



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

April 12, 2016

Lydia A. Guy, Regional Hearing Clerk
USEPA, Region III
1650 Arch Street
Philadelphia, Pennsylvania 19103

Re: W.R. Grace & Co.-Conn
Administrative Order Docket No. CAA-03-2015-0074

Dear Ms. Guy:

EPA and Respondent (the Parties) agree that the incorrect version of the Administrative Order on Consent (AOC) was filed in the above-referenced matter. Specifically, the version of the Site Map agreed to by the Parties is not included in the filed AOC. In all other respects the PDF version of the agreement attached to this letter and the originally filed document are identical.

Accordingly, please substitute the current version of the AOC in the file with the attached PDF version of the document. If you have any questions, please contact me at (215) 814-2643.

Sincerely,

A handwritten signature in black ink, appearing to read "S. T. Hodges", written over a horizontal line.

Susan T. Hodges
Sr. Assistant Regional Counsel

cc: Erich Weissbart, EPA
Pamela Marks, Beverage & Diamond P. C.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 ARCH STREET
PHILADELPHIA, PENNSYLVANIA 19103-2029

IN THE MATTER OF:

W.R. Grace & Co.-Conn.
5500 Chemical Road
Baltimore, MD 21226-1698

Regarding the Facility located at:

5500 Chemical Road
Baltimore, Maryland

RESPONDENT

)
)
) ADMINISTRATIVE ORDER
) ON CONSENT
)
) DOCKET NO.
) RCRA-03-2015-0074
)
)
)
) Proceeding under Section
) 3008(h) of the Resource
) Conservation and Recovery
) Act, as amended, 42 U.S.C.
) Section 6928(h)

I hereby certify that the
within is a true and correct copy
of the original revised AOL
filed in this matter.

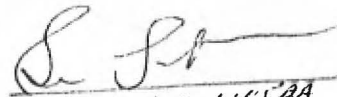

Attorney for USEPA

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Figure 1 - Site Map

ATTACHMENT 1 - Administrative Order on Consent, Docket No. RCRA-03-2002-0063,
signed on June 21, 2002

ATTACHMENT 2 - Final Decision and Response to Comments (FDRTC) issued September 4,
2014

ADMINISTRATIVE ORDER ON CONSENT

The parties to this Administrative Order on Consent (Consent Order or Order), the United States Environmental Protection Agency (EPA) and W.R. Grace & Co.-Conn. (Respondent), having agreed to entry of this Consent Order, it is therefore Ordered and Agreed that:

I. JURISDICTION

A. This Consent Order is entered into pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency by Section 3008(h) of the Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984 (collectively referred to hereinafter as RCRA), 42 U.S.C. § 6928(h). The authority vested in the Administrator has been delegated to the Director of the Land and Chemicals Division by EPA Delegation No. 8-32 dated June 21, 2004.

B. On January 25, 1985, EPA granted the State of Maryland (the State) authorization to operate a state hazardous waste program in lieu of the federal program, pursuant to Section 3006(b) of RCRA, 42 U.S.C. § 6926(b). EPA has also subsequently authorized additional revisions to the State's authorized program. The State, however, does not have authority to enforce Section 3008(h) of RCRA. The State has been given notice of the issuance of this Consent Order.

C. This Consent Order is entered into by EPA and Respondent, the owner and operator of a facility located at 5500 Chemical Road in Baltimore, Maryland (the Facility) as also defined in Section IV.B., below, and depicted in Figure 1 attached to this Consent Order and made a part thereof.

D. Respondent consents to this Consent Order, agrees to comply with its terms and will not contest EPA's authority to issue this Consent Order and to enforce its terms. Further, Respondent will not contest EPA's jurisdiction to: compel compliance with this Consent Order in any subsequent enforcement proceeding, either administrative or judicial; require Respondent's compliance with the terms of this Consent Order; or impose sanctions for violations of this Consent Order. Respondent reserves whatever rights it may have to challenge or defend against any future actions in any other administrative or judicial proceedings. Respondent's willingness to enter into this Consent Order or perform work pursuant to it does not serve as an admission of EPA jurisdiction for purposes of any proceeding to impose requirements beyond those agreed to herein.

II. PARTIES BOUND

A. This Consent Order shall apply to and be binding upon EPA, Respondent and their agents, successors and assigns.

B. No change in ownership of any property covered by this Consent Order, or in the corporate or partnership status of Respondent, shall in any way alter, diminish, or otherwise affect Respondent's obligations and responsibilities under this Consent Order.

C. Respondent shall provide a copy of this Consent Order to all supervisory personnel, contractors, subcontractors, laboratories, and consultants retained to conduct and/or monitor any portion of the work performed pursuant to this Consent Order and shall do so within thirty (30) calendar days of the effective date of this Consent Order or date of such retention, whichever is later. All contracts, agreements or other arrangements with such persons shall require such persons to conduct and/or monitor the work in accordance with the requirements of this Consent Order. Notwithstanding the terms of any such contract, agreement or arrangement, Respondent is responsible for complying with this Consent Order and for ensuring that all such persons perform such work in accordance with this Consent Order.

D. In the event of any change in ownership or operation of the Facility and/or in the event of any change in majority ownership or control of the Respondent, Respondent shall notify EPA in writing of the nature of any such change no later than fifteen (15) calendar days after the effective date of such change. In addition, Respondent shall provide a copy of this Consent Order to any successor to the Respondent and/or to the Facility at least fifteen (15) calendar days prior to the effective date of such change.

III. STATEMENT OF PURPOSE

In entering into this Consent Order, the mutual objectives of EPA and Respondent are to have Respondent implement the Final Remedy selected by EPA in the Final Decision and Response to Comments (FDRTC) issued in September 2014 as set forth herein as Attachment 2.

IV. EPA's FINDINGS OF FACT

Respondent neither admits nor denies the following EPA Findings of Fact, Conclusions of Law, and Determinations set forth in this Consent Order.

A. Respondent is a corporation and is a person as defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15).

B. Respondent is the owner and/or operator of a chemical facility located at 5500 Chemical Road in Baltimore, Maryland.

C. The Facility was a facility authorized to operate under Section 3005(e) of RCRA, 42 U.S.C. § 6925(e), for purposes of Section 3008(h) of RCRA, 42 U.S.C. § 6928(h).

D. The Findings of Fact set out in the Administrative Order on Consent, Docket No. RCRA-03-2002-0063 (June 2002) (2002 Order), are incorporated by reference herein as though

fully set forth at length. The 2002 Order is attached herein as Attachment 1 to this Order. The 2002 Order, excluding the continuing obligations requirements set forth therein, has been satisfied and terminates upon the effective date of this Order pursuant to Section XXIII of that 2002 Order.

E. An FDRTC was issued for this facility in September 4, 2014, and is incorporated by reference herein as though fully set forth at length and is attached herein and made a part hereof as Attachment 2 to this Consent Order.

F. Based on the findings above, EPA has determined that there are potential adverse environmental or human health impacts associated with the hazardous wastes and/or constituents released at or from the Facility.

V. CONCLUSIONS OF LAW AND DETERMINATIONS

EPA hereby determines that there is or has been a release of hazardous waste within the meaning of 3008(h) of RCRA, 42 U.S.C. § 6928(h), into the environment from the Facility and that the corrective action and/or other response measures required by this Consent Order are necessary to protect human health or the environment.

VI. WORK TO BE PERFORMED

All requirements set forth in this Section VI must be consistent with the purposes set forth in Section III above.

EPA acknowledges that Respondent may have completed some of the tasks required by this Consent Order and that Respondent may have available some of the information and data required by this Consent Order. This previous work may be used to meet the requirements of this Consent Order, upon submission to and formal approval by EPA.

Pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h), Respondent agrees to and is hereby ordered to implement the corrective measures set forth in the FDRTC in the manner and by the dates specified herein. All work undertaken pursuant to this Consent Order shall be developed and performed, as appropriate and approved by EPA, in accordance with: the Scope of Work for Corrective Measures Implementation; the Scope of Work for Health and Safety Plan; and RCRA, its implementing regulations and relevant EPA guidance documents. EPA's Scopes of Work and relevant guidance are available at: http://www.epa.gov/reg3wcmd/ca/ca_resources.htm, and are incorporated herein by reference.

Days as used herein shall mean calendar days unless otherwise specified.

A. CORRECTIVE MEASURES IMPLEMENTATION

1. Corrective Measures Implementation Plan

- a. Within sixty (60) days of the Effective Date of this Consent Order, Respondent shall submit to EPA for approval a Corrective Measures Implementation Plan (CMIP) for implementation of the Final Remedy. The CMIP will include a schedule to implement the Final Remedy, including the land and groundwater use restrictions that were selected as part of the Final Remedy and a description of monitoring to be performed. The CMIP shall be developed in accordance with the Scope of Work for Corrective Measures Implementation (CMI), and will establish, document, and report the methods that will be used to implement and monitor compliance with the land and groundwater use restrictions and ensure that they remain in place and effective. The CMIP must address the following:
 - i. All intrusive earth moving activities at the Facility, including excavation, drilling and construction activities, shall be conducted in compliance with the Facility-specific health and safety protocols and an EPA-approved Soil Management Plan (that includes appropriate Personal Protective Equipment requirements sufficient to meet EPA's acceptable risk and complies with all applicable OSHA requirements);
 - ii. Access restriction through the use and maintenance of fencing and controlled access (security gate);
 - iii. Groundwater at the Facility shall not be used for any purpose, including, but not limited to, use as a potable water source, other than to conduct the maintenance and monitoring activities required by EPA or other governmental parties, provided EPA gives prior written approval for such use, or to conduct such other use that the EPA may approve in writing upon request of Respondent; and
 - iv. The Facility shall not be used in a way that will adversely affect or interfere with the integrity and protectiveness of the Final Remedy.

EPA's Scopes of Work and relevant guidance are available at:

http://www.epa.gov/reg3wcmd/ca/ca_resources.htm.

- b. Within thirty (30) calendar days of receipt of EPA approval of the CMIP, Respondent shall begin implementing the Final Remedy selected in the FDRTC in accordance with the schedules and specifications set forth in the EPA-approved CMIP and the Scope of Work for CMI.

2. Corrective Measures Implementation Assessment Report

- a. Within one (1) year after EPA approval of the CMIP pursuant to subparagraph VI.A.1.a. immediately above, Respondent shall submit a CMI Assessment Report to EPA for approval. The CMI Assessment Report shall provide an evaluation of the effectiveness of the Final Remedy in achieving the objectives set forth in the FDRTC.
- b. If, based on the CMI Assessment Report or any other information, EPA determines that the Final Remedy is not achieving the corrective action objectives set forth in the FDRTC, EPA shall notify Respondent in writing of those activities that it has determined must be undertaken to meet the requirements of the FDRTC and the performance criteria established in the CMI Assessment Report and the parties shall proceed pursuant to paragraph e. below.
- c. No later than five (5) years after EPA approval of the CMIP pursuant to subparagraph VI.A.1.a. above and every five (5) years thereafter until Respondent's receipt of written notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Consent Order, including any additional tasks determined by EPA to be required pursuant to this Consent Order, have been satisfactorily completed, Respondent shall submit to EPA a CMI Five-Year Assessment Report for approval. Such Report shall contain an evaluation of the past and projected future effectiveness of the Final Remedy in achieving the corrective action objectives set forth in the FDRTC.
- d. Respondent may, as part of a CMI Five-Year Assessment Report, request that EPA select, for the purposes of this Consent Order, an alternative and/or supplemental corrective measures.
- e. In the event EPA selects an alternative and/or supplemental corrective measure(s) either in response to a request by Respondent pursuant to subparagraph 2d immediately above, or on its own initiative pursuant to subparagraph 2b above, EPA may provide Respondents with a period of thirty (30) calendar days from the date Respondent receives written notice from EPA of the selection of an alternative and/or supplemental corrective measure(s) within which to reach an agreement with EPA regarding performance of the alternative and/or supplemental corrective measure(s) in lieu of, or in addition to, the corrective measures. Any such agreement between EPA and Respondent shall be incorporated into and become enforceable under this Consent Order in accordance with Section XXII SUBSEQUENT MODIFICATION and Respondent shall implement the activities required under any such agreement in accordance with any schedule and provisions contained therein.

- f. Nothing in this Paragraph VI.A.2 shall limit EPA's authority to implement or seek to require performance of alternative and/or supplemental corrective measure(s) or to take any other appropriate action under RCRA, or any other legal authority, including the issuance of a unilateral administrative order or the filing of a civil action. Respondent reserves its rights and defenses to challenge any such action by EPA, subject to Section I.D.

B. SUBMISSIONS/EPA APPROVAL/ADDITIONAL WORK

1. EPA will review the Work Plans and reports and all other documents submitted by Respondent pursuant to this Consent Order, with the exception of progress reports (Submissions), and will notify Respondent in writing of EPA's approval or disapproval of each such Submission. In the event of EPA's disapproval, EPA shall specify in writing any deficiencies in the Submission. Such disapproval shall not be subject to the dispute resolution procedures of Section XV, below.

2. Within thirty (30) calendar days of receipt of EPA's comments on the Submission, Respondent shall submit to EPA for approval a revised Submission, which responds to any comments received and/or corrects any deficiencies identified by EPA. In the event that EPA disapproves of the revised Submission, Respondent may invoke the dispute resolution procedures of Section XV, below. In the event EPA disapproves the revised Submission, EPA reserves the right to revise such Submission and seek to recover from Respondent the costs thereof, in accordance with CERCLA and any other applicable law. Any Submission approved or revised by EPA under this Consent Order shall be deemed incorporated into and made an enforceable part of this Consent Order, except as provided for in Section VI.B.6. below.

3. Commencing one (1) year after EPA approval of the CMIP pursuant to subparagraph VI.A.1.a. above and annually on the anniversary thereafter, Respondent shall provide EPA with progress reports.

4. One electronic and one hard copy of all Submissions required by this Consent Order shall be hand-delivered or sent to the Project Coordinator designated pursuant to Section XI in a manner consistent with Section XII.

5. All work performed pursuant to this Consent Order shall be under the direction and supervision of a professional engineer or geologist with expertise in hazardous waste site investigation. Within thirty (30) calendar days after the effective date of this Consent Order, Respondent shall submit to EPA, in writing, the name, title, and qualifications of the engineer or geologist and of any contractors or subcontractors to be used in carrying out the terms of this Consent Order. Notwithstanding Respondent's selection of an engineer, geologist, contractor or subcontractor, nothing herein shall relieve Respondent of its obligation to comply with the terms and conditions of this Consent Order. EPA shall have the right to disapprove at any time the use

of any professional engineer, geologist, contractor or subcontractor selected by Respondent. EPA's disapproval shall not be subject to review under Section XV (DISPUTE RESOLUTION) of this Consent Order, or otherwise. Within thirty (30) calendar days of receipt from EPA of written notice disapproving the use of any professional engineer, geologist, contractor or subcontractor, Respondent shall notify EPA, in writing, of the name, title and qualifications of the personnel who will replace the personnel disapproved by EPA. Respondent shall notify EPA ten (10) days prior to changing voluntarily its engineer or geologist, and/or contractors or subcontractors to be used in carrying out the terms of this Consent Order, and shall submit to EPA in writing, the name, title, and qualifications of such person(s).

6. EPA may determine that certain tasks and deliverables including, but not limited to, investigatory work or engineering evaluation require additional work. These tasks and deliverables may or may not have been in the EPA-approved Work Plans. If EPA determines that such additional work is necessary, EPA shall request, in writing, that Respondent perform the additional work and shall specify the reasons for EPA's determination that additional work is necessary. Within fifteen (15) calendar days after the receipt of such request, or as otherwise agreed by the parties, Respondent shall have the opportunity to meet or confer with EPA to discuss the additional work EPA has requested. In the event that Respondent agrees to perform the additional work, this Consent Order shall be modified in accordance with Section XXII (SUBSEQUENT MODIFICATION) below, and such work shall be performed in accordance with this Consent Order. In the event Respondent declines or fails to perform the additional work, EPA reserves the right, at a minimum, to order Respondent to perform such additional work; and to perform such additional work itself and to seek to recover from Respondent all costs of performing such additional work. Respondent reserves its rights and defenses to challenge any such action by EPA, subject to Section I.D.

VII. QUALITY ASSURANCE

A. Throughout all sample collection and analysis activities, Respondent shall use EPA-approved quality assurance, quality control, and chain-of-custody procedures, as specified in the EPA-approved Work Plans. In addition, Respondent shall:

1. Ensure that laboratories used by Respondent for analyses perform such analyses according to the EPA methods included in Test Methods for Evaluating Solid Waste (SW-846, November 1986) or other methods deemed satisfactory to EPA. If methods other than EPA methods are to be used, Respondent shall submit all analytical protocols to be used for analyses to EPA for approval at least thirty (30) calendar days prior to the commencement of analyses and shall obtain EPA approval prior to the use of such analytical protocols.

2. Ensure that laboratories used by Respondent for analyses participate in a quality assurance/quality control program equivalent to that which is followed by EPA. As part of such a program, and upon request by EPA, such laboratories shall perform analyses of samples provided by EPA to demonstrate the quality of the analytical data.

3. Inform the EPA Project Coordinator at least fourteen (14) calendar days in advance of any laboratory analysis regarding which laboratory will be used by Respondent and ensure that EPA personnel and EPA authorized representatives have reasonable access to the laboratories and personnel used for analysis.

VIII. ON-SITE AND OFF-SITE ACCESS

A. At reasonable times, EPA and/or its authorized representatives shall have the authority to enter and freely move about all property at the Facility owned or controlled by Respondent during the effective dates of this Consent Order for the purposes of reviewing the progress of Respondent in implementing the provisions of this Consent Order by, inter alia: interviewing Facility personnel and contractors controlled by Respondent; inspecting Respondent's records, operating logs, and contracts related to the Facility; reviewing the progress of Respondent in carrying out the terms of this Consent Order; conducting such tests, sampling or monitoring as EPA or its Project Coordinator deem necessary; using a camera, sound recording, or other documentary type equipment; and verifying the reports and data submitted to EPA by Respondent. Respondent shall permit such persons to inspect and copy all records, files, photographs, documents, and other writings, including all sampling and monitoring data, that pertain to work undertaken pursuant to this Consent Order. To the extent that EPA and/or its authorized representatives enter the Facility they shall comply with all reasonable worker health and safety requirements. Such requirements shall not be used as a basis to deny EPA and/or its authorized representatives access to the Facility or an area of the Facility that is relevant to Consent Order implementation. Any information obtained by EPA is subject to the Section IX.C governing the right of Respondent to assert claims of business confidentiality.

B. To the extent that work required by this Consent Order, or by any EPA-approved Work Plan prepared pursuant hereto, must be done on property not owned or controlled by Respondent, Respondent shall use its best efforts to obtain site access agreement(s) from the present owner(s) and/or lessee(s) of such property, as appropriate, within thirty (30) calendar days of receipt of EPA approval of any Work Plan pursuant to this Consent Order which requires work on such property. For purposes of this paragraph, best efforts shall include, at a minimum, but shall not be limited to: a) a certified letter from Respondent to the present owner(s) or lessee(s) of such property requesting agreements to permit Respondent, EPA, and its authorized representatives to have access to such property; and b) the payment of reasonable sums of money in consideration of access. Reasonable sums of money means the fair market value of the right of access necessary to implement the requirements of this Consent Order. In the event that such agreements for access are not obtained within thirty (30) calendar days after receipt of EPA approval of any Work Plan pursuant to this Consent Order which requires work on property which is not owned or controlled by Respondent, Respondent shall notify EPA, in writing, within seven (7) calendar days after the conclusion of such thirty-day period, regarding both the efforts undertaken to obtain access and the inability to obtain such agreements. In the event that Respondent fails to obtain off-site access, despite the exercise of best efforts, EPA, in its

discretion, may assist Respondent in obtaining off-site access for Respondent. Respondent shall reimburse EPA for all costs incurred by EPA in obtaining access, including, but not limited to, attorneys' fees and the amount of any just compensation and costs incurred by EPA.

C. Nothing in this Consent Order limits or otherwise affects EPA's rights of access and entry pursuant to applicable law, including, but not limited to, RCRA and CERCLA.

IX. SAMPLING AND DATA/DOCUMENT AVAILABILITY

A. Respondent shall submit to EPA the results of all sampling and/or tests or other data generated by, or on behalf of, Respondent in accordance with the purpose and requirements of this Consent Order.

B. Respondent shall notify EPA, in writing, at least fourteen (14) calendar days in advance of any field activities, including but not limited to, well drilling, installation of equipment, or sampling. At the request of EPA, Respondent shall provide or allow EPA or its authorized representatives to take split or duplicate samples of all samples collected by Respondent pursuant to this Consent Order. Nothing in this Consent Order shall limit or otherwise affect EPA's authority to collect samples pursuant to applicable law, including, but not limited to, RCRA and CERCLA, and Respondent has the right to take split or duplicate samples of all samples collected by EPA.

C. Respondent may assert a business confidentiality claim covering all or part of any information submitted to EPA pursuant to this Consent Order in the manner described in 40 C.F.R. § 2.203(b). Any assertion of confidentiality shall be adequately substantiated by Respondent when the assertion is made in accordance with 40 C.F.R. § 2.204(e)(4). Information subject to a confidentiality claim shall be disclosed only to the extent allowed by, and in accordance with, the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such confidentiality claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to Respondent. Respondent shall not assert any confidentiality claim with regard to any physical, sampling, monitoring, or analytical data. For photographs, videos or other visual images collected by EPA, Respondent may assert business confidentiality before or within 48 hours after EPA takes any photographs, videos or other visual images of the Facility.

D. If Respondent wishes to assert a privilege with regard to any document or visual image which EPA seeks to inspect, copy or collect pursuant to this Consent Order, Respondent shall identify the document or visual image, the privilege claimed, and the basis therefore in writing. For the purposes of this Consent Order, privileged documents are those documents exempt from discovery from the United States in litigation under the Federal Rules of Civil Procedure. Respondent shall not assert a privilege with regard to analytical, sampling and monitoring data of environmental media.

X. RECORD PRESERVATION

Respondent agrees that it shall preserve, during the pendency of this Consent Order and for a minimum of at least six (6) years after its termination, all data, records and documents in its possession or in the possession of its divisions, officers, directors, employees, agents, contractors, successors, and assigns which relate in any way to this Consent Order, including any additional work that may be required pursuant to Section VI.B.6. above, and to implementation of the corrective measures set forth in the FDRTC. After six (6) years, Respondent shall make such records available to EPA for inspection or shall provide copies of such records to EPA. Respondent shall notify EPA at least thirty (30) calendar days prior to the proposed destruction of any such records, and shall provide EPA with a reasonable opportunity to inspect, copy and/or take possession of any such records. Respondent shall not destroy any record to which EPA has requested access for inspection and/or copying until EPA has obtained such access or withdrawn its request for such access. Nothing in this Section X shall in any way limit the authority of EPA under Section 3007 of RCRA, 42 U.S.C. § 6927, or any other access or information-gathering authority.

XI. PROJECT COORDINATORS

A. EPA hereby designates Erich Weissbart as the EPA Project Coordinator. Within ten (10) calendar days of the Effective Date of this Consent Order, Respondent shall notify EPA, in writing, of the Project Coordinator it has selected. Respondent's legal counsel shall not serve as Respondent's Project Coordinator. Each Project Coordinator shall be responsible for overseeing the implementation of the Consent Order. The EPA Project Coordinator will be EPA's primary designated representative at the Facility. To the maximum extent possible, all communications between Respondent and EPA, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Order, shall be directed through the Project Coordinators.

B. Each party agrees to provide at least seven (7) calendar days written notice to the other party prior to changing Project Coordinators.

C. If EPA determines that conditions or activities at the Facility, whether or not in compliance with this Consent Order, have caused or may cause a release or threatened release of hazardous wastes, hazardous constituents, hazardous substances, pollutants or contaminants which threaten or may pose a threat to the public health or welfare or to the environment, EPA may direct that Respondent stop further implementation of this Consent Order for such period of time as may be needed to abate any such release or threatened release and/or to undertake any action which EPA determines is necessary to abate such release or threatened release.

D. The absence of the EPA Project Coordinator from the Facility shall not be cause for the delay or stoppage of work.

XII. NOTIFICATION

A. Unless otherwise specified by the Project Coordinator, reports, approvals, disapprovals, notices, or other submissions relating to or required under this Consent Order shall be in writing and shall be sent as follows:

1. One electronic and one hard copy of all documents shall be submitted to:

Erich Weissbart, P.G.
Land and Chemicals Division
USEPA Region III
701 Mapes Road
Fort Meade, MD 20755
(410) 305-2779
weissbart.erich@epa.gov

2. One copy of all documents to be submitted to EPA shall also be sent to:

Ed Hammerberg, Regulations Coordinator
Maryland Department of the Environment
Land Management Administration
1800 Washington Boulevard, Suite 610
Baltimore, MD 21230-1719

All other written communications may be mailed First-Class Mail or overnight delivery or delivered electronically to the Project Coordinator.

B. Any notice, report, certification, data presentation, or other document submitted by Respondent pursuant to this Consent Order which discusses, describes, demonstrates, or supports any finding or makes any representation concerning Respondent's compliance or noncompliance with any requirement of this Consent Order shall be certified by a responsible corporate officer or a duly authorized representative of a responsible corporate officer. A responsible corporate officer means: (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. A person is a duly authorized representative only if: (1) the authorization is made in writing by a person described above; (2) the authorization specifies either an individual or position having responsibility for overall operation of the regulated facility or activity (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and (3) the written authorization is submitted to the Project Coordinator designated by EPA in Section XI (PROJECT COORDINATORS) of this Consent Order.

C. The certification required by paragraph B, above, shall be in the following form:

I certify that the information contained in or accompanying this [type of submission] is true, accurate, and complete.

As to [the/those identified portion(s)] of this [type of submission] for which I cannot personally verify [its/their] accuracy, I certify under penalty of law that this [type of submission] and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature : _____

Name : _____

Title : _____

XIII. COST ESTIMATES AND ASSURANCES OF FINANCIAL RESPONSIBILITY

A. Estimated Cost of Work

1. Ninety (90) days after the Effective Date of this Consent Order, Respondent shall submit to EPA for approval detailed written estimates, in current dollars, of the cost of hiring a third party to perform the work (Cost Estimate) under Section VI (WORK TO BE PERFORMED). The Cost Estimate must account for the costs of all foreseeable work under the Consent Order, including but not limited to all investigations and reports, implementation of the land use control, monitoring, and other long term care work.

2. Respondent shall annually adjust the Cost Estimate for inflation and for changes in the scope of the Work to Be Performed until the work required by this Consent Order is completed. Within thirty (30) days after the close of Respondent's fiscal year, Respondent shall submit each annual Cost Estimate to EPA for review.

3. If at any time EPA determines that a cost estimate provided pursuant to this Section XIII is inadequate, EPA shall notify Respondent in writing, stating the basis for its determination. If at any time Respondent becomes aware of information indicating that any Cost Estimate provided pursuant to this Section is inadequate, Respondent shall notify EPA in writing of such information within ten (10) days. Within thirty (30) days of EPA's notification, or within thirty (30) days of becoming aware of such information, as the case may be, Respondent shall submit a revised Cost Estimate to EPA for review.

B. Assurances of Financial Responsibility for Completing the Work

1. Within sixty (60) days after EPA approves the initial Cost Estimate, Respondent shall establish financial assurance for the benefit of the EPA. In the event that EPA approval of Respondent's initial Cost Estimate is not received within thirty (30) days after close of Respondent's fiscal year, Respondent shall establish and maintain the financial assurance in the amount of the Cost Estimate submitted pursuant to Paragraph XIII.A.1. within ninety (90) days of the end of its fiscal year. Respondent shall maintain adequate financial assurance until EPA releases Respondent from this requirement pursuant to Section XXIV (TERMINATION AND SATISFACTION). Respondent shall update the financial instrument or financial test demonstration to reflect changes to the Cost Estimate within ninety (90) days after the close of the Respondent's fiscal year. Respondent may use one or more of the financial assurance forms described in subparagraphs i. – v. immediately below. Any and all financial assurance documents shall be satisfactory in form and substance as determined by EPA.

- i. A trust fund established for the benefit of EPA, administered by a trustee;
- ii. A surety bond unconditionally guaranteeing performance of the Work in accordance with this Consent Order, or guaranteeing payment at the direction of EPA into a standby trust fund that meets the requirements of the trust fund in subparagraph i above;
- iii. An irrevocable letter of credit, payable at the direction of the Director, Land and Chemicals Division, into a standby trust fund that meets the requirements of the trust fund in subparagraph i above;
- iv. A corporate guarantee, executed in favor of the EPA by one or more of the following: (1) a direct or indirect parent company, or (2) a company that has a "substantial business relationship" with Respondent (as defined in 40 C.F.R. § 264.141(h)), to perform the Work to Be Performed under Section VI of this Consent Order or to establish a trust fund as permitted by subparagraph i above; provided, however, that any company providing such a guarantee shall demonstrate to the satisfaction of the EPA that it satisfies the financial test requirements of 40 C.F.R. § 264.143(f) with respect to the portion of the Cost Estimate that it proposes to guarantee.

- v. A demonstration by Respondent that it meets the financial test criteria of 40 C.F.R. § 264.143(f) with respect to the Cost Estimate, provided that all other requirements of 40 C.F.R. § 264.143(f) are satisfied.
2. Respondent shall submit all original executed and/or otherwise finalized instruments to the EPA Region III Regional Hearing Clerk (3RC00), U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103-2029 within thirty (30) days after date of execution or finalization as required to make the documents legally binding. Respondent shall also provide copies to the EPA Project Coordinator.
3. If at any time Respondent provides financial assurance for completion of the Work by means of a corporate guarantee or financial test, Respondent shall also comply with the other relevant requirements of 40 C.F.R. § 264.143(f), 40 C.F.R. § 264.151(f), and 40 C.F.R. § 264.151(h)(1) relating to these methods, and will promptly provide any additional information requested by EPA from Respondent or corporate guarantor within seven (7) calendar days of its receipt of such request from EPA or the corporate guarantor.
4. For purposes of the corporate guarantee or the financial test described above, references in 40 C.F.R. § 264.143(f) to “the sum of current closure and post-closure costs and the current plugging and abandonment cost estimates” shall mean “the sum of all environmental remediation obligations,” including, but not limited to, obligations under the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9601 *et seq.*, RCRA, the Underground Injection Control Program promulgated pursuant to the Safe Drinking Water Act, 42 U.S.C. §§ 300f *et seq.*, and the Toxic Substances Control Act, 42 U.S.C. §§ 2601, *et seq.*, and any other federal or state environmental obligation guaranteed by such company or for which such company is otherwise financially obligated in addition to the Cost Estimate.
5. Respondent may combine more than one mechanism to demonstrate financial assurance for the Work to Be Performed under Section VI of this Consent Order.
6. Respondent may satisfy its obligation to provide financial assurance for the Work to be Performed under Section VI herein by providing a third party who assumes full responsibility for said work and otherwise satisfies the obligations of the financial assurance requirements of this Consent Order; however, Respondent shall remain responsible for providing financial assurance in the event such third party fails to do so and any financial assurance from a third party shall be in one of the forms provided in subparagraphs XIII.B.1.i. through v. above.
7. If at any time EPA determines that a financial assurance mechanism provided pursuant to this Section XIII is inadequate, EPA shall notify Respondent in writing. If at any time Respondent becomes aware of information indicating that any

financial assurance mechanism(s) provided pursuant to this Section XIII is inadequate, Respondent shall notify EPA in writing of such information within ten (10) days of Respondent's becoming aware of such information. Within ninety (90) days of receipt of notice of EPA's determination, or within ninety (90) days of Respondent's becoming aware of such information, Respondent shall establish and maintain adequate financial assurance for the benefit of the EPA which satisfies all requirements set forth in this Section. Any and all financial assurance documents provided pursuant to this Consent Order shall be submitted to EPA for review in draft form at least forty-five (45) days before they are due to be filed and shall be satisfactory in form and substance as determined by EPA.

8. Respondent's inability or failure to establish or maintain financial assurance for completion of the Work to be Performed under Section VI of this Consent Order shall in no way excuse performance of any other requirements of this Consent Order.

9. Modification of Amount and/or Form of Performance Guarantee

- i. Reduction of Amount of Financial Assurance. If Respondent believes that the Cost Estimate has diminished below the amount covered by the existing financial assurance provided under this Consent Order, Respondent may, at the same time that Respondent submits its annual Cost Estimate, submit a written proposal to EPA for approval to reduce the amount of the financial assurance to equal the revised Cost Estimate.
- ii. Change of Form of Financial Assurance. If Respondent desires to change the form or terms of financial assurance, Respondent may, at the same time that Respondent submits the annual Cost Estimate, submit a written proposal to EPA for approval to change the form of financial assurance. The written proposal shall specify all proposed instruments or other documents required in order to make the proposed financial assurance legally binding and shall satisfy all requirements set forth in this Section XIII. Within thirty (30) days after receiving written approval of the proposed revised or alternative financial assurance, Respondent shall execute and/or otherwise finalize all instruments or other documents required in order to make the selected financial assurance legally binding. Respondent shall submit all executed and/or otherwise finalized instruments or other documents required in order to make the selected financial assurance legally binding to the EPA Region III Regional Hearing Clerk (3RC00), U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103-2029, with a copy to EPA's Project Coordinator, as provided in Section XII (NOTIFICATIONS) above. Upon receipt by EPA of the executed or otherwise finalized instrument, Respondent may terminate the former form of financial assurance.

10. Release of Financial Assurance. Respondent may submit a written request to the Director, Land and Chemicals Division that EPA release Respondent from the requirement to maintain financial assurance under this Section XIII upon receipt of written notice from EPA pursuant to Section XXIV that, as set forth therein, the terms of this Consent Order have been satisfactorily completed. If said request is granted, the Director, Land and Chemicals Division shall notify both the Respondent and the provider(s) of the financial assurance that Respondent is released from all financial assurance obligations under this Consent Order.

XIV. DELAY IN PERFORMANCE/STIPULATED PENALTIES

A. Unless there has been a written modification of a compliance date by EPA, or excusable delay as defined below in Section XVI (FORCE MAJEURE AND EXCUSABLE DELAY), in the event that Respondent fails to comply with any requirement set forth in this Consent Order, Respondent shall pay stipulated penalties, as set forth below, upon receipt of written demand by EPA. Compliance by Respondent shall include commencement or completion, as appropriate, of any activity, plan, study, or report required by this Consent Order in an acceptable manner and within the specified time schedules in and approved under this Consent Order. Stipulated penalties shall accrue as follows:

1. For failure to commence, perform or complete work as prescribed in this Consent Order: \$1,000 per day for one to seven days or part thereof of noncompliance, and \$3,000 per day for each day of noncompliance, or part thereof, thereafter;
2. For failure to comply with the provisions of this Consent Order after receipt of notice of noncompliance by EPA: \$2,000 per day for one to seven days or part thereof of noncompliance, and \$4,000 per day for each day of noncompliance, or part thereof, thereafter; in addition to any stipulated penalties imposed for the underlying noncompliance;
3. For failure to submit deliverables as required by this Consent Order, or for failure to comply with this Consent Order not described in subparagraphs 1 and 2 above: \$750 per day for one to seven days or part thereof of noncompliance, and \$1,000 per day for each day of noncompliance, or part thereof, thereafter.

B. All penalties shall begin to accrue on the date that complete performance is due or a violation occurs, and shall continue to accrue through the final day of or correction of the violation. Nothing herein shall prevent the simultaneous accrual of separate stipulated penalties for separate violations of this Consent Order.

C. All penalties owed to EPA under this Section XIV shall be due within thirty (30) calendar days of receipt of a demand for payment unless Respondent invokes the dispute resolution procedures in Section XV, below. Such notification shall describe the noncompliance and shall indicate the amount of penalties due. Interest shall begin to accrue on the unpaid balance at the end of the thirty (30)-calendar day period and shall accrue at the United States Tax and Loan Rate.

D. All penalty payments shall be made by certified or cashier's check payable to the Treasurer of the United States of America and shall be remitted to:

U.S. Environmental Protection Agency
Fines and Penalties
Cincinnati Finance Office
P.O. Box 979077
St. Louis, MO 63197-9000

In the alternative, Respondent may make payments through a wire transfer directed to:

Federal Reserve Bank of New York
33 Liberty Street
New York, NY 10045
ABA=121030004
Account =68010727
SWIFT Address=FRNYUS33
Field Tag 4200 of the FedWire message should read "D 68010727
Environmental Protection Agency"

All payments shall reference the name of the Facility, Respondent's name and address, and the EPA Docket Number of this Consent Order. Copies of the transmittal of payment shall be sent simultaneously to the EPA Project Coordinator and the Regional Hearing Clerk (3RC00), U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103-2029.

E. Respondent may dispute EPA's demand for payment of stipulated penalties for any alleged violation of this Consent Order by invoking the dispute resolution procedures below in Section XV (DISPUTE RESOLUTION). Stipulated penalties shall continue to accrue, but need not be paid, for any alleged noncompliance which is the subject of dispute resolution during the period of such dispute resolution. To the extent that Respondent does not prevail upon resolution of the dispute, Respondent shall remit to EPA within seven (7) calendar days of receipt of such resolution any outstanding penalty payment, including any accrued interest, in the manner described above in Paragraph D of this Section XIV. To the extent Respondent prevails upon resolution of the dispute, no penalties shall be payable.

F. Neither the filing of a petition to resolve a dispute nor the payment of penalties shall alter in any way Respondent's obligation to comply with the requirements of this Consent Order.

G. The stipulated penalties set forth in this Section XIV shall not preclude EPA from pursuing any other remedies or sanctions which may be available to EPA by reason of Respondent's failure to comply with any of the requirements of this Consent Order.

XV. DISPUTE RESOLUTION

A. If Respondent disagrees, in whole or in part, with any EPA disapproval, modification or other decision or directive made by EPA pursuant to this Consent Order, Respondent shall notify EPA in writing of its objections, and the basis therefor, within fourteen (14) calendar days of receipt of EPA's disapproval, decision or directive. Such notice shall set forth the specific points of the dispute, the position which Respondent asserts should be adopted as consistent with the requirements of this Consent Order, the basis for Respondent's position, and any matters which it considers necessary for EPA's determination. EPA and Respondent shall have an additional fourteen (14) calendar days from the receipt by EPA of the notification of objection, during which time representatives of EPA and Respondent may confer in person or by telephone to resolve any disagreement. If an agreement is reached, the resolution shall be written and signed by an authorized representative of each party. In the event that resolution is not reached within this fourteen (14) calendar day period, EPA will furnish to Respondent, in writing, its decision on the pending dispute.

B. The invocation of dispute resolution procedures under this Section XV shall not extend, postpone or affect in any way any obligation of Respondent under this Order unless EPA determines otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Order. In the event that Respondent does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XIV (DELAY IN PERFORMANCE/STIPULATED PENALTIES).

C. Notwithstanding any other provisions of this Consent Order, no action or decision by EPA, including, without limitation, decisions of the Director of Land and Chemicals Division, Region III, pursuant to this Consent Order, shall constitute final agency action giving rise to any right to judicial review prior to EPA's initiation of judicial action to compel Respondent's compliance with this Consent Order.

XVI. FORCE MAJEURE AND EXCUSABLE DELAY

A. Respondent shall perform the requirements of this Consent Order in the manner and within the time limits set forth herein, unless the performance is prevented or delayed by

events which constitute a force majeure. Respondent shall have the burden of proving such a force majeure. A force majeure is defined as any event arising from causes not reasonably foreseeable and beyond the control of Respondent, which cannot be overcome by due diligence and which delays or prevents performance in the manner or by a date required by this Consent Order. Such events do not include increased costs of performance, changed economic circumstances, reasonably foreseeable weather conditions or weather conditions which could have been overcome by due diligence, or failure to obtain federal, state, or local permits unless applications for such permits were submitted in a timely and complete fashion and such permits were not issued, through no fault of Respondent.

B. Respondent shall notify EPA, in writing, within seven (7) calendar days after it becomes or should have become aware of any event which Respondent claims constitutes a force majeure. Such notice shall estimate the anticipated length of delay, including necessary demobilization and remobilization, its cause, measures taken or to be taken to prevent or minimize the delay, and an estimated timetable for implementation of these measures. Failure to comply with the notice provision of this Section XVI shall constitute a waiver of Respondent's right to assert a force majeure claim with respect to such event. In addition to the above notification requirements, Respondent shall undertake all reasonable actions to prevent or to minimize any delay in achieving compliance with any requirement of this Consent Order after it becomes or should have become aware of any event which may delay such compliance.

C. If EPA determines that there is excusable delay because the failure to comply or delay has been or will be caused by a force majeure, the time for performance of that requirement of this Consent Order may be extended, upon EPA approval, for a period equal to the delay resulting from such force majeure. This shall be accomplished through an amendment to this Consent Order pursuant to Section XXII (SUBSEQUENT MODIFICATION). Such an extension shall not alter the schedule for performance or completion of any other tasks required by this Consent Order, unless these tasks are also specifically altered by amendment of the Consent Order. In the event that EPA and Respondent cannot agree that any delay or failure has been or will be caused by a force majeure, or if there is no agreement on the length of the extension, Respondent may invoke the dispute resolution procedures set forth in Section XV (DISPUTE RESOLUTION).

XVII. RESERVATION OF RIGHTS

A. EPA expressly reserves all rights and defenses that it may have, including the right both to disapprove of work performed by Respondent pursuant to this Consent Order, to require that Respondent correct and/or perform any work disapproved by EPA, and to request that Respondent perform tasks in addition to those stated in the Scope(s) of Work, Work Plans, or other provisions of this Consent Order.

B. EPA hereby reserves all of its statutory and regulatory powers, authorities, rights and remedies, both legal and equitable, including any which may pertain to Respondent's failure to comply with any of the requirements of this Consent Order, including, without limitation, the

assessment of penalties under Section 3008(h)(2) of RCRA, 42 U.S.C. § 6928(h)(2). This Consent Order shall not be construed as a covenant not to sue, or as a release, waiver or limitation of any rights, remedies, powers and/or authorities, civil or criminal, which EPA has under RCRA, CERCLA, or any other statutory, regulatory or common law authority.

C. Compliance by Respondent with the terms of this Consent Order shall not relieve Respondent of its obligations to comply with RCRA or any other applicable local, state, or federal laws and regulations.

D. The signing of this Consent Order and Respondent's consent to comply shall not limit or otherwise preclude EPA from taking additional enforcement action pursuant to RCRA, including but not limited to Sections 3008(a) or (h) of RCRA, 42 U.S.C. §§ 6928(a) or (h), or any other authority, should EPA determine that such action is warranted, nor shall it preclude Respondent from raising any defenses available to it to defend against such additional enforcement action subject to its consent to jurisdiction pursuant to Section I.D. (Jurisdiction) of this Consent Order for the purposes of enforcing this Consent Order. Respondent's willingness to enter into and comply with the Consent Order does not serve as an admission of any fact or of liability to EPA or any other person.

E. This Consent Order is not intended to be, nor shall it be construed as, a permit. This Consent Order does not relieve Respondent of any obligation to obtain and comply with any local, state, or federal permit or approval.

F. EPA reserves the right to perform any portion of the work consented to herein or any additional site characterization, feasibility study, and response/corrective actions it deems necessary to protect public health or welfare or the environment. EPA may exercise its authority under RCRA, CERCLA or any other authority to undertake or require the performance of response actions at any time, including circumstances in which there may be an imminent and substantial endangerment to public health and/or the environment. EPA reserves the right to seek reimbursement from Respondent for costs incurred by the United States in connection with any such response actions. Notwithstanding compliance with the terms of this Consent Order, Respondent is not released from liability, if any, for the costs of any response actions taken by EPA. Respondent reserves all rights and defenses it may have with respect to any such action by EPA, and makes no admission of liability as to such action by EPA.

G. EPA reserves whatever rights it may have under CERCLA or any other law, or in equity, to recover from Respondent any costs incurred by EPA in overseeing the implementation of this Consent Order. Respondent reserves all rights and defenses it may have to any such action by EPA and makes no admission of liability as to such action by EPA except as otherwise provided herein.

XVIII. OTHER CLAIMS

Nothing in this Consent Order shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person, firm, partnership, or corporation, government agency, or other entity for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous constituents, hazardous substances, hazardous wastes, solid wastes, pollutants, or contaminants found at, taken to, or taken from the Facility.

XIX. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to this Consent Order shall be undertaken in accordance with the requirements of all applicable local, state, and federal laws and regulations. Respondent shall obtain or require its authorized representatives to obtain all permits and approvals necessary under such laws and regulations.

XX. INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

Respondent agrees to indemnify and save and hold harmless the United States Government, its agencies, departments, agents, and employees, from any and all claims or causes of action arising from or on account of acts or omissions of Respondent or its agents, independent contractors, receivers, trustees, and assigns in carrying out activities required by this Consent Order. This indemnification shall not be construed in any way as affecting or limiting the rights or obligations of Respondent or the United States under their various contracts. The United States shall not be deemed to be a party to any contract entered into by Respondent for the purpose of carrying out any activities required by this Consent Order. Respondent shall not be responsible for indemnifying the EPA for claims or causes of action for or arising out of acts or omissions of EPA.

XXI. NOTICE OF NON-LIABILITY OF EPA

EPA shall not be deemed a party to any contract involving Respondent and relating to activities at the Facility and shall not be liable for any claim or cause of action arising from or on account of any act, or the omission of Respondent, its officers, employees, contractors, receivers, trustees, agents or assigns, in carrying out the activities required by this Consent Order.

XXII. SUBSEQUENT MODIFICATION

A. Except as provided in Paragraph C of this Section XXII, below, this Consent Order may be amended only by mutual agreement of EPA and Respondent. Any such amendment shall be in writing, shall be signed by an authorized representative of each party, shall have as its effective date the date on which it is signed by EPA, and shall be incorporated into this Consent Order.

B. Any reports, plans, specifications, schedules, other submissions, and attachments required by this Consent Order are, upon written approval by EPA, incorporated into this Consent Order. Any noncompliance with such EPA-approved reports, plans, specifications, schedules, other submissions, and attachments shall be considered a violation of this Consent Order and shall subject Respondent to the stipulated penalty provisions included in Section XIV (DELAY IN PERFORMANCE/STIPULATED PENALTIES).

C. Minor modifications in the studies, techniques, procedures, designs, or schedules utilized in carrying out this Consent Order and necessary for the completion of the project may be made by written agreement of the Project Coordinators. Such modifications shall have as an effective date the date on which the agreement is signed by the EPA Project Coordinator.

D. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by Respondent shall be construed as relieving Respondent of its obligation to obtain written approval, if and when required by this Consent Order.

XXIII. SEVERABILITY

If any provision or authority of this Consent Order or the application of this Consent Order to any party or circumstance is held by any judicial or administrative authority to be invalid, the application of such provision to other parties or circumstances and the remainder of this Consent Order shall not be affected thereby and shall remain in full force.

XXIV. TERMINATION AND SATISFACTION

The provisions of this Consent Order shall be deemed satisfied upon Respondent's receipt of written notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Consent Order, including any additional tasks determined by EPA to be required pursuant to this Consent Order, have been satisfactorily completed. This notice shall not, however, terminate Respondent's obligation to comply with any continuing obligations hereunder including, but not limited to, Sections X (RECORD PRESERVATION), XVII (RESERVATION OF RIGHTS), XVIII (OTHER CLAIMS), XIX (OTHER APPLICABLE LAWS), and XX (INDEMNIFICATION OF THE UNITED STATES GOVERNMENT).

XXV. SURVIVABILITY/PERMIT INTEGRATION

No requirement of this Consent Order shall terminate upon the issuance of a RCRA permit unless such requirement is expressly replaced by a requirement in the permit.

XXVI. ATTORNEYS' FEES

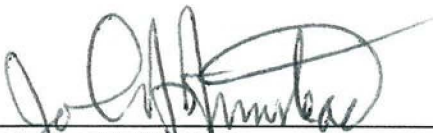
The Respondent shall bear its own costs and attorneys' fees.

XXVII. EFFECTIVE DATE/WAIVER OF HEARING

The effective date of this Consent Order shall be the date on which a true and correct copy of this Consent Order is received by Respondent. Because this Consent Order was entered with the consent of both parties, Respondent waives its right to request a public hearing pursuant to Section 3008(b) of RCRA, 42 U.S.C. § 6928(b), and 40 C.F.R. Part 24.


IT IS SO AGREED AND ORDERED:

DATE: 6.25.15

BY: 

JOHN ARMSTEAD
DIRECTOR
LAND AND CHEMICALS DIVISION
UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, REGION III

DATE: Jun 10, 2015

BY: 

KEITH N. COLE
VICE PRESIDENT, GOVERNMENT AFFAIRS,
COMMUNICATIONS, AND EHS

I hereby certify that the within is a true and correct copy of the original Consent Order filed in this matter.

W.R. GRACE & CO.-CONN.

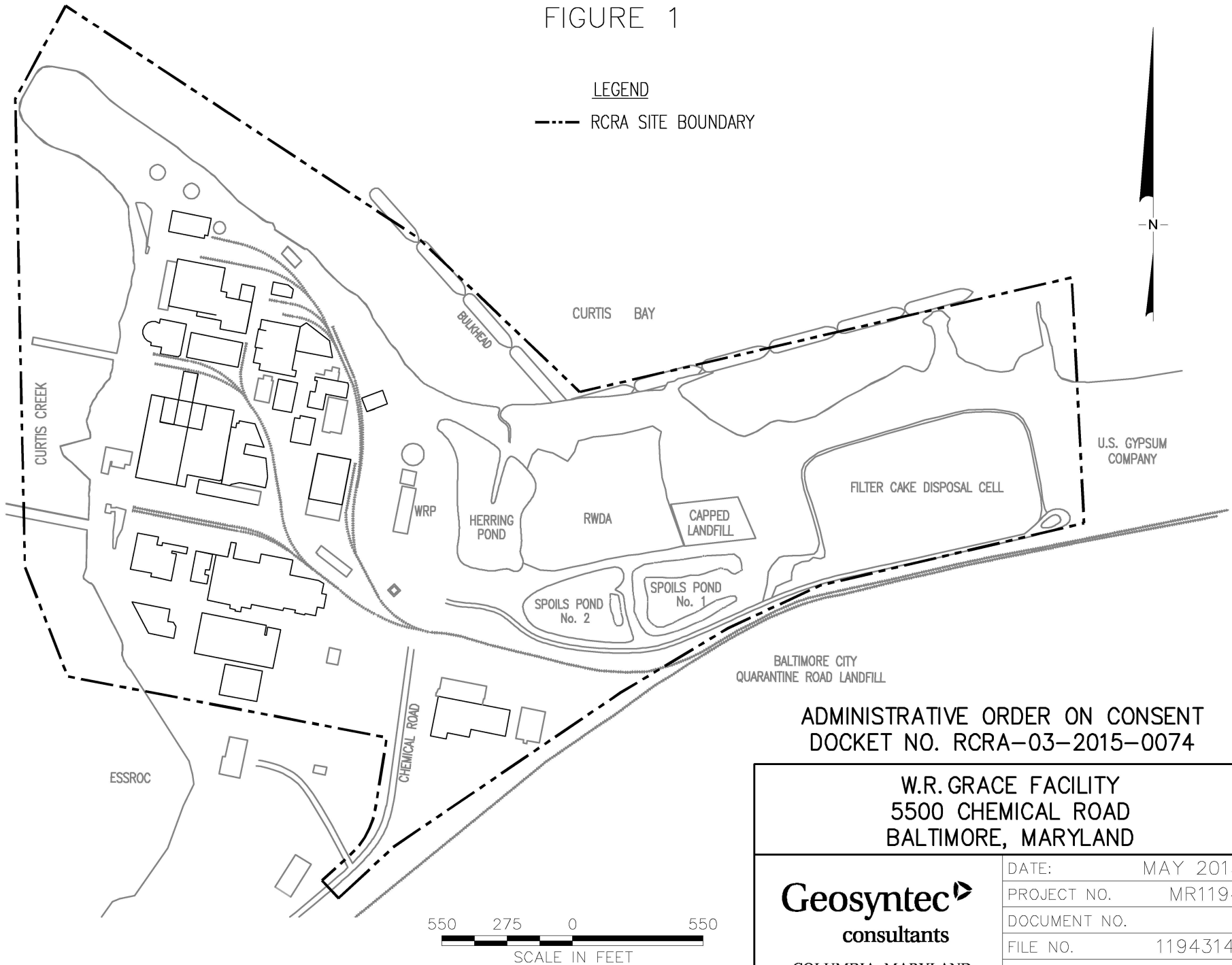


Attorney for USEPA

FIGURE 1

LEGEND

----- RCRA SITE BOUNDARY



ADMINISTRATIVE ORDER ON CONSENT
DOCKET NO. RCRA-03-2015-0074

W.R. GRACE FACILITY
5500 CHEMICAL ROAD
BALTIMORE, MARYLAND

Geosyntec
consultants
COLUMBIA, MARYLAND

DATE:	MAY 2015
PROJECT NO.	MR1194
DOCUMENT NO.	
FILE NO.	11943141
FIGURE NO.	1



ATTACHMENT 1

Administrative Order on Consent, Docket No.
RCRA-03-2002-0063, signed on June 21, 2002



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

VIA FEDERAL EXPRESS

JUN 24 2002

Ms. Lydia Belknap Duff, Esquire
W.R. Grace & Co.
7500 Grace Drive
Columbia, Maryland 21044

Re: 3013 Administrative Order on Consent
Docket No. RCRA 03-2002-0063

Dear Ms. Duff:

Enclosed, please find a true and correct copy of the Administrative Order on Consent ("Order") executed by W.R. Grace & Co. and the United States Environmental Protection Agency ("EPA") under Section 3013 of the Resource Conservation and Recovery Act ("RCRA") in regard to the above-referenced matter. As you know, the Order is effective on the date which W.R. Grace & Co. receives a fully executed true and correct copy of the Order.

If you have any technical questions concerning this matter, please contact Jennifer Shoemaker at (215) 814-2772. Legal questions can be directed to Sheila Briggs-Steuteville, Senior Assistant Regional Counsel, at (215) 814-2468.

Sincerely,

Maia Pisci Dudas

James J. Burke, Director
for
Waste and Chemicals Management Division

Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 ARCH STREET
PHILADELPHIA, PENNSYLVANIA 19103-2029

RECEIVED

2002 JUN 21 AM 10:08

REGIONAL HEARING CLERK
EPA REGION III, PHIL. A. PA

IN THE MATTER OF:)

W.R. Grace & Co.-Conn.)
5500 Chemical Road)
Baltimore, MD 21226-1698)

RESPONDENT)

EPA I.D. No. MDD001710227)

Proceeding under Section 3013 of the)
Resource Conservation and Recovery Act,)
as amended, 42 U.S.C. § 6934)

ADMINISTRATIVE ORDER)
ON CONSENT)

U.S. EPA Docket No:)
RCRA-03-2002-0063)

I hereby certify that the)
within is a true and correct copy)
of the original 3013 AOC)
filed in this matter.)

Shalee Bygg-Stuile)
Attorney for)

ADMINISTRATIVE ORDER ON CONSENT

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FIGURE

1. Location Map of Facility

**UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III**

IN THE MATTER OF:)	ADMINISTRATIVE ORDER
)	ON CONSENT
W.R. Grace & Co.-Conn.)	
5500 Chemical Road)	
Baltimore, MD 21226-1698)	
)	U.S. EPA Docket No:
)	RCRA-03-2002-0063
RESPONDENT)	
)	
EPA I.D. No. MDD001710227)	
)	Proceeding under Section 3013 of the
)	Resource Conservation and Recovery Act,
)	as amended, 42 U.S.C. § 6934

ADMINISTRATIVE ORDER ON CONSENT

The parties to this Final Administrative Order on Consent ("Consent Order"), the United States Environmental Protection Agency ("EPA") and W.R. Grace & Co.-Conn. ("Respondent"), having agreed to entry of this Consent Order, it is therefore Ordered and Agreed that:

I. JURISDICTION

A. This Consent Order is issued pursuant to the authority vested in the Administrator of the EPA by Section 3013 of the Solid Waste Disposal Act, commonly referred to as the Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984 (collectively referred to hereinafter as "RCRA"), 42 U.S.C. § 6934. The authority vested in the Administrator was delegated to the Regional Administrators by EPA Delegation No. 8-20 dated May 11, 1994. The authority was redelegated to the Director of the Waste and Chemicals Management Division by EPA Delegation No. 8-20 dated September 20, 1999.

B. On January 25, 1985, EPA granted the State of Maryland (the "State") authorization to operate a state hazardous waste program in lieu of the federal program, pursuant

to Section 3006(b) of RCRA, 42 U.S.C. § 6926(b). The State, however, does not have authority to enforce Section 3013 of RCRA. The State of Maryland has been given notice of the issuance of this Consent Order.

C. This Consent Order is issued to Respondent, the owner and operator of a facility located on 5500 Chemical Road in Baltimore, Maryland, hereinafter referred to as the "Facility" and as defined further in Section IV.B. below.

D. Respondent consents to issuance of this Consent Order and agrees to comply with its terms and will not contest EPA's authority to issue this Consent Order and to enforce its terms. Further, Respondent will not contest EPA's jurisdiction to: compel compliance with this Consent Order in any subsequent enforcement proceeding, either administrative or judicial; require Respondent's compliance with the terms of this Consent Order; or impose sanctions for violations of this Consent Order. Respondent reserves whatever rights it may have to challenge or defend against any future actions in any other administrative or judicial proceedings.

II. PARTIES BOUND

A. This Consent Order shall apply to and be binding upon EPA, Respondent and its agents, successors and assigns.

B. No change in ownership of any property covered by this Consent Order, or in corporate or partnership status of Respondent, shall in any way alter, diminish, or otherwise affect Respondent's obligations and responsibilities to EPA under this Consent Order.

C. Respondent shall provide a copy of this Consent Order to all supervisory personnel, contractors, subcontractors, laboratories, and consultants retained to conduct and/or monitor any portion of the work performed pursuant to this Consent Order and shall do so within seven (7) calendar days of the effective date of this Consent Order or date of such retention, whichever is later. All contracts, agreements or other arrangements with such persons shall require such persons to conduct and/or monitor the work in accordance with the requirements of this Consent Order. Notwithstanding the terms of any such contract, agreement or arrangement, Respondent is responsible for complying with this Consent Order and for ensuring that all such persons perform such work in accordance with this Consent Order.

D. In the event of any change in ownership or operation of the Facility and/or in the event of any change in majority ownership or control of the Respondent, Respondent shall notify EPA in writing of the nature of any such change no later than fifteen (15) calendar days after the effective date of such change. In addition, Respondent shall provide a copy of this Consent Order to any successor to the Respondent and/or to the Facility at least fifteen (15) calendar days prior to the effective date of such change.

III. STATEMENT OF PURPOSE

In entering into this Consent Order, the mutual objectives of EPA and Respondent are: (1) to perform and complete an Environmental Indicator (EI) Assessment Report/Phase I RCRA Facility Investigation ("RFI"); (2) to perform and complete an RFI; (3) to perform and complete a RCRA Corrective Measures Study ("CMS"); and (4) to perform and complete Interim Measures ("IM"), if necessary, all as required by this Consent Order.

IV. FINDINGS OF FACT

EPA makes the following findings, to which Respondent neither admits nor denies:

A. Respondent is a corporation doing business in the State of Maryland and is a "person" as defined in Section 1004(15) of RCRA, 42 U.S.C. § 6903(15).

B. Respondent is the owner and/or operator of a chemical facility located at 5500 Chemical Road in Baltimore County, Maryland within the meaning of Section 3013 of RCRA, 42 U.S.C. § 6934 ("Facility"). The property on which the facility is located, and all contiguous property under the ownership or control of Respondent is hereinafter referred to as the "Facility." See Figure 1 for a location map.

C. Respondent submitted to EPA on February 9, 1996, a revised Notification of Hazardous Waste Activity for the Facility, pursuant to Section 3010 of RCRA, 42 U.S.C. § 6930(a), identifying itself as generator of hazardous waste. Respondent has in the past managed the following hazardous wastes identified at 40 C.F.R. §§ 261.21-.24 and 261.33 at its Facility: D001 (Ignitable), D002 (Corrosive), D003 (Reactive), D007 (Chromium), D009 (Mercury), D010 (Selenium), D018 (Benzene), D035 (Methyl Ethyl Ketone), D038 (Pyridine), U196 (Pyridine), U226 (1,1,1-Trichloroethane or Methyl Chloroform), and M001 (Maryland Code, PCB containing materials). EPA assigned the Facility EPA Identification Number MDD001710227 on October 9, 1980.

D. According to an internal Respondent memo dated August 7, 1986, a railcar being used for temporary storage leaked approximately twenty-five (25) gallons of aluminum trichloride acid between the railroad tracks at the Facility the previous day. The gravel and soil beneath the railcar were excavated and removed for disposal.

E. Analytical data collected at the Facility show that there have been releases of hazardous constituents to groundwater and soil. Several preliminary field assessments have been performed by EPA and/or the State at the Facility under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") program. As described in the report entitled "A Site Inspection of Estech General Chemical Company, Baltimore, Maryland" dated

July 1989, sampling revealed metals, polynuclear aromatic hydrocarbons ("PAHs"), and pesticides in soils and metals and pesticides in aqueous samples in the area of the Facility previously known as the Estech General Chemical Company, now owned by Respondent. Also, the report "A Site Inspection of W.R. Grace and Company" dated August 9, 1984 details sampling results showing elevated levels of several constituents, including various heavy metals and arsenic, in two downgradient monitoring wells.

F. The hazardous constituents found in groundwater and soil exceed EPA risk-based screening criteria and have the potential to cause adverse impacts to human health and/or the environment.

V. CONCLUSIONS OF LAW AND DETERMINATIONS

EPA makes the following determinations, to which Respondent neither admits nor denies:

A. EPA hereby determines that the presence of hazardous waste that is or has been managed at the Facility and/or the release of hazardous waste which has been treated, stored or disposed of at the Facility may present a substantial hazard to human health or the environment.

B. EPA further determines that the monitoring, testing, analysis and reporting set forth in this Consent Order are reasonable to ascertain the nature and extent of the hazard at the Facility.

VI. WORK TO BE PERFORMED

EPA acknowledges that Respondent may have completed some of the tasks required by this Consent Order and that Respondent may have available some of the information and data required by this Consent Order. This previous work may be used to meet the requirements of this Consent Order, upon submission to and formal approval by EPA.

Pursuant to Section 3013 of RCRA, 42 U.S.C. § 6934, Respondent agrees to and is hereby ordered to perform the following acts in the manner and by the dates specified herein. All work undertaken pursuant to this Consent Order shall be developed and performed, as appropriate and approved by EPA, in accordance with: the Scope of Work for Interim Measure(s); the Scope of Work for a RCRA Facility Investigation; the Scope of Work for Health and Safety Plan; the Scope of Work for a CMS; and RCRA, its implementing regulations and relevant EPA guidance documents. These Scopes of Work are available at http://www.epa.gov/reg3wcmd/ca/ca_resources.htm, under Corrective Action Implementation Guidance, and are incorporated herein by reference.

The term "days" as set forth herein means calendar days unless otherwise specified.

A. ENVIRONMENTAL INDICATOR ASSESSMENT REPORT ("RFI PHASE I")

1. Within thirty (30) calendar days of the effective date of this Order, Respondent shall submit to EPA for approval an Environmental Indicator ("EI") Assessment Report/Phase I RFI ("EI Report") for the Facility which reports the results of historical data literature review and the field investigation undertaken by the Respondent in September of 2001 and describes future work, if any, to be performed in order to complete the Documentation of Environmental Indicator Determination ("EI forms"). The objective of the EI Report is to assess current human exposures and evaluate contaminated groundwater migration pathways to support completion of the EI forms for the Facility. The EI Report shall include the EI forms for the Facility completed by the Respondent, a Description of Current Conditions ("Description"), and an outline (proposal) of a RFI Workplan for the second phase of the RFI. The Description of Current Conditions shall be developed in accordance with the RFI Scope of Work.

B. INTERIM MEASURES ("IM")

2. Respondent shall evaluate available data and submit to EPA for approval a proposal for interim measures, as may be appropriate, as part of the Description of Current Conditions, required by Section VI.A.1 of this Consent Order. Within sixty (60) days after EPA's review and approval of Respondent's proposal, Respondent shall submit to EPA an IM Workplan in accordance with the IM Scope of Work and Paragraphs VI.B. 7, 8, and 9 immediately below. Within thirty (30) days of EPA's approval of the IM Workplan, Respondent shall implement the IM Workplan.

3. If, after EPA's review of the Description of Current Conditions, EPA determines that an interim measure(s) is necessary to address an immediate or substantial hazard to human health and/or the environment, EPA will so notify Respondent and shall identify an interim measure(s) which Respondent shall perform. Such notification shall set forth the basis for EPA's determination. Within sixty (60) days of receipt of EPA's notification, Respondent shall submit to EPA for approval an IM Workplan in accordance with the IM Scope of Work and Paragraphs VI.B. 7, 8, and 9 immediately below. Within thirty (30) days of EPA's approval of the IM Workplan, Respondent shall implement the IM Workplan.

4. If EPA and the Respondent agree that an interim measure(s) is necessary for circumstances other than those set forth in Paragraph VI.B.2, above, Respondent shall identify an interim measure(s) which Respondent shall perform. Within thirty (30) days of identifying such interim measure(s), Respondent shall submit to EPA for approval an IM Workplan in accordance with the IM Scope of Work and Paragraphs VI.B. 8 and 9 immediately below.

5. In the event Respondent identifies an immediate or substantial threat to human

health and/or the environment resulting from new releases of hazardous waste and/or hazardous constituents not previously identified to EPA, Respondent shall notify the EPA Project Coordinator, orally within forty-eight (48) hours of discovery and notify EPA in writing within five (5) calendar days of such discovery summarizing the immediacy and magnitude of the hazard to human health and/or the environment. Upon written request from EPA setting forth the basis for its determination that an interim measure is necessary to address an immediate or substantial hazard to human health and/or the environment, Respondent shall submit to EPA for approval an IM Workplan, in accordance with the IM Scope of Work and Paragraphs VI.B. 7, 8 and 9 immediately below, that identifies one or more interim measures that will address such hazard as necessary to protect human health and the environment. If EPA determines that immediate action is required, the EPA Project Coordinator may orally authorize Respondent to act prior to EPA's receipt of the IM Workplan.

6. If at any time EPA identifies an immediate or substantial threat to human health and/or the environment at the Facility resulting from new releases of hazardous waste and/or hazardous constituents at or from the Facility not previously identified, EPA will notify Respondent in writing. Within ten (10) days of receiving EPA's written notification setting forth the basis for its determination that an interim measure is necessary to address such hazard, Respondent shall submit to EPA for approval an IM Workplan in accordance with the IM Scope of Work and Paragraphs VI.B. 6, 8 and 9 immediately below, that identifies one or more interim measures that will address such hazard as necessary to protect human health and/or the environment. If EPA determines that immediate action is required, the EPA Project Coordinator may orally require Respondent to act prior to Respondent's receipt of EPA's written notification.

7. All IM Workplans shall ensure that the interim measures are designed to mitigate immediate or substantial threat(s) to human health and/or the environment, and should be consistent with the cleanup objectives of, and contribute to the performance of any long-term remedy, if known, which may be required at the Facility.

8. Each IM Workplan shall include those of the following sections that are appropriate and approved by EPA: Interim Measures Objectives, Public Involvement Plan, Data Collection Quality Assurance, Data Management, Design Plans and Specifications, Operation and Maintenance, Project Schedule, Interim Measures Construction Quality Assurance, and Reporting Requirements.

9. Concurrent with submission of an IM Workplan, Respondent shall submit to EPA an IM Health and Safety Plan.

C. RCRA FACILITY INVESTIGATION ("RFI")

10. Within ninety (90) calendar days of the approval of the EI Report discussed in Section VI.A.1, Respondent shall submit to EPA for approval a detailed Workplan for a Phase II

RCRA Facility Investigation ("RFI Workplan"). The RFI Workplan shall be developed as appropriate and approved by EPA in accordance with, at a minimum, the RFI Scope of Work, RCRA, its implementing regulations, and relevant EPA guidance documents.

11. The RFI Workplan shall be designed to determine the presence, magnitude, extent, direction, and rate of movement of any hazardous wastes or hazardous constituents within and beyond the Facility boundary. The RFI Workplan shall document the procedures Respondent shall use to conduct those activities necessary to: (A) characterize the source(s) of contamination; (B) characterize the potential pathways of contaminant migration (C) define the degree and extent of contamination; (D) identify actual or potential human and/or ecological receptors; and (E) support the development of alternatives from which a corrective measure(s) will be selected by EPA. Respondent may implement the work contained in the RFI Workplan in a phased approach. A specific schedule for timely implementation of all activities shall be included in the RFI Workplan.

12. The RFI Workplan shall include: (A) a Project Management Plan; (B) a Data Collection Quality Assurance Plan; (C) a Data Management Plan; and (D) a Community Relations Plan and shall provide for the submission of a draft and final RFI report.

13. Concurrent with the submission of the RFI Workplan, Respondent shall submit an RFI Health and Safety Plan.

14. Upon receipt of EPA approval of the RFI Workplan, Respondent shall implement the EPA-approved RFI Workplan in accordance with the terms and schedules contained therein. Upon completion of implementation of the RFI Workplan, Respondent shall submit to EPA for approval a draft RFI Report. After receiving comments from EPA on the draft RFI Report, Respondent shall submit to EPA for approval a final RFI Report, in accordance with the requirements and schedule contained in the EPA-approved RFI Workplan.

D. CORRECTIVE MEASURES STUDY ("CMS")

15. Within ninety (90) calendar days of receipt of EPA approval of the RFI Report, Respondent shall submit to EPA for approval a draft CMS Report for the Facility. The CMS Report shall be developed as appropriate and approved by EPA in accordance with the CMS Scope of Work.

16. Within forty-five (45) calendar days of receipt of EPA's comments on the Draft CMS Report, Respondent shall submit to EPA the Final CMS Report, revised to respond to all comments received from and/or remedy all deficiencies identified by EPA on the Draft CMS Report.

E. PUBLIC COMMENT AND PARTICIPATION

17. After approval of the CMS Report, EPA will make both the RFI Report and the CMS Report, a description of EPA's proposed corrective measure(s) if any are so proposed by EPA, and EPA's justification for proposing selection of such corrective measure(s) (the "Statement of Basis") available to the public for review and comment for at least thirty (30) calendar days.

18. Following the public review and comment period, EPA will notify Respondent of the corrective measure(s) selected by EPA in a Final Decision and Response to Comments ("FDRTC"). If the corrective measure(s) selected by EPA after consideration of public comments differs significantly from the corrective measure(s) recommended in the Statement of Basis, EPA will explain in the FDRTC the basis for such difference.

19. Any decisions or determinations made by EPA pursuant to the Consent Order will be available for public review on Mondays through Fridays, from 9:00 a.m. to 4:00 p.m., by contacting the EPA Project Coordinator, Jennifer Shoemaker, at (215) 814-2772.

F. CORRECTIVE MEASURES IMPLEMENTATION

20. After selection by EPA of the corrective measure(s) and issuance of the FDRTC, EPA may provide Respondent with an opportunity to negotiate the terms of an administrative order on consent for implementation of such corrective measure(s). Nothing in this Consent Order shall limit EPA's authority to implement the selected corrective measure(s) or to take any other appropriate action under RCRA, the Comprehensive Environmental Response, Compensation and Liability Act, as amended by the Superfund Amendments and Reauthorization Act of 1986, 42 U.S.C. §§ 9601 *et seq.* ("CERCLA") or any other legal authority, including issuance of a unilateral administrative order or the filing of a civil action seeking a judicial order directing Respondent to implement the selected corrective measure(s). Respondent reserves whatever rights it may have under any law, or in equity, to challenge or defend against any such order or action by EPA.

G. SUBMISSIONS/EPA APPROVAL/ADDITIONAL WORK

21. EPA will review Respondent's IM and RFI Workplans, RFI and CMS Reports, and any other documents submitted pursuant to this Consent Order ("Submissions") with the exception of progress reports, and will notify Respondent in writing of EPA's approval or disapproval of each such Submission. In the event of EPA's disapproval, EPA shall specify in writing any deficiencies in the Submission. Such disapproval shall not be subject to the dispute resolution procedures of Section XIV, below.

22. Within thirty (30) calendar days of receipt of EPA's comments on the Submission, or ten (10) calendar days in the case of an IM Workplan or an interim measure as required under Paragraphs VI.B. 2, 3, 5 and/or 6, Respondent shall submit to EPA for approval a revised Submission, which responds to any comments received and/or corrects any deficiencies identified by EPA. In the event that EPA disapproves of the revised Submission, EPA shall notify Respondent in writing of its objections and the basis thereof. Respondent may invoke the dispute resolution procedures of Section XIV, below, in connection with EPA's disapproval of the revised submission and/or the original submission under Paragraph VI.G.21, notwithstanding the provisions of Paragraph VI.G.21. In the event EPA disapproves the revised Submission, EPA reserves the right to revise such Submission and seek to recover from Respondent the costs thereof, in accordance with CERCLA and any other applicable law. Respondent reserves the right to contest and defend against any EPA action to seek such costs. Any Submission approved or revised by EPA under this Consent Order shall be deemed incorporated into and made an enforceable part of this Consent Order.

23. Beginning with the first day of the second full month following the effective date of this Consent Order, and every two months thereafter on the first day of the month, throughout the period that this Consent Order is effective, Respondent shall provide EPA with bimonthly (every two months) progress reports. The bimonthly progress reports shall contain the information required in the relevant Scope(s) of Work.

24. Four (4) copies of all Submissions required by this Consent Order shall be hand-delivered or sent by Certified Mail, Return Receipt Requested, to the Project Coordinator designated pursuant to Section XI, "PROJECT COORDINATORS," below.

25. All work performed pursuant to this Consent Order shall be under the direction and supervision of a professional engineer or geologist with expertise in hazardous waste site investigation. Within ten (10) calendar days after the effective date of this Consent Order, Respondent shall submit to EPA, in writing, the name, title, and qualifications of the engineer or geologist and of any contractors or subcontractors to be used in carrying out the terms of this Consent Order. Notwithstanding Respondent's selection of an engineer, geologist, contractor or subcontractor, nothing herein shall relieve Respondent of its obligation to comply with the terms and conditions of this Consent Order. EPA shall have the right to disapprove at any time the use of any professional engineer, geologist, contractor or subcontractor selected by Respondent. EPA's disapproval shall not be subject to review under Section XIV of this Consent Order ("DISPUTE RESOLUTION") or otherwise. Within fifteen (15) calendar days of receipt from EPA of written notice disapproving the use of any professional engineer, geologist, contractor or subcontractor, Respondent shall notify EPA, in writing, of the name, title and qualifications of the personnel who will replace the personnel disapproved by EPA. Respondent shall notify EPA ten (10) days prior to changing voluntarily its engineer or geologist, and/or contractors or subcontractors to be used in carrying out the terms of this Consent Order, and shall submit to EPA in writing, the name, title, and qualifications of such person(s).

26. EPA may determine that certain tasks and deliverables including, but not limited to, investigatory work or engineering evaluation are necessary in addition to the tasks included in any EPA approved Workplan, when such additional work is necessary to meet the purposes set forth in Section III above. These tasks and deliverables may or may not have been in the IM or RFI Workplans. If EPA determines that such additional work is necessary, EPA shall request, in writing, that Respondent perform the additional work and shall specify the reasons for EPA's determination that additional work is necessary. Within fifteen (15) calendar days after the receipt of such request, Respondent shall have the opportunity to meet or confer with EPA to discuss the additional work EPA has requested. In the event that Respondent agrees to perform the additional work, this Consent Order shall be modified in accordance with Section XXI, "SUBSEQUENT MODIFICATION," below, and such work shall be performed in accordance with this Consent Order. In the event Respondent declines or fails to perform the additional work, EPA reserves the right to order Respondent to perform such additional work; or to perform such additional work itself and to seek to recover from Respondent all costs of performing such additional work. In such event, Respondent reserves all rights, remedies, and defenses it may have with respect to such EPA action.

VII. QUALITY ASSURANCE

A. Throughout all sample collection and analysis activities, Respondent shall use EPA-approved quality assurance, quality control, and chain-of-custody procedures, as specified in the EPA-approved Workplans. In addition, Respondent shall:

1. Ensure that laboratories used by Respondent for analyses perform such analyses according to the EPA methods included in "Test Methods for Evaluating Solid Waste" (SW-846, November 1986) or other methods deemed satisfactory to EPA. If methods other than EPA methods are to be used, Respondent shall submit all analytical protocols to be used for analyses to EPA for approval at least thirty (30) calendar days prior to the commencement of analyses and shall obtain EPA approval prior to the use of such analytical protocols.
2. Ensure that laboratories used by Respondent for analyses participate in a quality assurance/quality control program equivalent to that which is followed by EPA. As part of such a program, and upon request by EPA, such laboratories shall perform analyses of an appropriate number of samples provided by EPA to demonstrate the quality of the analytical data.
3. Inform the EPA Project Coordinator at least fourteen (14) calendar days in advance regarding which laboratory will be used by Respondent to conduct laboratory analyses and ensure that EPA personnel and EPA authorized representatives have reasonable access to the laboratories and personnel used for analysis.

VIII. ON-SITE AND OFF-SITE ACCESS

A. At reasonable times, EPA and/or its authorized representatives shall have the authority to enter and freely move about all property at the Facility during the effective dates of this Consent Order for the purposes of reviewing the progress of Respondent in implementing the provisions of this Consent Order by: interviewing relevant Facility Personnel; conducting such tests, sampling or monitoring as EPA or its Project Coordinator deem necessary; using a camera, sound recording, or other documentary type equipment; and verifying the reports and data submitted to EPA by Respondent. Respondent shall permit such persons to inspect and copy all records, files, photographs, documents, and other writings, including all sampling and monitoring data (collectively referred to hereinafter as "Information"), that pertain to work undertaken pursuant to this Consent Order. To the extent that EPA and/or its authorized representatives enter the Facility, they shall comply with all reasonable worker health and safety requirements. Such requirements shall not be used as a basis to deny EPA and/or its authorized representatives access to the Facility or an area of the Facility.

B. To the extent that property wherein work required by this Consent Order must be undertaken is presently owned or controlled by parties other than the Respondent, the Respondent shall use its best efforts to obtain site access agreements from the present owners. Best efforts shall include, but not be limited to, agreement to reasonable conditions for access and/or the payment of reasonable fees. Such access agreements shall be finalized as soon as practicable but no later than thirty (30) calendar days after receiving EPA's written approval to proceed. Such agreements shall provide reasonable access for the Respondent and their employees, agents, consultants, contractors and other authorized and designated representatives to conduct the work, and for EPA and its designated representatives to conduct the activities outlined in Paragraph XI.C, below. In the event that any property owner refuses to provide such access or access agreements are not obtained within the time designated above, whichever occurs sooner, the Respondent shall notify EPA at that time, in writing, of all efforts to obtain access and the circumstances of the failure to obtain such access. EPA may then take steps to provide such access. Respondent shall reimburse the United States for all costs incurred in obtaining access, including, but not limited to, attorneys fees and the amount of any just compensation and costs incurred by EPA.

C. Nothing in this Consent Order limits or otherwise affects EPA's rights of access and entry pursuant to applicable law, including, but not limited to, RCRA and CERCLA.

IX. SAMPLING AND DATA/DOCUMENT AVAILABILITY

A. Respondent shall submit to EPA the results of all sampling and/or tests or other data generated by, or on behalf of, Respondent in accordance with the requirements of this Consent Order.

B. Respondent shall notify EPA and the State, in writing, at least fourteen (14) calendar days in advance of any field activities, including but not limited to, well drilling, installation of equipment, or sampling. At the request of EPA, Respondent shall provide or allow EPA or its authorized representatives to take split or duplicate samples of all samples collected by Respondent pursuant to this Consent Order. At the request of Respondent, EPA shall provide Respondent with a portion of each sample taken equal in volume or weight to the portion retained by EPA. Nothing in this Consent Order shall limit or otherwise affect EPA's authority to collect samples pursuant to applicable law, including, but not limited to, RCRA and CERCLA.

C. Respondent may assert a business confidentiality claim covering all or part of any information submitted to EPA pursuant to this Consent Order in the manner described in 40 C.F.R. Section 2.203(b). Any assertion of confidentiality shall be adequately substantiated by Respondent when the assertion is made in accordance with 40 C.F.R. Section 2.204(e)(4). Information subject to a confidentiality claim shall be disclosed only to the extent allowed by, and in accordance with, the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such confidentiality claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to Respondent. Respondent shall not assert any confidentiality claim with regard to any physical, sampling, monitoring, or analytical data which relate in any way to this Consent Order.

D. If Respondent wishes to assert a privilege with regard to any document which EPA seeks to inspect or copy pursuant to this Consent Order, Respondent shall identify the document, the privilege claimed, and the basis therefor in writing. For the purposes of this Consent Order, "privileged documents" are those documents exempt from discovery from the United States in litigation under the Federal Rules of Civil Procedure. Respondent shall not assert a privilege with regard to analytical, sampling and monitoring data which relate in any way to this Consent Order.

X. RECORD PRESERVATION

Respondent agrees that it shall preserve, during the pendency of this Consent Order and for a minimum of at least six (6) years after its termination, all data, records and documents in its possession or in the possession of its divisions, officers, directors, employees, agents, contractors, successors, and assigns which relate in any way to this Consent Order. After six (6) years, Respondent shall make such records available to EPA for inspection or shall provide copies of such records to EPA. Respondent shall notify EPA at least thirty (30) calendar days prior to the proposed destruction of any such records, and shall provide EPA with a reasonable opportunity to inspect, copy and/or take possession of any such records. Respondent shall not destroy any record to which EPA has requested access for inspection and/or copying until EPA has obtained such access or withdrawn its request for such access. Nothing in this Section X shall in any way limit the authority of EPA under Section 3007 of RCRA, 42 U.S.C. Section 6927, or

any other access or information-gathering authority. Nothing in this Section X shall require Respondent to provide to EPA, or to make available for inspection or copying by EPA, any "privileged documents" as that term is defined in Section IX.D of this Consent Order.

XI. PROJECT COORDINATORS

A. EPA hereby designates Jennifer Shoemaker as the EPA Project Coordinator. Within ten (10) calendar days of the effective date of this Consent Order, Respondent shall notify EPA, in writing, of the Project Coordinator it has selected. Respondent's legal counsel shall not serve as Respondent's Project Coordinator. Each Project Coordinator shall be responsible for overseeing the implementation of the Consent Order. The EPA Project Coordinator will be EPA's primary designated representative at the Facility. To the maximum extent possible, all communications between Respondent and EPA, and all documents, reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Consent Order, shall be directed through the Project Coordinators. The EPA Project Coordinator, in its sole discretion not subject to Section XIV (Dispute Resolution), may extend any deadline under this Consent Order.

B. Each party agrees to provide at least seven (7) calendar days written notice to the other party prior to changing Project Coordinators.

C. If EPA determines that conditions or activities at the Facility, whether or not in compliance with this Consent Order, have caused or may cause a release or threatened release of hazardous wastes, hazardous constituents, hazardous substances, pollutants or contaminants which threaten or may pose a threat to the public health or welfare or to the environment, EPA may direct that Respondent stop further implementation of this Consent Order for such period of time as may be needed to abate any such release or threatened release and/or to undertake any action to abate such release or threatened release which EPA determines is necessary to protect human health or the environment.

D. The absence of the EPA Project Coordinator from the Facility shall not be cause for the delay or stoppage of work.

XII. NOTIFICATION

A. Unless otherwise specified, reports, correspondence, approvals, disapprovals, notices, or other submissions relating to or required under this Consent Order shall be in writing and shall be sent as follows:

1. Four copies of all documents to be submitted to the EPA shall be sent to:

Jennifer Shoemaker
U.S. Environmental Protection Agency
Region III, Mail Code 3WC23
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029
Telephone: 215-814-2772
E-mail: shoemaker.jennifer@epa.gov

2. Documents to be submitted to Respondent shall be sent to:

Steven Ziegfeld
W.R. Grace & Co.-Conn.
Curtis Bay Works
5500 Chemical Road
Baltimore, MD 21226

3. One copy of all documents to be submitted to EPA shall also be sent to:

Maryland Department of the Environment
Hazardous and Solid Waste Management Administration
2500 Broening Highway
Baltimore, Maryland 21224

B. Any notice, report, certification, data presentation, or other document submitted by Respondent pursuant to this Consent Order which discusses, describes, demonstrates, or supports any finding or makes any representation concerning Respondent's compliance or noncompliance with any requirement of this Consent Order shall be certified by a responsible corporate officer or a duly authorized representative of a responsible corporate officer. A "responsible corporate officer" means: (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. A person is a "duly authorized representative" only if: (1) the authorization is made in writing by a person described above; (2) the authorization specifies either an individual or position having responsibility for overall operation of the regulated facility or activity (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and (3) the written authorization is submitted to the Project Coordinator designated by EPA in Section XII ("Project Coordinator")

of this Consent Order.

C. The certification required by paragraph B, above, shall be in the following form:

I certify that the information contained in or accompanying this [type of submission] is true, accurate, and complete.

As to [the/those identified portion(s)] of this [type of submission] for which I cannot personally verify [its/their] accuracy, I certify under penalty of law that this [type of submission] and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature : _____

Name : _____

Title : _____

XIII. DELAY IN PERFORMANCE/STIPULATED PENALTIES

A. Unless (i) there has been a written modification of a compliance date by EPA, (ii) EPA has approved, in writing, Respondent's written request for an extension of time, (iii) excusable delay as defined below in Section XV, "FORCE MAJEURE AND EXCUSABLE DELAY," is determined by EPA in its sole discretion, not subject to Section XIV (Dispute Resolution) to have arisen (iv) payment of stipulated penalties has been excused by the Director of Waste and Chemical Management Division, Region III, pursuant to Section XIV (Dispute Resolution), or (v) in the exercise of its unreviewable discretion, EPA has otherwise waived payment of all or any portion of stipulated penalties otherwise owed, Respondent shall pay stipulated penalties for violations of this Consent Order, as set forth below, upon receipt of written demand by EPA. Compliance by Respondent shall include commencement or completion, as appropriate, of any activity, plan, study or report required by this Consent Order in an acceptable manner and within the specified time schedules in and approved under this Consent Order. Stipulated penalties shall accrue as follows:

1. For failure to submit progress reports required by Paragraph VI.G.21: \$1,000 per

day for one to fourteen days or part thereof of noncompliance, and \$2,500 per day for each day of noncompliance, or part thereof, thereafter;

2. For failure to submit the Environmental Indicator Assessment Report required by Paragraph VI.A.1: \$2,000 per day for one to seven days or part thereof of noncompliance, and \$5,000 per day for each day of noncompliance, or part thereof, thereafter;

3. For failure to comply with the notification requirement regarding new releases in Paragraph VI.B.3: \$2000 per day for one to seven days or part thereof of noncompliance, and \$5,000 per day for each day of noncompliance or part thereof, thereafter;

4. For failure to submit any Interim Measures Workplan, as required by Paragraph VI.B.2, 3, 4, or 5: \$2,000 per day for one to seven days or part thereof of noncompliance, and \$5,000 per day for each day of noncompliance, or part thereof, thereafter;

5. For failure to implement any EPA-approved Interim Measures Workplan required by Section VI.B: \$2,000 per day for one to seven days or part thereof of noncompliance, and \$5,000 per day for each day of noncompliance, or part thereof, thereafter;

6. For failure to implement the EPA-approved RFI Workplan as required by Paragraph VI.C.12: \$2,000 per day for one to seven days or part thereof of noncompliance, and \$5,000 per day for each day of noncompliance, or part thereof, thereafter;

7. For failure to submit the draft and/or final RFI Workplan required by Section VI.C.8: \$2,000 per day for one to seven days or part thereof of noncompliance, and \$5,000 per day for each day of noncompliance, or part thereof, thereafter;

8. For failure to submit the draft and/or final RFI Report required by Section VI.C.12: \$2,000 per day for one to seven days or part thereof of noncompliance, and \$5,000 per day for each day of noncompliance, or part thereof, thereafter;

9. For failure to submit the draft and/or final CMS Report required by Section VI.D: \$2,000 per day for one to seven days or part thereof of noncompliance, and \$5,000 per day for each day of noncompliance, or part thereof, thereafter; and

10. For any failure to comply with any requirement of this Consent Order not described in subparagraphs 1 through 9, above: \$750 per day for each day of noncompliance, or part thereof.

B. All penalties shall begin to accrue on the date that complete performance is due or a violation occurs, and shall continue to accrue through the final day of or correction of the violation. Nothing herein shall prevent the simultaneous accrual of separate stipulated penalties

for separate violations of this Consent Order.

C. All penalties owed to EPA under this Section XIII shall be due within thirty (30) calendar days of receipt of a written demand for payment unless Respondent invokes the dispute resolution procedures under Section XIV, below. Such demand for payment shall describe the noncompliance and shall indicate the amount of penalties due. Interest shall begin to accrue on the unpaid balance at the end of the thirty (30) calendar day period or, if applicable, in accordance with any dispute resolution decision or agreement. Interest shall accrue at the Treasury Tax and Loan Account Rate.

D. All penalty payments shall be made by certified or cashier's check payable to the Treasurer of the United States of America and shall be remitted to:

Regional Hearing Clerk
U.S. Environmental Protection Agency
Region III
P.O. Box 360515
Pittsburgh, Pennsylvania 15251-6515

All payments shall reference the name of the Facility, Respondent's name and address, and the EPA Docket Number of this Consent Order. Copies of the transmittal of payment shall be sent simultaneously to the EPA Project Coordinator and the Regional Hearing Clerk (3RC00), U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103-2029.

E. Respondent may dispute EPA's demand for payment of stipulated penalties for any alleged violation of this Consent Order by invoking the dispute resolution procedures below under Section XIV, "DISPUTE RESOLUTION." Stipulated penalties shall continue to accrue, but need not be paid, for any alleged noncompliance which is the subject of dispute resolution during the period of such dispute resolution. To the extent that Respondent does not prevail upon resolution of the dispute, Respondent shall remit to EPA within fifteen (15) calendar days of receipt of such resolution any outstanding penalty payment, including any accrued interest due, in the manner described above in Paragraph D of this Section XIII. To the extent Respondent prevails upon resolution of the dispute, no penalties or interest shall be payable.

F. Neither the filing of a petition to resolve a dispute nor the payment of penalties shall alter in any way Respondent's obligation to comply with the requirements of this Consent Order.

G. The stipulated penalties set forth in this Section XIII shall not preclude EPA from pursuing any other remedies or sanctions which may be available to EPA by reason of Respondent's failure to comply with any of the requirements of this Consent Order.

XIV. DISPUTE RESOLUTION

A. If Respondent disagrees, in whole or in part, with any EPA disapproval, modification or other decision or directive made by EPA pursuant to this Consent Order, Respondent shall notify EPA in writing within seven (7) days of such disagreement, and representatives of EPA and Respondent may confer in person or by telephone to resolve any such disagreement. In the event that resolution is not reached within fourteen (14) calendar-days after EPA's receipt of any such objection, or such longer time as requested by Respondent, in writing, and approved by EPA in its sole discretion not subject to Dispute Resolution, Respondent shall notify EPA in writing of its objections and the basis thereof. Such written notice shall set forth the specific points of the dispute, the position which Respondent asserts should be adopted as consistent with the requirements of this Consent Order, the basis for Respondent's position, and any matters which it considers necessary for EPA's determination. EPA and Respondent shall have an additional fourteen (14) calendar days from the receipt by EPA of the written notification of objection, or such longer time as requested by Respondent, in writing, and approved by EPA in its sole discretion not subject to Dispute Resolution, during which time representatives of EPA and Respondent may confer in person or by telephone to resolve any disagreement. This shall conclude the Informal Negotiation Period. If an agreement is reached, the resolution shall be written and signed by an authorized representative of each party.

B. In the event that resolution is not reached, then the position advanced by EPA shall be considered binding unless, within seven (7) days after the conclusion of the Informal Negotiation Period, Respondent requests the dispute be resolved by the Director of the Waste and Chemicals Management Division, EPA Region III ("Director") at which time Respondent may request a meeting with the Director.

C. If requested by Respondent, the Director will hold a meeting. After any such meeting, the Director will furnish to Respondent, in writing, his decision on the pending dispute.

D. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone or affect in any way any obligation of Respondent under this Order, unless EPA determines otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Order. In the event that Respondent does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XIII "DELAY IN PERFORMANCE/STIPULATED PENALTIES."

E. Notwithstanding any other provisions of this Consent Order, no action or decision by EPA, including, without limitation, decisions of the Director of Waste and Chemicals Management Division, Region III, pursuant to this Consent Order, shall constitute final agency action giving rise to any right to judicial review prior to EPA's initiation of judicial action to compel Respondent's compliance with this Consent Order.

XV. FORCE MAJEURE AND EXCUSABLE DELAY

A. Respondent shall perform the requirements of this Consent Order in the manner and within the time limits set forth herein, unless the performance is prevented or delayed by events which constitute a force majeure. Respondent shall have the burden of proving such a force majeure. A force majeure is defined as any event arising from causes not reasonably foreseeable and beyond the control of Respondent, which cannot be overcome by due diligence and which delays or prevents performance in the manner or by a date required by this Consent Order. Such events do not include increased costs of performance, changed economic circumstances, weather conditions which could have been overcome by due diligence, or failure to obtain federal, state, or local permits unless Respondent has made timely and complete applications thereof and has exercised reasonable care to obtain such permit(s).

B. Respondent shall notify EPA, in writing, within seven (7) calendar days after it becomes or should have become aware of any event which Respondent claim constitutes a force majeure. Such notice shall estimate the anticipated length of delay, including necessary demobilization and remobilization, its cause, measures taken or to be taken to prevent or minimize the delay, and an estimated timetable for implementation of these measures. Failure to comply with the notice provision of this Section XV shall constitute a waiver of Respondent's right to assert a force majeure claim with respect to such event. EPA may in its sole discretion not subject to Dispute Resolution, waive the notice provision of this Section XV for a particular force majeure event. In addition to the above notification requirements, Respondent shall undertake all reasonable actions to prevent or to minimize any delay in achieving compliance with any requirement of this Consent Order after it becomes or should have become aware of any event which may delay such compliance.

C. If EPA determines that there is an excusable delay because the failure to comply or delay has been or will be caused by a force majeure, the time for performance of that requirement of this Consent Order or of any other requirement whose performance depends upon performance of the obligation affected by the force majeure event, may be extended, upon EPA approval, for a period equal to the delay resulting from such force majeure. This shall be accomplished through an amendment to this Consent Order pursuant to Section XXI, "SUBSEQUENT MODIFICATION." Such an extension shall not alter the schedule for performance or completion of any other tasks required by this Consent Order, unless these tasks are also specifically altered by amendment of the Consent Order. In the event that EPA and Respondent cannot agree that any delay or failure has been or will be caused by a force majeure, or if there is no agreement on the length of the extension, Respondent may invoke the dispute resolution procedures set forth in Section XIV, "DISPUTE RESOLUTION."

XVI. RESERVATION OF RIGHTS

A. EPA expressly reserves all rights and defenses that it may have, including the

right both to disapprove of work performed by Respondent pursuant to this Consent Order, to require that Respondent correct and/or perform any work disapproved by EPA, and to request that Respondent perform tasks in addition to those stated in the Scope(s) of Work, Workplans, or this Consent Order. Except as otherwise expressly provided in this Consent Order, Respondent hereby reserves all defenses that it may have to such requirements or EPA actions.

B. EPA hereby reserves all of its statutory and regulatory powers, authorities, rights and remedies, both legal and equitable, including any which may pertain to Respondent's failure to comply with any of the requirements of this Consent Order, including, without limitation, the assessment of penalties under Section 3013(e) of RCRA, 42 U.S.C. § 6934(e). This Consent Order shall not be construed as a covenant not to sue, or as a release, waiver or limitation of any rights, remedies, powers and/or authorities, civil or criminal, which EPA has under RCRA, CERCLA, or any other statutory, regulatory or common law authority.

C. Compliance by Respondent with the terms of this Consent Order shall not relieve Respondent of its obligations to comply with RCRA or any other applicable local, state, and/or federal laws and regulations.

D. The signing of this Consent Order and Respondent's consent to comply shall not limit or otherwise preclude EPA from taking additional enforcement action pursuant to RCRA, including but not limited to Section 3013 of RCRA, 42 U.S.C. § 6934, or any other authority, should EPA determine that such action is warranted, nor shall it preclude Respondent from raising any defenses available to it to defend against such additional enforcement action subject to its consent to jurisdiction pursuant to Section I.D. (Jurisdiction) of this Order for purposes of enforcing this Order.

E. This Consent Order is not intended to be, nor shall it be construed as, a permit. This Consent Order does not relieve Respondent of any obligation to obtain and comply with any local, state, or federal permit or approval.

F. EPA reserves the right to perform any portion of the work consented to herein or any additional site characterization, feasibility study, and response/corrective actions it deems necessary to protect public health or welfare or the environment, except, however, EPA agrees not to perform any portion of the work consented to herein provided that Respondent is in compliance with the terms of this Consent Order. Subject to the above, EPA may exercise its authority under RCRA, CERCLA or any other authority to undertake or require the performance of response actions at any time, including circumstances in which there may be an imminent and substantial endangerment to public health and/or the environment. EPA reserves the right to seek reimbursement from Respondent for costs incurred by the United States in connection with any such response actions. Notwithstanding compliance with the terms of this Consent Order, Respondent is not released from liability, if any, for the costs of any response actions taken by EPA. Respondent reserves all rights and defenses it may have with respect to any such action by EPA, and makes no admission of liability as to such action by EPA.

G. EPA reserves whatever rights it may have under CERCLA or any other law, or in equity, to recover from Respondent any costs incurred by EPA in overseeing the implementation of this Consent Order. Respondent reserves all rights and defenses it may have to any such action by EPA and makes no admission of liability as to such action by EPA.

XVII. OTHER CLAIMS

Nothing in this Consent Order shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person, firm, partnership, or corporation, or other entity for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous constituents, hazardous substances, hazardous wastes, solid wastes, pollutants, or contaminants found at, taken to, or taken from the Facility.

XVIII. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to this Consent Order shall be undertaken in accordance with the requirements of all applicable local, state, and federal laws and regulations. Respondent shall obtain or require its authorized representatives to obtain all permits and approvals necessary under such laws and regulations.

XIX. INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

Respondent agrees to indemnify and save and hold harmless the United States Government, its agencies, departments, agents, and employees, from any and all claims or causes of action arising from or on account of acts or omissions of Respondent or its agents, independent contractors, receivers, trustees, and assigns in carrying out activities required by this Consent Order. This indemnification shall not be construed in any way as affecting or limiting the rights or obligations of Respondent or the United States under their various contracts. The United States shall not be deemed to be a party to any contract entered into by Respondent for the purpose of carrying out any activities required by this Consent Order.

XX. NOTICE OF NON-LIABILITY OF EPA

EPA shall not be deemed a party to any contract involving Respondent and relating to activities at the Facility and shall not be liable for any claim or cause of action arising from or on account of any act, or the omission of Respondent, its officers, employees, contractors, receivers, trustees, agents or assigns, in carrying out the activities required by this Consent Order.

XXI. SUBSEQUENT MODIFICATION

A. Except as provided in Paragraph C of this Section XXI, below, this Consent Order may be amended only by mutual agreement of EPA and Respondent. Any such amendment shall be in writing, shall be signed by an authorized representative of each party, shall have as its effective date the date on which it is signed by EPA, and shall be incorporated into this Consent Order.

B. Any reports, plans, specifications, schedules, other submissions and attachments required by this Consent Order are, upon written approval by EPA, incorporated into this Consent Order. Except as otherwise determined pursuant to the procedures in Section XIV (Dispute Resolution) and Section XV (Force Majeure and Excusable Delay), above, any noncompliance with such EPA-approved reports, plans, specifications, schedules, other submissions, and attachments shall be considered a violation of this Consent Order and shall subject Respondent to the stipulated penalty provisions included in Section XIII, "DELAY IN PERFORMANCE/STIPULATED PENALTIES."

C. Minor modifications in the studies, techniques, procedures, designs or schedules utilized in carrying out this Consent Order and necessary for the completion of the project may be made by written agreement of the Project Coordinators. Such modifications shall have as an effective date the date on which the agreement is signed by the EPA Project Coordinator.

D. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by Respondent shall be construed as relieving Respondent of its obligation to obtain written approval, if and when required by this Consent Order.

XXII. SEVERABILITY

If any provision or authority of this Consent Order or the application of this Consent Order to any party or circumstance is held by any judicial or administrative authority to be invalid, the application of such provision to other parties or circumstances and the remainder of this Consent Order shall not be affected thereby and shall remain in full force.

XXIII. TERMINATION AND SATISFACTION

EPA, in its sole discretion, not subject to Section XIV (Dispute Resolution), upon receipt of a written request from Respondent, setting forth Respondent's justification that either the terms of this Consent Order have been met or that a no further action determination is necessary, may terminate this Consent Order. The provisions of this Consent Order shall be deemed satisfied upon Respondent's receipt of written notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Consent Order, including any

additional tasks determined by EPA to be required pursuant to this Consent Order, have been satisfactorily completed. This notice shall not, however, terminate Respondent's obligation to comply with any continuing obligations hereunder including, but not limited to, Sections X ("RECORD PRESERVATION"), XVI ("RESERVATION OF RIGHTS"), XVII ("OTHER CLAIMS"), XVIII ("OTHER APPLICABLE LAWS"), and XIX ("INDEMNIFICATION OF THE UNITED STATES GOVERNMENT").

XXIV. ATTORNEYS' FEES

The Respondent shall bear its own costs and attorneys fees.

XXV. EFFECTIVE DATE

The effective date of this Consent Order shall be the date on which a fully executed true and correct copy of this Consent Order is received by Respondent.

IT IS SO AGREED AND ORDERED:

DATE: 6-21-02

BY: Maria Pausi Vicars for
JAMES J. BURKE
DIRECTOR OF THE WASTE AND CHEMICALS
MANAGEMENT DIVISION
UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, REGION III

DATE: 6/14/02

BY: Steven Ziegfeld
W.R. GRACE & CO.-CONN.
STEVEN ZIEGFELD
SITE MANAGER
CURTIS BAY WORKS

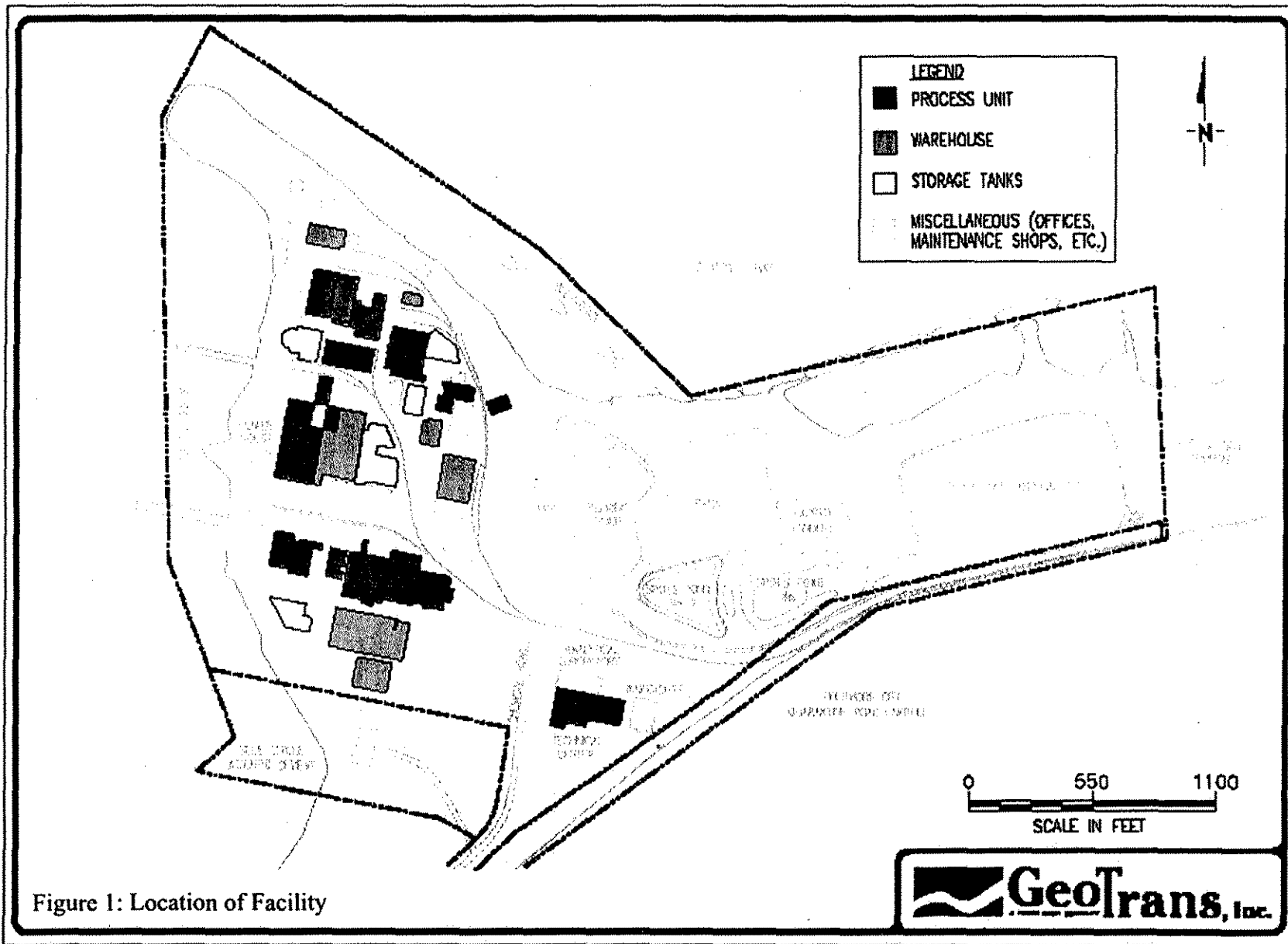


Figure 1: Location of Facility

ATTACHMENT 2

Final Decision and Response to Comments
(FDRTC) issued September 4, 2014



UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION III

FINAL DECISION AND RESPONSE TO COMMENTS

**W.R. GRACE & COMPANY-CONN.
BALTIMORE, MARYLAND**

EPA ID NO. MDD 001710227

September 2014

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Figure 1 Facility Location Map

Figure 2 Facility Map

Figure 3 Monitoring Well Location Map

I. Introduction

The United States Environmental Protection Agency (EPA) is issuing this Final Decision and Response to Comments (FDRTC or Final Decision) selecting the Final Remedy for the W.R. Grace Facility located at 5500 Chemical Road in Baltimore County, Maryland, (hereinafter referred to as the Facility). The Final Decision is issued pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. Sections 6901, *et seq.* EPA's final remedy for the Facility consists of engineering controls consisting of fencing and controlled access, land use controls limiting groundwater use and managing soil exposure, and a monitoring program for groundwater, sediment and pore water.

On July 17, 2014, EPA issued a Statement of Basis (SB) in which EPA proposed a remedy for the Facility. EPA held a thirty (30)-day public comment period which began on July 17, 2014 and ended on August 16, 2014. The only comments EPA received during the public comment period were submitted by the owner of the Facility.

EPA has determined that it is not necessary to make significant modifications to the proposed remedy as set in the SB. Based on comments received during the public comment period EPA is, however, making minor modifications to the SB as described in more detail in Attachment A, EPA Response to Comments. This Final Decision and the remedy selected herein incorporates those minor modifications and clarifications.

II. Facility Background

A. Site History

The Facility is located at 5500 Chemical Road in Baltimore County, Maryland, on approximately 110 acres. It occupies a portion of the southern shoreline of Curtis Bay and the adjacent Sleds Point Peninsula, which separates Curtis Bay to the east from Curtis Creek to the west (Figure 1). The Facility is located in a historically heavily industrialized area that is zoned for industrial use. Adjacent to the Facility to the east is US Gypsum Company and to the south are a cement company, Baltimore City Quarantine Road Landfill, a medical waste treatment facility, and a material recycling facility.

The Facility has been the site of inorganic chemical manufacturing operations since approximately 1909. Prior to that time, the Facility was not in industrial use. The principal product lines manufactured at the Facility through its operating history include sulfuric acid, phosphate fertilizer, amorphous silica gel, zeolites, alumina, and catalyst products. In addition, from May 1956 to early 1957, Grace processed monazite sands to extract thorium and rare earths for the U.S. government.

Grace is currently a manufacturing facility for silica-based absorbents and related products, polyolefin catalysts used in manufacturing of plastics, and fluid cracking catalysts used in petroleum refining. The Facility consists of an approximately 55-acre Manufacturing Area located on a peninsula extending to Sleds Point and a Non-Manufacturing Area of approximately equal size extending along the shoreline east of the Manufacturing Area.

The Manufacturing Area consists of production facilities, warehousing facilities, maintenance shops, and administrative buildings, and historically has been the only portion of the Facility within which manufacturing operations have occurred. The Manufacturing Area also includes a 9-acre parcel referred to as the "former Estech area". This area was formerly used by the Estech General Chemical Company for the manufacture of organic phosphates and chlorinated hydrocarbon pesticides in the 1950s and 1960s. Grace acquired the property in the mid-1970s.

The Non-Manufacturing Area includes six unlined disposal units including Herring Pond, Spoils Pond No. 1, Spoils Pond No. 2, Radioactive Waste Disposal Area (RWDA), a capped landfill, and a historical filter cake disposal cell and one lined unit – the new filter cake disposal cell expansion. Grace uses Herring Pond, the spoils ponds, and the new filter cake disposal cell for the management and disposal of Facility water treatment plant residuals. The RWDA and the capped landfill are inactive units.

The RWDA was placed in the Formerly Utilized Sites Remedial Action Program (FUSRAP). The United States Army Corps of Engineers (USACE) Baltimore District and Grace are jointly conducting FUSRAP remedial actions at the RWDA. The RWDA is excluded from Facility RCRA corrective actions.

The capped landfill was closed in accordance with requirements of the Maryland Department of the Environment (MDE). Evaluation of the conditions of the landfill concluded that there was no need for additional requirements beyond compliance with MDE closure requirements.

B. Site Geology and Hydrogeology

Data from soil borings and monitoring wells collected during the RCRA Facility Investigation (RFI) indicate that the Facility is underlain mainly by fill material, Quaternary lowland estuarine silt and clay deposits, and silty sand deposits belonging to the Patapsco Formation. The fill material consists of poorly-sorted sand and gravel, silt, clay, concrete, brick, wood, and other random debris and ranges in thickness from zero to over 20 feet. The greatest fill thicknesses occur in the ball field area south of Spoils Pond 2 and along the northeastern shoreline and southwestern shorelines of the Manufacturing Area. The fill thickness is highly variable in the Non-Manufacturing Area. Much of the central Manufacturing Area is underlain by fill averaging five feet in thickness.

Underlying the Facility the contact between the Patapsco Formation and the Arundel Clay is approximately 100 feet below ground surface (bgs) and the contact between the Arundel Clay and the Patuxent Formation is approximately 250 feet bgs. The Patapsco Formation is comprised of irregularly distributed beds of sand, gravel, sandy clay, and clay derived mainly from the Piedmont Plateau to the west and northwest. Regionally, the Patapsco is a major water-bearing unit consisting of approximately 30% sand and gravel, but locally it is mostly sand, silty sand, and clay. The Arundel Clay underlies the Patapsco Formation and consists primarily of red to yellow dense, plastic clay with thin lenses of silty clay. Due to its high clay content, Arundel Clay acts as a confining unit for the underlying Patuxent Formation, which is a major water-bearing unit.

The Patuxent and Patapsco aquifers are the two primary sources of groundwater in the vicinity. The Patuxent aquifer is used extensively as a fresh water source in Baltimore and Anne

Arundel counties. However, there are no active withdrawal permits or domestic wells within a one-mile radius of the Facility. In general, the Patapsco aquifer consists of sand and silty sand with discontinuous lenses of gravel, silt, and clay that occur throughout the aquifer without any discernible spatial correlation. In the western half of the Manufacturing Area, a shallow clay unit with a maximum thickness of approximately 30 feet separates the Patapsco aquifer into upper and lower water bearing units. Where present, this clay unit acts as a semi-confining unit that separates a thin zone of shallow groundwater from the deeper portion of the aquifer. Based on differences between the groundwater quality data collected from above and below the Manufacturing Area clay unit, this clay unit forms a semi-confining unit separating the shallow portion of the aquifer from the underlying portion in that area.

Groundwater discharges to either Curtis Bay or Curtis Creek. A local groundwater mound, present in the Manufacturing Area, is centered near the southwestern corner of the Manufacturing Area and may be the result of subsurface leakage from the fire protection system operated by the plant. Groundwater in the Manufacturing Area flows eastward and northeastward toward Herring Pond and Curtis Bay, westward and southwestward toward Curtis Creek, and southward toward groundwater monitoring well GM-23S.

III. Summary of Environmental History

In June 2002, Grace and the EPA entered into an Administrative Order on Consent (“Consent Order”), Docket No. RCRA-03-2002-0063, prepared under Section 3013 of RCRA. Pursuant to Section VI.C of the Consent Order, Grace developed and submitted to EPA a RCRA Facility Investigation (RFI) Workplan (GeoTrans, 2006). The RFI Workplan was approved by EPA, May 11, 2006 and subsequently implemented by Grace, with an RFI Report (GeoTrans, 2008) submitted in May 2008. Grace completed the baseline human health risk assessment (HHRA) and submitted a HHRA Report (Tetra Tech GEO, 2012) in November 2012 to EPA. On December 19, 2012, EPA approved both the RFI Report and the HHRA Report.

Based on subsequent discussions with EPA, Grace developed and submitted to EPA on April 26, 2013 a work plan for focused soil excavation in select areas of the Facility. Following EPA’s approval of the work plan on May 6, 2013, Grace completed focused soil excavation activities in December 2013 and January 2014 (Geosyntec, 2014). Based upon the information developed in the RFI, HHRA, and focused soil excavation, Grace prepared and submitted a Corrective Measures Study (CMS) in accordance with EPA Region III’s guidance on the Scope of Work for a CMS (Geosyntec, 2014). The CMS presented an evaluation of corrective action alternatives and recommended corrective measures for the Facility. The CMS was approved without comments on June 23, 2014.

A. RCRA Facility Investigations

Extensive data were collected for site-wide characterization of soil, groundwater, sediment, and pore water within the sediment for the development of the RFI. In addition, benthic macroinvertebrates were counted and benthic invertebrate tissues were sampled to support an ecological risk assessment. Soil gas sampling was conducted in the area adjacent to the Former Burn Pit Area (FBPA) to assess potential vapor intrusion of adjacent buildings. One objective of the RFI was to collect characterization data to support the evaluation of human health and/or ecological risk related to the site environmental conditions. For the development of the HHRA, EPA Region 3 Risk-Based Concentrations (RBC) for Residential Soil and residential Regional Screening Levels (rRBC), both with values adjusted for Hazard Index (HI)

of 0.1, were used as conservative screening levels.

Manufacturing Area

Soil samples detected with Constituents of Potential Concern (COPC) concentrations above the screening levels were generally distributed across the Facility without recognizable patterns. This observed distribution is indicative of historic placements of fill over broad areas, and to the naturally occurring presence of metals in regional soils. Metals are a principal constituent group detected above screening concentrations in soils. The metals with the most frequent exceedances of screening levels include arsenic, cobalt, iron, chromium (VI), and vanadium. For non-metal COPCs, polycyclic aromatic hydrocarbons (PAHs), particularly benzo(a)pyrene, were the constituents detected with the most frequent exceedances of screening levels. Although COPCs were detected in both surface soil (0 to 3 feet bgs) and subsurface soil (deeper than 3 feet bgs), concentrations detected in the subsurface soil samples were generally lower than those in the surface soil samples.

Overall, the extent of elevated soil concentrations has been delineated and defined laterally by the extent of historic fill and manufacturing activity. For surface soil samples (0 to 3 feet bgs) collected in this area, arsenic concentrations were above the screening level (0.43 mg/kg) in all samples. The maximum arsenic concentration (1,360 mg/kg at location SB-29) was more than three orders of magnitude greater than the screening level. In subsurface soil samples (deeper than 3 feet) collected in this area, arsenic was also the metal COPC with the highest exceedance frequency (number of samples with concentrations above screening level over total number of samples) at 100%. The focused soil excavation, described in III. E, included the removal of soil in the area of SB-29. The maximum arsenic concentration in the subsurface soil samples was 598 mg/kg at location SB-26 (3 to 6 feet bgs). Vanadium and iron were also detected in soil samples collected from this area with high exceedance frequency at 95% and 94%, respectively.

Non-Manufacturing Area

There were 13 metals detected above the screening levels in at least one soil sample collected in the Non-Manufacturing Area. Arsenic was detected with the greatest screening level exceedance frequency (100%) in this area. The maximum detected arsenic concentration was 3,930 mg/kg of a composite sample, TPC-1 collected at 25 ft bgs in the GM-8/SB-25 area. The maximum detected arsenic concentration associated with a discrete soil sample as considered by the HHRA was 532 mg/kg in the surface soil (0 to 1 foot bgs) collected at SB-12. The focused soil excavation, described in III. E, action included the removal of surface soil in the area of SB-12.

Vanadium and iron were also detected in soil samples collected from this area with high exceedance frequency at 100% and 91%, respectively.

B. Sediment and Pore Water

For the sediment evaluation, seven off-shore sampling stations and three reference sampling stations located at Ferry Point across Curtis Creek were established. All bulk sediment samples were enumerated for benthic macroinvertebrates and analyzed for metals, SVOCs, total organic carbon (TOC), and grain size. In addition, sediment pore water samples were collected from all locations and analyzed for dissolved metals. Constituent of Interest (COI) concentrations detected in bulk sediment samples were compared to the following:

The EPA Biological Technical Assistance Group Sediment Quality Guidelines (SQGs) for Region III; The Effects Range Median Sediment Quality Guidelines (originally published by National Oceanic and Atmospheric Administration and cited in MacDonald et al., 2000); and The “consensus-based” Probable Effect Concentration guidelines published by MacDonald et al. (2000).

The sediment sampling data were similar between Facility-related sediment sampling locations and the Reference locations, with some concentrations in both data sets above conservative sediment quality screening levels. The dissolved metal concentrations detected in pore water samples were compared to the ambient water quality criteria for chronic saltwater aquatic life. Most metals were below their respective ambient water quality criteria at most locations. The sediment analyses indicated that most of the benthic substrates were composed mainly of sand and fine silt, along with a small amount of gravel. Three major groups of marine invertebrates were detected: Polychaeta, Mollusca, and Crustacea. Based on analyses of various metrics of benthic community health and considering other data, the RFI concluded that the sediment adjacent to the Facility is similar in quality and supports equally healthy benthic communities as the off-site Reference locations. Therefore EPA concluded that there appears to be little to no apparent effect on the benthic community associated with COI concentrations detected in bulk sediments and pore water.

C. Groundwater

The lateral and vertical extent of groundwater was delineated during the RFI by screening monitoring well concentrations against residential Regional Tapwater Screening Levels. Based on the RFI data, no localized, discernible source area or plume is present at the Facility. Groundwater was characterized by metals detections above screening levels; arsenic is the primary groundwater COPC considering the detection frequency and degree by which the concentrations are above the screening level. For organic COPCs, concentrations greater than screening levels were sporadic in occurrence with the exception of the FBPA. Groundwater samples collected from monitoring well locations GM-31, GM-27S, and GP-18 at the northwest end of the Manufacturing Area contain the greatest number of exceedances. Based on the COPC screening results, the maximum arsenic concentration detected in a site monitoring well was 11,700 µg/L at P-9S, southwest of Herring Pond.

Two groundwater monitoring wells (GM-33S and GM-33D) are located within the FBPA. Fourteen metals were detected in groundwater samples collected in the FBPA at concentrations above their respective screening levels in one or more samples; however, VOCs and SVOCs were the primary COPCs in the FBPA groundwater. Forty-four non-metal COI were detected in the groundwater samples collected from FBPA at concentrations above their respective screening levels. Among these, 21 were VOCs, 18 were SVOCs, three were Aroclors, and two were pesticides. The sample collected from GM-33S was characterized by the greatest number of exceedances at 19. As with VOCs, the sample collected from GM-33S was detected with the greatest number of SVOC exceedances at 11.

Perimeter groundwater monitoring was performed at Grace in August 2006 and March 2007 and annually from February 2008 through February 2013. The monitoring wells included in the annual groundwater monitoring program were select wells located along the shoreline perimeter. The scope of annual monitoring (wells sampled and chemical constituents analyzed) was consistent with the Facility Quality Assurance Project Plan (QAPP) as amended by the

following:

EPA's letter dated 4 January 2008 (Subject: Proposed Modifications to the Groundwater Sampling Task [Geo Trans, Inc., 8/17/07] W.R. Grace & Co. – Conn., Baltimore, Maryland); and EPA's letter dated 11 January 2011 (Subject: Proposed Modifications to the Groundwater Sampling Task [Geo Trans, Inc., Response to Request for Additional Information, 1/6/11]).

Results of each annual groundwater monitoring event were submitted to EPA. Between 2008 and 2013, arsenic, cadmium, chromium, cobalt, copper, iron, lead, mercury nickel, vanadium, and zinc were detected at concentrations above their screening levels at least once. Each year, arsenic was the metal with the highest exceedance frequency, which was greater than 55%. During the most recent sampling event (February 2013), the maximum arsenic concentration was detected at location GM-28 (3,000 µg/L). Overall the magnitude and the number of arsenic exceedances have declined since 2008. The maximum concentration of arsenic decreased from 12,400 µg/L (GM-33D) in 2008 to 3,000 µg/L at GM-28 in 2013. The exceedance frequency of arsenic also decreased from 79% of the wells in 2008 to 56% in 2013. A similar observation was made for lead, with the maximum concentration of 1,240 µg/L at GM-33S in 2008 and 530 µg/L at GM-28 in 2013, and an exceedance frequency of 29% in 2008 and 17% in 2013.

Of the 52 VOCs included in the monitoring program, three VOCs [methylene chloride, perchloroethene (PCE), and trichloroethene (TCE)] were detected at concentrations above their screening levels each year since 2008. In addition, 15 VOCs were detected at concentrations above screening levels at least once between 2008 and 2013. During the February 2013 sampling event, one monitoring well (P-7D located to the north of Herring Pond) detected VOC concentrations above screening levels, including 1,2-dichloroethane, benzene, chloroform, methylene chloride, PCE, and TCE. Between 2008 and 2013, four SVOCs [2-Methylnaphthalene, bis(2-Chloroethyl) ether, Naphthalene, and Phenanthrene] were detected at concentrations above their screening levels every year at one or more sampling locations. Among these four SVOCs, bis(2-Chloroethyl) ether was the compound with the highest exceedance frequency (≥ 44%) in more than one sampling event. The maximum concentration of bis(2-Chloroethyl) ether detected in the February 2013 sampling event was 0.5 µg/L at P-7D.

D. Risk Assessment

A baseline HHRA was completed, and the HHRA Report (Tetra Tech, 2012) was submitted to and subsequently approved by EPA. In addition, an addendum (ARCADIS, 2011) to the RFI Report presenting the results of an evaluation of potential ecological risks associated with arsenic and lead in sediments was also approved by EPA. EPA conducted an assessment of potential ecological risk associated with uplands areas. For the development of the HHRA, a conservative screening process was established and used to screen the RFI data and identify the COI that could potentially present a credible and quantifiable risk to human health. The screening process was specific with respect to potential receptors, individual routes of potential exposure, and exposure scenarios that were first established and approved by EPA as the basis for the HHRA. The screening resulted in the identification of a total of 53 soil COPCs and 74 groundwater COPCs. The HHRA applied distinct exposure scenarios related to the surface soil (0 to 3 feet bgs) and the subsurface soil and groundwater (3 to 10 feet bgs).

Out of six exposure scenarios evaluated, the only one resulting in acceptable risk and hazard estimates was the adolescent trespasser for the Non-Manufacturing Area. All of the other

scenarios resulted in either unacceptable risk estimates ranging from 2.4E-4 to 4.8E-4, and/or unacceptable hazard indices ranging from 1.6 to 99.6. The largest contributor to Reasonable Maximum Exposure risk was arsenic with approximately 50% of the cancer risk and approximately 62% of the Hazard Index (HI). The major contribution for arsenic was from incidental soil ingestion. After completing the RFI and the risk assessments, a focused soil excavation, approved by EPA May 6, 2013, was performed to remove soils from select areas where elevated concentrations of arsenic, VOCs or SVOCs were detected (Section III. E). The soil removal was performed at four discrete areas, including the FBPA and the areas surrounding soil boring locations SB-28, SB-29, and SB-12. The soil excavation, disposal, and backfill activities were completed in December 2013 and January 2014 (Geosyntec, 2014). The soil removal action resulted in revised exposure point concentrations and revised risk assessment calculations, yielding calculated risk and HI within EPA's acceptable range for the current use of the Facility.

E. Focused Soil Excavation

The four excavation areas were selected based on data presented in the RFI Report (GeoTrans, 2008) and findings of the HHRA (Tetra Tech GEO, 2012), which indicated that (i) elevated concentrations of select VOCs and metals were present in the FBPA; and (ii) elevated concentrations of arsenic were present at SB-28, SB-29, and SB-12. The extent of excavation in the FBPA generally followed the extent of fill area characterized during the RFI. Excavation in the FBPA was to the groundwater table, in this area of the Facility, approximately 5 to 8 feet bgs. For each of the excavations in the vicinity of SB-28, SB-29 and SB-12, the excavation was to a depth of 3 feet bgs. Soil was excavated from target areas and disposed of off-site in accordance with the Soil Management Plan included in the approved work plan. The excavations were subsequently backfilled with pre-approved clean imported soil.

F. Ecological Risk Assessment

The assessment of risk to ecological receptors included consideration of the potential risk posed to terrestrial receptors, intertidal zone receptors, and receptors that inhabit the subtidal groundwater/surface water transition zone.

With regard to the assessment of risks to terrestrial receptors, EPA conducted a visit on July 27, 2005. Based on the results of this visit, EPA concluded that the ecological exposure pathways for the impacted terrestrial habitat of the Facility are either incomplete or do not pose an unacceptable risk (EPA, 2007).

The results obtained from the RFI sediment sampling, sediment pore water sampling, and benthic enumeration characterization provided data to characterize risks posed by the Grace Facility to the subtidal groundwater/surface water transition zone in the adjoining surface water bodies. The data suggest that Facility COIs in the sediment are not affecting the benthic community in a measurable way. Concentrations of COIs measured in pore water and sediment are generally comparable to reference area samples. Additionally, metrics of benthic population health are comparable between Facility sample locations and reference locations.

An evaluation of the potential risks to upper trophic level receptors from exposure to arsenic and lead in sediments in the vicinity of the Facility was conducted as part of the RFI. The evaluation was complemented by a potential food chain risk evaluation. Collectively the evaluations concluded that there was likely no potential risk to mammals or birds resulting from

the observed levels of arsenic and lead in bulk sediments or pore water near the Facility.

IV. Corrective Action Objectives

EPA has identified the following Corrective Action Objectives (CAO) for soils and groundwater at the Facility:

A. Soils

EPA has determined, that based on the facility specific risk assessment, that direct contact with soils do not pose an unacceptable risk for current industrial exposure scenarios for the entire Facility. However, surface and subsurface soils pose an unacceptable risk to hypothetical future construction workers and hypothetical future industrial workers for the entire Facility. Therefore EPA's CAO for Facility soils is to control exposure to the hazardous constituents remaining in the soils over the Facility specific risk assessment exposure point concentrations by requiring the compliance with and maintenance of land use restrictions and the implementation of engineering controls and a soil management plan.

B. Groundwater and Technical Impracticability

EPA expects final remedies to return usable groundwater to its maximum beneficial use, where practicable, within a timeframe that is reasonable. Where returning contaminated groundwater to its maximum beneficial use is not technically practicable, EPA generally expects facilities to prevent or minimize the further migration of a plume, prevent exposure to the contaminated groundwater, and evaluate further risk reduction. Technical impracticability (TI) for contaminated groundwater refers to a situation where achieving groundwater cleanup standards associated with final cleanup standards is not practicable from an engineering perspective. The term "engineering perspective" refers to factors such as feasibility, reliability, scale or magnitude of a project, and safety.

EPA has determined that restoration of groundwater to drinking water standards known as Maximum Contaminant Levels (MCLs) promulgated at 40 C.F.R. Part 141 pursuant to Section 1412 of the Safe Drinking Water Act, 42 U.S.C. Section 300g-1 at the Facility is technically impracticable for the following reasons:

- 1) COPCs (primarily arsenic) greater than screening levels are sporadic in occurrence;
- 2) Elevated COPC concentrations are present across the Facility as a result of historical practices for utilizing fill and are located in both soil and groundwater, without a localized, discernible source area;
- 3) There are no currently available remedial technologies capable of permanently restoring the groundwater to MCLs; and
- 4) Excavation (removal) of the fill is not feasible from an engineering or cost perspective given the areal extent and depth of the fill and the presence of manufacturing operations.

Therefore, EPA's Corrective Action Objectives for Facility groundwater are to control exposure to the hazardous constituents remaining in the groundwater and ensure that groundwater containing elevated concentrations of COPCs will not impact ecological receptors nor adjacent surface water bodies.

V. Final Remedy

The final remedy for the Facility consists of:

- 1) Establishment of a TI zone for groundwater with long term monitoring; and
- 2) Land and groundwater use restrictions.

A. Groundwater – Establishment of a TI Zone with Long Term Monitoring

Because of the constraints of no discernible plume of contamination and the particular hydrogeological conditions at the Facility, i.e., site-wide fill prohibiting source removal, EPA is proposing ongoing groundwater monitoring combined with groundwater use restrictions, sediment and pore water monitoring, along with the establishment of a TI Zone as the remedy that represents the best balance of the criteria that EPA considers when selecting a remedy. This remedy will be protective of human health and the environment. In addition, natural attenuation will continue to mitigate groundwater impacts to adjacent surface water bodies.

B. Land and Groundwater Use Restrictions

Because COPCs remain in the soil and groundwater at the Facility at levels that may result in risks of adverse health effects to hypothetical future construction workers above EPA's target risk levels, EPA's final remedy requires land and groundwater use restrictions for activities that may result in exposure to those contaminants.

EPA is proposing the following land and groundwater use restrictions be implemented at the Facility:

- a) All intrusive earth moving activities at the Facility, including excavation, drilling and construction activities, shall be conducted in compliance with the Facility-specific health and safety protocols and an EPA-approved Soil Management Plan (that includes appropriate Personal Protective Equipment requirements sufficient to meet EPA's acceptable risk and complies with all applicable OSHA requirements);
- b) Access restriction through the use and maintenance of fencing and controlled access (security gate);
- c) Groundwater at the Facility shall not be used for any purpose, including, but not limited to, use as a potable water source, other than to conduct the maintenance and monitoring activities required by EPA or other governmental parties; and
- d) The Facility shall not be used in a way that will adversely affect or interfere with the integrity and protectiveness of the final remedy.

The land and groundwater use restrictions necessary to prevent human exposure to contaminants at the Facility will be implemented through an order and/or an Environmental Covenant pursuant to the Maryland Environmental Covenant Act (Maryland Environment Code Annotated § 1-800). If EPA determines that additional maintenance and monitoring activities, land use controls, or other corrective actions are necessary to protect human health or the environment, EPA has the authority to require and enforce such additional corrective actions through an enforceable mechanism which may include an order or Environmental Covenant, provided any necessary public participation requirements are met.

VI. Evaluation of Final Remedy

This section provides a description of the criteria EPA used to evaluate the final remedy consistent with EPA guidance, "Corrective Action for Releases from Solid Waste Management Units at Hazardous Waste Management Facilities; Proposed Rule," 61 Federal Register 19431, May 1, 1996. The criteria are applied in two phases. In the first phase, EPA evaluates three decision threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, EPA then evaluates seven balancing criteria to determine which remedy alternative provides the best relative combination of attributes.

A. Threshold Criteria

- 1. Protect Human Health and the Environment** - This criterion is met without additional remedial actions with respect to current risk except for potential current construction workers. Implementation of the use restrictions will address the residual risk and will also protect hypothetical and future workers by eliminating or controlling potential exposure pathways, thus, reducing potential intake and contact of soil and groundwater COPCs by human receptors. The ecological risk assessment concluded that the Facility currently does not pose an unacceptable risk to the environment. The Facility will verify that current conditions remain the same by conducting ecological monitoring.
- 2. Achieve Media Cleanup Objectives** - EPA's final remedy meets the cleanup objectives appropriate for the expected current and reasonably anticipated future land use, which are risk-reduction. The objectives are to protect workers (hypothetical future construction worker) from potential exposures to Facility-related soil or groundwater constituents at levels that may result in risks of adverse health effects. Given the controlled access and use restrictions described in Section V.B, the final remedy will attain soil and groundwater objectives. Groundwater is not used for potable purposes within one mile of the Facility. The final remedy does not meet groundwater cleanup standards that would allow for the beneficial use of groundwater at the Facility. Because EPA has determined that achieving groundwater MCLs is technically impracticable, concentration specific cleanup goals for groundwater were not developed. The activity use restrictions will eliminate current and future unacceptable exposures to both soil and groundwater.
- 3. Control the Source of Releases** - In its RCRA Corrective Action remedies, EPA seeks to eliminate or reduce further releases of hazardous wastes or hazardous constituents that may pose a threat to human health and the environment. Controlling the sources of contamination relates to the ability of the remedy to reduce or eliminate, to the maximum extent practicable, further releases. Subsequent to the completion of the focused soil excavation, sampling results did not indicate localized, discernible source areas associated with the soil and groundwater conditions observed at the Facility. The results of both perimeter groundwater monitoring and sediment and porewater sampling did not indicate material effects of COPCs to the environment. The soil excavation has removed select soil COPCs in four areas reducing potential risks to within risk levels for current industrial workers. The control measures included in the final remedy, such as Soil Management Plan requirements and groundwater use restrictions, provide a mechanism to control and reduce potential further releases of COPCs by eliminating the potential for groundwater use and requiring proper planning associated with intrusive activities.

B. Balancing/Evaluation Criteria

1. **Long-Term Reliability and Effectiveness** - The final remedy will maintain protection of human health and the environment over time by controlling exposure to the hazardous constituents remaining in soils and groundwater. The long term effectiveness is high, as use restrictions are readily implementable and easily maintained. Given the historical, heavily industrial uses of the Facility and the surrounding area, including the presence of landfills, industrial land uses of this area and existing groundwater use restrictions are expected to continue in the long term.
2. **Reduction of Toxicity, Mobility, or Volume of Waste** - The completion of the focused soil excavation in select areas has reduced toxicity, mobility, and the volume of soil COPCs. The final remedy will not actively further reduce the toxicity, mobility, or volume of the soil COPCs. Groundwater COPCs have generally demonstrated a stable or decreasing trend in concentrations with time and this trend is likely to continue. The final remedy will avoid the short term risks associated with excavating and transporting large quantities of soil.
3. **Short-Term Effectiveness** - EPA's final remedy does not involve any additional activities, such as construction or excavation that would pose short-term risks to workers, residents, and the environment. The Facility is located in a heavily industrial zone, which is not densely populated, and the nature of contamination does not pose a fire or explosion hazard. There are existing control measures in place, including groundwater use restrictions and Facility-specific health and safety protocols and Soil Management Plan, which have been shown to be effective in protecting workers; therefore the final remedy's short-term effectiveness is high.
4. **Implementability** - EPA's final remedy is readily implementable. The remedy will be implemented using existing monitoring wells. The final remedy is easily implemented because Grace owns and operates the Facility. Some of the control measures included in the final remedy, including State groundwater use restrictions where public water supply is available and Facility-specific health and safety protocols and Soil Management Plan are already in place. The control measures are compatible with current Facility uses and operations, and can be implemented, maintained, and monitored effectively with a well-designed control plan.
5. **Cost** - The major cost components for the final remedy include the implementation of a monitoring and reporting program, and maintenance of existing control programs. Grace will develop a cost estimate for the EPA-approved corrective measures for the Facility as part of the design for Corrective Measures Implementation and to provide a basis for demonstrating financial assurance compliance. Based on EPA's best professional judgment, the final remedy is cost effective for the Facility.
6. **Community Acceptance** - Grace is a founding member of, and meets regularly with, the South Baltimore Community Advisory Panel to foster open dialogue with the community. There have been no known issues raised by the community regarding RCRA investigation efforts.
7. **State/Support Agency Acceptance** - MDE has been involved throughout the Facility investigation process. The use restrictions included in the final remedy are already in place and are generally recognized as commonly employed measures for long-term stewardship.

VII. Environmental Indicators

Under the Government Performance and Results Act (GPRA), EPA has set national goals to address RCRA corrective action facilities. Under GPRA, EPA evaluates two key environmental clean-up indicators for each facility: (1) Current Human Exposures Under Control and (2) Migration of Contaminated Groundwater Under Control. The Facility met these indicators on September 1, 2004, and July 12, 2005, respectively. The environmental indicators are available at <http://www.epa.gov/reg3wcmd/ca/md/webpages/mdd001710227.html>.

VIII. Financial Assurance

W.R. Grace will be required to demonstrate and maintain financial assurance for completion of the remedy pursuant to the standards contained in Federal regulations 40 C.F.R. § 264.145 and 40 C.F.R. § 264.143.

IX. DECLARATION

Based on the Administrative Record, EPA has determined that the Remedy as set forth in this Final Decision is appropriate and will be protective of human health and the environment.

Signature:



John Amstede, Director
Land and Chemicals Division
USEPA, Region III

Date:

9.4.14

- Attachment 1 Administrative Record File Index of Documents
- Attachment 2 EPA Response to Comments
- Attachment 3 Grace's comments on the Statement of Basis
- Figure 1 Facility Location Map
- Figure 2 Facility Map
- Figure 3 Monitoring Well Location Map

ATTACHMENT 1

W.R. GRACE & CO. – CONN.
BALTIMORE, MARYLAND
ADMINISTRATIVE RECORD FILE
INDEX OF DOCUMENTS

1. Letter from Diane Aijl, EPA, to Lidia Duff, W.R. Grace & Co. – Conn. Davison Chemical Division Curtis Bay Works, dated 6 June 2002, transmitting Administrative Order on Consent.
2. EPA, 2007. Terrestrial Habitat and Soil Contaminants at W.R. Grace Curtis Bay Works. November 20, 2007 Memorandum from Stephanie Dehnhard (EPA) to Paul Bucens (Remedium Group).
3. Letter from Erich Weissbart, EPA, to Paul Bucens, W.R. Grace & Co. – Conn., dated 23 June 2014, approving Facility-wide CMS.
4. Letter from Paul Bucens, W.R. Grace, to Erich Weissbart, USEPA, dated 21 May 2012, containing Analysis Results for the February 2011 Groundwater Sampling Round Conducted for the W. R. Grace & Co. – Conn. Curtis Bay Works RCRA Facility Investigation, May 27, 2011.
5. Electronic Communication from Mark Shupe, Geotrans, to Stephanie Denhard, USEPA, dated 30 May 2008, containing Analytical Results for the February 2008 Groundwater Sampling Round Conducted for the W. R. Grace & Co. – Conn. Curtis Bay Works RFI.
6. Electronic Communication from Mark Shupe, Geotrans, to Stephanie Denhard, USEPA, dated 28 May 2009, containing Analytical Results for the February 2009 Groundwater Sampling Round Conducted for the W. R. Grace & Co. – Conn. Curtis Bay Works RFI.
7. Electronic Communication from Mark Shupe, Geotrans, to Bill Wentworth, USEPA, dated 18 May 2010, containing Analytical Results for the February 2010 Groundwater Sampling Round Conducted for the W. R. Grace & Co. – Conn. Curtis Bay Works RFI.
8. ARCADIS, 2011. Revised Evaluation of Potential Food Chain Risks Associated with Arsenic and Lead in Sediments, Revised Addendum to the RCRA Facility Investigation Report, W.R. Grace & Co.-Conn. Curtis Bay Works Site, Baltimore, Maryland, March 2011.
9. Geosyntec Consultants, Inc. (Geosyntec), 2013. Voluntary Focused Soil Excavation Work Plan, Curtis Bay Works, Baltimore, Maryland, April 2013.
10. Geosyntec Consultants, Inc. (Geosyntec), 2014. Voluntary Focused Soil Excavation Field Notes and Contractor Submittals.
11. GeoTrans, 2002. Final Historical Data Review and Report of Groundwater Investigations to Support Environmental Indicator Determination for the W. R. Grace & Co. - Conn.,

Davison Chemical Division, Curtis Bay Works, Baltimore, Maryland. Prepared for W.R. Grace & Co.-Conn., February, 2002.

12. GeoTrans, 2003. Quality Assurance Project Plan for the RCRA Corrective Action Program at the W.R. Grace & Co. – Conn, Davison Chemical Division, Curtis Bay Works, Baltimore, Maryland, May 30, 2003.
13. GeoTrans, 2006. RCRA Facility Investigation Work Plan, Curtis Bay Works, W.R. Grace & Co. – Conn., Baltimore, Maryland Quality Assurance Project Plan.
14. GeoTrans, 2008. RCRA Facility Investigation Report for the W.R. Grace & Co.-Conn. Curtis Bay Works, Baltimore, Maryland, May 2008.
15. Tetra Tech GEO, 2011. Results of the Soil Gas Investigation in the Vicinity of the Former Burn Pit Area for the W.R. Grace & Co.-Conn. Curtis Bay Works, May 2011.
16. Tetra Tech GEO, 2012. Human Health Risk Assessment Report for the W.R. Grace & Co.-Conn. Curtis Bay Works, November 2012.
17. Geosyntec 2014 – Corrective Measures Study, Curtis Bay Works, Baltimore, Maryland, February 27, 2014.

ATTACHMENT 2

W.R. GRACE & CO. – CONN. BALTIMORE, MARYLAND EPA RESPONSE TO COMMENTS

During the comment period, EPA received comments from Paul Bucens of Grace on the Statement of Basis. Grace's comments and EPA's responses to those comments are set forth below.

Page 4 Section III 2nd Paragraph 3rd from Last Sentence

Suggest that a reference is added for the CMS at the end of this sentence (i.e. Scope of Work for a CMS (Geosyntec, 2014)" and that the reference is included in the administrative record index at page 15.

EPA's Response

EPA agrees and will make the change.

Page 5 Manufacturing Area, 2nd Paragraph

Please add "The focused soil excavation, described in III.E., included the removal of soil in the area of SB-29." Immediately before the sentence that begins "The maximum arsenic concentration in the subsurface soil..." This will eliminate the impression that the SB-29 soil remains onsite.

EPA's Response

EPA agrees and will make the change.

Page 5 Manufacturing Area, 2nd Paragraph

Please revise the last sentence to read "The focused soil excavation, described in III.E., included the removal of surface soil in the area of SB-12." This will enable ease of cross reference and consistency in terminology.

EPA's Response

EPA agrees and will make the change.

Page 7, 1st Paragraph, 1st Sentence

Please revise to read "Perimeter groundwater monitoring was performed at Grace in August 2006 and March 2007 and annually from February 2008 through February 2013." in order to include the two rounds of sampling performed on a semi-annual basis.

EPA's Response

EPA agrees and will make the change.

Page 7, 3rd Paragraph, 1st and 2nd Sentences

Please correct the two grammatical errors so the sentence reads “Results of each annual groundwater monitoring event were submitted to EPA. Between 2008 and 2013, arsenic, cadmium, chromium, cobalt, copper, iron, lead, mercury; nickel, vanadium, and zinc were detected at concentrations above their screening levels at least once.”

EPA’s Response

EPA agrees and will make the change.

Page 8, Section III.E.

Please revise the title to "Focused Soil Excavation" as this work was not performed as an Interim Measure as defined in the 2002 Consent Order.

EPA’s Response

EPA agrees and will make the change.

Page 8, Section III.F., 3rd Paragraph, 2nd Sentence

Please revise the sentence to read “The data suggest that the Facility COIs in sediment are not affecting the benthic community in a measurable way." Whether the constituents are present as a result of historic transport from the site, ongoing transport from the site or other sources is not defined. Further the overall quality of the sediment was assessed during the RFI, not just the effects of the “principal constituents”.

EPA’s Response

EPA agrees and will make the change.

Page 9, Section IV.A. 2nd Sentence

Please revise the sentence to read “However, surface and subsurface soils pose an unacceptable risk to hypothetical future construction workers and hypothetical future industrial workers for the entire Facility”. Similarly at Page 11, Section VI.A.1, the “and” should be removed from between “hypothetical” and “future”. This will ensure consistency with the risk assessment and references elsewhere in the Corrective Measures Study and this Statement of Basis.

EPA’s Response

EPA agrees and will make the change.

Page 9, Section IV.B., Bullet 4)

Please revise the bullet to read “Excavation (removal) of the fill is not feasible from an engineering or cost perspective given the areal extent and depth of the fill and the presence of manufacturing operations.”

EPA’s Response

EPA agrees and will make the change.

Page 10, Section V.B., 1st Paragraph

Please revise to read “Because COPCs remain in the soil and groundwater at the Facility at levels that may result in risks of adverse health effects to hypothetical future construction workers above EPA's target risk levels, EPA's proposed remedy requires land and groundwater use restrictions for activities that may result in exposure to those contaminants.” This has been slightly reordered to improve clarity of the text.

EPA's Response

EPA agrees and will make the change.

Page 10, Section V.B., Bullet a)

Please insert “intrusive” after “All”. This clarifies that soil management applies to disturbance of in place soil rather than import and placement of clean fill and is consistent with VI.A.3 (remedy evaluation).

EPA's Response

EPA agrees and will make the change.

Page 10, Section V.B., Bullet c)

Please insert “or other governmental parties (i.e. groundwater well monitoring associated with the MDE landfill permit)” after “required by EPA”. This clarifies that other activities on site, such as MDE required monitoring, remediation or construction work may require groundwater “use” such as sampling or extraction for safe and efficient excavation dewatering.

EPA's Response

EPA agrees and will make the change.

Page 11, Section VI.A.1., Last Sentence

Please revise the text to “The Facility will verify that current conditions remain the same by conducting ecological monitoring.” “Verify” is suggested in place of “ensure” as the monitoring will only provide data.

EPA's Response

EPA agrees and will make the change.

ATTACHMENT 3



Paul G. Bucens
Project Manager
Environment, Health and Safety

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62 Whittemore Avenue
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August 12, 2014

Mr. Erich Weissbart
U.S. Environmental Protection Agency – Region III
Land and Chemicals Division
Environmental Science Center
701 Mapes Road
Fort Meade, MD 20755

**RE: Grace Comments on Statement of Basis dated July 2014
W.R. Grace & Co.-Conn., Grace Davison Curtis Bay Works, Baltimore, MD
Administrative Order on Consent
U.S. EPA Docket No. RCRA-03-2002-0063**

Dear Mr. Weissbart:

Grace has received and reviewed the referenced Statement of Basis issued by U.S. EPA for public comment. The following provides Grace's comments:

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Please revise to read “Because COPCs remain in the soil and groundwater at the Facility at levels that may result in risks of adverse health effects to hypothetical future construction workers above EPA’s target risk levels, EPA’s proposed remedy requires land and groundwater use restrictions for activities that may result in exposure to those contaminants.” This has been slightly reordered to improve clarity of the text.

Page 10, Section V.B., Bullet a)

Please insert “intrusive” after “All”. This clarifies that soil management applies to disturbance of in place soil rather than import and placement of clean fill and is consistent with VI.A.3 (remedy evaluation).

Page 10, Section V.B., Bullet c)

Please insert “or other governmental parties (i.e. groundwater well monitoring associated with the MDE landfill permit)” after “required by EPA”. This clarifies that other activities on site, such as MDE required monitoring, remediation or construction work may require groundwater “use” such as sampling or extraction for safe and efficient excavation dewatering.

Page 11, Section VI.A.1., Last Sentence

Please revise the text to "The Facility will verify that current conditions remain the same by conducting ecological monitoring." "Verify" is suggested in place of "ensure" as the monitoring will only provide data.

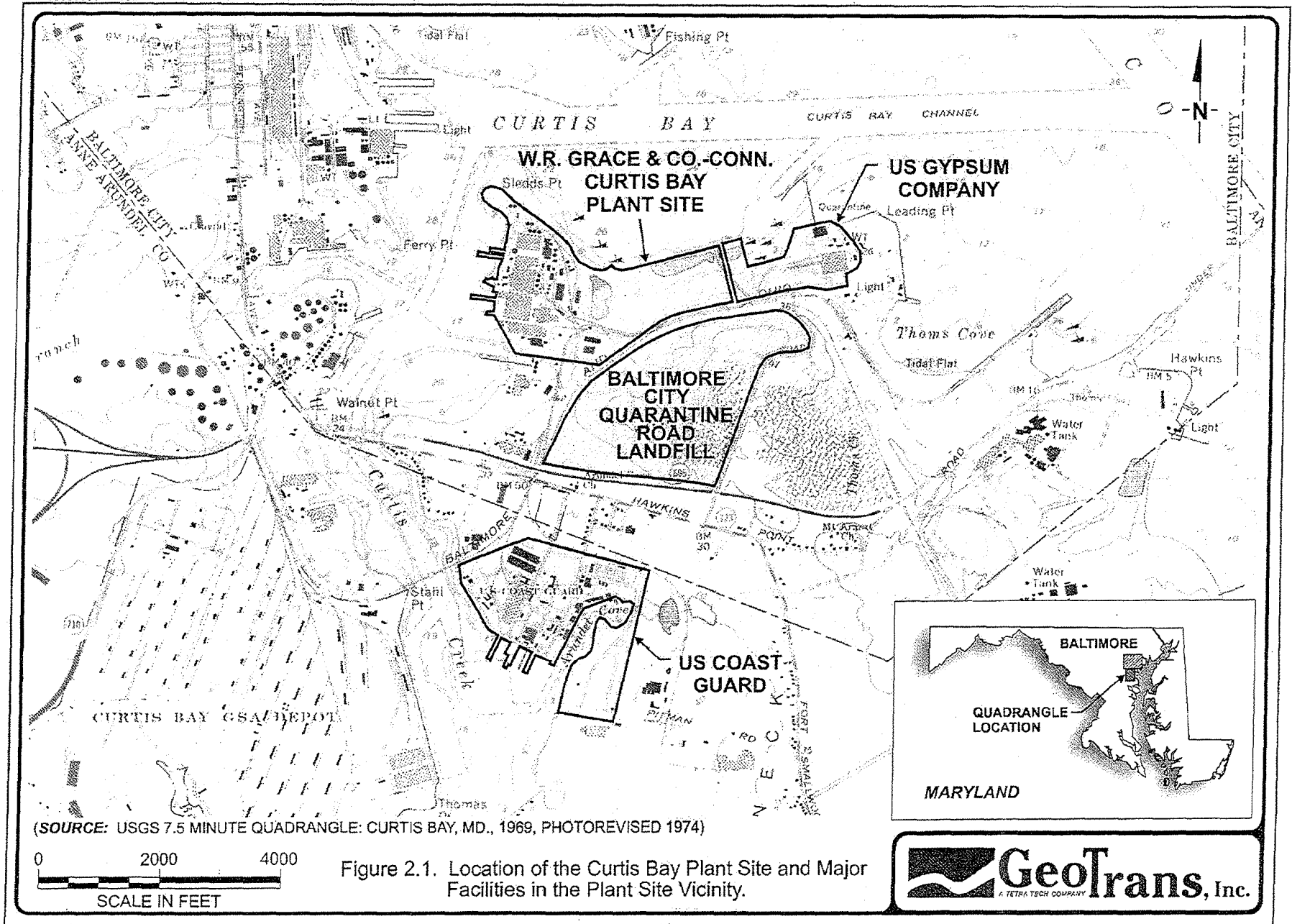
Please do not hesitate to call (617 498 2667) or e-mail (paul.g.bucens@grace.com) me if you have any questions related to this project.

Sincerely,



Paul Bucens, P.E.
Project Manager

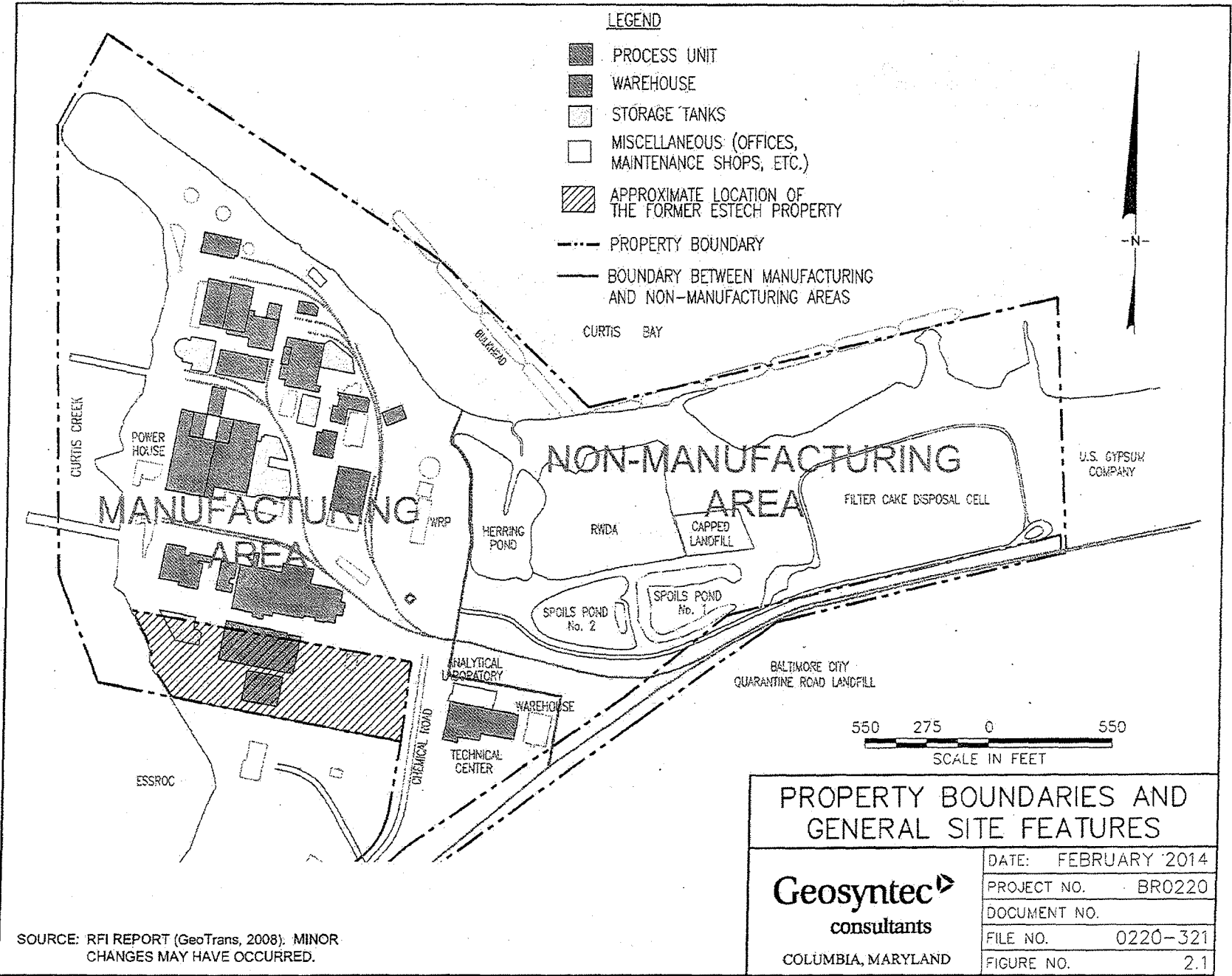
cc: K. Krammer, Grace Curtis Bay Works
L. Duff, Grace Legal
J. Wang, Geosyntec
E. Hammerberg, MDE



(SOURCE: USGS 7.5 MINUTE QUADRANGLE: CURTIS BAY, MD., 1969, PHOTOREVISED 1974)

Figure 2.1. Location of the Curtis Bay Plant Site and Major Facilities in the Plant Site Vicinity.





SOURCE: RFI REPORT (GeoTrans, 2008). MINOR CHANGES MAY HAVE OCCURRED.

