent Decree; and

WHEREAS, all actions under Remedial Work Element I (soils and sediments) of the 2001 Work Plan have been completed by Settling Defendants and approved by EPA; and

WHEREAS, during the remedial design for Remedial Work Element II (groundwater), Settling Defendants performed a monitored natural attenuation (“MNA”) study which was documented in a 2007 Revised Comprehensive Monitored Natural Attenuation Evaluation Report (“2007 MNA Report”). The findings of the 2007 MNA Report were summarized in a 2008 Focused Feasibility Study (“2008 FFS”). Upon review of the 2007 MNA Report and 2008 FFS, EPA concluded that MNA, if implemented, would be equally effective in restoring the groundwater at the Site as would be the groundwater remedy selected in the 2000 ROD; and

WHEREAS, EPA has determined that restoration of groundwater in an area of the Site approximately 120 feet long by 80 feet wide by 30 feet deep (the “MW-19 Area”) is technically impracticable from an engineering perspective; and

WHEREAS, the decision by EPA to modify the groundwater action selected in the 2000 ROD in order to provide for MNA to address the groundwater at the Site, except for the MW-19 Area which is subject to a technical impracticability waiver, and to provide for the implementation of an informational institutional control at the site relating to soil vapor concerns is embodied in a ROD Amendment dated September 27, 2011 (the “2011 ROD Amendment”), a copy of which is attached hereto as Appendix AA, on which the State had a reasonable opportunity to comment and on which the State has given its concurrence; and

WHEREAS, the issuance of the 2011 ROD Amendment which modified the groundwater remedy at the Site and provided for an institutional control relating to soil vapor concerns at the Site necessitates that the Consent Decree be amended by this Amendment to Consent Decree; and

WHEREAS, the United States and those Settling Defendants (or, where applicable, their successor entities) that have signed this Amendment to Consent Decree wish to modify the Original Consent Decree, including the Statement of Work attached thereto as Appendix B to reflect the 2011 ROD Amendment; and

WHEREAS, certain of the corporate Settling Defendants have not signed this Amendment to Consent Decree because they have become dissolved, defunct, bankrupt or liquidated, and an individual Settling Defendant has not signed this Amendment to Consent Decree because he is deceased, as described in the following paragraphs; and

WHEREAS, certain of the Original Settling Defendants have subsequently changed their names, been merged into a successor company, or had their liabilities at the Site assumed by a related entity, this Amendment to Consent Decree is being signed under the current name of the Original Settling Defendant or by the successor entity or the related company, as described in the following paragraphs; and

WHEREAS, Agway, Inc. was dissolved in Delaware, its state of incorporation on December 16, 2011; filed Chapter 11 bankruptcy in the Northern District of New York on October 1, 2002 (Case No. 02-65872); the United States did not submit a claim in the bankruptcy on behalf of

EPA; the Chapter 11 Plan was confirmed on 04/28/2004 and the case was closed on 01/09/2013; it is therefore not signing this Amendment to Consent Decree; and

WHEREAS, Agway Energy Products, LLC changed its name to Yawga Energy Products, LLC on January 21, 2004, this Amendment to Consent Decree is being signed by Yawga Energy Products, LLC; and

WHEREAS, Atofina Chemicals, Inc. changed its name to Arkema Inc. on October 4, 2004, this Amendment to Consent Decree is being signed by Arkema Inc.; and

WHEREAS, Azon Corporation filed bankruptcy in the Northern District of New York in July of 2002 (Case No. 02-64368) which proceeding was converted to Chapter 7 listed as "closed no assets" as of January 11, 2007; the United States did not submit a claim in the bankruptcy on behalf of EPA, and Azon Corporation is therefore not signing this Amendment to Consent Decree; and

WHEREAS, BMC Industries, Inc. filed Chapter 11 bankruptcy in the District of Minnesota on 06/23/2004; the United States did not submit a claim in the bankruptcy on behalf of EPA; the Chapter 11 Plan was confirmed on 08/09/2006 and the case was closed on 06/05/2007; and BMC Industries, Inc. was dissolved in Minnesota, its state of incorporation on December 5, 2006, and BMC Industries, Inc. is therefore not signing this Amendment to Consent Decree; and

WHEREAS, Borden, Inc., following certain name changes is now, as of January 15, 2015, known as Hexion Inc., this Amendment to Consent Decree is being signed by Hexion Inc.; and

WHEREAS, International Paper Company is the successor to Champion International Corporation by merger on June 20, 2000, this Amendment to Consent Decree is being signed by International Paper Company for itself and as successor by merger to Champion International Corporation; and

WHEREAS, Cooper Industries, Inc., an Ohio corporation, was merged out of existence effective January 1, 2005 pursuant to a merger with Cooper Industries, LLC, a Delaware limited liability company, this Amendment to Consent Decree is being signed by Cooper Industries, LLC as successor to Cooper Industries, Inc.; and

WHEREAS, Daimler Chrysler Corporation was reorganized in Delaware as Chrysler LLC in 2007, changed its name to Old Carco LLC and filed for bankruptcy in the United States Bankruptcy Court, Southern District of New York, Docket No. 09-50011 in 2009, was liquidated in the bankruptcy and is no longer in existence having had its corporate charter cancelled in Delaware, its state of incorporation, on April 30, 2010, and Daimler Chrysler Corporation is therefore not signing this Amendment to Consent Decree; and

WHEREAS, Rocky Brands, Inc. is the successor by merger to EJ Footwear LLC, this Amendment to Consent Decree is being signed by Rocky Brands, Inc.; and

WHEREAS, General Motors Corporation changed its name to Motors Liquidation Company and discharged its obligations with respect to the Consent Decree pursuant to a settlement agreement approved by the bankruptcy court on March 29, 2011 in the bankruptcy proceedings in the United States Bankruptcy Court, Southern District of New York, Docket No. 09-50026, and General Motors Corporation is therefore not signing this Amendment to Consent Decree; and

WHEREAS, Inmont Corporation changed its name to BASF Corporation pursuant to a certificate of merger filed with the Delaware Secretary of State on December 27, 1985, this Amendment to Consent Decree is being signed by BASF Corporation; and

WHEREAS, Jones Chemicals, Inc. changed its name to JCI Jones Chemicals, Inc. on February 8, 1999, this Amendment to Consent Decree is being signed by JCI Jones Chemicals, Inc.; and

WHEREAS, Kaplan Container Corp. changed its name to KCC Holding, Inc. on March 16, 2001, this Amendment to Consent Decree is being signed by KCC Holding, Inc.; and

WHEREAS, Newton Falls LLC is the successor to Newton Falls Inc. by merger on October 24, 2001, this Amendment is being signed by Newtown Falls LLC; and

WHEREAS, Potter Paint Co., Inc. is no longer in existence, having been dissolved in the State of New York, its state of incorporation, on December 27, 2007, and Potter Paint Co., Inc. is therefore not signing this Amendment to Consent Decree; and

WHEREAS, Rome Cable Corp. is no longer in existence having been merged in Delaware, its state of incorporation on June 27, 2002, into Rome Cable Corp. (an entity having the same name and referred to herein as "Rome Cable Corp. (new)") and Rome Cable Corp. (new), its successor, is no longer in existence, having forfeited its charter in Delaware on November 5, 2004, Rome Cable Corp. is therefore not signing this Amendment to Consent Decree; and

WHEREAS Schenectady International, Inc. changed its name to SI Group, Inc. on April 4, 2006, this Amendment to Consent Decree is being signed by SI Group, Inc.; and

WHEREAS, Sonoco Flexible Packaging Co., Inc., a South Carolina Corporation and subsidiary of Sonoco Products Company, had assumed, on March 16, 1998, the obligations under the Consent Decree of Sonoco Flexible Packaging, Inc., a Delaware corporation and former subsidiary of Sonoco Products Company which signed the Consent Decree and which was subsequently the non-survivor of a merger effective January 1, 2001, this Amendment to Consent Decree is being signed by Sonoco Flexible Packaging Co., Inc., a South Carolina Corporation; and

WHEREAS, Tri-Cities Barrel Co., Inc. is no longer in existence, having been dissolved in the State of New York, its state of incorporation, on September 24, 1997, and Tri-Cities Barrel Co., Inc. is therefore not signing this Amendment to Consent Decree; and

WHEREAS, Underwood Industries of New York, Inc. is no longer in existence, having been dissolved in the State of New York, its state of incorporation, on June 17, 2004, and Underwood

Industries of New York, Inc. is therefore not signing this Amendment to Consent Decree; and

WHEREAS, Wainwright Oil Co., Inc. is no longer in existence, having been dissolved in the State of New York, its state of incorporation, on May 28, 1999, and Wainwright Oil Co., Inc. is therefore not signing this Amendment to Consent Decree; and

WHEREAS, Francis Warner is deceased, having died June 20, 2008, and Francis Warner is therefore not signing this Amendment to Consent Decree; and

WHEREAS, the United States has demonstrated to the Court's satisfaction, that this Amendment to Consent Decree should be approved notwithstanding that certain of the Original Settling Defendants have not signed; and

WHEREAS, in accordance with Section XXXI of the Consent Decree, the United States has provided the State of New York with a reasonable opportunity to review and comment on the modifications being made to the SOW.

NOW, THEREFORE, in order to amend the Consent Decree to provide for the implementation of the response actions selected in the 2011 ROD Amendment, the parties agree to this Amendment to Consent Decree as follows:

1. The 2015 SOW attached as Appendix BB hereto amends the SOW attached as Appendix B to the Original Consent Decree with respect to the Remedial Work Element II portions of the Work. References in the Consent Decree to "SOW" or "Statement of Work" shall be read to mean the SOW attached as Appendix B to the Original Consent Decree as amended by the 2015 SOW. References in the Consent Decree to the "2000 SOW" shall be read to mean the statement of work annexed as Appendix B to the Original Consent Decree.
2. The effective date of this Amendment to Consent Decree (hereinafter "the Effective Date of the Amendment to Consent Decree") shall be the date upon which this Amendment to Consent Decree is entered by this Court.
3. The following paragraphs of the Consent Decree, which each contain one or more references to "the Record of Decision" or "the ROD," are hereby revised to change said references to "the 2000 ROD and the 2011 ROD Amendment":
 - a. Section I, Paragraph J (which shall also be amended to refer to the execution date of the 2011 ROD Amendment as September 27, 2011 and to the publication, pursuant to Section 117(b) of CERCLA, of the final plan for the 2011 ROD Amendment as November 10, 2011);
 - b. Section I, Paragraph L;
 - c. Section IV, Paragraph 4, in the definition of "Performance Standards" and in the definition of "Remedial Action;"
 - d. Section V, Paragraphs 6.a. and 7;
 - e. Section VI, Paragraph 14;
 - f. Section XIII, Paragraph 46;

- g. Section IX, Paragraph 29;
 - h. Section XIV, Paragraphs 50.a and 51.a;
 - i. Section XIX, Paragraph 67;
 - j. Section XX, Paragraphs 71(b)(5) and 71(b)(7); and
 - k. Section XXI, Paragraph 85(c).
4. Section IV (DEFINITIONS), Paragraph 4 of the Consent Decree is hereby amended by changing or adding definitions as follows:

- a. The following new definitions shall be added to and be a part of the Consent Decree:

“Amendment to Consent Decree” shall mean this Amendment to Consent Decree.

“MNA Plan” shall mean the Long-Term MNA Sampling Program dated January 11, 2012, which EPA approved on January 18, 2012.”

“Original Consent Decree” shall mean the Consent Decree entered on August 8, 2001, in the United States District Court for the Northern District of New York under Civil Action Number 3:01-CV-0637.

“Tri-Cities Barrel Superfund Site Special Account” shall mean the special account, within the EPA Hazardous Substance Superfund, established for the Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3).

“2011 Record of Decision Amendment” or “2011 ROD Amendment” shall mean the ROD Amendment relating to the Site signed on September 27, 2011 by the Director of the Emergency and Remedial Response Division, EPA Region 2, and all attachments thereto. The 2011 ROD Amendment is attached as Appendix AA to this Amendment to Consent Decree.”

- b. The definition of “Consent Decree” shall be amended to read as follows:

“Consent Decree” shall mean the Consent Decree entered on August 8, 2001, in the United States District Court for the Northern District of New York under Civil Action Number 3:01-CV-0637, as amended and modified by this Amendment to Consent Decree.”

- c. The terms “Record of Decision” or “ROD” shall be replaced with the terms “2000 Record of Decision” or “2000 ROD.” The definition shall remain the same.
- d. The definition of “Settling Defendants” shall be amended to exclude those parties that have not signed this Amendment to Consent Decree, provided, however, that

the term “Original Settling Defendants,” when used herein, refers to those settling defendants who signed the Original Consent Decree. Notwithstanding anything to the contrary in this Amendment to Consent Decree, the covenants not to sue by plaintiff provided by Section XXI; the covenants by the Original Settling Defendants provided by Section XXII; and the contribution protection provided by Section XXIII shall apply to Settling Defendants and Original Settling Defendants.

- e. The defined term “Statement of Work” or “SOW” shall be amended to read as follows:

"Statement of Work" or "SOW" shall mean the statement of work for implementation of Remedial Work Element I of the Remedial Design and Remedial Action, annexed as Appendix B to the Original Consent Decree, as amended with respect to Remedial Work Element II by the 2015 Statement of Work annexed as Appendix BB to the Amendment to Consent Decree, and any further modifications made in accordance with this Consent Decree.

- 5. Section VI, Paragraphs 11 and 12 of the Consent Decree, are hereby replaced with the following:

11. On September 27, 2011, at EPA’s direction via a September 1, 2011 letter, Settling Defendants commenced natural attenuation monitoring of the groundwater at the Site using the protocols identified in the Settling Defendants’ November 30, 2006 Revised Interim Groundwater Monitoring Program. On January 11, 2012, Settling Defendants modified the Revised Interim Groundwater Monitoring Program in response to October 27, 2011 and December 13, 2011 comments from EPA. As part of the modifications, the Revised Interim Groundwater Monitoring Program was renamed the Long-Term MNA Sampling Program (“MNA Plan”). EPA approved the MNA Plan on January 18, 2012. Settling Defendants shall implement the EPA-approved MNA Plan in accordance with the schedules contained therein. Following one (1) year of implementation of the MNA Plan, the Settling Defendants submitted to EPA the Remedial Action Report – Final for Remedial Work Element II Groundwater (“Interim RA Report”) on November 29, 2012. EPA approved the Interim RA Report on January 3, 2013.

12. Settling Defendants shall implement the amended remedy selected with respect to Remedial Work Element II, in the 2011 ROD Amendment by financing and performing the Work in accordance with the 2011 ROD Amendment, the Consent Decree and the SOW.

- 6. Section VI, Paragraph 14.b.(iv) is hereby replaced with the following:

(iv.) monitored natural attenuation of the groundwater throughout the Site, except in the “MW-19 Area”; long-term groundwater monitoring throughout the Site to verify that the level and extent of groundwater contaminants are declining within the timeframe projected and that conditions are protective of human health and the

environment; and periodic monitoring of nearby residential private wells to ensure the effectiveness of the selected remedy.

7. Section IX, Paragraph 26 of the Consent Decree is hereby amended to add a subparagraph d. thereto which shall read as follows:

d. Within fifteen (15) days after each anniversary of the Effective Date of this Amendment to Consent Decree, and until Performance Standards have been achieved at the Site, Settling Defendants shall contact the local governmental office with jurisdiction over the issuance of building permits in the Town of Fenton (currently the Building Inspector for the Town of Fenton) to confirm that such office has a record of EPA's request that the appropriate Town officer confer with EPA before issuing any building permits for construction at the Site in order to address potential soil vapor intrusion concerns as set forth in the 2011 ROD Amendment. Contact by the Settling Defendants to such local office shall be made by telephone and confirmed in writing, and Settling Defendants shall provide annual notice to EPA to confirm that such contact has been made.

8. Section X, Paragraph 31 of the Consent Decree is hereby replaced with the following:

31. In addition to any other requirement of this Consent Decree, Settling Defendants shall submit to EPA and the State written semiannual progress reports that: (a) describe the actions which have been taken toward achieving compliance with this Consent Decree during the previous six (6)-month reporting period; (b) include a summary of all results of sampling and tests and all other data received or generated by Settling Defendants or their contractors or agents in the previous six (6)-month reporting period; (c) identify all deliverables required by this Consent Decree completed and submitted during the previous six (6)-month reporting period; (d) describe all actions, including, but not limited to, data collection, which are scheduled to be performed during the next six (6)-month reporting period and provide other information relating to the progress of the remedy, including, but not limited to, critical path diagrams, Gantt charts and PERT charts; (e) include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays and (f) include any modifications to the MNA plan or other schedules that Settling Defendants have proposed to EPA or that have been approved by EPA. Settling Defendants shall submit these progress reports to EPA and the State on the progress report delivery schedule established in the MNA Plan.

9. Section X, Paragraph 35 of the Consent Decree is hereby replaced with the following:

35. Settling Defendants shall submit to EPA and NYSDEC copies of all plans, reports, or other submissions required by the Consent Decree, the SOW, or any approved plan in accordance with the schedules therein. Upon request by or

agreement of EPA, Settling Defendants shall submit such plans, reports, or other submissions in electronic form. Any electronic submissions must be in a format that is compatible with EPA software and in database files and sizes to be specified by EPA. In addition, Settling Defendants will provide electronic submittal of sampling and geologic data collected after the Effective Date of this Amendment to Consent Decree in accordance with EPA Region 2 policies, guidelines, and formats. Geologic data includes all newly-installed monitoring wells and representative data from borings within the source areas. The EPA Region 2 Electronic Data Deliverable (“R2 EDD”) is a standardized format for all electronic submittals. Electronic submittals of sampling and geologic data will be made in accordance with the project schedule and in conjunction with the submittal of reports. Settling Defendants are responsible for reviewing any contractor work and ensuring consistency with R2 EDD requirements. The R2 EDD *Comprehensive EDD Specification Manual* includes instruction manuals and data-submission and validation files. The most recent R2 EDD policies, guidelines, and formats, including the most recent *Comprehensive EDD Specification Manual*, can be found at: <http://www.epa.gov/region02/superfund/medd.htm>.

10. Section XVI, Paragraph 54 of the Consent Decree is hereby replaced with the following:

54. Settling Defendants shall pay EPA all Future Response Costs not inconsistent with the NCP. On a periodic basis, EPA will send Settling Defendants a bill requiring payment that includes a printout of cost data in EPA’s financial management system. Settling Defendants shall make all payments to EPA via electronic funds transfer (“EFT”) within 30 days of receipt of each bill requiring payment. To effect payment via EFT, Settling Defendants shall instruct their bank to remit payment in the required amount via EFT using the following information, or such other updated EFT information that EPA may subsequently provide to Settling Defendants:

- Amount of payment
- Bank: **Federal Reserve Bank of New York**
- Account code for Federal Reserve Bank account receiving the payment: **68010727**
- Federal Reserve Bank ABA Routing Number: **021030004**
- SWIFT Address: **FRNYUS33**
33 Liberty Street
New York, NY 10045
- Field Tag 4200 of the Fedwire message should read: **D 68010727**
Environmental Protection Agency
- Name of remitter: **Tri-Cities Barrel site Potentially Responsible Parties Group**
- Index number: **96-CV-0637**
- Site/spill identifier: **02-5V**

At the time of payment, Settling Defendants shall send notice that such payment has been made by email to acctsreceivable.cinwd@epa.gov, kellum.elizabeth@epa.gov, mongelli.thomas@epa.gov and mintzer.michael@epa.gov

and by regular mail to:

U.S. Environmental Protection Agency
Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, OH 45268

Such notice shall reference the date of the EFT, the payment amount, the name of the Site, and Settling Defendants' names and addresses.

The total amount to be paid by Settling Defendants shall be deposited by EPA in the Tri-Cities Barrel Superfund Site Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

11. Section XVI, Paragraph 84 of the Consent Decree is hereby replaced with the following:

84. For purposes of Paragraph 82, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date the 2011 ROD Amendment was signed and, as set forth in the 2000 ROD and 2011 ROD Amendment for the Site and the administrative records supporting the 2000 ROD and 2011 ROD Amendment. For purposes of Paragraph 83, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date of Certification of Completion of the Remedial Action and set forth in the 2000 ROD and 2011 ROD Amendment, the administrative records supporting the 2000 ROD and 2011 ROD Amendment, the post-ROD administrative records, or in any information received by EPA pursuant to the requirements of this Consent Decree prior to Certification of Completion of the Remedial Action.

12. Section XXVI, Paragraph 104 of the Consent Decree is hereby replaced with the following:

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

any written notice requirement of the Consent Decree with respect to the United States, EPA, and the Settling Defendants, respectively.

As to the United States and EPA:

One hard copy and, if an email address is provided below, one electronic copy, to each of the following:

Remedial Project Manager – Tri-Cities Barrel Site
Emergency and Remedial Response Division
United States Environmental Protection Agency, Region 2
290 Broadway, 20th Floor
New York, New York 10007-1866
Attention: Thomas Mongelli, Remedial Project Manager
(Email) mongelli.thomas@epa.gov

Chief, New York/Caribbean Superfund Branch
Office of Regional Counsel
U.S. Environmental Protection Agency, Region II
Attention: Tri-Cities Barrel Superfund, Site Attorney
Email: mintzer.michael@epa.gov

EES Case Management Unit
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ # 90-11-3-1514/1
Email: eescdcopy.enrd@usdoj.gov (Re: DOJ # 90-11-3-1514/1)

United States Attorney's Office
Northern District of New York
445 Broadway, Room 218
Albany, New York 12207
Email: Thomas.spina@usdoj.gov

As to the State:

Director, Division of Environmental Remediation
N.Y. State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, New York 12233-7011
Attention: Josh Haugh
(electronic) josh.haugh@dec.ny.gov

As to the Settling Defendants

Name and address of Settling Defendants' Project Coordinator

13. Section XXIX, Paragraph 107 of the Consent Decree is hereby replaced with the following:
107. The following appendices are attached to and incorporated into this Consent Decree:
- "Appendix A" is the 2000 ROD.
 - "Appendix AA" is the 2011 ROD Amendment.
 - "Appendix B" is the 2000 SOW.
 - "Appendix BB" is the 2015 Statement of Work.
 - "Appendix C" is the description and/or map of the Site.
 - "Appendix D" is the complete list of the Settling Defendants.
 - "Appendix E" is the complete list of the Owner Settling Defendants.
 - "Appendix F" is the draft easement to secure access and institutional controls.
14. Other than as explicitly stated herein, the rights, remedies, and obligations of the Parties under the Consent Decree are not affected.
15. This Amendment to Consent Decree shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment in accordance with Section 122(d)(2) of CERCLA, 42 U.S.C. § 9622(d)(2), and 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding this Amendment to Consent Decree disclose facts or considerations that indicate that this Amendment to Consent Decree is inappropriate, improper, or inadequate. All other Parties to this Amendment to Consent Decree consent to the entry of this Amendment to Consent Decree without further notice.
16. Each undersigned representative of a Settling Defendant or, where applicable, successor entities, and the Assistant Attorney General for Environment and Natural Resources of the Department of Justice certifies that he or she is fully authorized to enter into the terms and conditions of this Amendment to Consent Decree and to execute and legally bind such Party to this document.


SO ORDERED THIS DAY OF , 2015.

United States District Judge

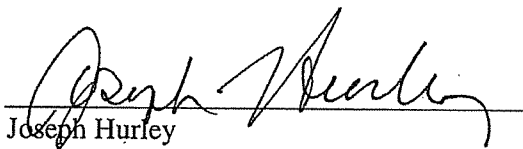
THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation et al. (N.D.N.Y.), regarding the Tri-Cities Barrel Superfund Site.

FOR THE UNITED STATES OF AMERICA

Date: _____


JOHN CRUDEN
Assistant Attorney General
Environment & Natural Resources Division
United States Department of Justice
Washington, D.C. 20530

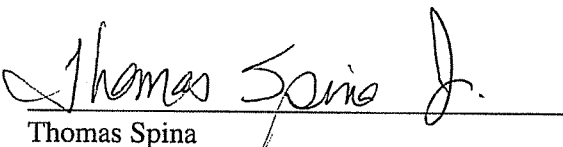
Date: 11-4-15


Joseph Hurley
Senior Counsel
Environmental Enforcement Section
Environment & Natural Resources Division
United States Department of Justice
P.O. Box 7611
Washington, D.C. 20044

RICHARD S. HARTUNIAN
United States Attorney for the
Northern District of New York

Date: 11/5/15

By:


Thomas Spina
Assistant United States Attorney
Northern District of New York
445 Broadway, Room 218
Albany, NY 12207

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

FOR THE UNITED STATES OF AMERICA

Date: 10/20/15

Walter E. Mugdan

Walter E. Mugdan, Director
for Emergency and Remedial Response Division
U.S. Environmental Protection Agency, Region 2
290 Broadway
New York, NY 10007-1866

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Amphenol Corporation
Settling Defendant

7/17/2015
Date


Signature

Assoc General Counsel & Assistant Secretary
Name and Title

358 HALL AVENUE
Address

Wallingford, CT 06492

203-265-8631
Phone Number

PPEREZ@Amphenol.com
E-mail Address

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

Name: THE CORPORATION TRUST COMPANY

Title: AUTHORIZED AGENT

Address: CORPORATION TRUST CENTER

1209 ORANGE STREET, WILMINGTON, DE 19801

Telephone Number: 800-677-3394

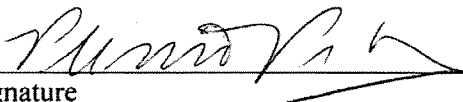
E-mail Address:

BOSTON TEAM @ ~~WALTERS~~ WALTERS KLOWER.COM

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Amphenol Interconnect Products Corporation
Settling Defendant

7/17/2015
Date


Signature

Assoc. General Counsel & Assistant Secretary
Name and Title

358 HALL AVENUE
Address

WALLINGFORD, CT 06492

203-265-8631
Phone Number

PPEKEZ@amphenol.com
E-mail Address

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

Name: THE CORPORATION TRUST COMPANY
Title: AUTHORIZED AGENT
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1209 ORANGE STREET, WILMINGTON, DE 19801
Telephone Number: 800-677-3394
E-mail Address: BOSTONTEAM@WOLTERS KLOWER.COM

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Amphenol Interconnect Products Corporation
Settling Defendant

7/17/2015
Date

[Handwritten Signature]
Signature

Assoc. General Counsel & Assistant Secretary
Name and Title

358 HALL AVENUE
Address

WALLINGFORD, CT 06492

203-265-8631
Phone Number

PPEKEZ@amphenol.com
E-mail Address

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

Name: THE CORPORATION TRUST COMPANY

Title: AUTHORIZED AGENT

Address: CORPORATION TRUST CENTER
1209 ORANGE STREET, WILMINGTON, DE 19801

Telephone Number: 800-677-3394

E-mail Address: BOSTONTEAM@WOLTERS KLOWER.COM

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Ashland Inc.
Settling Defendant

07/24/15
Date

Rob E. Lampkin
Signature

Robin E. Lampkin, Senior Environmental, Product Regulatory
Name and Title *+ Trade Group Counsel*

5200 Blazer Parkway
Address

Dublin, OH 43017

614.790.3019
Phone Number

relampking@ashland.com
E-mail Address

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


Name: *CT Corporation Systems*
Title: *Registered Agent*
Address: *111 8th Avenue, New York, New York 10011*

Telephone Number: *1.866.925.9916*
E-mail Address: *None*

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Arkema Inc. (f/k/a Atofina Chemicals, Inc.)
Settling Defendant

Date



William J. Hamel
Sr. Vice President and General Counsel

Arkema Inc.
900 First Avenue
King of Prussia, PA 19406

Phone: (610) 205-7052
E-mail: william.hamel@arkema.com

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

Corporation Service Company (CSC)
2595 Interstate Drive, Suite 103
Harrisburg, PA 17110

Phone Number: (866) 403-5272
E-mail Address: N/A

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

BASF Corporation
Settling Defendant

7/14/15
Date

Linda Brenneman
Signature

Linda Brenneman, Associate General Counsel
Name and Title

100 Park Ave
Address

Florham Park, NJ 07932

973-245-7781
Phone Number

Linda.Brenneman@basf.com
E-mail Address

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

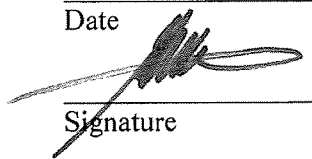
Name: Karyllan Mack
Title: Environmental Counsel
Address: 100 Park Ave
Florham Park, NJ 07932
Telephone Number: 973-245-7170
E-mail Address: Karyllan@mack@BASF.COM

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Bristol-Myers Squibb Company
Settling Defendant

7-14-15

Date


Signature

Glen R. Stuart, Esq., Outside Counsel

Name and Title

Morgan, Lewis & Bockius LLP

Address

1701 Market Street, Philadelphia, PA 19103

215-963-5883

Phone Number

gstuart@morganlewis.com

E-mail Address

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

Name: Glen R. Stuart, Esq.

Title: Outside Counsel

Address: Morgan, Lewis & Bockius LLP
1701 Market Street, Philadelphia, PA 19103

Telephone Number: 215-963-5883

E-mail Address: gstuart@morganlewis.com

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Bronstein Container Company, Inc.

Settling Defendant

9/15/15
Date

Steven H. Bronstein
Signature

Steven Bronstein, President
Name and Title

Rock Cut Road & Cor Rams Gulch Road
Address

Syracuse, NY 13210

315/469-6191
Phone Number

SHB@BronsteinContainer.com
E-mail Address

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

Name: Kevin C. Murphy, Esq.
Title: The Wladis Law Firm, P.C.
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Syracuse, New York 13214
Telephone Number: 315-445-1700
E-mail Address: kmurphy@wladislawfirm.com

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Carrier Corporation
Settling Defendant

July 20, 2015
Date

Ellen J 2
Signature

Ellen J. Quinn VP of EHS
Name and Title

One Carrier Place
Address

Farmington, CT 06032

860 674 3406
Phone Number

ellen.quinn@utc.com
E-mail Address

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

Name: Diane Bellantoni
Title: Counsel
Address: United Technologies Corporation
10 Farm Springs Road, Farmington, CT 06032-2568
Telephone Number: 860 728 7842
E-mail Address: diane.Bellantoni@utc.com

583216

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Chemcoat, Inc.

7/27/2015
Date

Myral A. Bonnell
Signature

Myral A. Bonnell, President

2700 Canfields Lane

Montoursville, PA 17754

570-368-8631
Phone Number

MABonnell@Chemcoat.com
E-mail Address

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

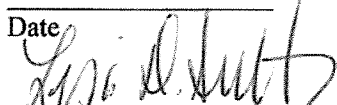
Name: Peter G. Facey, Esquire
Title: Lawyer
Address: McNemey, Page, Vanderlin & Hall
433 Market Street
Williamsport, PA 17701
Telephone Number: 570-326-6555
E-mail Address: pfacey@mpvhlaw.com

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Cooper Industries, LLC (as successor to Cooper Industries, Inc.)
Settling Defendant

July 14, 2015

Date



Signature

Lisa D. Sutton
Vice President/Chief Counsel - Environment Health & Safety
Name and Title

Eaton

Address

1100 Eaton Boulevard, Cleveland, OH 44122

440-523-4358

Phone Number

LisaDSutton@eaton.com

E-mail Address

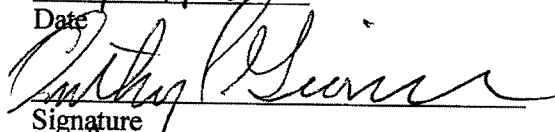
Agent Authorized to Accept Service on Behalf of Above-Signed Party:

Name: CT Corporation System
Title: Kristin.Bolden
Address: 1300 East Ninth Street
Cleveland, OH 44114
Telephone Number: 216-802-2121
E-mail Address: Kristin.Bolden@wolterskluwer.com

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Crash's Auto Parts and Sales, Inc.
Settling Defendant

7/29/15
Date


Signature

Anthony P. Giovinazzo, President
Name and Title

2128 State Rt. 5
Address

Utica NY 13502

(315) 732-7274
Phone Number

N/A
E-mail Address

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

Name: Vincent Tramacera

Title:

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Utica, NY 13502

Telephone Number: 315-724-8244

E-mail Address: Vtramacera@fssgroupllc.com

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Drake Oil Company, Inc.
Settling Defendant

7.16'15

Date

Joanne P. Drake
Signature

Joanne P. Drake, Successor-in-interest to Drake Oil Company, Inc.
Name and Title

21 Lake Rd. ext.
Address

Pulaski, N.Y. 13142

843.651.9341
Phone Number

jdrake36@gmail.com
E-mail Address

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

Name: Richard R. Capozza, Esq.
Title: Barclay Damon, LLP
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Syracuse, NY 13202
Telephone Number: (315) 425-2710
E-mail Address: rcaozza@barclaydamon.com

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

E.I. du Pont de Nemours & Company
Settling Defendant

25 July 2015

Date



Signature

STEPHEN RAHAIM CHIEF ENVIRONMENTAL COUNSEL
Name and Title

974 CENTRE ROAD 721/1264
Address

WILMINGTON DE 19805

302-996-8278

Phone Number

STEPHEN.RAHAIM@DUPONT.COM
E-mail Address

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

Name:

Title:

Address:

AFABOK

Telephone Number:

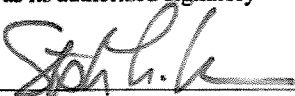
E-mail Address:

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Emerson Power Transmission Corp.
Settling Defendant

Date

By Emerson Electric Co., a Missouri corporation, as indemnifying party to its former subsidiary, Emerson Power Transmission Corp., and as its authorized signatory

By: 
Signature

Stephen L. Clarke Vice President

Name and Title Environmental Affairs and Real Estate

8000 W. Florissant Avenue
Address

St. Louis, MO 63136

314.553.1953
Phone Number

Steve.Clarke@Emerson.com
E-mail Address

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

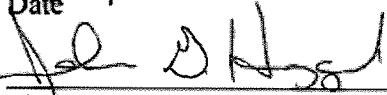
Name:
Title:
Address:

Telephone Number:
E-mail Address:

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

General Electric Company
Settling Defendant

7/17/2015
Date


Signature

John Haggard, Leader Global Remediation
Name and Title

319 Great Oaks Blvd.
Address

Albany, NY 12203

518-862-2739
Phone Number

John.Haggard@ge.com
E-mail Address

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

Name:
Title:
Address:

Telephone Number:
E-mail Address:

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Hexion Inc. (f/k/a Borden, Inc.)
Settling Defendant

7-13-15
Date

K E Kosten
Signature

Karen Kosten Executive v. & President
Name and Title

HEXION INC.
Address

180 E. Broad St Columbus OH 43215

614-225-4000
Phone Number

karen.kosten@hexion.com
E-mail Address

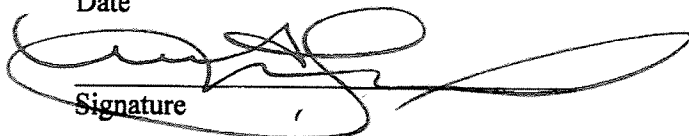
Agent Authorized to Accept Service on Behalf of Above-Signed Party:

Name: National Registered Agents, Inc
Title: Registered Agent
Address: 100 Canal Pointe Blvd # 212
Princeton NJ 08540
Telephone Number: 800-767-1553
E-mail Address: Norine.Najel@wotterskluger.com

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Honeywell International Inc.
Settling Defendant

7-13-15
Date


Signature

MARK A. SWEITZER, REMEDIATION MANAGER
Name and Title

6100 PHILADELPHIA PIKE
Address

CLAYMONT, DE 19703

215-807-8453
Phone Number

MARK.SWEITZER@HONEYWELL.COM
E-mail Address

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


Name:
Title:
Address:

Telephone Number:
E-mail Address:

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

International Business Machines Corporation
Settling Defendant

8/4/2015
Date


Signature

Edan Dionne
Name and Title

Director, IBM Corporate Environmental Affairs

Address
294 Rte. 100, Building 2

Somers, NY 10589
Phone Number

914-766-2729, dionneaus.ibm.com
E-mail Address

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

Name:
Title:
Address:

Telephone Number:
E-mail Address:

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

International Paper Company (for itself and as successor to Champion International Corporation)
Settling Defendant

7/14/2015
Date

Brian E. Heim
Signature

Brian E. Heim, Chief Counsel, Environment + Sustainability
Name and Title

6400 Poplar Ave
Address

Memphis, TN 38197

901-419-3824
Phone Number

brian.heim@ipaper.com
E-mail Address

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

Name: Brian E. Heim
Title: Chief Counsel
Address: International Paper, 6400 Poplar Ave, Memphis, TN 38197

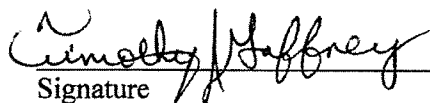
Telephone Number: 901-419-3824

E-mail Address: brian.heim@ipaper.com

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

JCI Jones Chemicals, Inc. (formerly known as Jones Chemicals, Inc.)
Settling Defendant

July 16, 2015
Date


Signature

Timothy J. Gaffney, Executive V. P.
Name and Title

JCI Jones Chemicals, Inc.
Address
100 Sunny Sol Boulevard
Caledonia, NY 14423

(585) 538-2314
Phone Number

tgaffney@jciichem.com
E-mail Address

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

Name:

Title:

Address:

Telephone Number:

E-mail Address:

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

KCC Holding, Inc. (formerly known as Kaplan Container Corporation)
Settling Defendant

7/23/15

Date

Charles Kaplan
Signature

CHARLES KAPLAN - President
Name and Title

5 Harrington Drive
Address

Fairport NY 14450

585-381-3393
Phone Number

BaronKap@gmail.com
E-mail Address

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

Name: Leslie M. Mauro
Title: Partner, Hart, Sargent & Emery LLP
Address: 1600 Bausch and Lomb Place, Rochester, NY 14604

Telephone Number: 585.231.1367

E-mail Address: mmauro@hselaw.com

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Malchak Salvage Company, Inc.
Settling Defendant

7/24/15
Date

Willb Malchak
Signature

Willson Malchak manager
Name and Title

360 Castle Creek Road
Address

Binghamton, NY 13901

607-648-4827
Phone Number

willywostny.rv.com
E-mail Address

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

Name:

Title:

Address:

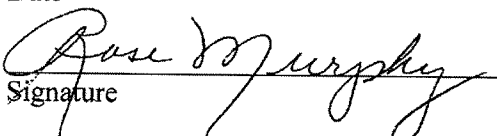
Telephone Number:

E-mail Address:

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Masonite Corporation
Settling Defendant

July 21, 2015
Date


Signature

Rose Murphy, Vice President
Name and Title

210 N Franklin Street, Suite 300
Address

Tampa, Florida 33602

813-739-1814
Phone Number

rmurphy@masonite.com
E-mail Address

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

Name:
Title:
Address:

Telephone Number:
E-mail Address:

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Newton Falls LLC (successor to Newton Falls Inc.)
Settling Defendant

July 22, 2015
Date

Edwin F. Bush II
Signature

Edwin F. Bush, II; Secretary
Name and Title

110 Appleton Coated LLC
540 Prospect Street
Address

Combined Locks, WI

920-687-3388
Phone Number

ebush@appletoncoated.com
E-mail Address

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

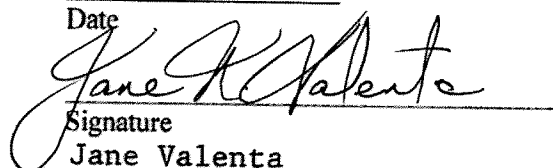
Name: Edwin F. Bush, II
Title: Secretary
Address: 540 Prospect Street
Combined Locks, WI
Telephone Number: 920-687-3388
E-mail Address: ~~ebush~~ ebush@appletoncoated.com

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

PPG Industries, Inc.
Settling Defendant

August 17, 2015

Date



Signature

Jane Valenta
VP, Environment, Health & Safety

Name and Title

One PPG Place

Address

Pittsburgh, PA 15272

412-434-4229

Phone Number

valenta@ppg.com

E-mail Address

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

Name: Steve Faeth
Title: Corporate Counsel
Address: One PPG Place, 39th Floor
Pittsburgh, PA 15272
Telephone Number: 412-434-3799
E-mail Address: sfaeth@ppg.com

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Rocky Brands, Inc. (successor to EJ Footwear L.L.C.)
Settling Defendant

August 6, 2015
Date

James E. McDonald
Signature

JAMES E. McDonald, EVP and CFO
Name and Title

39 East Canal Street
Address

Nelsonville, Ohio 45764

(740) 753-1951
Phone Number

jim.mcdonald@rockybrands.com
E-mail Address

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

Name: Acme Agent, Inc.

Title:

Address: 41 South High Street, Suite 2800
Columbus, Ohio 43215

Telephone Number: (614) 227-2000

E-mail Address:

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

SI Group, Inc. (f/k/a Schenectady International, Inc.)
Settling Defendant

July 10, 2015

Date



Signature

Tom Masterson, General Counsel
Name and Title

2750 Balltown Road
Address

Schenectady, NY 12309

518-347-4443
Phone Number

Thomas.Masterson@siigroup.com
E-mail Address

Agent Authorized to Accept Service on Behalf of Above-Signed Party: *None*

Name:

Title:

Address:

Telephone Number:

E-mail Address:

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Sonoco Flexible Packaging, Co., Inc. a South Carolina corporation (successor to Sonoco Flexible Packaging, Inc., a Delaware corporation)

Settling Defendant

13 July 2015

Date

[Signature]

Signature

LARRY PATTENGILL, DIRECTOR GLOBAL ENVIRONMENTAL

Name and Title

1 NORTH SECOND STREET

Address

HARTSVILLE, SC 29550

843-383-3463

Phone Number

larry.pattengill@sonoco.com

E-mail Address

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

Name: CT Corporation

Title:

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Telephone Number: 866-665-5799

E-mail Address: ctcorporationSouthTeam@WoltersKluwer.com

or

ct.wolterskluwer.com

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Gary F. Warner
Settling Defendant

7/22/15
Date

Gary F. Warner
Signature

None
Name and Title

P.O. Box 65
Address

Paoli, OH.

405 207 7918
Phone Number

None
E-mail Address

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

Name:

Title:

Address:


Telephone Number:

E-mail Address:

THE UNDERSIGNED PARTY enters into this Amendment to Consent Decree in the matter of United States v. Amphenol Corporation, et al., (N.D.N.Y.) regarding the Tri-Cities Barrel Superfund Site.

Yawga Energy Products, LLC (formerly known as Agway Energy Products, LLC)
Settling Defendant

7/13/2015
Date


Signature

John R. Steiner, President
Name and Title

P.O. Box 101975
Address

IRONDALE, AL 35210

315-247-1374
Phone Number

jsteiner@yawga.net
E-mail Address

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

Name: THOMAS J. FUCILLO, Esq.
Title: ATTORNEY FOR YAWGA
Address: MENTER, RUDIN & TRIVELPIECE, P.C., 308 MALTBIE ST.,
SYRACUSE, NY 13204
Telephone Number: 315-474-7541
E-mail Address: TFucillo@menterlaw.com

APPENDIX AA
to
AMENDMENT TO CONSENT DECREE
TRI-CITIES BARREL SUPERFUND SITE

2011 ROD Amendment

AMENDMENT TO THE RECORD OF DECISION

Tri-Cities Barrel Superfund Site
Town of Fenton, Broome County, New York



United States Environmental Protection Agency
Region II
New York, New York
September 2011

DECLARATION FOR THE AMENDMENT TO THE RECORD OF DECISION

SITE NAME AND LOCATION

Tri-Cities Barrel Superfund Site
Town of Fenton, Broome County, New York

Superfund Site Identification Number: NYD980509285
Operable Unit 1

STATEMENT OF BASIS AND PURPOSE

This amendment to the Record of Decision (ROD Amendment) documents the U.S. Environmental Protection Agency's (EPA's) selection of a modified groundwater remedy for the Tri-Cities Barrel Superfund site (Site), which is chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §9601, *et seq.*, and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300. This decision document explains the factual and legal basis for selecting the modified remedy for the Site. The attached index (see Appendix III) identifies the items that comprise the Administrative Record upon which the selection of the modified groundwater remedy is based.

The New York State Department of Environmental Conservation (NYSDEC) was consulted on the planned modified remedy in accordance with CERCLA Section 121(f), 42 U.S.C. §9621(f), and it concurs with the selected modified remedy (see Appendix IV).

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the action selected in this ROD Amendment, may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED MODIFIED REMEDY

A ROD signed on March 31, 2000 selected a remedy for the Site, which called for, among other things, the excavation and off-Site treatment/disposal of contaminated soil and sediment, and extraction and on-Site treatment of the contaminated groundwater. This ROD Amendment changes the groundwater component of the remedy. This action represents the final remedy planned for the Site.

The major components of the selected modified groundwater remedy include the following:

- Monitored natural attenuation of groundwater contamination¹ throughout the Site, except in the "MW-19 Area,"
- Long-term groundwater monitoring to verify that the level and extent of groundwater contaminants are declining within the timeframe projected and that conditions are protective of human health and the environment; and,
- Periodic monitoring of nearby residential private wells to ensure the effectiveness of the selected remedy.

In addition, biodegradation parameters (e.g., dissolved oxygen, nitrate, sulfate, methane, ethane, ethene, alkalinity, redox potential, pH, temperature, conductivity, chloride, sulfide, iron, and total organic carbon) will be used to assess the progress of the degradation process.

MW-19 Area groundwater is located in an approximately 120 feet (ft) by 80 ft by 30 ft deep technical impracticable zone and is depicted on Figures 2 and 3 of the ROD Amendment. The chemical-specific applicable or relevant and appropriate requirements are waived in this zone for tetrachloroethene, 1,1,1-trichloroethane, 1,1-dichloroethane, cis-1,2-dichloroethene, and vinyl chloride.

Under this remedy, the installation and use of groundwater wells at the Site for drinking water purposes are prohibited by an existing deed restriction. Also under this remedy modification, the groundwater cleanup goals remain the same as in the 2000 ROD, except to the extent they are waived.

The Site is zoned residential and is currently vacant. If, in the future, structures are proposed to be built on the property, then a soil vapor intrusion evaluation and, potentially, vapor mitigation may be needed, or alternatively just soil vapor mitigation. As a governmental institutional control, the Office of the Town of Fenton Building Inspector has acknowledged to EPA that such office will notify any person seeking to build residential structures at the Site of soil vapor concerns relating to the property, and specifically of the need for a soil vapor evaluation and potentially, soil vapor mitigation systems or, alternatively just soil vapor mitigation.

The soil and sediment component of the remedy selected in the 2000 ROD is not being modified by this ROD Amendment. The soil and sediment component of the remedy

1 Natural attenuation describes a variety of *in-situ* processes, which under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in groundwater. Groundwater monitoring would be conducted to assess the progress of the natural attenuation.

was completed in 2003. Under this action, approximately 75,000 tons of contaminated soil and sediment were excavated and disposed off-Site.

DECLARATION OF STATUTORY DETERMINATIONS

The selected modified groundwater remedy meets the requirements for remedial actions set forth in CERCLA Section 121, 42 U.S.C. §9621, because it: 1) is protective of human health and the environment; 2) meets a level or standard of control of the hazardous substances, pollutants and contaminants, which at least attains the legally applicable or relevant and appropriate requirements under federal and state laws, except where the ARAR is waived; 3) is cost effective; and 4) provides long-term effectiveness.

Because the selected modified groundwater remedy will result in contaminants remaining on-Site that exceed acceptable health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, additional actions may be implemented.

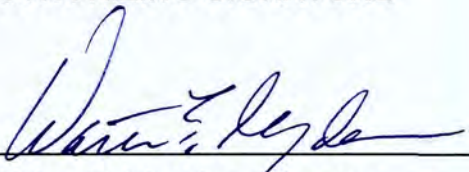
ROD DATA CERTIFICATION CHECKLIST

The ROD Amendment contains the modified groundwater remedy selection information noted below. More details may be found in the Administrative Record file for this Site.

- Contaminants of concern and their respective concentrations (see ROD Amendment, pages 6-7);
- Current and reasonably-anticipated future land use assumptions and current and potential future uses of groundwater used in the baseline risk assessment and ROD Amendment (see ROD Amendment, pages 8-9);
- Baseline risk represented by the contaminants of concern (see ROD Amendment, pages 9-12);
- Cleanup levels established for contaminants of concern and the basis for these levels (see ROD Amendment, Appendix II, Table 10);
- Key factors used in selecting the modified remedy (*i.e.*, how the selected modified groundwater remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decision)(see ROD Amendment, pages 21-26);
- Key factors used in technical impracticability for the MW-19 Area (see ROD Amendment, pages 26-27); and,

- Estimated capital, annual monitoring, and present-worth costs; discount rate; and the number of years over which the modified groundwater remedy cost estimates are projected (see ROD Amendment, page 23 and Appendix II, Table 11).

AUTHORIZING SIGNATURE



Walter E. Mugdan, Director
Emergency and Remedial Response Division

9/27/11

Date

**RECORD OF DECISION FACT SHEET
EPA REGION II**

Site

Site name: Tri-Cities Barrel Superfund Site
Site location: Town of Fenton, Broome County, New York
HRS score: 44.06
Listed on the NPL: October 4, 1989

Amendment to the Record of Decision

Date signed: September 27, 2011
Selected remedy: Monitored natural attenuation of Site groundwater excluding the area covered by a technical impracticability waiver (MW-19 Area)
Capital cost: \$65,600
Annual monitoring cost: \$134,800
Present-worth cost: \$1,774,000 (7% discount rate for 30 years)

Lead

EPA
Primary contact: Young S. Chang, Remedial Project Manager, (212) 637-4253
Secondary contact: Joel Singerman, Chief
Central New York Remediation Section, (212) 637-4258

Main PRPs

See ROD Amendment Appendix VI – Settling Defendants

Waste

Waste type: Volatile organic compounds and metals in groundwater
Waste origin: Industrial waste containing hazardous substances remaining in drums that were sent to the Site for reconditioning
Contaminated media: Groundwater

**AMENDMENT TO THE RECORD OF DECISION
DECISION SUMMARY**

Tri-Cities Barrel Superfund Site
Town of Fenton, Broome County, New York

United States Environmental Protection Agency
Region II
New York, New York
September 2011

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SITE NAME, LOCATION, AND DESCRIPTION

The Tri-Cities Barrel Superfund Site (Site), which is listed on the NPL, includes a 14.9-acre parcel which became contaminated through operation of a drum and barrel reconditioning business. Operations at the Site included the receipt and reconditioning of drums and barrels previously used to contain a variety of substances used in industrial or commercial processes. Wastewater from the reconditioning process was discharged to the ground or into unlined lagoons on the Site. The Site is situated adjacent to Old Route 7, approximately five miles northeast of the City of Binghamton, in the Town of Fenton, Broome County, New York and is bisected by Interstate Highway 88 (I-88). The Site is bordered to the north by Osborne Creek and by rural residential areas, farmland, and woodlands on the other sides. The property is presently zoned residential/agricultural; the industrial use of the property was a nonconforming use (*i.e.*, the drum reclamation facility was permitted to continue operating after a zoning ordinance that would have prohibited such industrial use had been established for this area). The current land use in the immediate vicinity of the Site is residential, agricultural, and recreational².

The southern portion of the Site is relatively flat, except in the vicinity of I-88, where the ground surface slopes steeply down to the highway. North of I-88, the ground surface slopes gradually northward toward Osborne Creek. In the vicinity of Osborne Creek, the ground surface slopes steeply to the creek and the associated flood plain. The elevation of the site ranges from 930 feet (ft) (at Osborne Creek) to 1,025 ft above mean sea level (south of Osborne Hollow Road). Refer to Figure 1.

Two small unnamed, intermittent streams parallel the eastern and the western sides of the Site. The eastern tributary is located outside the property boundary; the western tributary is located within the property boundary. Both streams collect the surface water runoff from the southern portion of the Site, including Osborne Hollow Road, Old Route 7, and the railroad tracks. Both of the streams flow north, discharging to Osborne Creek.

A man-made pond (a former lagoon) located north of I-88 occupies approximately 6,000 square feet (sq ft). However, the size of the pond varies greatly with seasonal precipitation, and is often dry or nearly dry during the summer months. The pond covers the greatest amount of land surface and is deepest (2-3 ft) during the spring. Currently, the pond receives water from precipitation directly into the pond and storm water runoff from I-88 and the area between I-88 and the pond.

2 The Tri-Cities Barrel Potentially Responsible Party Group (PRP Group) obtained a deed restriction from the current property owner to restrict the use of the property in perpetuity, recorded in the Broome County Clerk's Office, State of New York, Book of Deeds No. 01875 at Page 1044.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

The property was operated as a barrel and drum (hereinafter, "drum") reconditioning facility from about 1955 to 1992. The Tri-Cities Barrel Co., Inc., a defunct corporation of which Gary Warner was the most recent president, owned and operated the property during this period.

The drum reconditioning process involved cleaning and reconditioning the interior and exterior of drums through a combination of physical, chemical, and mechanical means. The drums, which were brought to the Site from numerous different sources, typically contained residues of a variety of chemical compounds employed in industrial or commercial operations. Depending on the nature of the residues, Tri-Cities Barrel Co. employed various processes to remove such residues, including water and caustic sodium hydroxide solutions, incineration, particle blasting, and scraping. Much of the available property south of I-88 was used for drum storage. As many as 1,000 drums per week were reconditioned at the facility.

From the beginning of the facility's operations to the early 1960s, liquid wastes from the reconditioning process were discharged to the ground and allowed to flow downslope toward Osborne Creek. This practice created a distinctive drainage pattern. From the early 1960s to 1980s, liquid wastes were discharged into a series of unlined lagoons on the Site. These lagoons were reportedly three to four ft deep. Prior to the completion of construction of I-88 in 1968, there were five lagoons located north of the former process building that were aligned along a north-south line in the same general area as the earlier discharge pattern. After the construction of I-88, the liquid wastes were directed from east to west across the Site through the lagoons. The discharge from these lagoons flowed to the western tributary.

Tri-Cities Barrel Co. discontinued its practice of discharging liquid wastes to the lagoons in 1980 after negotiations with NYSDEC. By 1981, the three lagoons south of I-88 had been backfilled with approximately 7,000 cubic yards of fill. Following the closure of the lagoons, the liquid wastes generated in the drum cleaning process were collected in a holding tank and hauled off-site for disposal. Upon installation of a closed-loop wastewater recirculation system, only infrequent off-site disposal of the liquid wastes was done.

Based upon the results of an EPA-performed site investigation and New York State-performed Phase I and Phase II site investigations, the Site was listed on the National Priorities List on October 4, 1989.

A PRP search conducted by EPA in 1991 resulted in the initial identification of 23 PRPs for the Site. In May 1991, EPA notified these parties that it considered them PRPs with respect to the Site, and provided those parties with the opportunity to perform a remedial investigation and feasibility study (RI/FS) for the Site under EPA oversight pursuant to an Administrative Order on Consent (AOC). On May 14, 1992, EPA entered into an AOC

with 14 of these parties (i.e., the original members of the PRP Group), under which they agreed to perform an RI/FS to determine the nature and extent of the contamination at the Site and to identify and evaluate remedial alternatives.

Drum reconditioning operations ceased at the facility in 1992, in accordance with an agreement between the PRP Group and Gary Warner. During 1992 and 1993, the property was used by Tri-Cities Barrel Co. to broker clean drums that were brought in by the company from off-site sources, and to sell the existing inventory of empty, clean plastic drums.

Following issuance of the RI/FS AOC, EPA continued its PRP investigation and, in August 1995, notified 64 additional parties of their potential responsibility at the Site. Thirty-one of these parties were determined by EPA to be parties with a minimal, or *de minimis*, share of liability and were offered participation in a *de minimis* settlement. Of those 31 parties, 26 elected to settle their liability with EPA as respondents in an AOC in March 1996. Three more *de minimis* parties settled with EPA in an AOC in July 1997.

On September 25, 1996, EPA entered into an AOC with 34 PRPs whereby the PRP Group agreed to perform a removal action at the Site under EPA oversight. EPA then issued a Unilateral Administrative Order in December 1997 to eight non-consenting PRPs, directing them to participate in the removal action along with the AOC parties. The objectives of this action were to locate, characterize the contents, and properly dispose of all containers, drums, tanks, and debris located on-site and decontaminate, demolish, and dispose of all buildings and structures. This work was completed in January 1997. Several concrete slabs and building foundations were present after 1997.

Based upon the results of the 1999 RI/FS reports and a February 2000 public meeting, a Record of Decision (ROD) was signed on March 31, 2000, which called for the excavation and off-site disposal of contaminated soil/sediment, backfill of the excavated area with clean fill and the extraction and treatment of contaminated groundwater at the Site.

In 2001, the United States settled with 43 PRPs in a consent decree entered in United States district court. The consent decree required the settling PRPs to implement the design and remedial action for the Site that had been selected by EPA in the ROD. The soil and sediment remedy selected in the ROD was completed in 2003 and resulted in the excavation and off-site disposal of 74,969 tons (40,000 cubic yards) of contaminated soil and sediment. In 2003, the building foundations remaining after the 1997 removal were excavated, decontaminated, cut into manageable sizes, and buried in a clean area on-site in an area that is designated as the "MW-19 Area" and shown on Figure 2. The concrete foundations with visible staining were disposed off-site at a Subtitle D landfill.

To evaluate the potential for natural attenuation of groundwater, an evaluation was conducted during the RI/FS. The results of natural attenuation screening conducted during the RI/FS were inconclusive and because of the lack of important site-specific

information or "evidence" of natural attenuation, including characterization data necessary to quantify the rates of biological degradation processes, it was not possible to develop time frames for the natural attenuation of contaminants in the groundwater.

From 2001 through 2005, seven rounds of groundwater samples were collected as part of an MNA study and documented in the 2007 *Revised Comprehensive Monitored Natural Attenuation Evaluation Report*. The data indicate that the total mass of contaminants had greatly reduced after the removal of the source of the groundwater contamination, vadose zone soil. In addition, the presence of reductive microbial metabolic products indicates that the primary MNA mechanism responsible for the decline is biodegradation. The findings of this effort were also summarized in a PRP Group-prepared 2008 draft focused feasibility study (FFS) report with comparison of MNA to other alternatives such as groundwater pump and treat. After reviewing the draft FFS report, EPA concluded that while MNA may be feasible for the majority of the Site, the data did not demonstrate that MNA would address the groundwater contamination in the "MW-19 Area" (the source of the contamination in this area could not be identified). It was also concluded by EPA that because of the low permeability of the aquifer, groundwater extraction and treatment was not technically viable for the Site.

Based upon the recommendations in the draft FFS report, the PRP Group was directed by EPA to implement an enhanced reductive dechlorination (ERD) pilot-scale treatability study in the MW-19 Area. Following the completion of four rounds of performance monitoring events, the PRP Group submitted a draft Pilot Study Report in January 2010. Based upon its review of the report, EPA requested that the PRP Group perform additional investigation to locate the source and, if located, then perform targeted ERD treatment. The PRP Group performed a supplemental investigation from September through December 2010. This work included the performance of a passive soil gas survey³, collection of discrete groundwater samples from the silt and sand/gravel zones beneath and around the concrete rubble, permeability testing, and hydraulic conductivity testing. This investigation did not result in the identification of a source of the contamination in the MW-19 Area.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

The *Revised Comprehensive Monitored Natural Attenuation Evaluation Report* (ESC Engineering, 2007), *Pilot Study Report (Revision 2)* (WSP Environmental, 2010), *MW-19 Area Supplemental Investigation Report* (WSP Environmental, 2011), *A Risk Assessment for Human Health and Ecological Risks* developed in 2008, *Focused Feasibility Study Report (Revision 2)* (WSP Environmental, 2011), and *2011 Proposed*

3 Forty-seven passive soil gas samplers were installed in 15-ft intervals over the MW-19 Area. The results were used to aid in locating the potential source of 1,1,1-trichloroethane (1,1,1-TCA) and tetrachloroethene (PCE) in MW-19 Area groundwater. 1,1,1-TCA was detected 14 times over the reporting limit and the maximum detected was 832 nanograms. PCE was detected 18 times over the reporting limit and the maximum detected was 6,513 nanograms.

Plan for Remedy Modification for the Site were made available to the public in both the Administrative Record and information repositories⁴ maintained at the EPA Docket Room in the Region II New York City office at 290 Broadway in Manhattan and the information repository at the Fenton Town Hall, 44 Park Street, Port Crane, New York. A notice of availability for the above-referenced documents was published in the *Binghamton Press and Sun Bulletin* on Sunday, July 31, 2011. A public comment period ran from July 31, 2011 to August 30, 2011.

On August 16, 2011, EPA conducted a public meeting at the Town of Fenton Town Hall to present the findings of the recent groundwater investigations and FFS and to answer questions from the public about the Site and the groundwater remedial alternatives under consideration.

Responses to the comments received at the public meeting and in writing during the public comment period are included in the Responsiveness Summary (see Appendix V).

SCOPE AND ROLE OF OPERABLE UNIT

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Section 300.5, defines an operable unit as a discrete action that comprises an incremental step toward comprehensively addressing site problems. This discrete portion of a remedial response manages migration, or eliminates or mitigates a release, threat of a release, or pathway of exposure. The cleanup of a site can be divided into a number of operable units, depending on the complexity of the problems associated with the site. Operable units may address geographical portions of a site, specific site problems, or an initial phase of an action, or it may consist of any set of actions performed over time or any actions that are concurrent but located in different parts of a site.

This action applies a comprehensive approach; therefore, only one operable unit is required to remediate the Site. The primary objectives of this action are to restore site-wide⁵ groundwater quality to levels which meet state and federal drinking-water standards within a reasonable time frame and reduce or eliminate any direct contact or inhalation threat associated with contaminated groundwater.

The action described in this ROD Amendment changes the groundwater remedy selected in the 2000 ROD, but does not alter the objectives except as to those objectives which are waived. All objectives related to soil and sediment remediation identified in the 2000

4 As of August 1, 2011, another repository location has been added for this Site. Fenton Free Library, 1062 Chenango Street, Binghamton, NY.

5 EPA concluded that since the source of the groundwater contamination in the MW-19 Area could not be identified despite multiple investigations, further efforts to try to identify the source would likely be fruitless, and remedial action in the MW-19 Area to address the source or to address the groundwater contamination is not warranted due to technical impracticability from an engineering perspective.

ROD have been met and completed. This action represents the final remedy planned for the Site.

SUMMARY OF SITE CHARACTERISTICS

The Site is underlain by 35 ft (southern portion of the Site, south of Old Route 7) to greater than 60 ft (northern portion of the Site) of unconsolidated deposits, which are brown, silty, and clayey till, with discontinuous thin sand and gravel lenses. The till deposits with sand layers form the unconsolidated water-bearing zone at the Site. Because of the slow recharge observed in the on-site wells and the low hydraulic conductivity of the till, the groundwater present in the till is referred to as a water-bearing zone and does not qualify as an aquifer⁶. Beneath the unconsolidated deposits lies predominantly shale bedrock. Based on over fifteen years of data, it has been concluded by EPA that the contamination in the groundwater at this Site is confined to the shallow groundwater present in the till and sand layers mentioned above.

Within 1,000 ft of the Site boundary, there are nine private drinking water wells⁷. They are all located upgradient or cross-gradient from the Site and installed in bedrock and are not considered potential receptors of affected groundwater.

The affected groundwater at the Site is mainly restricted to the area south of I-88, within the shallow, unconsolidated water-bearing zone; the bedrock aquifer is not contaminated. Prior to the 2003 removal of the contaminated soil, the groundwater plume at the Site appeared to be located in isolated zones within an area approximately 240 ft wide by 500 ft long. The most prevalent volatile organic compounds (VOCs) and their corresponding maximum concentrations detected in the groundwater prior to 2003 soil remediation were toluene (7,500 micrograms per liter (ug/l)), 2-butanone (5,300 ug/l), 1,1-dichloroethane (1,1-DCA) (4,700 ug/l), cis-1,2-dichloroethene (cis-1,2-DCE) (12,000 ug/l), 1,1,1-TCA (310 ug/l), methylene chloride (1,600 ug/l), and vinyl chloride (VC) (21,000 ug/l). The most prevalent semi-volatile organic compounds (SVOCs) and their corresponding maximum concentrations detected prior to 2003 were phenol (6,900 ug/l) and 4-methylphenol (13,000 ug/l). PCBs and pesticides (alpha-chlordane, 4,4'-DDE, and heptachlor) were detected in monitoring wells outside of the VOC plume at relatively low levels of 1.6 ug/l, 0.11 ug/l, 0.03 ug/l, and 0.09 ug/l, respectively. The prevalent metals of concern and their maximum concentrations detected were iron (38,000 ug/l), manganese (15,600 ug/l), antimony (59.2 ug/l), nickel (184 ug/l) and cadmium (15 ug/l). Other metals were at background concentrations in the groundwater.

⁶ Aquifer in this context is a permeable geologic unit that can transmit and store significant quantities of water. The well yield at Site is so low it is measured in milliliters per minute. The Remedial Investigation report referred to the groundwater at the Site as a water-bearing zone and not an aquifer due to the very low yield.

⁷ The private drinking water wells were sampled by the New York State Department of Health during the RI; no Site-related contaminants were detected. The residential well located closest to the Site was resampled in 2005. Site-related contaminants were not detected.

While the vertical and horizontal extent of the groundwater contaminant plume has not significantly changed since the removal of the source, with the exception of trichloroethene (TCE) which showed a moderate decrease in concentration, the concentrations of other contaminants have dramatically decreased since the removal of the contaminated soil in 2003. In 2010, the most prevalent VOCs and their corresponding maximum concentrations detected in the groundwater are TCE (720 ug/l), 1,1-DCA (160 ug/l), cis-1,2-DCE (270 ug/l), and VC (270 ug/l). 2010 data for toluene, methylene chloride, 2-butanone, and 1,1,1-TCA found previously in the groundwater which had exceeded the New York State Ambient Water Quality Standards (NYS AWQS) prior to the 2003 source removal, were either not detected or were within the drinking water standard for New York State. All of the maximum concentrations detected, except TCE, were from monitoring well MW-3S. Maximum levels of TCE were observed in monitoring well MW-16S. Most of the other wells south of I-88 had TCE at concentrations ranging from 13 to 75 ug/l. Monitoring well MW-16S is located in the former operational area south of I-88 and monitoring well MW-3S is located 140 ft downgradient of monitoring well MW-16S.

Monitoring wells MW-3S and MW-16S are not in the MW-19 Area. Historically, MW-19 Area TCE concentration ranged from non-detect to 1.3 ug/l. A summary of groundwater data since the source removal of 2003 is provided in the Table 1 of Appendix II. Groundwater data from 2010 for all wells monitored are provided in Table 2 of Appendix II.

The relatively low concentrations observed in monitoring wells north of I-88, downgradient of the source areas, suggest that the plume is not highly mobile. For example, the only contaminant of concern (COC) detected downgradient has been VC. The maximum detected concentrations of VC in 2010 were found in two monitoring wells located near the remediated source areas South of I-88 at 68 ug/l and 270 ug/l, whereas the maximum detected concentrations of VC in monitoring wells which are 200 and 300 feet downgradient and screened at similar depths, were 6.8 ug/l and 4.5 ug/l, respectively.

Groundwater data collected after the 2003 source removal detected levels of SVOCs, pesticides, and PCBs below the federal and state drinking water standards. Maximum detected levels of metals which exceeded the federal and state drinking water standards since the 2003 contaminated soil and sediment removal are as follows: iron (6,900 ug/l), manganese (1,600 ug/l), and cadmium (7.9 ug/l).

During the RI/FS, two monitoring wells, MW-14 and MW-14B, and one piezometer, P-2, (see Figure 2) were located in the vicinity of what is now called the MW-19 Area. Only piezometer P-2 showed PCE contamination above the cleanup levels. During the MNA study in 2001, a monitoring well (MW-19) was installed approximately 20 ft easterly of piezometer P-2. Since then, PCE and 1,1,1-TCA have persisted in the MW-19 Area wells with concentration levels ranging from 12 to 66 ug/l and 45 to 72 ug/l, respectively.

Piezometer P-2 has exhibited similar PCE and 1,1,1-TCA contamination levels since 1997. The MW-19 Area plume is estimated to be about 120 ft by 80 ft. The NYS AWQS and the federal standard of Drinking Water Maximum Contamination Level (MCL) for PCE is 5 ug/l. See Tables 1 and 2 for groundwater data.

PRINCIPAL THREAT WASTE

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430 (a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for the migration of contamination to groundwater, surface water, or air, or acts as a source for direct exposure. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of alternatives, using the remedy selection criteria which are described below. This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

Principal threat wastes identified in the 2000 ROD located in the former incoming drum storage area, the former Lagoon 1 area, and within the former process building area were removed with other contaminated soil and sediment in 2003 and treated as appropriate prior to disposal.

CURRENT AND POTENTIAL FUTURE LAND AND RESOURCE USES

The property is presently zoned residential/agricultural; the industrial use of the property was a nonconforming use (*i.e.*, the drum reclamation facility was permitted to continue operating after a zoning ordinance prohibiting such use had been established for this area)⁸. The current land use in the immediate vicinity of the Site is residential, agricultural, and recreational. Based on a number of factors, including EPA's observations as to land use in the area of the Site since at least 1989, the existing zoning for the Site property, an August 1999 resolution by the Town Board of the Town of Fenton affirming that zoning⁹, and subsequent communications between the Town Board, EPA,

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- 8 Letter from Donald F. Brown, Town Engineer, Town of Fenton, to Joel Singerman, Chief, Central New York Remediation Section, EPA, dated August 23, 1999. See Site Administrative Record.
- 9 Resolution of August 23, 1999 by the Town of Fenton Town Board, and letter from Donald F. Brown, Town Engineer, Town of Fenton, to Jack Spicuzza, Ashland, Inc., dated November 2, 1999. See Site Administrative Record.

and the PRP Group, EPA determined that the reasonably-anticipated future use for the Site is residential/agricultural.

Currently, the on-Site shallow contaminated unconsolidated water-bearing zone and the uncontaminated bedrock aquifer are not used for drinking water. Residents living in the vicinity of the Site use the deep bedrock aquifer as the sole source of potable water which was not impacted by the Site. Groundwater near the Site will continue to be used as a source of potable water under future-use scenarios. In addition, the potential future use of the unconsolidated water-bearing zone on Site may be used as a drinking water source once cleanup levels have been achieved.

SUMMARY OF SITE RISKS

Based upon the results of the RI, a baseline risk assessment was conducted to estimate the risks associated with current and future Site conditions. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these under current and anticipated future land uses.

EPA developed an updated baseline risk assessment to estimate the current and future effects of contaminants on human health and the environment following the 2003 implementation of the remedial action which removed source material (soil and sediment). A baseline risk assessment is an analysis of the potential adverse human health and ecological effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate such releases, under future groundwater uses. The updated baseline risk assessment includes a human health risk assessment (HHRA) and an ecological risk assessment (ERA) that is presented in the 2008 document titled *Future Groundwater Scenario for the Tri-Cities Barrel Superfund Site* (USEPA 2008).

Human Health Risk Assessment

Four-step processes is utilized for assessing site-related human health risks for reasonable maximum exposure (RME) scenarios and are identified below:

Hazard Identification (Data Collection and Evaluation): In this step, the COCs at a site in various media (in this case, contaminants in groundwater) are identified based on such factors as toxicity, frequency of occurrence, fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

The 2008 risk assessment used the maximum concentrations from the shallow wells (MW-2S, MW-3S, MW-7S, MW-16S, and MW-20S) collected on December 11 and 12, 2007 to identify the COCs. Based on the results of the baseline human health risk

assessment, the following COCs were identified: 1,1-DCA, 1,2-DCA, cis-1,2-DCE, methylene chloride, PCE, TCE, and VC (see Table 3).

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants identified in the previous step are evaluated. Examples of exposure pathways include ingestion of and dermal contact with contaminated groundwater and inhalation exposures while showering. Factors relating to the exposure assessment include, but are not limited to, the concentrations in specific media that people might be exposed to and the frequency and duration of that exposure. Using these factors, a RME scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

Potential receptors and exposure pathways were based on current and future land use. The exposure routes were evaluated as appropriate for the potential receptors. See Table 4 for the Selection of Exposure Pathways.

In addition to calculating the risks and hazards to the RME individual, calculations of risks and hazards to the Central Tendency Exposed (CTE) individual are also provided for those chemicals exceeding the risk range.

Toxicity Assessment: In this step, the types of adverse health effects associated with contaminant exposures and the relationship between magnitude of exposure (dose) and severity of adverse health effects (response) are determined. Potential health effects are contaminant specific and may include the risk of developing cancer over a lifetime or other non-cancer health effects, such as changes in the normal functions of organs within the body (e.g., changes in the effectiveness of the immune system). Some contaminants are capable of causing both cancer and non-cancer health effects. Tables 5 and 6 provide a summary of the COCs and their respective toxicity values for carcinogenic and non-carcinogenic health effects.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks for all COCs. Exposures are evaluated based on the potential risk of developing cancer and the potential for non-cancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a one-in-ten-thousand excess cancer risk; or one additional cancer may be seen in a population of 10,000 people as a result of exposure to site contaminants under the conditions identified in the Exposure Assessment. Current Superfund regulations for acceptable exposures are an individual lifetime site-related excess cancer risk in the range of 10^{-4} to 10^{-6} , corresponding to a one-in-ten-thousand to a one-in-a-million excess cancer risk or less. For non-cancer health effects, a hazard index (HI) is calculated. An HI represents the sum of the individual exposure levels compared to their corresponding Reference Doses. The key concept for a non-cancer HI is that a "threshold" (measured as an HI of less than or equal to 1) exists below which non-cancer health hazards are not expected to occur. The goal of protection is 10^{-6} for cancer risk and an HI of 1 for a

non-cancer health hazard. Chemicals that exceed a 10^{-4} cancer risk or an HI of 1 are typically those that will require remediation at the site.

The cancer risk and non-cancer health hazard estimates in the HHRA are based on future RME scenarios and were developed by taking into account various health protective estimates about the frequency and duration of an individual's exposure to chemicals selected as COCs, as well as the toxicity of these contaminants. Cancer risks and non-cancer HIs are summarized below.

The 2008 risk assessment evaluated the health effects for both future children, adults, and on-site workers in a residential setting exposed to direct contact with contaminated groundwater in the shallow wells (e.g., through ingestion of groundwater and inhalation of volatiles released into indoor air from groundwater while showering in an enclosed space). The updated risk assessment began by selecting COCs in groundwater that would be representative of Site exposures and resulting risks.

Based on the 2008 risk assessment, future risks to the adult resident were 6.3×10^{-4} (6.3 additional cancers within a population of 10,000 people based on ingestion of 2 liters/day of shallow groundwater for a period of 350 days/year for 24 years) and to the child resident were 3.6×10^{-4} (3.6 additional cancers within a population of 10,000 people based on ingestion of 1 liter/day for a period of 350 days/year for 6 years). The risks to the combined future adult and child resident are 9.9×10^{-4} (an increased risk of approximately 1 additional cancer within a population of 1,000 based on the exposure assumptions identified above). Risks to the future adult worker were 4.8×10^{-4} (4.8 additional cancers among a population of 10,000 workers assuming ingestion of 2 liters/day for 250 days/year for a period of 25 years). See Table 6 for summary of risks to carcinogens.

The non-cancer hazards based on the same exposure assumptions used in the cancer assessment were approximately HI of 2 for the future adult resident; 4.7 for the future child resident; and 1.4 for the future worker. See Table 8 for summary of non-cancer hazards.

The toxicity values used in the 2008 assessment were evaluated against currently available toxicity values. This comparison found that the toxicity values for TCE and cis-1,2-DCE were revised since the 2008 assessment. The oral cancer slope factor for TCE changed from 1.3×10^{-2} mg/kg-day to 5.9×10^{-3} mg/kg-day which resulted in a change in the calculated risks. This reduction does not significantly change the calculated risks found in the original assessment. A summary of the changes in the cancer risks for all receptors are provided in Table 9.

In addition, the oral Reference Dose for cis-1,2-DCE was revised through the IRIS process. This revision resulted in an increase in the non-cancer health hazard for the future exposures for the child from HI of 2.8 to 14; adult from HI of 0.86 to 4.3; and adult worker from HI of 0.86 to 4.3. These changes in toxicity values do not result in significant changes to the overall conclusions from the risk assessment.

The risks for the future adult and child resident are above the risk range established in the NCP (10^{-4} to 10^{-6}) described above. The risks to the future workers are within the upper bounds of the risk range. The non-cancer hazards exceeded EPA's goal of protection of an HI = 1 for all three receptors (i.e., future adult and child resident, and future on-site worker). The main COCs were VC, TCE, and cis-1,2-DCE. Evaluation of cancer risks and non-cancer hazards associated with showering were within the risk range for all receptors. A complete discussion of the exposure pathways and estimates of risk can be found in the Human Health Risk Assessment Future Groundwater Scenario for the Tri-Cities Barrel Site.

In addition, the assessment also evaluated cancer risks and non-cancer health hazards associated with exposures to the future adult, child and the worker exposed under central tendency or average exposure scenarios. The CTE assessment evaluated risks to a future adult from ingestion of groundwater and inhalation of VOCs while showering and other household uses. The total risks were 7.8×10^{-5} and this calculated risk is within the risk range. The cancer risks to the future child from ingestion of groundwater and inhalation of VOCs while showering and other household uses. The total risks were 1.3×10^{-4} and this risk is within the upper bounds of the risk range. The non-cancer Hazard Indices to the future residential child and adult under CTE scenarios were 3.3 and 1, respectively; however, using the revised toxicity value for cis-1,2-dichloroethylene the Hazard Indices were 11 and 3.4, respectively. The updated non-cancer HI exceed the goal of protection of a HI = 1. The main contributor to the non-cancer Hazard Indices was cis-1,2-dichloroethene. The cancer risks to the future worker consuming shallow drinking water provides the risk to the future adult worker from ingestion groundwater and inhalation of VOCs while showering and other household uses. The total risks to the future worker were 6.5×10^{-5} and are within the risk range. The HI for the on-site worker was 0.71 under the previous toxicity value; however the use of the revised toxicity value resulted in an HI greater than 1 up to an HI of 2.4.

In summary, the greatest potential future carcinogenic risk attributable to the Site is associated with the ingestion of groundwater. The potential cancer risk and non-cancer Hazard Indices are based on current levels of groundwater contaminants.

Ecological Risk Assessment

The potential risk to ecological receptors was evaluated. For there to be an exposure, there must be a pathway through which a receptor (e.g. plant, animal) comes into contact with one or more of the contaminants of potential concern. Without a complete pathway or receptor, there is no exposure and hence, no risk.

Based on a review of existing data, there are no potential exposure pathways for ecological receptors at the Site. As noted above, all of the contaminated soil and sediment have been excavated and disposed of off-site. The depth to groundwater (the

medium of concern) is approximately 30 ft and is unlikely to affect any surface water bodies.

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include the following: environmental chemistry sampling and analysis; environmental parameter measurement; fate and transport modeling; exposure parameter estimation; and toxicological data. Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there can be significant uncertainty as to the actual levels present. Environmental chemistry-analysis error can stem from several sources, including the errors inherent in the analytical methods and characteristics of the matrix being sampled.

Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come in contact with the COCs, the period of time over which such exposure would occur, and the fate and transport models used to estimate the concentrations of the chemicals of concern at the point of exposure.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the Risk Assessment provides upper-bound estimates of the risks to populations near the Site, and it is highly unlikely to underestimate actual risks related to the Site. More specific information concerning public health risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways is presented in the updated 2008 risk assessment.

Basis for Action

Based upon the results of the RI, the risk assessment, and updated 2008 risk assessment, EPA has determined that the action selected in this ROD Amendment is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) are specific goals to protect human health and the environment. These objectives are based on available information and standards such as Applicable or Relevant and Appropriate Requirements (ARARs) for drinking water.

The following RAOs are established for the Site groundwater:

- Restore Site-wide¹⁰ groundwater quality to levels which meet state and federal drinking-water standards within a reasonable time frame; and
- Reduce or eliminate any direct contact or inhalation threat associated with contaminated groundwater.

DESCRIPTION OF ALTERNATIVES

CERCLA §121(b)(1), 42 U.S.C. §9621(b)(1), mandates that remedial actions must be protective of human health and the environment, cost-effective, comply with ARARS, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which employ, as a principal element, treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, and contaminants at a site. CERCLA §121(d), 42 U.S.C. §9621(d), further specifies that a remedial action must attain a level or standard of control of the hazardous substances, pollutants, and contaminants that at least attains ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA §121(d)(4), 42 U.S.C. §9621(d)(4).

The 2000 ROD evaluated three remedial alternatives to address the Site-wide groundwater contamination: no action; MNA; and groundwater extraction and treatment. At that time, there was insufficient data to demonstrate that MNA was occurring at the Site. Groundwater extraction and treatment was selected in the ROD as the most appropriate alternative. As described above, since the ROD, MNA has been evaluated further and now sufficient data exists which demonstrates that MNA is occurring at the Site, except in the MW-19 Area. The *Focused Feasibility Study Report (Revision 2)* (WSP Engineering, 2011) evaluates no action, MNA, and groundwater extraction and treatment.

Detailed descriptions of the remedial alternatives for addressing the contamination associated with the Site (excluding the MW-19 Area) can be found in the FFS report.

Since the PRP Group effectuated a deed restriction with the current Site property owner to prohibit, among other things, the installation and use of groundwater wells at the Site, this institutional control is considered a component of all of the remedial alternatives described below.

10 EPA concluded that since the source of the groundwater contamination in the MW-19 Area could not be identified despite multiple investigations, further efforts to try to identify the source would likely be fruitless, and remedial action in the MW-19 Area to address the source or to address the groundwater contamination is not warranted due to technical impracticability from an engineering perspective.

The construction time for each alternative reflects only the time required to construct or implement the remedy and does not include the time required to design the remedy, negotiate the performance of the remedy with the responsible parties, or procure contracts for design and construction. The present-worth costs for the alternatives discussed below are calculated using a discount rate of seven percent and a 30-year time interval.

The alternatives described below have been renumbered from the *FFS Report* to facilitate the presentation of the analysis.

Alternative GW-1: No Action

Capital Cost:	\$0
Annual Monitoring Cost:	\$0
Present-Worth Cost:	\$0
Construction Time:	0 months

The Superfund program requires that the "no-action" alternative be considered as a baseline for comparison with the other alternatives. The no-action remedial alternative does not include any physical remedial measures that address the problem of groundwater contamination at the Site.

Because this alternative would result in contaminants remaining on-site above levels that allow for unrestricted use and unlimited exposure, CERCLA requires that the Site be reviewed every five years. If justified by the review, remedial actions may be implemented in the future to remove or treat the contamination.

Alternative GW-2: Monitored Natural Attenuation

Capital Cost:	\$65,600
Annual Monitoring Cost:	\$134,800
Present-Worth Cost:	\$1,775,000
Construction Time:	0 months

Under this alternative, the groundwater contamination would be addressed through natural attenuation processes (*i.e.*, biodegradation, dispersion, sorption, volatilization, and oxidation-reduction reactions). As part of a long-term groundwater monitoring program, a performance monitoring plan would be needed to monitor the effectiveness of the MNA remedy.

For cost estimating purposes, groundwater samples were assumed to be collected and analyzed quarterly in order to verify that the level and extent of groundwater contaminants (e.g., VOCs) are declining and that conditions are protective of human health and the environment. In addition, biodegradation parameters (e.g., dissolved oxygen, nitrate, sulfate, methane, ethane, ethene, alkalinity, redox potential, pH, temperature, conductivity, chloride, sulfide, iron, and total organic carbon) would be used to assess the progress of the degradation process.

The capital cost associated with this alternative is for the preparation of a performance monitoring plan. For the present worth cost calculation, a 30-year monitoring time was assumed.

Because this alternative would result in contaminants remaining on-site which exceed acceptable health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, additional actions may be implemented.

Alternative GW-3: Groundwater Extraction and Treatment

Capital Cost:	\$792,000
Annual Operation, Monitoring and Maintenance (OM&M) Cost:	\$125,000
Present-Worth Cost:	\$2,381,000
Construction Time:	3 months

Under this alternative, a network of recovery wells would be used to extract contaminated groundwater which would be treated and discharged to surface water.

As part of a long-term groundwater monitoring program to evaluate the effectiveness of the groundwater extraction and treatment remedy, an OM&M Plan would be needed.

For cost estimating purposes, a 30-year operation time was used and groundwater sampling was assumed to be collected and analyzed semiannually.

Because this alternative would result in contaminants remaining on-site which exceed acceptable health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, additional actions may be implemented.

COMPARATIVE ANALYSIS OF ALTERNATIVES

In selecting a remedy, EPA considered the factors set out in CERCLA Section 121, 42 U.S.C. §9621, by conducting a detailed analysis of the viable remedial alternatives pursuant to the NCP, 40 CFR §300.430(e)(9), and OSWER Directive 9355.3-01 (*Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA: Interim Final*, EPA, October 1988). The detailed analysis consisted of an assessment of the individual alternatives against each of nine evaluation criteria and a comparative analysis focusing upon the relative performance of each alternative against those criteria.

The following "threshold" criteria are the most important and must be satisfied by any alternative in order to be eligible for selection:

1. *Overall protection of human health and the environment* addresses whether or not a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.
2. *Compliance with ARARs* addresses whether or not a remedy would meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes and requirements or the circumstances to provide grounds for invoking a waiver.

The following "primary balancing" criteria are used to make comparisons and to identify the major tradeoffs between alternatives:

3. *Long-Term effectiveness and permanence* refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.
4. *Reduction of toxicity, mobility, or volume through treatment* is the anticipated performance of the treatment technologies, with respect to these parameters, a remedy may employ.
5. *Short-term effectiveness* addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.

6. *Implementability* is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.
7. *Cost* includes estimated capital, operation and maintenance and net present-worth costs.

The following "modifying" criteria are used in the final evaluation of the remedial alternatives after the formal comment period, and may prompt modification of the preferred remedy that was presented in the Superfund Proposed Plan for Remedy Modification:

8. *State acceptance* indicates whether, based on its review of the Revised Comprehensive Monitored Natural Attenuation Evaluation Report, 2008 FFS report, and Superfund Proposed Plan for Remedy Modification, the State concurs with, opposes, or has no comments on the selected modified remedy.
9. *Community acceptance* refers to the public's general response to the alternatives described in the 2008 FFS report and Superfund Proposed Plan for Remedy Modification.

A comparative analysis of these alternatives based upon the evaluation criteria noted above, follows.

Overall Protection of Human Health and the Environment

Although Alternative GW-3 would rely upon extraction and treatment of contaminated groundwater to restore to groundwater while Alternative GW-1 and Alternative GW-2 would rely upon natural attenuation to restore groundwater quality to drinking water standards, based upon preliminary modeling results, it is estimated that all three alternatives would result in the restoration of groundwater quality to drinking water standards in approximately 50 years. Under Alternative GW-1, however, since monitoring would not be performed, there would be no way to gauge the overall protectiveness of the remedy.

Until groundwater standards are met under all of the alternatives, human exposure to the contaminated groundwater would be mitigated through the existing deed restrictions that would prevent the use of the shallow groundwater for drinking water purposes. In addition, five-year reviews would be conducted at the Site as described above.

Compliance with ARARs

EPA and NYSDEC have promulgated health-protective MCLs, which are enforceable standards for various drinking water contaminants (chemical-specific ARARs). While

contamination from the Site has not been found in any existing private wells in the vicinity of the Site, groundwater contamination at the Site itself presents human health cancer risks for future on-site residents and workers if not addressed by one of the remedial alternatives.

Alternatives GW-1 and GW-2 do not provide for any direct remediation of groundwater and would, therefore, rely upon natural attenuation to achieve chemical-specific ARARs. Based upon groundwater modeling, all three alternatives would be effective in reducing groundwater contaminant concentrations below MCLs. Under Alternative GW-1, however, since monitoring would not be performed, there would be no way to gauge the effectiveness of the remedy in meeting ARARs.

Long-Term Effectiveness and Permanence

Alternative GW-1 and Alternative GW-2 would rely upon natural attenuation to restore groundwater quality to drinking water standards, whereas the Alternative GW-3 would rely upon extraction and treatment of contaminated groundwater to restore to groundwater. Based on modeling results, all three alternatives would result in the restoration of groundwater quality to drinking water standards in approximately 50 years; therefore, the alternatives have similar long-term effectiveness and permanence. Under Alternative GW-1, however, since monitoring would not be performed, there would be no way to gauge the long-term effectiveness and permanence of the remedy.

Alternative GW-3 would generate treatment residues which would have to be appropriately handled; Alternatives GW-1 and GW-2 would not generate such residues.

Reduction of Toxicity, Mobility, or Volume Through Treatment

Alternatives GW-1 and GW-2 would rely upon natural attenuation, not treatment, to reduce the volume of contaminants. Collecting and treating contaminated groundwater under Alternative GW-3, on the other hand, would reduce the toxicity, mobility, and volume of contaminants through treatment, thereby satisfying CERCLA's preference for treatment. However, as noted earlier, because of the low hydraulic conductivity of the fill, pumping the contaminated groundwater present in the shallow zone at this Site will yield a very small volume. As a result, collecting the contaminated groundwater for treatment would be difficult and inefficient.

Short-Term Effectiveness

Alternatives GW-1 and GW-2 do not include any active remediation; therefore, they would not present an additional risk to the community or workers resulting from activities at the Site. Alternatives GW-2 and GW-3 might present some limited risk to on-site workers through dermal contact and inhalation related to groundwater sampling activities. Alternative GW-3 would pose an additional risk to on-site workers since it would involve

the installation of extraction wells through potentially contaminated groundwater. The risks to on-site workers could, however, be minimized by utilizing proper protective equipment.

Since no actions would be performed under Alternative GW-1, there would be no implementation time. It is estimated that Alternative GW-2 would require a month to implement, since developing a long-term groundwater monitoring program would be the only activity that is required. It is estimated that the groundwater extraction and treatment systems under Alternative GW-3 would be constructed in three months.

Based upon groundwater modeling results, it has been estimated that the contaminated groundwater would naturally attenuate to groundwater standards (under Alternatives GW-1 and GW-2) in 50 years. It is also estimated that under Alternative GW-3, groundwater standards would be met after 50 years of extraction and treatment. Alternative GW-3 is estimated to take as long as the Alternatives GW-1 and GW-2 because of the low yielding shallow groundwater at site.

Implementability

Alternative GW-1 would be the easiest groundwater alternative to implement, since it would require no activities. With the performance of monitoring of natural attenuation parameters to demonstrate that it is reliable in achieving the specified performance goals, Alternative GW-2 would require more effort to implement than Alternative GW-1, but would be easily implemented. Alternative GW-3 would be the most difficult to implement in that it would require the construction of a groundwater extraction system and pipelines. The services and materials that would be required for the implementation of all of the groundwater remedial alternatives are readily available. However, as noted earlier, because of the low hydraulic conductivity of the till, pumping the contaminated groundwater present in the shallow zone at this Site for Alternative GW-3 will yield a very small volume. As a result, collecting the contaminated groundwater for treatment would be difficult and inefficient.

All of the treatment equipment that would be utilized in Alternatives GW-3 are proven and commercially available. Transportation and disposal of treatment residues could be easily implemented using commercially-available equipment. Under these alternatives, sampling for treatment effectiveness and groundwater monitoring would be necessary, but could be easily implemented.

Cost

The estimated capital, annual operation, monitoring, and/or maintenance, and present-worth costs for each of the alternatives are presented below. Present-worth costs are calculated using a discount rate of seven percent and a 30-year time interval.

Alternative	Capital Cost	Annual Cost	Present-Worth Cost
GW-1	\$0	\$0	\$0
GW-2	\$65,600	\$134,800	\$1,774,000
GW-3	\$792,000	\$125,000	\$2,381,000

As can be seen by the cost estimates, the least costly alternative is GW-1 at \$0. Alternative GW-3 is the most costly alternative at \$2,381,000.

State Acceptance

NYSDEC concurs with the selected modified groundwater remedy; a letter of concurrence is attached (see Appendix IV).

Community Acceptance

Comments received during the public comment period indicate that the public generally supports the selected modified groundwater remedy. These comments are summarized and addressed in the Responsiveness Summary, which is attached as Appendix V to this document.

SELECTED MODIFIED GROUNDWATER REMEDY

Summary of the Rationale for the Selected Modified Groundwater Remedy

Based upon an evaluation of the various groundwater alternatives, Alternative GW-2, Monitored Natural Attenuation, provides the best balance of tradeoffs with respect to the evaluation criteria as described below. Under this alternative, the groundwater contamination will be addressed through natural attenuation processes (*i.e.*, biodegradation, dispersion, sorption, volatilization, and oxidation-reduction reactions). As part of a long-term groundwater monitoring program, groundwater samples will be collected and analyzed periodically in order to verify that the level and extent of groundwater contaminants (*e.g.*, VOCs) are declining and that conditions are protective of human health and the environment. In addition, biodegradation parameters (*e.g.*, dissolved oxygen, nitrate, sulfate, methane, ethane, ethene, alkalinity, redox potential, pH, temperature, conductivity, chloride, sulfide, iron, and total organic carbon) would be used to assess the progress of the degradation process. The installation and use of groundwater wells at the Site for drinking water purposes will be prohibited by the existing deed restriction. This selected remedy includes an informational institutional control to notify prospective builders of soil vapor intrusion concerns which could be addressed by

soil vapor intrusion evaluation and, if needed, vapor mitigation, or alternatively just soil vapor mitigation.

While Alternative GW-3 would actively treat the groundwater and Alternatives GW-1 and GW-2 would rely upon natural attenuation, it is estimated that it would take 50 years to achieve groundwater standards under all three alternatives. However, as noted earlier, because of the low hydraulic conductivity of the till, pumping the contaminated groundwater present in the shallow zone at this Site will yield a very small volume. As a result, collecting the contaminated groundwater for treatment would be difficult and inefficient. Alternative GW-3 is, however, significantly more costly than Alternatives GW-1 and GW-2. While Alternative GW-1 would achieve the cleanup objectives in the same time frame as the other alternatives and would be the least costly alternative, since monitoring would not be performed under this alternative, there would be no way to gauge the overall effectiveness of the remedy. Therefore, EPA and NYSDEC believe that Alternative GW-2 would minimize the migration of contaminated groundwater at the Site, while providing the best balance of tradeoffs among the alternatives with respect to the nine evaluation criteria.

The selected modified remedy is protective of human health and the environment, provides long-term effectiveness, will achieve the ARARs in a reasonable time frame (except to the extent that they are waived), and is cost-effective. Therefore, the modified selected remedy will provide the best balance of tradeoffs among the alternatives with respect to the evaluation criteria.

Description of the Selected Modified Groundwater Remedy

The major components of the selected modified groundwater remedy include the following:

- MNA of groundwater contamination throughout the Site, except in the "MW-19 Area;"
- Long-term groundwater monitoring to verify that the level and extent of groundwater contaminants are declining within the timeframe projected and that conditions are protective of human health and the environment; and,
- Periodic monitoring of nearby residential private wells to ensure the effectiveness of the selected remedy.

MW-19 Area groundwater is located in an approximately 120 ft by 80 ft by 30 ft deep technical impracticable zone. The chemical-specific ARARs are waived in this zone for PCE, 1,1,1-TCA, 1,1-DCA, cis-1,2-DCE, and VC.

Under this remedy, the installation and use of groundwater wells at the Site for drinking

water purposes are prohibited by an existing deed restriction.

If, in the future, structures are proposed to be built on the property, then a soil vapor intrusion evaluation and, potentially, vapor mitigation may be needed, or alternatively just soil vapor mitigation. As a governmental institutional control, the Office of the Town of Fenton Building Inspector has acknowledged to EPA that such office will notify any person seeking to build residential structures at the Site of soil vapor concerns relating to the property, and specifically of the need for a soil vapor evaluation and potentially, soil vapor mitigation systems or, alternatively just soil vapor mitigation.

The soil and sediment component of the remedy selected in the 2000 ROD is not being modified by this ROD Amendment. The soil and sediment component of the remedy was completed in 2003. During the 2003 action, approximately 75,000 tons of contaminated soil and sediment were excavated and disposed off-Site.

Because the selected modified groundwater remedy will result in contaminants remaining on-Site that exceed acceptable health-based levels, CERCLA requires that the Site be reviewed every five years. If justified by the review, additional actions may be implemented

Summary of the Estimated Modified Groundwater Remedy Costs

The estimated capital, annual (cost to monitor groundwater), and present-worth costs (using a 7% discount rate for a period of 30 years) for the selected modified groundwater remedy are \$65,600, \$134,800, and \$1,774,000, respectively. Table 11 provides the basis for the cost estimate for the selected modified remedy.

It should be noted that these cost estimates are order-of-magnitude engineering cost estimates that are expected to be within +50 to -30 percent of the actual project cost. These cost estimates are based on the best available information regarding the anticipated scope of the selected modified remedy. Changes in the cost elements may occur as a result of new information and data collected during the annual monitoring of the modified groundwater remedy.

Expected Outcomes of the Selected Modified Groundwater Remedy

The 2000 ROD called for excavation and off-Site treatment/disposal of contaminated soils and sediments, and extraction and on-Site treatment of the contaminated groundwater. The results of post-soil remediation aquifer testing indicated that the selected groundwater remedy would not be effective in addressing the groundwater contamination. As a result, the remedial alternatives for the groundwater component of the remedy were reevaluated. Land use associated with the Site has been discussed above and is not anticipated to change as a result of the implementation of the selected remedy. However, in the future, if structures are proposed to be built on the property,

then a soil vapor intrusion evaluation and, potentially, vapor mitigation may be needed or alternatively just soil vapor mitigation.

The current action addresses the groundwater. The results of the risk assessment indicate that the hypothetical future use of the groundwater at the Site will pose an unacceptable increased future cancer risk and an unacceptable non-cancer hazard risk to human health. Under the selected alternative, the groundwater contamination would be addressed through natural attenuation and a long-term groundwater monitoring program to verify that the level and extent of groundwater contaminants are declining and that conditions are protective of human health and the environment. Under the selected remedy, the installation and use of groundwater wells at the Site for drinking water purposes would be prohibited by the existing deed restriction.

By having had addressed the source material in 2003 and with MNA selected as modified remedy, this will restore the groundwater in the shallow unconsolidated water-bearing zone in a reasonable time frame by reducing contaminant levels to the federal and state MCLs. Also, with the existing deed restriction, the direct contact and inhalation threat associated with the contaminated groundwater is eliminated. Federal and state MCLs are presented in Table 10. Achieving the cleanup levels will restore the aquifer to its beneficial use.

It is estimated that it will take 50 + years to achieve the groundwater cleanup objectives under the selected remedy.

STATUTORY DETERMINATIONS

Under CERCLA Section 121 and the NCP, the lead agency must select remedies that are protective of human health and the environment, comply with ARARs (unless a statutory waiver is justified), are cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which employ treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, or contaminants at a site.

For the reasons discussed below, EPA has determined that the selected modified groundwater remedy meets these statutory requirements, except for the MW-19 Area groundwater where chemical specific ARARs are waived in the 120 ft by 80 ft by 30 ft depth zone for PCE, 1,1,1-TCA, 1,1-DCA, cis-1,2-DCE, and VC.

Protection of Human Health and the Environment

The results of the risk assessment indicate that, if no action is taken, the hypothetical future use of the groundwater at the Site will pose an unacceptable increased future cancer risk and an unacceptable non-cancer hazard risk to human health. The selected

remedy will be protective of human health and the environment in that it will restore groundwater quality at the site over the long term. Combined with institutional controls, the selected remedy will provide protectiveness of human health and the environment over both the short and long term.

Compliance with ARARs and Other Environmental Criteria

A summary of the ARARs and "Other Criteria, Advisories, or Guidance TBCs" which will be complied with during implementation of the selected remedy, is presented below.

- New York State Department of Environmental Conservation Water Quality Regulations for Surface Waters and Groundwater (6 NYCRR Parts 700-705);
- New York State Department of Health Drinking Water Standards (10 NYCRR Part 5); and,
- Safe Drinking Water Act National Primary Drinking Water Standards (MCLs and non-zero maximum contaminant level goals) (40 CFR Part 141).

Cost-Effectiveness

A cost-effective remedy is one whose costs are proportional to its overall effectiveness (NCP Section 300.430(f)(1)(ii)(D)). Overall effectiveness is based on the evaluations of: long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness. Based on the comparison of overall effectiveness (discussed above) to cost, the selected remedy meets the statutory requirement that Superfund remedies be cost-effective in that it is the least-cost action alternative and will achieve the remediation goals in a reasonable time frame.

Each of the alternatives has undergone a detailed cost analysis. In that analysis, capital and annual monitoring or OM&M costs have been estimated and used to develop present-worth costs. In the present-worth cost analysis, annual monitoring or OM&M costs were calculated for the estimated life of an alternative using a 7% discount rate.

Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

The selected remedy provides the best balance of tradeoffs among the alternatives with respect to the balancing criteria set forth in NCP Section 300.430(f)(1)(i)(B), such that it represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner at the Site. In addition, the selected remedy provides the protection of human health and the environment, provides the long-term effectiveness, is able to achieve the ARARs as quickly as the other alternatives, and is cost-effective.

While the selected groundwater remedy will not actively treat the groundwater, there is an overall downward trend of the contamination in the groundwater plume, and there is currently no exposure pathway to the contaminated groundwater at the Site, because there are no drinking water wells on the Site. The existing deed restriction prohibits installation of new drinking water wells and nearby residences' private drinking water wells are not impacted by contamination from the Site as they are using the deep bedrock aquifer which is not contaminated. In addition, a review of the MNA data shows that natural attenuation is occurring at Site except in MW-19 Area. The selected groundwater remedy will provide a permanent remedy to reduce the toxicity, mobility, and volume of the contaminants in the groundwater over a long-term.

Preference for Treatment as a Principal Element

The statutory preference for remedies that employ treatment as a principal element is not satisfied under the selected modified remedy since there is no active treatment of the contaminated groundwater.

Five-Year Review Requirements

Since the selected modified groundwater remedy will allow for hazardous substances to remain at this Site above levels that would allow for unlimited use without restriction, pursuant to Section 121 (c) of CERCLA, EPA or the State will review implemented remedies no less often than every five years. Although the contaminated soil and sediments have been excavated, each five-year review will cover all aspects of the soil and groundwater remedies.

TECHNICAL IMPRACTICABILITY DETERMINATION

The restoration of contaminated groundwater is one of the primary objectives of the Superfund program. Experience at Superfund sites has shown, however, that the restoration of contaminated groundwater may not always be achievable from an engineering perspective.

As was noted in the "Site History" section, above, seven rounds of groundwater samples were collected as part of an MNA study. The findings of this effort were summarized in a PRP Group-prepared report entitled *Revised Comprehensive Monitored Natural Attenuation Evaluation Report* (ESC Engineering, 2007). Based upon its review, EPA concluded that the data did not demonstrate that MNA would address the groundwater contamination in the MW-19 Area. It was also concluded that because of the low permeability of the aquifer, groundwater extraction and treatment was not viable for the Site.

Based upon the recommendations in the 2008 draft FFS report, the PRP Group was directed by EPA to implement an ERD pilot-scale treatability study in the MW-19 Area. Following the approval of a work plan, the PRP Group initiated an ERD pilot test in December 2008. As part of the pilot test, approximately 50 gallons of Hydrogen Release Compound (HRC) and 35 gallons of HRC primer were applied to an 800 sq ft area via eight direct push delivery points. Following the completion of four rounds of performance monitoring events, the PRP Group submitted a report entitled draft *Pilot Study Report* in January 2010. Based upon its review of the report, EPA requested that the PRP Group perform additional investigation to locate the source and, if located, then perform targeted ERD treatment. The PRP Group performed a supplemental investigation from September through December 2010. This work included the performance of a passive soil gas survey, collection of discrete groundwater samples from the silt and sand/gravel zones beneath and around the concrete rubble, permeability testing, and hydraulic conductivity testing. Based on the results of this effort, the PRP Group submitted a draft report entitled *Draft MW-19 Area Supplemental Investigation Report* on February 3, 2011. After review of the document, EPA concluded that the source of the PCE and 1,1,1-TCA contamination had not been identified and further efforts to try to identify the source would likely be fruitless. Nevertheless, the rubble in this area was excavated and disposed off-Site at a permitted landfill by the PRP Group in August 2011. Samples collected during the excavation did not identify any source material.

Contaminants exceeding the federal MCLs and NYSDEC Water Quality Regulations for Groundwater (NYCRR, Title 6, Part 703) in the monitoring wells and piezometer located in the MW-19 Area have been PCE, 1,1,1-TCA, and 1,1-DCA. Since 2003 source removal, MW-19 Area plume detected PCE from 30 to 69 ug/L, 1,1,1-TCA from 41 to 99 ug/l, and 1,1-DCA from 5.7 to 21 ug/l. cis-1,2-DCE and VC are also breakdown products of PCE, however, they have not been detected in the groundwater of the MW-19 Area plume in exceedance of the standards. The NYS AWQS and the federal MCLs for PCE, 1,1,1-TCA, 1,1-DCA, and cis-1,2-DCE are 5 ug/l and for VC is 2 ug/l. The MW-19 Area plume is estimated to be about 120 ft by 80 ft and 30 ft in depth.

EPA has determined that the restoration of the groundwater in the MW-19 Area is technically impracticable from an engineering perspective due to the ineffectiveness of active remedies in the low permeable soils found at the Site, the limited mobility of the groundwater contamination (the contaminant plume is not migrating), and the inability to locate a source. Therefore, EPA is proposing a technical impracticability waiver pursuant to CERCLA §121(d)(4)(C) and NCP §300.430(f)(1)(ii)(C)(3) for the groundwater in this area.

Because the existing deed restriction prohibits the installation and use of the groundwater wells at the Site for drinking water purposes, the potential for direct contact or inhalation threat associated with contaminated groundwater does not exist. Also, there are no current and potential receptors downgradient of MW-19 Area. If, in the future, structures are proposed to be built on the property, then a soil vapor intrusion evaluation and,

potentially, vapor mitigation may be needed, or alternatively just soil vapor mitigation. As a governmental institutional control, the Office of the Town of Fenton Building Inspector has acknowledged to EPA that such office will notify any person seeking to build residential structures at the Site of soil vapor concerns relating to the property, and specifically of the need for a soil vapor evaluation and potentially, soil vapor mitigation systems or, alternatively just soil vapor mitigation.

While it has been estimated that site-wide groundwater restoration would be achieved in 50 years, the restoration time frame for the MW-19 Area is unknown, since a source of the contamination has not been identified. It is anticipated that the restoration time frame would be significantly greater than 50 years.

The "technical impracticability zone" is the approximate 120 ft by 80 ft MW-19 Area to a depth of 30 ft (see Figures 2 and 3). The ARARs that would be waived for this zone would be the federal MCLs and NYSDEC Water Quality Regulations for Groundwater (NYCRR, Title 6, Part 703) for PCE, 1,1,1-TCA, 1,1-DCA, cis-1,2-DCE, and VC. Both ARARs cited above are applicable requirements which are being waived. The MW-19 Area groundwater will continue to be monitored periodically to confirm that the technically impracticable zone is not expanding in size and no additional contaminants other than those waived are detected above MCLs.

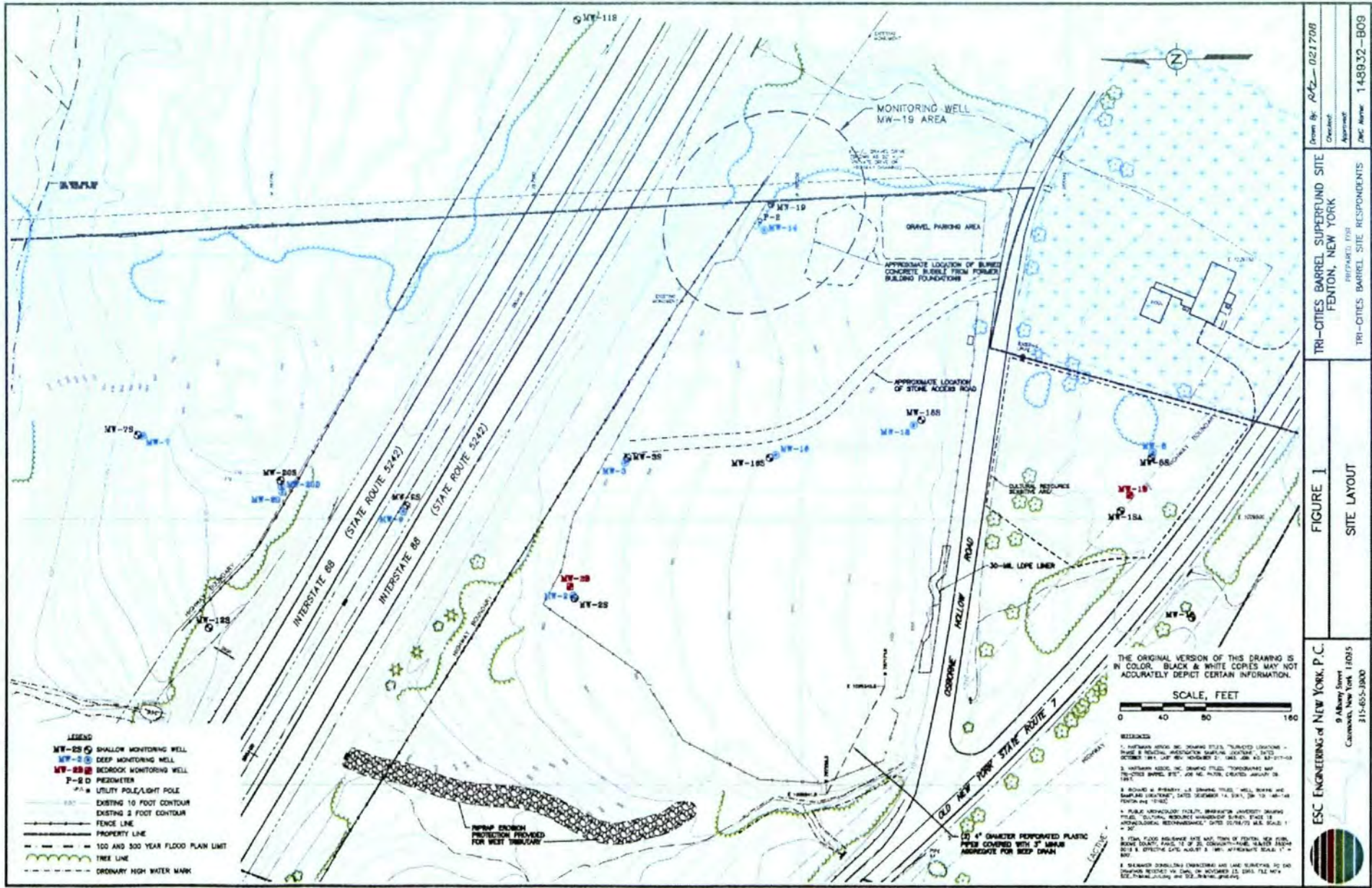
DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan released for public comment on July 31, 2011, identified Alternative GW-2, MNA, as the preferred modified groundwater remedy. It also identified the EPA plans to invoke a technical impracticability waiver for the MW-19 Area groundwater. Based upon its review of the written and oral comments submitted during the public comment period, EPA has determined that no significant changes to the remedy, as originally identified in the Proposed Plan for Remedy Modification, are necessary or appropriate.

APPENDIX I

FIGURES

- Figure 1 Site Layout
- Figure 2 MW-19 Area (Horizontal)
- Figure 3 MW-19 Area (Vertical)



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FIGURE 1 SITE LAYOUT	Drawn by: R/LZ - 021708 Checked: Approved: DMC Number: 148932-B09
TRI-CITIES BARREL SUPERFUND SITE FENTON, NEW YORK	
PREPARED FOR: TRI-CITIES BARREL SITE RESPONDENTS	
ESC ENGINEERING OF NEW YORK, P.C. 9 Albany Street Carmel, New York 11005 315-655-1900	

THE ORIGINAL VERSION OF THIS DRAWING IS IN COLOR. BLACK & WHITE COPIES MAY NOT ACCURATELY DEPICT CERTAIN INFORMATION.

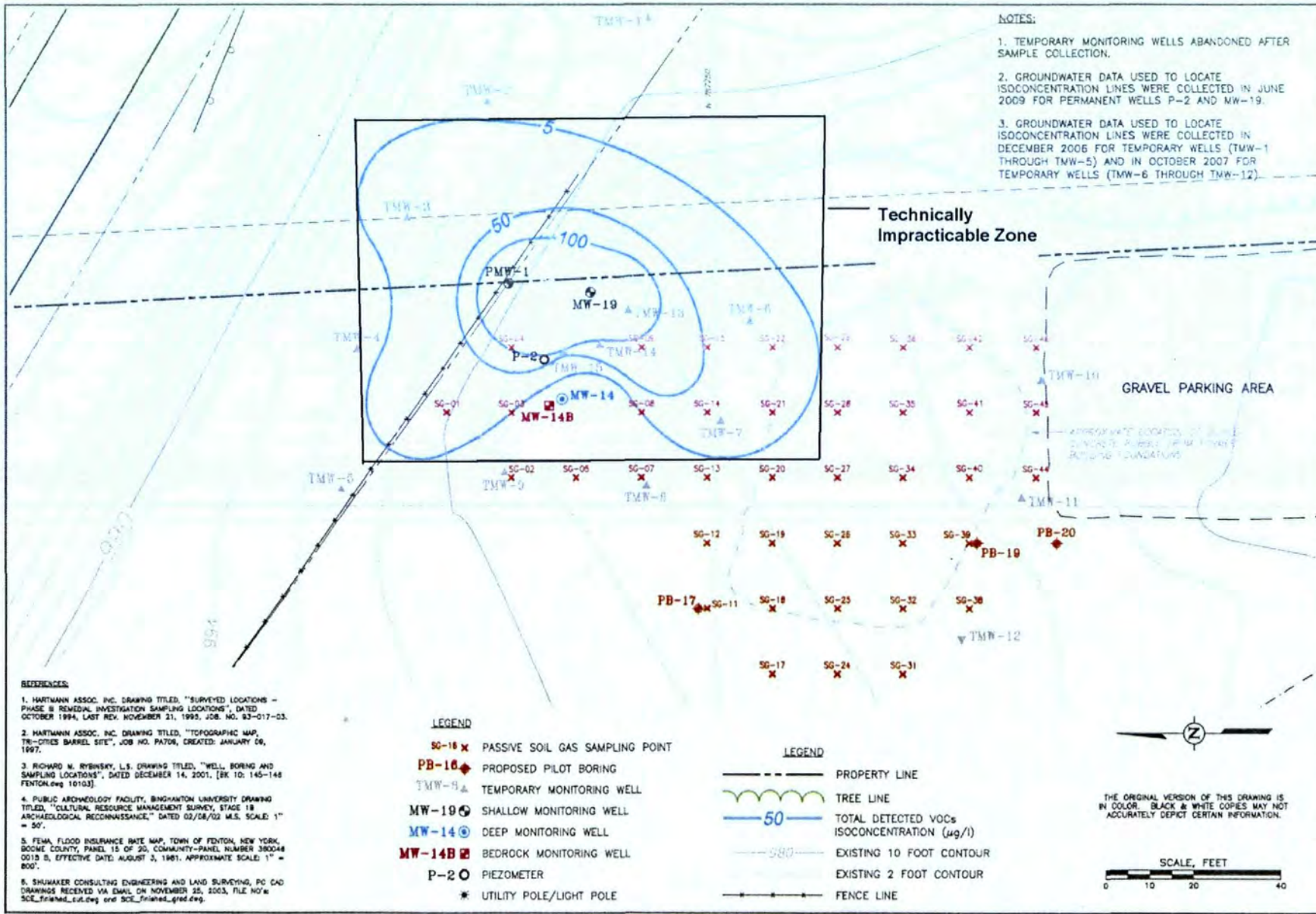
SCALE, FEET

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REVISIONS:

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Drawn By: *AK-KSLD*
 Checked:
 Approved:
 DMC Name: 148932-B1B

TRI-CITIES BARREL SUPERFUND SITE
 FENTON, NEW YORK
 PREPARED FOR
 TRI-CITIES BARREL SITE RESPONDENTS

FIGURE 2
 SUPPLEMENTAL MW-19 AREA
 INVESTIGATION

WSP
 Engineering of
 New York, P.C.
 750 Highway Drive, Suite 410
 Pittsburgh, PA 15220 412-694-1040

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APPENDIX II

TABLES

Table 1	Summary of Groundwater Data Since 2003
Table 2	Groundwater Data in 2010
Table 3	Summary of Chemicals of Concern
Table 4	Selection of Exposure Pathways
Table 5	Cancer Toxicity Data Summary
Table 6	Non-Cancer Toxicity Data Summary
Table 7	Risk Characterization - Summary of Carcinogenic Risks
Table 8	Risk Characterization - Summary of Non- Carcinogenic Risks
Table 9	Updates to Toxicity Values and Calculated Risks
Table 10	Federal and State MCLs for Drinking Water
Table 11	Cost Estimate for Selected Remedy

Table 1 Summary of Groundwater Data Since 2003

Contaminants	Number of Detections above ARAR	Number Analyzed	Min. Conc. ug/l	Max. Conc. ug/l	ARAR Conc. ug/l
VOCs					
2-Butanone (MEK)	0	151	10 U	10 U	50
1,1-Dichloroethane	41	151	1 U	1,100	5
1,2-Dichloroethane	11	151	0.6 U	39 J	0.6
1,1,1-Trichloroethane	19	42	1 U	99	5
cis-1,2-Dichloroethene	45	151	1 U	9,000	5
Methylene chloride	4	151	5 U	59J	5
Tetrachloroethene	23	151	1 U	69	5
Toluene	5	151	1 U	190	1
Trichloroethene	27	151	1 U	720	5
Vinyl chloride	52	151	1 U	280	2
SVOCs					
bis(2-Ethylhexyl)phthalate	1	36	5 U	5.4	5
Metals					
Cadmium	2	36	5 U	7.9	5
Iron	13	36	37J	6,900J	300
Manganese	32	36	56	1,600	300

Note: Most stringent of Federal Maximum Cleanup Level and New York State Drinking Water Standard was used for ARAR Conc.

U - constituent not detected at the noted detection limit

J - constituent detected at an estimated concentration

Table 2. Groundwater Data in 2010

	Well ID								
	MW-2S		MW-2		MW-3S		MW-7S		MW-14
Sample Date	6/15	12/21	6/15	12/21	6/16	12/21	6/15	12/21	6/15
Parameters (ug/l)									
VOCs									
2-Butanone (MEK)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	3.4	12	1.7	4.1	200	160	1 U	1 U	1.7
1,2-Dichloroethane	0.6 U	0.6 U	0.6 U	0.6 U	3.7	2.5	0.6 U	0.6 U	0.61
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	1.9	5.8	0.21 J	5.4	270	130	1 U	1 U	0.85 J
Methylene chloride	5 U	5 U	5 U	5 U	3.8 J	4 J	5 U	5 U	1 U
Tetrachloroethene	1 U	1 U	1 U	1 U	1.5	1.1	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	0.22 J	0.21 J	0.72 J	31	1.9	1.1	1 U	1 U	1 U
Vinyl chloride	0.21 J	1.2	1 U	6.4	68	6.9	1 U	1 U	2 U

	Well ID								
	MW-16S		MW-19		MW-20S		MW-20	P-2	
Sample Date	6/15	12/21	6/16	12/22	6/15	12/21	6/15	6/16	12/21
Parameters (ug/l)									
VOCs									
2-Butanone (MEK)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10	8.8 J	4.4	3.9	1 U	1 U	1 U	5.9	4.9
1,2-Dichloroethane	0.21 J	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
1,1,1-Trichloroethane	-	-	99	67	-	-	-	72	64
cis-1,2-Dichloroethene	630	610	1 U	0.29 J	1 U	1 U	1 U	0.89 J	1.2
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	1 U	1 U	66	69	1 U	1 U	1 U	46	64
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	720	680	1.7	1.8	1 U	1 U	1 U	2.1	1.9
Vinyl chloride	270	170	1 U	1 U	1.4	2	1 U	2 U	1 U

Notes:

Highlighted data exceeds ARARs.

U - constituent not detected at the noted detection limit

J - constituent detected at an estimated concentration

Table 3. Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations.

Scenario Timeframe: Future								
Medium: Groundwater								
Exposure Medium: Groundwater								
Exposure Point	Chemical of Concern	Concentration Detected		Units	Frequency of Detection	Exposure Point Concentration	EPC Units	Statistical Unit
		Min	Max					
Tap and Showerhead	1,1 Dichloroethane	1 (U)	160	ug/l	2/5	160	ug/l	Max < 10 samples
	1,2 Dichloroethane	0.6 (U)	2	ug/l	1/5	2	ug/l	Max < 10 samples
	cis 1,2-Dichloroethene	1 (U)	440	ug/l	3/5	440	ug/l	Max < 10 samples
	1,2 Dichloroethylene (total)	2 (U)	470	ug/l	3/5	470	ug/l	Max < 10 samples
	Methylene chloride	1 (U)	2.6	ug/l	1/5	2.6	ug/l	Max < 10 samples
	Tetrachloroethylene	1 (U)	1.3	ug/l	1/5	1.3	ug/l	Max < 10 samples
	Trichloroethylene	1 (U)	1.3	ug/l	3/5	460	ug/l	Max < 10 samples
	Vinyl chloride	2 (U)	83	ug/l	4/5	460	ug/l	Max < 10 samples

notes:

(U) = non-detect

ug/l = micrograms/liter

TABLE 4
 SELECTION OF EXPOSURE PATHWAYS
 Tri-Cities Barrel, Fenton, New York

Scenario Timeframe	Medium and Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Groundwater	Tapwater	Resident	Adult	Ingestion	Quant.	Private wells are currently used in the area for potable purposes. There is a potential for future exposure to groundwater through ingestion of contaminated groundwater and inhalation of volatile organic compounds while showering if the groundwater under the site was used for potable purposes by a current/future resident.
				Child	Ingestion	Quant.	Private wells are currently used in the area. There is a potential for future exposure to groundwater through ingestion of contaminated groundwater and inhalation of volatile organic compounds while showering if the groundwater under the site was used for potable purposes by a current/future resident.
		Shower head	Resident	Adult	Inhalation	Quant.	Private wells are currently used in the area. There is a potential for future exposure to groundwater through ingestion of contaminated groundwater and inhalation of volatile organic compounds while showering if the groundwater under the site was used for potable purposes by a current/future resident.
				Child	Inhalation	Quant.	Private wells are currently used in the area. There is a potential for future exposure to groundwater through ingestion of contaminated groundwater and inhalation of volatile organic compounds while showering if the groundwater under the site was used for potable purposes by a current/future resident.
Future	Groundwater	Tapwater	On-site worker	Adult	Ingestion	Quant.	Private wells are currently used in the area for potable purposes. There is a potential for future exposure to groundwater through ingestion of contaminated groundwater and inhalation of volatile organic compounds while showering if the groundwater under the site was used for potable purposes by the current/future worker.
		Shower head	On-site worker	Adult	Inhalation	Quant.	Private wells are currently used in the area. There is a potential for future exposure to groundwater through ingestion of contaminated groundwater and inhalation of volatile organic compounds while showering if the groundwater under the site was used for potable purposes by the current/future worker.

Table 5. Cancer Toxicity Data Summary

Pathway: Ingestion, Dermal						
Chemical of Concern	Oral Cancer Slope Factor	Dermal Cancer Slope Factor	Slope Factor Units	Weight of Evidence Classification	Source	Date
1,1 Dichloroethane	0.0057	0.0057	mg/kg-day	C	CalEPA	9/1/08
1,2 Dichloroethane	0.091	0.091	mg/kg-day	B2	IRIS	9/1/08
cis 1,2-Dichloroethene	NA	NA		D	IRIS	9/1/08
1,2 Dichloroethylene (total)	NA	NA		D	IRIS	9/1/08
Methylene chloride	0.0075	0.0075	mg/kg-day	B2	IRIS	9/1/08
Tetrachloroethylene	0.54	0.54	mg/kg-day	C-B2	CalEPA	9/1/08
Trichloroethylene	0.013	0.013	mg/kg-day	C-B2	CalEPA	9/1/08
Vinyl chloride	0.72	0.72	mg/kg-day	A	IRIS	9/1/08

notes:

A - known carcinogen

B2 - probable human carcinogen

C - possible human carcinogen

D - not classifiable

E - non-human carcinogen.

CAL EPA - California Environmental Protection Agency

IRIS - Integrated Risk Information System (www.epa.gov/iris)

NA - Not available

Table 5. Cancer Toxicity Data Summary (continued)

Pathway: Inhalation					
Chemical of Concern	Inhalation Unit Risk	Units	Weight of Evidence Classification	Source	Date
1,1 Dichloroethane	1.6 E-06	(ug/m ³) ⁻¹	C	CalEPA	9/1/08
1,2 Dichloroethane	2.6 E-05	(ug/m ³) ⁻¹	B2	IRIS	9/1/08
cis 1,2-Dichloroethene	NA		D	IRIS	9/1/08
1,2 Dichloroethylene (total)	NA		D	IRIS	9/1/08
Methylene chloride	4.7 E-07	(ug/m ³) ⁻¹	B2	IRIS	9/1/08
Tetrachloroethylene	5.9 E-06	(ug/m ³) ⁻¹	C-B2	CalEPA	9/1/08
Trichloroethylene	2.0 E-06	(ug/m ³) ⁻¹	C-B2	CalEPA	9/1/08
Vinyl chloride	4.4 E-06	(ug/m ³) ⁻¹	A	IRIS	9/1/08

notes:

A - known carcinogen

B2 - probable human carcinogen

C - possible human carcinogen

D - not classifiable

E - non-human carcinogen

CalEPA - California Environmental Protection Agency

IRIS - Integrated Risk Information System (www.epa.gov/iris)

NA - Not applicable

ug/m³ = micrograms/cubic meter

Table 6. Non-Cancer Toxicity Data Summary.

Pathway: Ingestion, Dermal									
COC	Chronic/ Subchronic	Oral RfD Value	Units	Dermal RfD	Units	Primary Target Organ	Combined UF/ MF	Source of RfD Target Organ	Dates
1,1 Dichloroethane	Chronic	0.20	mg/kg-day	0.20	mg/kg-day	NOAEL	3000	PPRTV	9/1/08
1,2 Dichloroethane	Chronic	N/A	mg/kg-day	N/A	mg/kg-day	N/A	N/A	IRIS	9/1/08
cis 1,2-Dichloroethene	Chronic	0.01	mg/kg-day	0.01	mg/kg-day	NOAEL	3000	PPRTV	9/1/08
1,2 Dichloroethylene (mixed isomers)	Chronic	0.009	mg/kg-day	0.009	mg/kg-day	LOAEL	1000	HEAST	9/1/08
Methylene chloride	Chronic	0.06	mg/kg-day	0.06	mg/kg-day	Liver	100	IRIS	9/1/08
Tetrachloroethylene	Chronic	0.01	mg/kg-day	0.01	mg/kg-day	Liver	1000	IRIS	9/1/08
Trichloroethylene	Chronic	N/A	mg/kg-day	N/A	mg/kg-day	NA	NA	IRIS	9/1/08
Vinyl chloride	Chronic	0.003	mg/kg-day	0.003	mg/kg-day	Liver	30	IRIS	9/1/08

notes:

Absorption rates were derived from the U.S. EPA Dermal Guidance (USEPA, 2004)

RfD – Reference Dose

NOAEL - No Observed Adverse Effect Level

LOAEL - Lowest Observed Adverse Effect Level

PPRTV - Provisional Peer Reviewed Toxicity Value

IRIS - Integrated Risk Information System obtained from www.epa.gov/iris on 9/1/08

HEAST - Health Effects Assessment Tables

NA – Not available

Table 6. Non-Cancer Toxicity Data Summary. (continued)

Pathway: Inhalation									
COC	Chronic/ Subchronic	Inhalation RfC Value	Units	Inhalation RfD	Units	Primary Target Organ	Combined UF/ MF	Source of RfD Target Organ	Dates
1,1 Dichloroethane	Chronic	0.50	mg/m ³	N/A	mg/kg-day	Kidney	1000	HEAST	9/1/08
1,2 Dichloroethane	Chronic	2.40	mg/m ³	N/A	mg/kg-day	NOAEL	90	ATSDR	9/1/08
cis 1,2-Dichloroethene	Chronic	N/A	mg/m ³	N/A	mg/kg-day	N/A		IRIS	9/1/08
1,2 Dichloroethylene (mixed isomers)	Chronic	N/A	mg/m ³	N/A	mg/kg-day	N/A		HEAST	9/1/08
Methylene chloride	Chronic	1.10	mg/m ³	N/A	mg/kg-day	NOAEL	30	ATSDR	9/1/08
Tetrachloroethylene	Chronic	0.27	mg/m ³	N/A	mg/kg-day	LOAEL	100	ATSDR	9/1/08
Trichloroethylene	Chronic	0.6	mg/m ³	N/A	mg/kg-day	Nervous System/Eye	NA	CalEPA	9/1/08
Vinyl chloride	Chronic	0.1	mg/m ³	N/A	mg/kg-day	Liver	30	IRIS	9/1/08

notes:

RfC – Reference Concentration

RfD – Reference Dose

NOAEL - No Observed Adverse Effect Level

LOAEL - Lowest Observed Adverse Effect Level

ATSDR - Agency for Toxic Substances and Disease Registry

CalEPA - California Environmental Protection Agency

HEAST - Health Effects Assessment Tables

NA – Not available

Table 7. Risk Characterization - Summary of Carcinogens

Scenario Timeframe: Future								
Receptor Timeframe: Future								
Receptor Age: Adult Resident								
Media	Exposure Media	Exposure point	COC	Carcinogenic Risk				
				Ingestion	Inhalation	Dermal	External (Rad)	Exposure Routes Total
Groundwater	Groundwater	Tap Water / Shower	1,1 Dichloroethane	8.6E-06	1.3E-06	NA	NA	9.9E-06
			1,2 Dichloroethane	1.7E-06	2.6E-07	NA	NA	1.96E-06
			Methylene chloride	2.3E-08	4.9E-09	NA	NA	2.8E-08
			Tetrachloroethylene	6.6 E-06	3.0E-08	NA	NA	6.6E-06
			Trichloroethylene	5.6E-05	3.7E-06	NA	NA	6.0E-05
			Vinyl chloride	5.5E-04	1.5E-06	NA	NA	5.5E-04
			Pathway Total	6.1E-04	6.7E-06	NA	NA	6.2E-04
							Total Risk	6.2E-04

NA: Route of exposure is not applicable to this medium

Table 7. Risk Characterization - Summary of Carcinogens (continued)

Scenario Timeframe: Future								
Receptor Timeframe: Future								
Receptor Age: Child Resident								
Media	Exposure Media	Exposure point	COC	Carcinogenic Risk				
				Ingestion	Inhalation	Dermal	External (Rad)	Exposure Routes Total
Groundwater	Groundwater	Tap Water / Shower	1,1 Dichloroethane	5.0E-06	4.0E-09	NA	NA	5.0E-06
			1,2 Dichloroethane	1.0E-07	5.2E-08	NA	NA	1.0E-06
			Methylene chloride	1.1E-07	1.2E-09	NA	NA	1.1E-07
			Tetrachloroethylene	3.8E-06	7.6E-09	NA	NA	3.8E-06
			Trichloroethylene	3.3E-05	9.1E-07	NA	NA	3.3E-05
			Vinyl chloride	3.2E-04	3.6E-07	NA	NA	3.2E-04
			Pathway Total	3.6E-04	1.3E-06	NA	NA	3.6E-04
			Total Risk					

NA: Route of exposure is not applicable to this medium

Table 7 Risk Characterization - Summary of Carcinogens (continued)

Scenario Timeframe: Future								
Receptor Timeframe: Future								
Receptor Age: On-Site Worker								
Media	Exposure Media	Exposure point	COC	Carcinogenic Risk				
				Ingestion	Inhalation	Dermal	External (Rad)	Exposure Routes Total
Groundwater	Groundwater	Tap Water / Shower	1,1 Dichloroethane	6.4E-06	1.7E-08	NA	NA	6.4E-06
			1,2 Dichloroethane	1.3E-06	2.2E-07	NA	NA	1.52E-06
			Methylene chloride	1.4E-07	5.1E-09	NA	NA	1.4E-07
			Tetrachloroethylene	4.9E-06	3.2E-08	NA	NA	4.9E-06
			Trichloroethylene	4.2E-05	3.8E-06	NA	NA	4.5E-05
			Vinyl chloride	4.2E-04	1.5E-06	NA	NA	4.2E-04
			Pathway Total	4.7E-04	5.6E-06	NA	NA	4.7E-04
							Total Risk	4.7E-04

NA: Route of exposure is not applicable to this medium

Table 8. Risk Characterization - Summary of Non-Carcinogens

Scenario Timeframe: Future									
Receptor Timeframe: Future									
Receptor Age: Adult									
Media	Exposure Media	Exposure point	COC	Target Organ	Non-Cancer Health Hazard				
					Ingestion	Inhalation	Dermal	External (Rad)	Exposure Routes Total
Groundwater	Groundwater	Tap Water / Shower	cis 1,2- dichloroethene	NOAEL	1.2	NA	NA	NA	1.2
			Vinyl chloride	Liver	0.76	0.003	NA	NA	0.76
			Pathway Total		2.0	0.003	NA	NA	2.0
			Total Risk						

Scenario Timeframe: Future									
Receptor Timeframe: Future									
Receptor Age: Child Resident									
Media	Exposure Media	Exposure point	COC	Target Organ	Non-Cancer Health Hazard				
					Ingestion	Inhalation	Dermal	External (Rad)	Exposure Routes Total
Groundwater	Groundwater	Tap Water / Shower	cis 1,2- dichloroethene	NOAEL	2.8	NA	NA	NA	2.8
			Vinyl chloride	Liver	1.8	0.00082	NA	NA	1.8
			Pathway Total		4.6	0.00082	NA	NA	4.6

NA: Route of exposure is not applicable to this medium

Table 8. Risk Characterization - Summary of Non-Carcinogens (continued)

Scenario Timeframe: Future									
Receptor Timeframe: Future									
Receptor Age: Adult On-Site Worker									
Media	Exposure Media	Exposure point	COC	Target Organ	Non-Cancer Health Hazard				
					Ingestion	Inhalation	Dermal	External (Rad)	Exposure Routes Total
Groundwater	Groundwater	Tap Water / Shower	cis 1,2- dichloroethene	NOAEL	0.86	NA	NA	NA	0.86
			Vinyl chloride	Liver	0.54	0.0025	NA	NA	0.54
			Pathway Total		1.4	0.0025	NA	NA	1.4
			Total Risk						

NA: Route of exposure is not applicable to this medium

Table 9 Updates to Toxicity Values and Calculated Risks

Since the completion of the 2008 Human Health Risk Assessment, the following toxicity values changed.

Chemical	Toxicity Value Type	2008 Value	2011 Value	Reason for Change and Source of Toxicity Value
Trichloroethylene	Oral Cancer Slope Factor	1.3 E-02 (mg/kg-day) ⁻¹	5.9 E-03 (mg/kg-day) ⁻¹	Updated CalEPA Value
cis-1,2-dichloroethene	Oral Reference Dose	1.0 E-02 mg/kg-day	2.0 E-03 mg/kg-day	Updated IRIS Value
Updated Calculated Risks				
Trichloroethylene	Chemical Specific Future Cancer Risk		Total Future Cancer Risk	
Receptor	2008	2011	2008	2011
Child Resident	3.3 E-05	1.5 E-05	3.6 E-04	3.4 E-04
Adult Resident	5.6 E-05	2.5 E-05	6.2 E-04	5.9 E-04
On-Site Worker	4.2 E-05	1.9 E-05	4.7 E-04	4.5 E-04
cis-1,2-dichloroethene	Chemical Specific Future Non-Cancer Hazard		Total Future Non-Cancer Hazard	
Receptor	2008	2011	2008	2011
Child Resident	2.8	14.0	4.6	16.0
Adult Resident	1.2	6.0	2.0	6.8
On-Site Worker	0.86	4.3	1.4	4.9

Table 10 Federal and State MCLs for Drinking Water

Contaminants	Federal Safe Drinking Water Act	New York State Water Quality Standards for Class GA (Groundwater)	New York Public Water Supply Regulations
	MCL (ug/l)	NYCRR, Title 6 Part 701-703 (ug/l)	NYCRR, Title 10 Part 5-1 (ug/l)
VOCs			
2-Butanone (MEK)		50	50
1,1-Dichloroethane		5	5
1,2-Dichloroethane	5	0.6	5
1,1,1-Trichloroethane	200	5	5
cis-1,2-Dichloroethene	70	5	5
Methylene chloride	5	5	5
Tetrachloroethene	5	5	5
Toluene	1	5	
Trichloroethene	5	5	
Vinyl chloride	2	2	2
SVOCs			
bis(2-Ethylhexyl)phthalate	6	5	6
Metals			
Cadmium	5	5	5
Iron		300	300
Manganese		300	300

Table 11

Cost Estimate
MNA (Site-Wide Excluding MW-19 Area)
Tri-Cities Barrel Superfund Site
Fenton, New York (a)

Description:
Implement groundwater monitoring program
Capital costs occur in Year 0
Annual O&M costs occur in Years 1-30
Periodic costs occur every 5 years

	QTY	Unit	Unit Cost	Total	Notes
Capital					
Administrative Requirements					
Rod Modification Support	1	LS	\$ 15,000	\$ 15,000	arbitrary
GW Monitoring Plan	1	LS	\$ 35,000	\$ 35,000	
				\$ 50,000	
				\$ 50,000	
				\$ 12,500	25%
				\$ 62,500	
				\$ 62,500	
				\$ 3,125	5%
				\$ 65,625	

Monitoring

Performance Monitoring					
Procurement/Setup	24	Hours	\$ 120	\$ 2,880	
Travel	2	Trip	\$ 500	\$ 1,000	
Annual sampling (two full time)	6	Days	\$ 1,500	\$ 9,000	10 wells
Groundwater lab	13	Each	\$ 220	\$ 2,860	metals, VOCs
MNA Parameters	10	Each	\$ 500	\$ 5,000	
Equipment Rental	1	Week	\$ 5,000	\$ 5,000	
Shipping	3	Each	\$ 150	\$ 450	
Report	1	Each	\$ 7,500	\$ 7,500	
				\$ 33,690	matches actual effort
				\$ 134,760	

Five Year Review Reports				\$ 15,000	
Years 5,10,15, 20, 25, 30					

Abandonment					
Well Abandonment	40	Each	\$ 700	\$ 28,000	
Site Restoration	1	acre	\$ 3,500	\$ 3,500	
				\$ 31,500	

Present Value Analysis

Type	Year	Total Cost	Annual Cost	Discount Factor (7%)	Present Value
Capital	0	\$ 65,625	65625	1	\$ 65,625
Annual O&M	1-30	\$ 4042800	\$ 134,760	12.409	\$ 1,672,237
Periodic Cost	5	\$ 15,000	15000	0.713	\$ 10,695
Periodic Cost	10	\$ 15,000	15000	0.508	\$ 7,620
Periodic Cost	15	\$ 15,000	15000	0.362	\$ 5,430
Periodic Cost	20	\$ 15,000	15000	0.258	\$ 3,870
Periodic Cost	25	\$ 15,000	15000	0.184	\$ 2,760
Periodic Cost	30	\$ 15,000	15000	0.131	\$ 1,965
Abandon System	30	\$ 31,500	\$ 31,500	0.131	\$ 4,127
		\$ 4,229,925			\$ 1,774,328
Total Present Value					\$ 1,774,328

APPENDIX III

ADMINISTRATIVE RECORD INDEX



111397

TRI-CITIES BARREL CO., INC.
OPERABLE UNIT ONE
ADMINISTRATIVE RECORD FILE UPDATE #6
INDEX OF DOCUMENTS

5.0 RECORD OF DECISION

5.2 Amendment to the Record of Decision

- P. 500173 - Report: Final Revised Comprehensive Monitored
500419 Natural Attenuation Evaluation, Tri-Cities
Barrel Superfund Site, Fenton, New York,
Doc. ID# 111379 prepared by ESC Engineering of New York, P.C.,
prepared for U.S. Environmental Protection
Agency, Region 2, August 16, 2007.
- P. 500420 - Report: Final Revised Comprehensive Monitored
500701 Natural Attenuation Evaluation, Tri-Cities
Barrel Superfund Site, Fenton, New York,
Doc. ID# 111380 Appendix C - Groundwater Monitoring Logs,
(Provided on CD), prepared by ESC Engineering
of New York, P.C., prepared for U.S.
Environmental Protection Agency, Region 2,
August 16, 2007.
- P. 500702 - Report: Final Revised Comprehensive Monitored
503791 Natural Attenuation Evaluation, Tri-Cities
Barrel Superfund Site, Fenton, New York,
Doc. ID# 111381 Appendix D, Part 1, December 2001, prepared by
ESC Engineering of New York, P.C., prepared for
U.S. Environmental Protection Agency, Region 2,
August 16, 2007.
- P. 503792 - Report: Final Revised Comprehensive Monitored
506936 Natural Attenuation Evaluation, Tri-Cities
Barrel Superfund Site, Fenton, New York,
Doc. ID# 111382 Appendix D, Part 2, Summer 2002, prepared by
ESC Engineering of New York, P.C., prepared for
U.S. Environmental Protection Agency, Region 2,
August 16, 2007.

P. 506937 - Report: Final Revised Comprehensive Monitored
513402 Natural Attenuation Evaluation, Tri-Cities
Barrel Superfund Site, Fenton, New York,
Appendix D, Part 3, Spring 2003, prepared by
Doc. ID# 111383 ESC Engineering of New York, P.C., prepared for
U.S. Environmental Protection Agency, Region 2,
August 16, 2007.

P. 513403 - Report: Final Revised Comprehensive Monitored
514024 Natural Attenuation Evaluation, Tri-Cities
Barrel Superfund Site, Fenton, New York,
Appendix D, Part 4, Summer 2003, prepared by
Doc. ID# 111384 ESC Engineering of New York, P.C., prepared for
U.S. Environmental Protection Agency, Region 2,
August 16, 2007.

P. 514025 - Report: Final Revised Comprehensive Monitored
517345 Natural Attenuation Evaluation, Tri-Cities
Barrel Superfund Site, Fenton, New York,
Appendix D, Part 5, Spring 2004, prepared by
Doc. ID# 111385 ESC Engineering of New York, P.C., prepared for
U.S. Environmental Protection Agency, Region 2,
August 16, 2007.

P. 517346 - Report: Final Revised Comprehensive Monitored
520237 Natural Attenuation Evaluation, Tri-Cities
Barrel Superfund Site, Fenton, New York,
Appendix D, Part 6, Summer 2004, prepared by
Doc. ID# 111386 ESC Engineering of New York, P.C., prepared for
U.S. Environmental Protection Agency, Region 2,
August 16, 2007.

P. 520238 - Report: Final Revised Comprehensive Monitored
522656 Natural Attenuation Evaluation, Tri-Cities
Barrel Superfund Site, Fenton, New York,
Appendix D, Part 7, Fall 2004, prepared by ESC
Doc. ID# 111387 Engineering of New York, P.C., prepared for
U.S. Environmental Protection Agency, Region 2,
August 16, 2007.

P. 522657 - Report: Final Revised Comprehensive Monitored
525318 Natural Attenuation Evaluation, Tri-Cities
Barrel Superfund Site, Fenton, New York,
Appendix D, Part 8, January 2005, prepared by
Doc. ID# 111388 ESC Engineering of New York, P.C., prepared for

U.S. Environmental Protection Agency, Region 2,
August 16, 2007.

P. 525319 - Report: Final Revised Comprehensive Monitored
525720 Natural Attenuation Evaluation, Tri-Cities
Barrel Superfund Site, Fenton, New York,
Doc. ID# 111389 Appendix D, Part 9 Spring 2005, prepared by
ESC Engineering of New York, P.C., prepared for
U.S. Environmental Protection Agency, Region 2,
August 16, 2007.

P. 525721 - Report: Pilot Study Report (Revision 2)
525768 Tri-Cities Barrel Superfund Site, Fenton, New
York, prepared by WSP Engineering of New York,
Doc. ID# 111390 P.C., prepared for U.S. Environmental
Protection Agency, Region 2, January 15, 2010.

P. 525769 - Report: Pilot Study Report (Revision 2)
527591 Tri-Cities Barrel Superfund Site, Fenton, New
York, Appendix D - Laboratory Data - Provided
on CD, prepared by WSP Engineering of New York,
Doc. ID# 111391 P.C., prepared for U.S. Environmental
Protection Agency, Region 2, January 15, 2010.

P. 527592 - Report: MW-19 Area Supplemental Investigation
528408 Report, Tri-Cities Barrel Superfund Site,
Fenton, New York, prepared by WSP Engineering
of New York, P.C., prepared for U.S.
Doc. ID# 111392 Environmental Protection Agency, Region 2,
February 3, 2011.

P. 528409 - Report: Final Focused Feasibility Study,
528526 (Revision 2), Tri-Cities Barrel Superfund Site,
Fenton, New York, prepared by WSP Engineering
of New York, P.C., prepared for U.S.
Doc. ID# 111394 Environmental Protection Agency, Region 2,
July 21, 2011.

P. 528527 - Report: Final Focused Feasibility Study,
531007 (Revision 2), Tri-Cities Barrel Superfund Site,
Fenton, New York, Appendix A - MW-19, Area
Reports, prepared by WSP Engineering of
Doc. ID# 111395 New York, P.C., prepared for U.S. Environmental
Protection Agency, Region 2, July 21, 2011.

P. 531008 - Report: Final Focused Feasibility Study,
531169 (Revision 2), Tri-Cities Barrel Superfund Site,

Doc. ID# 111396

Fenton, New York, Appendices B-E, prepared by WSP Engineering of New York, P.C., prepared for U.S. Environmental Protection Agency, Region 2, July 21, 2011.

P. 531170 - Report: Superfund Proposed Plan for Remedy
531182 Modification, Tri-Cities Barrel Site, Town of
Fenton, Broome County, New York, prepared by
U.S. Environmental Protection Agency, Region 2,
July 2011.

Doc. ID# 111393

APPENDIX IV

STATE LETTER OF CONCURRENCE

New York State Department of Environmental Conservation

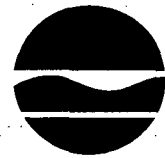
Division of Environmental Remediation

Office of the Director, 12th Floor

625 Broadway, Albany, New York 12233-7011

Phone: (518) 402-9706 • Fax: (518) 402-9020

Website: www.dec.ny.gov



Joe Martens
Commissioner

September 13, 2011

SENT VIA EMAIL ONLY

Mr. Walter E. Mugdan, Director (mugdan.walter@epa.gov)
Emergency and Remedial Response Division
United States Environmental Protection Agency
Region II
290 Broadway, Floor 19
New York, New York 10007-1866

Re: Tri-City Barrel Company, Site No.: 704005
Amendment to the Record of Decision
New York State Concurrence

Dear Mr. Mugdan:

The New York State Department of Environmental Conservation (Départment) and Department of Health (NYSDOH) have reviewed the draft Amendment to the Record of Decision dated September 2011 and concur with the amendment. We understand the amended remedy for this site includes a modification from a pump and treat alternative to monitored natural attenuation. As part of a long-term groundwater monitoring program, groundwater samples will be collected and analyzed periodically to verify that the level and extent of groundwater contaminants (e.g., VOCs) are declining and that conditions are protective of human health and the environment. If this review indicates that monitored natural attenuation was not effective, more aggressive remedies, such as enhanced monitored natural attenuation, may be implemented.

In addition, as part of the amended remedy, EPA has determined that the restoration of the groundwater in the MW-19 Area (*i.e.*, attainment of the MCLs) is technically impracticable from an engineering perspective due to the ineffectiveness of active remedies in the low permeable soils found at the Site, the limited mobility of the groundwater contamination (the contaminant plume is not migrating), the absence of current and potential receptors, and the inability to locate a source. Therefore, EPA is issuing a technical impracticability waiver for the groundwater in this area. It is our understanding that the rubble near MW-19 has been excavated and disposed off site at a permitted landfill by the PRP Group as of August 2011.

The amended remedy was presented to the public at an August 16, 2011 meeting and a public comment period was provided. Comments from the meeting and comment period are presented and answered in the responsiveness summary included in the amendment. With this understanding, we concur with the selected remedy for the Tri-City Barrel Site.

If you have any questions or need additional information, please contact Mr. Edward Hampston at (518)402-9814.

Sincerely,

Dale A. Desnoyers, Director
Division of Environmental Remediation

ec: J. Singerman, USEPA (singerman.joel@epa.gov)
Y. Chang, USEPA (chang.young@epa.gov)
S. Bates, NYSDOH (smb02@health.state.ny.us)
G. Laccetti, NYSDOH (gj102@health.state.ny.us)
R. Schick
M. Cruden
J. White
E. Hampston

APPENDIX V

RESPONSIVENESS SUMMARY

Appendices

V-a. Emails Submitted During the Public Comment Period

V-b. Public Notice

RESPONSIVENESS SUMMARY

Tri-Cities Barrel Superfund Site

INTRODUCTION

This Responsiveness Summary provides a summary of citizens' comments and concerns received during the public comment period related to the Tri-Cities Barrel Superfund site (Site) Proposed Plan for Remedy Modification (Proposed Plan) and the U.S. Environmental Protection Agency's (EPA's) and the New York State Department of Environmental Conservation's (NYSDEC's) responses to those comments and concerns. All comments summarized in this document have been considered in EPA and NYSDEC's final decision in the selection of a modified groundwater remedy at the Site.

SUMMARY OF COMMUNITY RELATIONS ACTIVITIES

The *Revised Comprehensive Monitored Natural Attenuation Evaluation Report* (ESC Engineering, 2007), *Pilot Study Report (Revision 2)* (WSP Engineering, 2010), *MW-19 Area Supplemental Investigation Report* (WSP Engineering, 2011), *Focused Feasibility Study Report (Revision 2)* (WSP Engineering, 2011), and *2011 Proposed Plan for Remedy Modification* for the Site were made available to the public in both the Administrative Record and information repositories¹ maintained at the EPA Docket Room in the Region II New York City office at 290 Broadway in Manhattan and the information repository at the Fenton Town Hall, 44 Park Street, Port Crane, New York. A notice of the commencement of the public comment period, the public meeting date, the preferred modified groundwater remedy, contact information, and the availability of the above-referenced documents was published in the *Binghamton Press and Sun Bulletin* on Sunday, July 31, 2011. A public comment period ran from July 31, 2011 to August 30, 2011.

EPA held a public meeting on August 16, 2011 at 7:00 P.M. at the Town of Fenton Town Hall to present the findings of the recent groundwater investigations and a focused feasibility study (FFS) and to answer questions from the public about the Site and the groundwater remedial alternatives under consideration. Approximately 20 people, including area residents, and state and local government officials, attended the public meeting. On the basis of comments received during the public comment period, the public generally supports the selected modified groundwater remedy.

¹ On August 1, 2011, another repository was added for this Site -- Fenton Free Library, 1062 Chenango Street, Binghamton, NY.

SUMMARY OF COMMENTS AND RESPONSES

The following correspondence (see Appendix V-a) were received during the public comment period:

- Email to Young Chang, dated August 3, 2011, from Keevin Kenyon, area resident.
- Email to Judith Enck, Regional Administrator, dated August 16, 2011 from James Little, Western Broome Environmental Stakeholders Coalition.

A summary of the comments contained in the above emails and the comments provided at the August 16, 2011 public meeting, as well as EPA and NYSDEC's responses to them, have been organized into the following topics:

- Extent of Contamination
- Remedial Alternatives
- MW-19 Area and Technical Impracticability Waiver Concerns
- Private Well Concerns
- Vapor Intrusion Concerns

A summary of the comments and concerns and EPA responses thereto are provided below:

Extent of Contamination

Comment #1: A commenter requested details related to the 2003 soil and sediment excavation activities conducted at the Site.

Response #1: Based upon the results of the 1999 RI/FS reports, a ROD was signed on March 31, 2000, which called for the excavation and off-site disposal of contaminated soil and sediment and the backfilling of the excavated area with clean fill. Pursuant to a consent decree, in 2003, the potentially responsible parties (PRPs) excavated and disposed of off-site 74,969 tons (40,000 cubic yards) of contaminated soil and sediment.

Comment #2: Several commenters expressed concern that contamination may have spread to soils north of Interstate-88 (I-88) up to, into, and along Osborne Creek, due to barrels traveling from the facility in flooding events during the mid-1970's and early 2000's.

Response #2: During the remedial investigation (RI), sampling in Osborne Creek did not detect any site-related contamination in surface water or sediment samples.

However, contamination was found in soils located north of I-88. During the 2003 remedial action, contaminated soil in various areas of north of I-88 was excavated to depths of two to six feet (ft) and disposed of off the Site.

Comment #3: Several commenters expressed concern about groundwater contamination potentially moving off the Site.

Response #3: The Site is underlain by 35 ft (southern portion of the Site, south of Old Route 7) to greater than 60 ft (northern portion of the Site) of unconsolidated deposits, which consist of a clayey till with discontinuous thin sand and gravel lenses. Beneath the unconsolidated deposits lies predominantly shale bedrock. Based on over fifteen years of data, it has been concluded by EPA that the contamination in the groundwater at this Site is confined to the shallow groundwater present in the till and discontinuous sand layers mentioned above.

The affected groundwater at the Site is mainly restricted to the area south of I-88, within the shallow, unconsolidated water-bearing zone; the bedrock aquifer is not contaminated. Prior to the 2003 removal of the contaminated soil, the groundwater plume at the Site appeared to be located in isolated zones within an area approximately 240 ft wide by 500 ft long. The vertical and horizontal extent of the groundwater contaminant plume has not expanded since the RI. Therefore, it is not anticipated that the groundwater will migrate off-site in the future.

Remedial Alternatives

Comment #4: A commenter requested that EPA clarify the processes that would result in the reduction in contaminant levels under the monitored natural attenuation alternative.

Response #4: Natural attenuation describes a variety of *in-situ* processes (*i.e.*, biodegradation, dispersion, sorption, volatilization, oxidation-reduction reactions), which under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in groundwater. From 2001 through 2005, seven rounds of groundwater samples were collected as part of a natural attenuation study. The data indicate that the total mass of contaminants had greatly reduced after the removal of the contaminated soil, which was the source of the groundwater contamination. The data also showed the presence of reductive microbial metabolic products, which indicate that the primary mechanism responsible for the decline is biodegradation.

Under the monitored natural attenuation alternative, the groundwater contamination would be addressed through natural attenuation. Groundwater monitoring would be conducted to assess the progress of the natural attenuation. Specifically, groundwater samples would be collected and analyzed periodically in order to verify that the level and extent of groundwater contaminants are declining and that conditions are protective of human health and the environment. In addition, biodegradation parameters (e.g., dissolved oxygen, nitrate, sulfate, methane, ethane, ethane, alkalinity, redox potential, pH, temperature, conductivity, chloride, sulfide, iron, and total organic carbon) would be used to assess the progress of the degradation process. Monitoring would continue until the state and federal drinking water standards are met.

Comment #5: A commenter asked if bioremediation, a technology that encourages the growth and reproduction of indigenous microorganisms to enhance biodegradation of organic constituents in the water table, would be an appropriate technique to remediate the contaminated groundwater.

Response #5: The 1999 FS report, which identified and evaluated remedial alternatives for the Site, evaluated bioremediation and concluded that the delivery of bioremediation agents throughout the affected area of groundwater would be very difficult at this Site. Nonetheless, one form of bioremediation (injection of a Hydrogen Release Compound) was pilot-tested in the groundwater at one area of the Site. It was not, however, successful in breaking down the volatile organic compounds.

MW-19 Area and Technical Impracticability Waiver Concerns

Comment #6: Several commenters requested clarification regarding the technical impracticability (TI) waiver that was proposed for the MW-19 Area.

Response #6: The restoration of contaminated groundwater is one of the primary objectives of the Superfund program. Experience at Superfund sites has shown, however, that the restoration of contaminated groundwater may not always be achievable from an engineering perspective.

It was concluded that because of the low permeability of the aquifer, groundwater extraction and treatment was not viable for the Site. Seven rounds of groundwater samples were collected as part of a natural attenuation study at the Site. Based upon its review, EPA concluded that while natural attenuation would be feasible for the contaminated groundwater for the majority of the Site, the data did not demonstrate that natural attenuation would address the tetrachloroethylene (PCE) and 1,1,1-

trichloroethane (1,1,1-TCA) contamination in the MW-19 Area (this area is approximately 120 ft by 80 ft to a depth of 30 ft.).

As part of a PRP-performed field test in December 2008, approximately 50 gallons of Hydrogen Release Compound (HRC) and approximately 35 gallons of HRC primer were injected in the MW-19 Area. The results of four rounds of subsequent sampling were inconclusive. EPA subsequently requested that the PRPs perform additional investigation to locate the source and, if located, then perform targeted treatment. The PRPs performed this investigation from September through December 2010. This work included the performance of a passive soil gas survey, collection of groundwater samples from the silt and sand/gravel zones beneath and around building debris that was buried on the Site, permeability testing, and hydraulic conductivity testing. Based on the results of this effort, EPA concluded that the source of the PCE and 1,1,1-TCA contamination had not been identified and further efforts to try to identify the source would likely be fruitless. Nevertheless, the building debris in this area was excavated and disposed off-Site at a permitted landfill by the PRP Group in August 2011.

EPA determined that the restoration of the groundwater in the MW-19 Area is technically impracticable from an engineering perspective due to the ineffectiveness of active remedies in the low permeable soils found at the Site, the limited mobility of the groundwater contamination (the contaminant plume is not migrating), and the inability to locate a source. Therefore, EPA proposed a technical impracticability waiver from the regulatory requirements of the federal Safe Drinking Water Maximum Contamination Levels and NYSDEC Water Quality Regulations for Groundwater.

MW-19 Area groundwater will continue to be monitored periodically to confirm that the TI zone is not expanding or moving vertically or horizontally, and no additional contaminants other than those waived are detected.

Comment #7: A commenter questioned why the contamination in the MW-19 Area could not be excavated.

Response #7: The contamination in the MW-19 Area is confined to the groundwater. Since the soil in this area is not contaminated, its excavation would not remediate the groundwater contamination.

Comment #8: A commenter asked whether an air sparging system or groundwater extraction system would be an appropriate technique to remove contamination in the MW-19 Area.

Response #8: Air sparging is an in-situ treatment method that consists of injecting air into the groundwater through drilled wells or driven points. Volatile organic constituents in groundwater partition into the injected air. The air and organic compounds then rise to the vadose zone where they are typically removed by a soil vapor extraction system. This method was considered in the 1999 FS, but was not retained for detailed analysis due to ineffectiveness. The low permeability soils at the Site would inhibit the effectiveness of injection and movement of air into and through the subsurface.

Groundwater extraction and treatment were also evaluated in the FFS. While this remedy would be implementable, it is severely limited in its effectiveness by the low permeability of the soils at the Site. Also contributing to the decreased effectiveness of such a remedy is the limited mobility of the groundwater contamination and the inability to locate a contamination source in the MW-19 area. There are also significantly higher capital and operation and maintenance costs associated with this remedy. As a result, it was determined not to be an appropriate remedy.

Comment #9: Several commenters expressed concern that a TI waiver was being sought for an area where a source cannot be found.

Response #9: Sufficient safeguards for the protection of human health and the environment are in place. Currently, there is no one on the Site using the groundwater for drinking water purposes. In addition, a deed restriction prohibits the installation and use of groundwater wells at the Site for drinking water purposes until drinking water standards have been met. Continued monitoring will ensure that the Site remains protective of human health until the cleanup levels have been achieved.

It should also be noted that the bedrock aquifer, which is used for potable purposes in the area, is not contaminated.

Private Well Concerns

Comment #10: Several commenters expressed concern that drinking water wells on their respective properties have not been adequately monitored.

Response #10: Within 1,000 ft of the Site boundary, there are nine private drinking water wells. They are all located upgradient or cross-gradient from the Site and are installed in bedrock. Therefore, they are not considered potential receptors of the affected groundwater. Based on over fifteen years of data, EPA has concluded that the contamination in the groundwater at this Site is confined to the shallow groundwater

unit. In addition, the relatively low concentrations observed in monitoring wells downgradient of the source areas suggest that the plume is not mobile, since the plume has not expanded since the 1999 RI. The private drinking water wells were sampled by the New York State Department of Health during the RI; no Site-related contaminants were detected. The residential well located closest to the Site was resampled in 2005. Site-related contaminants were not detected. For these reasons, EPA does not believe that monitoring is warranted for the private drinking water wells. However, since concerns related to contamination were expressed, the New York State Department of Health will sample several of residents' private drinking water wells.

Vapor Intrusion Concerns

Comment #11: A commenter expressed concerns about vapor intrusion.

Response #11: Because the groundwater contamination is not migrating beyond the Site boundary, vapor intrusion is not considered a concern for nearby residences. In the future, if any structure is constructed on the Site, a soil vapor intrusion study may be warranted.

APPENDIX V-a

Emails Submitted During the Public Comment Period



Tri cities Barrel SuperFund Site

Keevin Kenyon

to:

Young Chang

08/03/2011 03:10 PM

Hide Details

From: "Keevin Kenyon" <kkenyon1@stny.rr.com>

To: Young Chang/R2/USEPA/US@EPA

To whom it may Concern:

We have lived at 56 Pleasant Hill Rd. in Port Crane, NY since October 1982 and our property is bordered by Osborne Creek. In April 1988 our water well ceased to provide enough water and we had a new 300 ft. well drilled. The new well has a great deal of sediment and a significant amount of an unidentified gas. We initially drank the water but eventually switched to bottled water because of the strong odor and taste of the well water.

We previously opposed any modification to the soil and sediment portion of the remedy. We are also opposed to this modification unless it can be shown that a full hydrogeologic investigation has been completed and no risk to the community exists.

Regards,

Keevin and Cheyanne Kenyon

To:
Cc:
Bcc:
Subject: Fw: <http://www.pressconnects.com/article/20110815/NEWS01/108150364/-2-4M-effort-won->
From: Young Chang/R2/USEPA/US - Tuesday 09/06/2011 04:01 PM

----- Forwarded by Walter Mugdan/R2/USEPA/US on 08/17/2011 10:25 AM -----

----- Forwarded by Judith Enck/R2/USEPA/US on 08/16/2011 10:57 AM -----

From: JLi2533838@aol.com
To: Judith Enck/R2/USEPA/US@EPA
Date: 08/16/2011 10:39 AM
Subject: <http://www.pressconnects.com/article/20110815/NEWS01/108150364/-2-4M-effort-won->

Would bio remediation be an option for cleanup here? James Little Endicott NY

<http://www.pressconnects.com/article/20110815/NEWS01/108150364/-2-4M-effort-won-t-clean-up-Tri-Cities-Barrel-facility?odyssey=tab|topnews|text|FRONTPAGE>

APPENDIX V-b

Public Notice

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY INVITES

PUBLIC COMMENT ON THE PROPOSED MODIFIED GROUNDWATER REMEDY FOR THE TRI-CITIES BARREL SUPERFUND SITE

The U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation will hold a public meeting on August 16, 2011 at 7 p.m. in the Town of Fenton Town Hall, 44 Park Street, Port Crane, NY, to discuss EPA's Proposed Plan for Remediation (Proposed Plan) for the Tri-Cities Barrel Superfund site. EPA is issuing the Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, and Section 300.430(f) of the National Contingency Plan.

In 2000, EPA selected a remedy for the site that included the excavation of contaminated soils and sediments, followed by off-site treatment/disposal, and extraction and on-site treatment to address the contaminated groundwater. The soil and sediment portion of the remedy was implemented in 2003.

The Proposed Plan describes proposed changes to the groundwater component of the remedy and identifies the rationale for this preference. The main feature of the preferred modified groundwater remedy is the utilization of monitored natural attenuation to restore the groundwater instead of groundwater extraction and treatment.

The modified remedy described in the Proposed Plan is the preferred modified remedy for the site. Changes to the preferred modified remedy, or a change from the preferred modified remedy to another remedy, may be made if public comments or additional data indicate that such a change will result in a more appropriate remedial action. The final decision regarding the modified remedy will be made after EPA has taken into consideration all public comments. EPA is soliciting public comments on the alternatives considered in the Proposed Plan and in the 2011 Focused Feasibility Study report because EPA relies on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site.

The administrative record file contains the information upon which the selection of the response action will be based and is available at the following locations:

Fenton Town Hall USEPA Records Center
44 Park Street 290 Broadway, 18th Floor
Port Crane, NY 13833 New York, NY 10007-1866

Responses to the comments received at the public meeting and in writing during the public comment period, which runs from July 31, 2011 to August 30, 2011, will be documented in the Responsiveness Summary section of an Amendment to the Record of Decision, the document that formalizes the selection of the modified remedy. All written comments should be addressed to: Young S. Chang, Remedial Project Manager, USEPA, 290 Broadway, 20th Floor, New York, NY 10007-1866. Fax: (212) 637-3566, or chang.young@epa.gov.

If you have any questions regarding the public meeting you can e-mail Ms. Cecilia Echols, Community Involvement Coordinator at: echols.cecilia@epa.gov, or call (212) 637-3678 or toll-free at 1-800-346-5009.

Afghans arrest Taliban leader

Insurgent, official also detained

Associated Press

KABUL, Afghanistan — A senior Defense Ministry official who allegedly leaked secrets that helped the Taliban stage suicide attacks in Kabul has been arrested by the Afghan Intelligence Service — one of three high profile arrests announced Saturday by the agency.

A spokesman said also arrested were a senior Taliban official accused of leading an insurgent propaganda campaign in eastern Afghanistan, and an insurgent who allegedly helped organize an April 1 attack against the U.N. headquarters in the northern city of Mazar-i-Sharif that killed 11 people, including seven foreign U.N. employees.

Infiltration has become a serious concern for Afghan forces and the



Marine Cpl. Patrick Ducey, 21, of Garfield, N.J., left, and Lance Cpl. Charlie Quintana, 22, of Manhattan, rest for a moment while hiking down from an observation post Saturday, in Helmand province, Afghanistan. ASSOCIATED PRESS

U.S.-led military alliance that is training them — often on bases they share. The Taliban have said the practice has become one of their main strategies in their war against the U.S.-led coalition and President Hamid Karzai's government. Several attacks involving bombers wearing military uniforms have targeted foreign troops as well as official Afghan

institutions, including an April suicide bombing by an attacker wearing an army uniform that killed three people at the Defense Ministry.

The intelligence service recently arrested Gul Muhammad, an army officer who was serving at the Defense Ministry headquarters in Kabul, the agency's spokesman Lutfullah Masali said at a news conference.

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	MAINE STREET DELICATESSEN		
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APPENDIX BB
to
AMENDMENT TO CONSENT DECREE
TRI-CITIES BARREL SUPERFUND SITE

2015 STATEMENT OF WORK
Remedial Action for Groundwater (Remedial Work Element II)
Tri-Cities Barrel Site
Fenton, New York

2015 STATEMENT OF WORK
Remedial Action for Groundwater (Remedial Work Element II)
Tri-Cities Barrel Site
Fenton, New York

I. WORK TO BE PERFORMED

This 2015 Statement of Work (“2015 SOW”) is incorporated into and an enforceable part of the Consent Decree (as amended by the Amendment to Consent Decree), Civil Action No. 3:01-CV-0637 concerning the Tri-Cities Barrel Superfund Site (Site) and is attached as Appendix B to the Amendment to Consent Decree.

This 2015 SOW amends the SOW (attached as Appendix B to the Original Consent Decree) only as it applies to Remedial Work Element II. Thus, the term "Statement of Work" or "SOW" shall mean the statement of work for the Remedial Design and Remedial Action of Remedial Work Element I and the Statement of Work for the Remedial Design and Remedial Action of Remedial Work Element II. References herein to the 2015 SOW refer only to Remedial Work Element II.

Terms that are defined in the Consent Decree (as amended by the Amendment to Consent Decree) shall have the same meaning in this 2015 SOW.

The objectives of the “Work”, as defined in Section IV., Paragraph 4 of the Consent Decree, to be conducted at the Site pursuant to this 2015 SOW, are to:

- Restore groundwater quality to levels which meet State and Federal drinking-water standards; and
- Reduce or eliminate any direct human contact or inhalation threat associated with contaminated groundwater.

These objectives shall be met through implementation at the Site of the amended remedy selected with respect to Remedial Work Element II, in the ROD Amendment dated September 27, 2011 (the “2011 ROD Amendment”), a copy of which is attached as Appendix A to the Amendment to Consent Decree. Settling Defendants shall finance and perform the Work in accordance with the Consent Decree, the 2011 ROD Amendment, and this 2015 SOW, including all terms, conditions, and schedules set forth herein or developed and approved hereunder.

The Work includes:

- Monitored natural attenuation (“MNA”) of the groundwater throughout the Site, except in the “MW-19 Area;”
- Long-term groundwater monitoring throughout the Site to verify that the level and extent of groundwater contaminants are declining within the timeframe projected and

that conditions are protective of human health and the environment; and

- Periodic monitoring of nearby residential private wells to ensure the effectiveness of the selected remedy.

II. PERFORMANCE STANDARDS

The remedial action (“RA”) shall provide for the performance of the remedy set forth in the 2011 ROD Amendment that, when implemented, will achieve the Performance Standards and legally applicable and relevant and appropriate requirements as set forth therein.

**III. PROJECT SUPERVISION/MANAGEMENT:
SUPERVISING CONTRACTOR AND PROJECT COORDINATOR**

Supervising Contractor

The Work performed by Settling Defendants pursuant to the Consent Decree shall meet the requirements of applicable federal, state, and local laws and be performed under the direction and supervision of a qualified licensed professional engineering firm. Settling Defendants have identified and EPA has approved WSP USA Corp. as the Supervising Contractor. Selection of a new Supervising Contractor shall be subject to approval by EPA in accordance with Section VI. of the Consent Decree.

Project Coordinator

The Project Coordinator shall be responsible for the day-to-day management of all Work to be performed pursuant to the Consent Decree. The Project Coordinator shall have adequate technical and managerial experience to manage all Work described in this Statement of Work and under the Consent Decree. The Project Coordinator shall be knowledgeable at all times about all matters relating to activities regarding the Work. The Project Coordinator shall be the primary contact for EPA on all matters relating to Work at the Site and should be available for EPA to contact during all working days. The Project Coordinator shall not be an attorney. Settling Defendants have identified, and EPA has approved, Steven Roach of Ashland Inc. as the Project Coordinator. Selection of a new Project Coordinator shall be subject to approval by EPA in accordance with Section XII. Of the Consent Decree.

**IV. IMPLEMENTATION OF MONITORED NATURAL ATTENUATION PLAN FOR
GROUNDWATER**

A. Selection of MNA Plan Implementation Contractor

Settling Defendants have identified and EPA has approved WSP USA Corp. as the MNA Plan Implementation Contractor for Remedial Work Element II.

B. MNA Plan Implementation

On September 27, 2011, at EPA's direction via a September 1, 2011 letter (Settling Defendants acknowledged acceptance of the request in correspondence dated September 9, 2011), Settling Defendants commenced natural attenuation monitoring of the groundwater at the Site using the protocols identified in the Settling Defendants November 30, 2006 Revised Interim Groundwater Monitoring Program. On January 11, 2012, Settling Defendants modified the Revised Interim Groundwater Monitoring Program in response to October 27, 2011 and December 13, 2011 comments from EPA. As part of the modifications, the Revised Interim Groundwater Monitoring Program was renamed the Long Term MNA Sampling Program ("MNA Plan"). EPA approved the MNA Plan on January 18, 2012. Settling Defendants shall implement the EPA-approved MNA Plan in accordance with the schedules contained therein.

C. Groundwater Remedial Action Report

Following one (1) year of implementation of the MNA Plan, the Settling Defendants submitted to EPA the Interim Remedial Action Report for Remedial Work Element II Groundwater ("Interim RA Report") on November 29, 2012.

D. EPA approved the Interim RA Report on January 3, 2015.

E. Goal for Aquifer Restoration

1. The Performance Standards for aquifer restoration at the Site are included in the 2011 ROD Amendment. The 2011 ROD Amendment lists federal and State MCLs and other criteria for various constituents detected in the Site groundwater. Settling Defendants shall perform MNA until it has been determined that the Performance Standards have not been exceeded for a period of two (2) consecutive years, or a shorter period if approved by EPA in its sole discretion (see Section V., below).
2. Settling Defendants shall implement MNA Contingency Measures as discussed in Sections IV.E.4. through IV.E.8., below, until the Performance Standards have not been exceeded for a period of two (2) consecutive years, or a shorter period if approved by EPA in its sole discretion if, based on the results of groundwater monitoring, Settling Defendants believe that some or all of the Performance Standards specified in the 2011 ROD Amendment will not be reached in the expected time period through continued implementation of the MNA Plan. EPA shall determine, in its sole discretion, whether MNA Contingency Measures should be implemented. EPA's decision shall be binding on Settling Defendants.

3. Settling Defendants' may petition EPA in writing for authorization to amend the MNA Plan. The petition for authorization to amend the MNA Plan through the implementation of MNA Contingency Measures shall include, at a minimum, the following information, as well as any other information and analyses EPA requests prior to or following submission of the petition:
 - a. a list identifying each Performance Standard that has not been met;
 - b. a description of any changes in the conceptual model for Site contamination since issuance of the 2011 ROD Amendment, including geological, hydrogeologic, and geochemical characterizations, or identification of new/additional source areas;
 - c. comprehensive groundwater monitoring data relevant to the groundwater remedy implemented;
 - d. an analysis of the performance of the groundwater remedy which describes the spatial and temporal trends in groundwater contaminant concentrations within the groundwater plume (*e.g.*, whether contaminant migration has been effectively prevented, as well as any reduction or changes in the overall size or location of the groundwater plume, or stabilized or very slow decreases in contaminant concentrations);
 - e. a description of the proposed MNA Contingency Measures;
 - f. a predictive analysis of the approximate time frame required to achieve the Performance Standards with both the existing groundwater remedy and that to be implemented with the proposed MNA Contingency Measures using methods appropriate for the data and Site-specific conditions. Such analysis shall also address the uncertainty, if any, inherent in these predictions; and
 - g. The petition shall not be deemed complete until all information and analyses required and/or requested by EPA are submitted by Settling Defendants.
4. If, after having performed MNA, EPA believes that one or more of the Performance Standards specified in the ROD will not be reached in the expected time period through continued implementation of the MNA Plan and Settling Defendants have not petitioned EPA in writing for authorization to amend the MNA Plan, EPA may require Settling Defendants to implement MNA Contingency Measures and to submit an MNA Contingency Measures Plan (see Section IV.E.6., below).
5. An MNA Contingency Measures Plan shall be submitted to EPA by Settling Defendants within ninety (90) days of receipt of EPA's written determination that MNA Contingency Measures are appropriate.

6. The MNA Contingency Measures Plan shall:
 - a. address design, construction, and O&M of the MNA Contingency Measures, as appropriate;
 - b. include an amended Quality Assurance Project Plan (QAPP) and Health and Safety Plan (HASP) for O&M activities, if necessary; and
 - c. include a schedule for the implementation of the MNA Contingency Measures.
7. EPA will either approve the MNA Contingency Measures Plan or disapprove and/or require modification of such plan, in accordance with the procedures set forth in Section XI. of the Consent Decree.
8. Settling Defendants shall implement the MNA Contingency Measures Plan within thirty (30) days of receipt of EPA's written approval of the Contingency Measures Plan.
9. Settling Defendants may petition EPA in writing for authorization to discontinue implementation of the MNA Contingency Measures Plan if, based on the results of performance data collected during implementation of the MNA Contingency Measures, Settling Defendants demonstrate to EPA's satisfaction that any portion of the aquifer cannot be restored. Settling Defendants may petition EPA to waive compliance with one or more of the Performance Standards based on a demonstration that it is technically impracticable, from an engineering perspective, to attain those standards. Settling Defendants shall not submit such a petition until they have implemented the MNA Contingency Measures for at least three (3) years, or a shorter period if approved by EPA in its sole discretion. A determination will be made by EPA based on Site-specific data and conditions. If a first petition is rejected, a subsequent petition will be considered by EPA only if EPA determines that it is based on significant new Site-specific data. The determination of whether attainment of a particular Performance Standard is technically impracticable will be made by EPA, and will be based on the engineering feasibility and reliability of the remedy. EPA's decision shall be binding on the Settling Defendants.
10. Neither the submission of a petition by Settling Defendants nor the granting of a waiver of one or more Performance Standards by EPA pursuant to this Section shall relieve Settling Defendants of their obligation to (i) continue to implement the groundwater remedy as required by the Consent Decree and this 2015 SOW unless EPA specifies otherwise, (ii) attain Performance Standards for any contaminants for which EPA has not specifically granted a waiver, and (iii) complete any other obligation under the Consent Decree.

11. Following the implementation of the MNA Contingency Measures for a period of at least three (3) consecutive years, or a shorter period if approved by EPA in its sole discretion, Settling Defendants may petition EPA for a technical impracticability (TI) waiver of one or more of the Performance Standards, as discussed in this Section through Section IV.E.14., below, and consistent with EPA guidance, including, but not limited to, Guidance for Evaluating the Technical Impracticability of Groundwater Restoration (EPA/540-R-93-080) dated September 1993. Settling Defendants' petition for a TI waiver and/or for authorization to discontinue implementation of the MNA Contingency Measures Plan shall include, at a minimum, the information and analyses required by EPA guidance and the following Site-specific information:
 - a. a list of each Performance Standard for which a waiver is being sought, and the spatial limits for which they are sought.
 - b. a description of the conceptual model for Site contamination, including geological, hydrogeologic, and geochemical characterizations. The sources and quantities (if known), distribution, characteristics, migration potential and fate of contaminants present at the Site at the time of the petition shall be described. These descriptions shall incorporate pertinent data obtained during design, construction, and operation of groundwater remediation system, as well as other pertinent information obtained during any previous Site characterization efforts;
 - c. comprehensive groundwater monitoring data and an evaluation of the groundwater remedy implemented, along with any other remedial actions performed which enhanced or affected this remedy. The petition shall also demonstrate that the remedy has been designed, constructed, and operated in a manner which is consistent with the conceptual model of the Site and that the system has been modified or enhanced to the extent practicable by the implementation of Contingency Measures in order to improve its ability to attain Performance Standards;
 - d. a description of known or suspected groundwater contaminant sources at the Site. The petition shall also describe any additional source control and removal efforts undertaken, and the effectiveness of those efforts;
 - e. an analysis of the performance of the groundwater remedy that describes the spatial and temporal trends in groundwater contaminant concentrations within the groundwater plume. The petition shall discuss the hydro-geochemical factors which influence the remedy's ability to achieve the Performance Standards, and demonstrate how these factors inhibit the remedial system achieving the Performance Standards;
 - f. a demonstration (including appropriate engineering analysis) that all other technologies which are potentially applicable to the Site cannot attain the

Performance Standards in a manner that is practicable from an engineering perspective. This demonstration shall include a prediction of the level of cleanup other technologies can attain;

- g. a predictive analysis of the approximate time frame required to achieve the Performance Standards with the existing groundwater remedy using methods appropriate for the data and the Site-specific conditions. Such analysis shall also address the uncertainty, if any, inherent in these predictions; and
 - h. other information or analyses not included above but which Settling Defendants or EPA considers appropriate to making a determination on the petition.
12. Upon receipt of all information required by the previous Paragraph, EPA will review and consider the information in the petition and any other relevant information. After opportunity for review and comment by the State, EPA will determine (1) whether compliance with any of the Performance Standards shall be waived; (2) whether modifications to the groundwater portion of the remedial action or any additional response actions relating to groundwater contamination are required; and (3) whether revised interim milestone and completion dates are needed for attainment of Performance Standards under the Consent Decree. EPA's determination on the petition will be consistent with the National Contingency Plan ("NCP"), Section 121(d) of CERCLA, and any other applicable laws, regulations, and guidance in effect at the time.
 13. If EPA, after a reasonable opportunity for review and comment by the State, grants any petition or other relief pursuant to this Section, that decision will be reflected in a further post-ROD decision document, as required by the NCP.
 14. Upon issuance of EPA's further post-ROD decision document, and, if necessary, filing of a further revised SOW and further Consent Decree amendment with the Court and issuance of a court order approving the modification, Settling Defendants shall implement the modifications selected by EPA to the groundwater remedy or additional response actions relating to groundwater contamination, and achieve and maintain all Performance Standards and remediation requirements established pursuant to this Section. Unless expressly modified by EPA's decision on the petition submitted hereunder, all requirements of the Consent Decree (as amended by the Consent Decree Amendment), including Settling Defendants' obligation to conduct long-term groundwater monitoring, shall continue in force and effect.

V. NOTICE OF COMPLETION OF MNA

- A. Within forty (40) days of meeting the Performance Standards as specified in the 2011 ROD Amendment and this 2015 SOW for two (2) consecutive years (or a shorter period if approved by EPA in its sole discretion), Settling Defendants shall submit to EPA a Notice of Completion of MNA.
- B. EPA will determine whether the MNA (including any MNA Contingency Measures) has been completed in accordance with the standards, specifications, and reports required by the Consent Decree. If EPA determines that they have not been so completed, EPA will notify Settling Defendants in writing of those tasks which must be performed to complete the MNA (including any MNA Contingency Measures). Settling Defendants shall then implement the specified activities and tasks in accordance with the specifications and schedules approved by EPA and shall then submit a report on the specified activities and tasks and certification signed by a licensed professional engineer, within thirty (30) days after completion of the specified activities and tasks.

VI. FINAL CLOSE-OUT REPORT

- A. Within ninety (90) days of EPA's determination pursuant to Section V.B. of this SOW, that MNA has been completed in accordance with the standards, specifications, and reports required by the Consent Decree, Settling Defendants shall submit to EPA a Final Close-Out Report (FCOR). The FCOR shall, among other things, summarize the Work performed under Remedial Work Elements I and II and the data so generated. The FCOR shall conform with the FCOR guidance incorporated in EPA's *Close Out Procedures for National Priorities List Sites* (EPA OSWER Directive 9320.2-22, May 2011 or the latest revision) and include, at a minimum, the following sections:
 - 1. Introduction
 - a. Include a brief description of the location, size, environmental setting, and operational history of the Site.
 - b. Describe the operations and waste management practices that contributed to contamination of the Site.
 - c. Describe the regulatory and enforcement history of the Site.
 - d. Describe the major findings and results of Site investigation activities.
 - e. Describe prior removal and remedial activities at the Site.
 - 2. Background

- a. Summarize the requirements specified in the 2011 ROD Amendment. Include information on the cleanup goals and monitoring requirements.
 - b. Provide additional information regarding the basis for determining the cleanup goals, including planned future land use.
 - c. Summarize the work performed under Remedial Work Elements I and II.
3. Summary of Sampling Events
- a. Provide a summary of the sampling that was performed pursuant to the Remedial Action under Remedial Work Elements I and II and a summary of the results from that sampling.
 - b. Discuss contaminant trends and progress of natural attenuation.

4. Chronology of Events

Provide a tabular summary that lists the major events for Remedial Work Elements I and II and associated dates of those events, starting with the 2000 ROD signature date.

5. Certifications

- a. Briefly describe adherence to health and safety requirements while implementing the monitoring. Explain any substantial problems or deviations.
- b. Include a certification statement, signed by a responsible corporate official of one or more of the Settling Defendants or by the Settling Defendants Project Coordinator, which states the following: “To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”
- c. A certification by a qualified professional engineer licensed by the State of New York that the Remedial Action under Remedial Work Elements I and II has been completed in conformance with the requirements of the 2000 ROD, the 2011 ROD Amendment, the Consent Decree, as amended, the SOW, as amended, Remedial Work Element I design and MNA and PRM Plans and all plans, specifications, reports, and other relevant items developed hereunder.

6. Observations and Lessons Learned

Provide Site-specific observations and lessons learned from the project, highlighting successes and problems encountered and how they were resolved.

7. Contact Information

Provide contact information (names, addresses, phone numbers, and contract/reference data) for all relevant personnel.

8. Appendices: Cost and Construction Performance Summary

The specific parameters for documenting cost and performance information are presented in the *Guide to Documenting and Managing Cost and Performance Information for Remediation Projects*, EPA 542-B-98-007.

- B. EPA will either approve the FCOR or require modification of it, in accordance with the procedures set forth in Section XI. of the Consent Decree.
- C. In accordance with the procedures set forth in Section XIV. of the Consent Decree, Settling Defendants shall schedule and conduct a pre-certification inspection to be attended by Settling Defendants and EPA within ninety (90) days after Settling Defendants conclude that the Remedial Action has been fully performed and the Performance Standards have been attained. If, after the pre-certification inspection, Settling Defendants still believe that the Remedial Action has been fully performed and the Performance Standards have been attained, they shall submit a written report requesting Certification of Completion to EPA for approval, with a copy to the State, within thirty (30) days of the inspection. This report should include documentation that the Performance Standards have been met in accordance with the Consent Decree. Each Performance Standard should be addressed by providing the standard, the results of field sampling, as appropriate, and the basis for determining that the standard was met. If, after completion of the pre-certification inspection and receipt and review of the written report, EPA, after reasonable opportunity for review and comment by the State, determines that the Remedial Action or any portion thereof has not been completed in accordance with the 2000 ROD, the 2011 ROD Amendment, the Consent Decree, the SOW, the Remedial Work Element I design and the MNA and PRM Plans, or that the Performance Standards have not been achieved, EPA will notify Settling Defendants in writing of the activities that must be undertaken to complete the Remedial Action or achieve the Performance Standards. EPA will set forth in the notice a schedule for performance of such activities or require the Settling Defendants to submit a schedule to EPA for approval. Settling Defendants shall perform all activities described in the notice in accordance with the specifications and schedules.

If EPA concludes, based on the initial or any subsequent report requesting Certification of Completion, and after a reasonable opportunity for review and

comment by the State, that all Remedial Action has been fully performed in accordance with the 2000 ROD, the 2011 ROD Amendment, the Consent Decree, the SOW, the Remedial Work Element I design and the MNA and PRM Plans and that the Performance Standards have been achieved, EPA will so certify in writing to Settling Defendants.