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REPORT

Interim Remedial Measure Final Report for Operable Unit 2 Envirotek II Site

Technical Committee
Participating Potentially Responsible Parties

Tonawanda, New York

January 2004

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

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INTERIM REMEDIAL MEASURES FINAL REPORT FOR OPERABLE UNIT 2

ENVIROTEK II SITE (NYSDEC SITE #915056) TONAWANDA, NEW YORK

Envirotek II Site Potentially Responsible Parties Group

CERTIFICATION STATEMENT

I certify that this document and all attachments were prepared in accordance with the *Operable Unit No. 2* (OU-2) *Interim Remedial Measures* (IRM) *Work Plan* (Blasland, Bouck & Lee, Inc., April 2003) and the Administrative Order on Consent (AOC), Index #B9-0407-92-05, entered into between the Envirotek II Site Potentially Responsible Parties Group and the New York State Department of Environmental Conservation (NYSDEC), with an effective date of August 20, 1998. The requirements of the IRM OU-2 Work Plan are specified in Section V of the AOC and the NYSDEC *Technical and Administrative Guidance Memorandum #4042: Interim Remedial Measures*. Based on my review of the above-referenced documents, as well as those referenced in this attached document, the *Interim Remedial Measures* (IRM) *Final Report for Operable Unit 2* (December 2003), is to the best of my knowledge and belief, true, accurate, and complete.

Joseph Molina III, P.E.
BLASLAND, BOUCK & LEE, INC.

1/9/04
Date

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1. Introduction

1.1 General

Blasland, Bouck & Lee, Inc. (BBL) has prepared this *Interim Remedial Measures* (IRM) *Final Report for Operable Unit 2* (IRM Final Report for OU-2) to summarize the IRM activities conducted for OU-2 at the Envirotek II Superfund Site (site) located at 4000 River Road in the Town of Tonawanda, Erie County, New York. This report has been prepared on behalf of the Envirotek II Site Potentially Responsible Parties (PRP) Group implementing the Administrative Order on Consent (AOC), Index #B9-0407-92-05, which was issued by the New York State Department of Environmental Conservation (NYSDEC) on August 20, 1998.

The OU-2 IRM activities were performed at the site in accordance with the AOC and the *Interim Remedial Measures Work Plan for Operable Unit 2* (IRM OU-2 Work Plan) (BBL, April 2003), which was conditionally approved by the NYSDEC in a letter dated August 18, 2003, and approved by BBL's follow-up September 16, 2003 response letter (Appendix A1). The objectives established in the OU-2 IRM Work Plan consisted of the following:

- to remove volatile organic compound- (VOC-) impacted soil from the former Envirotek operations area to, or approaching, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046 – Determination of Soil Cleanup Objectives and Clean Levels for VOCs (NYSDEC TAGM #4046 soil cleanup objectives for VOCs); and

- to eliminate the migration of VOC constituents of concern that are associated with former Envirotek operations from the Spill Discharge Area (SDA)/source area soil to the shallow groundwater, to allow for the restoration of groundwater through monitored natural attenuation (MNA).

The OU-2 IRM activities implemented at the site to achieve these objectives consisted of the following:

- excavating VOC-impacted soils for appropriate management, which included reuse for backfilling excavated areas, and if not acceptable, transportation and offsite disposal;

- managing remediation-generated debris and waste materials for transportation and offsite disposal at approved disposal facilities;

- collecting soil samples to provide sufficient analysis of impacted materials to determine the potential reuse of site soils for backfill. The established soil cleanup goal for the IRM which was to meet or approach NYSDEC TAGM #4046 soil cleanup objectives for VOCs;

- collecting post excavation soil samples to determine the final limits of excavation to meet the established soil cleanup goal for the IRM which was to meet or approach NYSDEC TAGM #4046 soil cleanup objectives for VOCs;

- monitoring for health and safety provisions during the performance of IRM activities; and

- backfilling excavated areas and restoring the site.

A meeting to discuss the implementation of future IRM activities at the site was held between BBL, the NYSDEC, and the New York State Department of Health (NYSDOH) on February 3, 2003. BBL summarized

the key points of this meeting and provided a project schedule in a letter to the NYSDEC dated February 14, 2003 (Appendix A2). In this letter, the concept of classifying varying media at the site as operable units was discussed, with the following operable units being defined for the site:

- Operable Unit No. 1 (OU-1) – Waste Material Present in the Boiler House and Waste Pit No. 6;
- Operable Unit No. 2 (OU-2) – VOC-Impacted Soil; and
- Operable Unit No. 3 (OU-3) – Groundwater.

Each dedicated operable unit assigned for the site can now be managed independently and be more effectively addressed when the NYSDEC subsequently prepares the Proposed Remedial Action Plan (PRAP) and Record of Decision (ROD) for the site. As discussed previously, the purpose of this report is to summarize the OU-2 IRM activities that were recently completed at the site.

1.2 Site Location

The site consists of a 2.5-acre parcel of land located within the 50-acre Roblin Steel complex (NYSDEC Site #915056) at 4000 River Road in the Town of Tonawanda, Erie County, New York. A map identifying the approximate location of the Roblin Steel complex is presented on Figure 1. Figure 2 presents a site plan of the Roblin Steel complex, showing that it is in an industrialized area along River Road, and identifies the 2.5-acre Envirotek II site. The Roblin Steel complex (Figure 2), which is presently owned by Niagara River World, Inc. (NRW), is bounded on the west by the Niagara River, on the east by River Road, on the south by Marathon Oil, and on the north by a facility under investigation by the NYSDEC, referred to as the River Road Site (NYSDEC Site #915031).

1.3 Site History and Background

The history of the site is interrelated with the history of the Roblin Steel complex, as the site was formerly leased from Roblin Steel for industrial use. Between August 1981 and June 1989, Envirotek Ltd. (Envirotek) operated a solvent recovery operation at the site located within the Roblin Steel property.

A review of the Roblin Steel property history indicates that industrial steel production activities have been associated with the property since the early 1900s. Prior to development of the property, a section of the Erie Canal along River Road was filled with unspecified materials. In addition, Rattlesnake Creek, which formerly ran through the Roblin Steel property, was backfilled with slag and other materials to bridge Rattlesnake Island with the main property. Because areas of the Roblin Steel property were located in seasonal floodplains, those low areas were filled with slag and other industrial debris to raise the site grade. The property was developed in the early 1900s for the production of steel by the Wickwire Spencer Steel Company (Wickwire). In 1945, the property was sold to the Colorado Fuel and Iron Corporation (Colorado F&I), which subsequently merged with Wickwire and was operated by Colorado F&I until it went bankrupt in 1963. In the mid- to late 1960s, Roblin Steel purchased the property and used it primarily for storage. Roblin Steel also subleased portions of the property to various other companies, including, but not limited to, the following: Ascension Chemical, Rupp Rental, Freightways Transportation, Envirotek, and Booth Oil.

In 1984, the NYSDEC issued a Resource Conservation and Recovery Act (RCRA) Part B permit to Envirotek to operate as a hazardous waste treatment, storage, and disposal facility (TSDF). After violations of this permit in

1985, including improper waste characterization, RCRA drum handling violations, and lack of insurance and financial assurance, Envirotek entered into a Consent Order with the NYSDEC that required a reduction of Envirotek's hazardous waste inventory.

In 1988, Envirotek submitted a Facility Closure Plan to the NYSDEC to remove and dispose of all materials remaining onsite and to take measures to decontaminate the property. The NYSDEC's review determined that the plan was unacceptable, citing inaccurate closure costs and the use of unqualified personnel to implement the closure as reasons for rejecting the plan.

On February 2, 1989, Envirotek filed a petition under Chapter 11 of the Bankruptcy Code in the United States Bankruptcy Court of the Western District of New York. The current owner of the property, NRW, evicted Envirotek in June 1989, at which time Envirotek abandoned the facility. The NYSDEC formally revoked Envirotek's RCRA Part B permit to operate on November 16, 1989, on the basis of Envirotek's inability to develop an acceptable Facility Closure Plan.

Following abandonment of the site, the United States Environmental Protection Agency (USEPA) inspected the site and confirmed the presence of abandoned and unsecured drums and containers, pits containing hazardous substances, and contaminated process vessels and tanks. Preliminary analysis of some of the materials suggested that corrosive, air-reactive, and metal-contaminated wastes, as well as oils and waste solvents, were present onsite. Many of the materials located onsite were flammable, with some known to be either acutely or chronically toxic.

As a result, the USEPA notified former Envirotek customers of their potential liability at the site and requested the performance of a removal action to control site conditions. On May 14, 1990, the USEPA entered into an AOC with site respondents to perform a removal action at the site (Removal Action AOC). The site boundaries, as defined in this Removal Action AOC, included the property once leased by Envirotek and the southeast portion of the hangar-like building that contained the aforementioned pits, which was located adjacent to the property once leased by Envirotek.

Under the Removal Action AOC, several tasks were completed by the site PRP Group, which included the following:

- Between June 1990 and November 1990, a removal action was implemented at the site that consisted of the characterization, removal, and transportation and offsite disposal of approximately 980 drums; 3,500 gallons of liquid wastes; 363 tons of solid wastes; and 146 lab pack containers, all of which had been stored in Buildings 13, 24, and 153.

- Between July 1990 and October 1990, a removal action was implemented at the site that consisted of the characterization, removal, and transportation and offsite disposal of waste materials that were formerly stored in Pits 1, 2, 3, 3A, 4, and 5; decontamination of the former pits; offsite transportation and disposal of decontamination water; and backfilling of the pits.

- Between June 1990 and January 1991, decontamination activities were performed at the site for various process vessels, tanks, buildings, and equipment.

- Between September 1990 and November 1990, BBL implemented a *Remedial Action Sampling Plan* (RASP) at the site to identify areas onsite, other than the SDA, at which spills or releases of chemical compounds may have occurred. The RASP also estimated the direction and rate of groundwater flow in the shallow overburden aquifer underlying the site, evaluated the nature of any chemical compounds in

groundwater that were associated with the former activities at the site, and provided a preliminary characterization of site conditions that would be the basis for evaluating whether further investigation and/or remediation of the site would be warranted. To accomplish these objectives, BBL performed a soil gas survey, installed and sampled site groundwater monitoring wells, analyzed groundwater samples for VOCs, and collected soil samples from the SDA.

The results of this investigation indicated the following:

- The soil gas survey indicated elevated levels of VOCs in the area of the SDA and in an area to the west of Building 153.

- The analytical results for the groundwater sampling indicated the presence of VOC-impacted groundwater associated with the site.

- The analytical results for the soil sampling indicated that there were elevated levels of chlorinated and aromatic VOCs, and that the soils containing the highest level of VOCs was located in the vicinity of the SDA.

- Following this removal action, BBL performed an evaluation of potential interim remedial alternatives for the SDA in March 1991.

- As a result of this evaluation, in May 1993, a removal action was implemented at the site that consisted of the removal of approximately 175 tons of impacted soil from the SDA. Soils with field headspace screening results greater than 1,000 units total volatile organic vapors were removed from this area. A polyethylene sheet was placed over the remaining soils in the excavation, and clean fill was placed over the polyethylene sheet. A 12-inch-diameter production well located near the Power Building was also abandoned during this field activity.

Additionally, in 1999 and 2001, BBL conducted a remedial investigation (RI) at the site to assess the onsite surface and subsurface soil quality, offsite subsurface soil quality, site groundwater quality, and site geologic and hydrogeologic characteristics. The results of the RI for the site are presented in the *Remedial Investigation Report* (RI Report) (BBL, 2002). Based on the results of the RI, the Envirotek II Site PRP Group recommended to the NYSDEC the following:

1. implementating an IRM to remove the Boiler House ink waste for offsite disposal; removing soil containing elevated levels of VOCs from Waste Pit No. 6, decontaminating the pit, and backfilling the pit with clean backfill; and disposal of all solid, liquid, and personal protection equipment (PPE) generated during this IRM to an approved offsite disposal facility(ies);

2. reducing the potential for migration of VOC constituents of concern from source-area soil to the shallow overburden groundwater; and

3. reducing the concentration of VOC constituents of concern in shallow overburden groundwater associated with elevated VOC concentrations in source area soils.

The first recommendation, which is defined as OU-1 and is related to the removal of ink waste in the Boiler House and VOC-impacted soil in Waste Pit No. 6, was implemented in April 2003 and is summarized in the IRM Final Report for OU-1 (BBL, June 2003). The IRM Final Report for OU-1 was reviewed and approved by the NYSDEC in letters dated November 5 and 19, 2003 (Appendix A3). The second recommendation, which is

defined as OU-2 and is related to reducing the potential for migration of VOC constituents of concern from source-area soil to the shallow overburden groundwater, was implemented in October 2003 and is the subject of this IRM Final Report for OU-2. The third recommendation, which is defined as OU-3 and is related to reducing the concentration of VOC constituents of concern in shallow overburden groundwater associated with elevated VOC concentrations in source-area soils, will primarily be addressed upon the NYSDEC's approval of this IRM Final Report for OU-2. At the present time, it is anticipated that MNA will be the proposed remedy for OU-3.

1.4 Roles and Responsibilities

The OU-2 IRM activities were implemented at the site between October 6 and October 28, 2003. The Envirotek II Site PRP Group retained BBL Environmental Services, Inc. (BBLES), BBL's remedial management and construction affiliate, to implement the OU-2 IRM. The subcontractors that were retained by BBLES during the OU-2 IRM included the following:

- Modern Environmental Services, Inc. (Modern) of Model City, New York was used as the primary subcontractor to implement the OU-2 IRM activities at the site.
- Waste Technology Services, Inc. (WTS) of Niagara Falls, New York was used to provide transportation and offsite disposal services for solid waste materials generated during the OU-2 IRM.
- Severn Trent Laboratories, Inc. (STL) of Amherst, New York was used to perform offsite analytical testing for imported backfill, potentially clean soil, and post-excavation samples.

The OU-2 IRM activities for the site were managed and documented by BBLES, with BBLES providing representatives onsite for the duration of the project. BBLES also collected imported backfill, potentially reusable soil, and post-excavation samples and performed air monitoring in accordance with the approved OU-2 IRM Work Plan during the performance of the OU-2 IRM activities. The completed OU-2 IRM activities were documented by BBLES using photographs and Construction Field Reports, which are included in Appendices B and C, respectively.

1.5 Report Organization

This IRM Final Report for OU-2 summarizes and documents the OU-2 IRM activities implemented by the Envirotek II Site PRP Group and has been organized into the following sections:

- Section 1 – Introduction: Provides a brief overview of the OU-2 IRM activities performed at the site, provides a site description and background information for the site, identifies the OU-2 IRM objectives and demonstrates how these objectives have been achieved, identifies the roles and responsibilities of the entities involved during the performance of OU-2 IRM activities, and describes the organization of this IRM Final Report for OU-2.
- Section 2 – Summary of Remedial Activities: Summarizes the remediation activities performed at the site, as well as the restoration of the site, including the reuse of onsite soils.
- Section 3 – Summary of Analytical Activities: Summarizes the analytical activities performed for samples collected during the OU-2 IRM activities.

- Section 4 – Conclusions: Summarizes the activities performed at the site to achieve the objectives specified in the OU-2 IRM Work Plan.

2. Summary of Remedial Activities for OU-2

2.1 Pre-Mobilization Activities

Prior to mobilizing to the site, NRW cleared the entire work area, removing all debris and large vegetation. NRW also demolished the Power Building, which formerly stood inside the proposed limits of excavation.

In addition, BBLES contracted Nothnagle Drilling, Inc., of Scottsville, New York to abandon two groundwater monitoring wells (ENV-2 and ENV-3), one production well (RW-1), and two unnamed piezometers, which were located within the proposed limits of excavation. The well abandonment activities were performed on September 25, 2003 in accordance with NYSDEC standard procedures. Copies of the well abandonment logs are included in Appendix D.

2.2 Site Preparation Activities

Labor, construction equipment, and a site office trailer were mobilized to the site on October 6, 2003. Site preparation activities included the construction of a decontamination pad and temporary soil staging area, as outlined in the OU-2 IRM Work Plan. Both the decontamination pad and the temporary soil staging area were constructed of a high-density polyethylene (HDPE) geomembrane over a layer of geotextile fabric. Hay bales were used to construct berms along the perimeter of the decontamination pad and temporary soil staging area. The decontamination pad was backfilled with a 12-inch layer of No. 2 run-of-crusher stone to allow transport vehicles to drive over it.

In addition, on October 6, 2003, Modern's surveying subcontractor surveyed (Photograph #4) the pre-excavation conditions of the site and marked out the initial limits of excavation, as identified in the OU-2 IRM Work Plan. The initial limits of excavation, as shown in the OU-2 IRM Work Plan, were divided into Areas 1, 2, and 3.

2.3 Remedial Activities Summary

Remedial activities for OU-2 were performed at the site between October 6 and October 28, 2003. These activities included removing concrete from the surface, excavating and staging potentially clean soil, excavating and disposing non-hazardous and RCRA-hazardous soil at appropriate offsite disposal facilities, and performing air monitoring during the performance of excavation activities. Excavation activities commenced in Area 1, and progressed to Areas 2 and 3. The excavation sequence for each area consisted of the removal of concrete, followed by the removal of potentially clean soil and VOC-impacted soil.

Once material was excavated and removed from the limits of excavation, BBLES collected samples to verify that potentially clean soil was suitable for reuse as backfill and to verify that the remedial objectives had been achieved (discussed further in Section 3). Once the analytical results for these samples were reviewed and it was determined that the site cleanup criteria had been achieved, the excavated area was backfilled and restored. Additional information related to the remedial activities performed for OU-2 is presented below.

2.3.1 Concrete Removal

Once the initial limits of excavation were marked out for OU-2, a steel-tracked excavator with a hoe ram attachment was used to break up large slabs of concrete at the surface within the limits of excavation. The surface concrete was removed and loaded into transport vehicles between October 8 and October 10, 2003, and was transported to Swift River Associates (SRA) of Tonawanda, New York for recycling. A total of 40 truckloads (approximately 400 cubic yards) of concrete material were transported to SRA. Copies of the load tickets for all concrete hauled to SRA are included in Appendix E.

2.3.2 Reusable Soil Excavation

Once the surface concrete material was removed from Area 1, excavation activities commenced on October 8, 2003 for potentially clean soil in Area 1 between the bottom of concrete and approximately 6 feet below ground surface (bgs), as delineated in the OU-2 IRM Work Plan. The potentially clean soil was direct loaded into dump trucks and was transported across the site to the temporary staging area (Photograph #1). Approximately 34 truckloads of potentially clean soil from Area 1 were transported and stockpiled in the temporary staging area. This initial stockpile was field measured and was estimated to be approximately 500 cubic yards in volume. The excavated material consisted primarily of slag and soil, with some miscellaneous debris (e.g., broken pipe and bricks). In accordance with the requirements in the OU-2 IRM Work Plan, BBLES collected a representative composite sample from this 500-cubic yard stockpile and submitted this sample to STL for analysis to determine whether the material was suitable for reuse as backfill (Section 3.1.1).

The excavation of potentially clean soil in Area 1, between the bottom of surface concrete and approximately 6 feet bgs, continued on October 9 and 10, 2003. This potentially clean soil was again transported to and stockpiled in the temporary staging area to create a second stockpile. Approximately 22 truckloads of potentially clean soil were transported to the temporary staging area during this timeframe. This second stockpile was field measured and was estimated to be approximately 315 cubic yards in volume. After it was determined that no additional material would be added to this second stockpile, BBLES collected a representative composite sample on October 13, 2003 and submitted this sample to STL for analysis to determine whether the material was suitable for reuse as backfill (Section 3.1.1).

The potentially clean soil in Area 2 (between the bottom of surface concrete and approximately 2 feet bgs) and Area 3 (between the bottom of the surface concrete and approximately 6 feet bgs) was managed and sampled using an alternative procedure that was reviewed and approved by the NYSDEC onsite representative. The potentially clean soil in these areas was sampled in situ (via test pits) prior to excavation. On October 13, 2003, after receiving NYSDEC approval, BBLES excavated test pits (Photograph #6) at random locations throughout Areas 2 and 3 (at the corresponding depth intervals); collected composite, in-situ samples; and submitted these samples to STL for analysis to determine whether the material was suitable for reuse as backfill (Section 3.1.2). Analytical results for these samples indicated that the soil was below the site cleanup criteria and was, therefore, suitable for reuse as backfill at the site.

On October 17, 2003, the potentially clean soil in Area 2 was excavated and temporarily stockpiled on top of the potentially clean soil that remained in place in Area 3. On October 20, 2003, these potentially clean soils were direct loaded into transport vehicles and transported to and placed in Area 1 for backfill (Section 2.3.8).

An estimated 300 cubic yards of soil from Area 2 and an estimated 750 cubic yards from Area 3 were reused onsite. The total volume of soil reused onsite was approximately 1,940 cubic yards.

2.3.3 Excavation of Nonhazardous Soil

Once the potentially clean soil was removed from Area 1 (Section 2.3.2), nonhazardous soil was excavated from Area 1 on October 9 and 10, 2003. Nonhazardous soil was excavated from Area 1 between 6 and 10 feet bgs and was direct loaded into transport vehicles, which then transported the nonhazardous soil to Modern Landfill, Inc. (Modern Landfill) in Model City, New York for landfill disposal (Section 2.3.7). During the excavation of nonhazardous soil along the west end of Area 1, it was discovered that the groundwater table at this location was approximately 10.5 feet bgs. Excavation activities did not extend below the groundwater table; however, some groundwater was exposed in low-lying troughs (created by the teeth of the excavator bucket) on the floor of the excavation. In some (but not all) areas (Photograph #2) where groundwater was present on the excavation floor, a light nonaqueous phase liquid (LNAPL) was present on the surface of the water. At the request of the NYSDEC, absorbent booms were placed on the water surface in these areas to collect the LNAPL. The absorbent booms remained in place for a minimum of 24 hours and were then collected and disposed with the nonhazardous waste. As excavation activities progressed in an easterly direction, groundwater was not encountered again until the RCRA-hazardous soil was excavated in Area 2 (Section 2.3.4).

Upon the completion of nonhazardous soil excavation in Area 1, nonhazardous soil was excavated (Photographs #3 and #12) from Area 2 between October 13 and 20, 2003. With the exception of two small areas containing potentially clean soil in the 0- to 2-foot interval (Section 2.3.2) and the RCRA-hazardous soil in the 8- to 10-foot interval (Section 2.3.4), nonhazardous soil was excavated from Area 2 and direct loaded into transport vehicles, which then transported the nonhazardous soil to Modern Landfill for disposal (Section 2.3.7).

Upon the completion of nonhazardous soil excavation in Area 2, nonhazardous soil was excavated from Area 3 (Photograph #17) on October 21 and October 22, 2003. Nonhazardous soil was excavated from Area 3 between 6 and 10 feet bgs and was direct loaded into transport vehicles, which then transported the nonhazardous soil to Modern Landfill for disposal (Section 2.3.7).

Once the nonhazardous soil was removed from the proposed limits of excavation in Area 3, three areas of potential concern were encountered. These potential areas of concern consisted of: (1) a small area of black-stained material that was present on the floor at the northeast corner of the excavation; (2) an unidentified 12-inch-diameter steel pipe that was observed at the east sidewall of the excavation; and (3) high levels of VOCs that were detected along the south sidewall of the excavation during the performance of air monitoring (Section 2.3.6).

The small area of black-stained material discovered at the northeast corner of the excavation was field assessed by BBLES and NYSDEC onsite representatives using a handheld photoionization detector (PID). The PID did not indicate an elevated level of VOCs in this area, and odors detected in this area were described as similar to those of asphalt. Based on this field assessment, it was determined that the black-stained soil may not be a VOC-impacted area. Based on discussions with the NYSDEC's onsite representative, BBLES collected a post-excavation floor sample in the middle of this area and submitted it to STL for analysis. Review of the analytical results for this sample indicated that VOC levels were acceptable and that the remedial objectives for this area had been achieved; therefore, additional excavation was not required for this area.

The unidentified 12-inch-diameter steel pipe entered the excavation on the east sidewall (Photograph #14), passed through the stub portion of the excavation (at the south end of Area 3), and exited the excavation on the west sidewall of the stub portion, before re-entering the excavation on the south sidewall. Based on the high levels of VOCs that were detected along the south wall of the excavation during air monitoring, it was determined that additional excavation would be performed in the corner of the sidewall where the section of pipe entered and exited the excavation. After this additional excavation was completed, PID screening of the

south sidewall did not indicate elevated VOC readings; therefore, a post-excavation sidewall sample was collected by BBLES and submitted to STL for analysis. Review of the analytical results for this sample indicated that VOC levels were acceptable and that the remedial objectives for this area had been achieved; therefore, additional excavation was not required for this area. However, the pipe entering the excavation on the east sidewall was investigated further, as described in Section 2.3.5 below.

Based on the final limits of excavation, it is estimated that 4,660 cubic yards of material was transported offsite as nonhazardous waste. The final limits of nonhazardous excavation are presented on Figure 3.

2.3.4 Excavation of RCRA-Hazardous Soil

Once the potentially clean soil and non-hazardous soil from Areas 1 and 2 were removed, RCRA-hazardous soil was excavated from Area 2 between October 15 and 20, 2003. Initially, the RCRA-hazardous soil was excavated from Area 2 between 8 and 10 feet bgs, as outlined in the OU-2 IRM Work Plan. It was direct loaded into transport vehicles and transported to CWM Chemical Services, LLC's (CWM's) facility in Model City, New York for treatment and landfill disposal (Section 2.7).

During the initial excavation of RCRA-hazardous soil at this location, it was discovered that the soil removed from approximately 10 feet bgs was coated with a black, NAPL-like material (Photograph #7). In an attempt to determine the extent of this material, additional material was excavated vertically, below the water table, to a depth of approximately 11 feet bgs. At this depth, a thick layer of LNAPL (Photographs #8 and #11) appeared at the surface of the groundwater table. The LNAPL coated the material that was removed from below the groundwater table and prohibited any visual determination of the extent of the impacted soil. Therefore, it was determined that the excavated material removed below the groundwater table would be screened with a PID. Based on PID reading, it was agreed that the soil removed below the groundwater table was grossly contaminated with VOCs.

Based on discussions with the NYSDEC in conjunction with their November 21, 2002 letter, it was determined that the excavation would extend vertically below the groundwater table until the native confining clay layer was encountered. Based on information provided in the RI, it was anticipated that the clay layer would be encountered at approximately 16 feet bgs. Additional soil was excavated (Photograph #9) in this area vertically, and, based on visual observations, it was determined that the native clay layer fluctuated between 15 and 16 feet bgs. Since the excavation in this area remained under water, the NYSDEC's onsite representative agreed that, once the native clay layer was visually observed, excavation activities would terminate, and no post-excavation bottom samples would be required for this area.

Based on the final limits of excavation, an estimated 425 cubic yards of material was transported offsite as RCRA-hazardous waste. The final limits of RCRA-hazardous excavation are presented on Figure 3.

2.3.5 Additional Investigations

Upon completion of the excavation activities, two areas of potential concern remained. These areas included the unidentified pipe, which was discussed previously in Section 2.3.3, and an unidentified pit that was filled with debris and was located east of the excavation. It appeared that these two areas were related, since the pipe seemed to head directly into the pit. As a result, it was determined that exploratory excavations in these two areas would be performed to confirm that these areas were not impacted with VOCs.

The first exploratory excavation was along the unidentified pipe, which was removed. It was quickly discovered that the pipe did not enter the pit but, rather, continued straight east of the excavation for approximately 10 feet and turned vertically at a 90-degree elbow, shortly beyond which it had been cut and removed. Therefore, excavation activities in this area were terminated. The pipe was crushed and transported with the surrounding soil to Modern Landfill for disposal as nonhazardous waste.

Investigation of the pit area indicated that the top 12 inches of fill material were loosely packed, with PID readings that peaked at 14.7 parts per million (ppm). This top material was removed and transported with the surrounding soil to Modern Landfill for disposal as nonhazardous waste. Further investigation of the pit revealed what appeared to be a steel containment structure (Photograph #16) that had been filled with a solid, concrete-like material. The structure had a steel floor supported by steel beams, and steel walls that measured approximately 12 inches tall. The floor of the structure sat at approximately 24 inches bgs. The remainder of the pit was investigated, as well, and it was discovered that the pit had weathered concrete sidewalls and floor. The floor appeared to be approximately 2.5 feet bgs in the center of the pit (under the steel structure), and approximately 4.5 feet bgs at the edges. Water was observed at approximately 2 feet bgs and appeared to be contained within the pit. Based on PID screening of the soil approximately 12 inches bgs and of the water within the pit, no elevated VOC readings were detected. Based on discussions with the NYSDEC's onsite representative, the NYSDEC agreed that no further action was necessary regarding pit excavation, and no post-excavation samples were needed. The pit was then backfilled with the materials that had been removed from it.

2.3.6 Air Monitoring

Air monitoring was performed continuously during the remedial activities and included air monitoring within the work area, as well as air monitoring along the perimeter of the site at one upwind location and two downwind locations. The air monitoring program consisted of collecting fugitive dust data using a DataRam and volatile organic vapor data using a PID. The upwind and downwind air monitoring meters ran continuously, with audible alarms activated to warn of any potential hazardous situations; data was logged on the meters every 15 minutes and recorded by BBLES personnel every hour. During the implementation of the OU-2 IRM activities, a few, short term exceedances were documented on individual meter logs, however no exceedances were noted by BBLES personnel. The air monitoring equipment documented readings that were influenced by site conditions such as high humidity and localized vehicle exhaust emissions. In addition, BBLES noticed discrepancies in readings between similar pieces of equipment at the same locations. It is believed that the discrepancies were the result of equipment failures. The Daily Air Monitoring Logs (recorded by BBLES personnel) and the data logged by the upwind and downwind air monitoring meters are included in Appendix F.

2.3.7 Transportation and Offsite Disposal of Solid Waste Materials

As summarized in Section 3.4 of the OU-2 IRM Work Plan, waste characterization sampling and analysis were previously performed for the VOC-impacted materials within the limits of excavation. Based on the analytical results, it was determined that the materials would be managed as either a nonhazardous or RCRA- hazardous solid waste. The waste characterization data indicated that one sample (SB-33) at a depth of 8 to 10 feet bgs exceeded the Toxicity Characteristics Leaching Procedure (TCLP) regulatory limits for tetrachloroethene (PCE); therefore, it was necessary for the material in this area to be managed as a RCRA-hazardous waste. As previously discussed in Section 2.3.4, additional RCRA-hazardous material was excavated in this area down to a depth of approximately 15 to 16 feet bgs.

Prior to implementing the OU-2 IRM activities at the site, BBLES prepared the appropriate waste profile application for each waste stream. The waste profile application and waste characterization sampling results for the nonhazardous soil were submitted to Modern Landfill to obtain approval from the facility for disposal of the nonhazardous soil. Based on review of the waste profile application and associated analytical data, Modern Landfill gave approval for the acceptability of the nonhazardous waste from the site to its facility (Appendix G). In addition, the waste profile application and waste characterization sampling results for the RCRA-hazardous soil were submitted to CWM to obtain approval from the facility for disposal of the RCRA-hazardous soil. Based on review of the waste profile application and associated analytical data, CWM gave approval for the acceptability of the RCRA-hazardous waste from the site to its facility (Appendix H).

A total of approximately 6,052 tons of nonhazardous soil was transported to Modern Landfill for disposal (Table 1). Copies of the Nonhazardous Waste Manifests and weigh tickets for the nonhazardous soil disposed at Modern Landfill are included in Appendix I. A total of approximately 1,033 tons of RCRA-hazardous soil was transported to CWM for treatment/landfill disposal (Table 2). Copies of the Hazardous Waste Manifests, weigh tickets, and Certificates of Disposal for the RCRA-hazardous soil disposed at CWM are included in Appendix J.

2.3.8 Backfilling and Site Restoration

After the limits of excavation had been reached and analytical results of the post-excavation sampling had been received and remedial cleanup goals had been achieved and verified, the excavated area was backfilled and restored. Backfilling began on October 10, 2003 and was performed concurrently with the excavation of other areas. All compaction of backfilled materials was performed using a vibratory roller.

For the majority of the excavation, the bottom 2 feet were backfilled with No. 3 crushed limestone (Photographs #5 and #10), supplied by the LaFarge Corporation. In the area of RCRA-hazardous waste excavation, where the excavation reached a depth of 15 to 16 feet bgs, No. 3 crushed limestone was used to backfill in the entire deeper excavation, up to 8 feet bgs.

The next layer consisted of the reusable soil (Photographs #13 and #19) that had been excavated from the site, which was generally placed in 2-foot lifts, approximately 6 to 8 feet bgs. This reused soil was placed over approximately 90% of the excavation, leaving only the northeast corner of the excavation area without reused soil.

After all of the reusable soil had been placed, the excavation was backfilled with recycled concrete (Photograph #15), supplied by SRA. The recycled concrete was placed and compacted in 2-foot lifts, approximately 1 to 6 feet bgs across the entire area of the excavation.

The excavation backfilling was completed by placing and compacting a 12-inch layer of No. 2 crushed limestone across the entire area of the excavation (Photograph #20). The No. 2 crushed limestone was supplied by LaFarge Corporation. The total tonnage of backfill materials (Photograph #18) placed at the site is summarized in Table 3.

After the final lift of backfill had been placed and compacted, in situ nuclear density testing was performed on the entire surface of the excavation to verify that the material was compacted to 90% of the maximum dry density for the No. 2 crushed limestone. Ten locations were selected throughout the excavation. After the initial round of testing, the recorded density at two of the ten locations was below the 90% maximum dry density. The two areas were recompacted, and both areas were retested. The second round of testing on these two areas yielded a compaction result that was above 90% of the maximum dry density. The final in situ

nuclear density testing results for the excavation ranged between 90.6% and 98.4% of the maximum dry density. The field log for the in situ nuclear density testing is included in Appendix K.

3. Summary of Sampling and Analytical Activities

3.1 Potentially Reusable Soil Sampling and Analysis

As described in the OU-2 IRM Work Plan, previously collected soil boring data indicated that some of the soil within the proposed limits of excavation met the NYSDEC TAGM #4046 soil cleanup objectives for VOCs. It was anticipated that, while it would be necessary to excavate this soil to reach the contaminated soil beneath it, this soil would not need to be disposed and could potentially be reused as backfill material at the site. The NYSDEC required that any potentially reusable soil be re-analyzed to verify that it achieved remedial cleanup goals prior to its being reused as backfill at the site.

3.1.1 Stockpile Sampling

All potentially reusable soil from Area 1 was excavated and staged in one of two stockpiles. On October 9, 2003, the first stockpile was completed and sampled. On October 13, 2003, the second stockpile was completed and sampled. Sampling of the stockpiles consisted of collecting five discrete soil samples from each stockpile. Each discrete sample was collected from a depth of 6 to 12 inches below the exposed surface, using decontaminated sampling equipment. Each discrete sample was placed into laboratory-provided glassware and preserved at 4° C. The samples were transported to STL for laboratory compositing and analysis under full chain-of-custody procedures. STL analyzed the subsequent composite soil sample for Target Compound List (TCL) VOCs using USEPA Method 8260B.

The analytical results for the samples were compared to the NYSDEC TAGM #4046 soil cleanup levels for VOCs, and are summarized in Table 4 and included in Appendix L. The analytical results indicated that, while some VOCs were detected at low levels, both samples met the site remedial cleanup goals. After the NYSDEC reviewed the analytical results, the two stockpiles were approved for reuse as backfill at the site.

3.1.2 In Situ Sampling

With field approval from the NYSDEC, the potentially reusable soil in Areas 2 and 3 were sampled in situ. Rather than excavating and stockpiling the soil in these areas, BBLES excavated test pits at random locations throughout the potentially reusable soil areas and collected samples from these test pits. The volume of the potentially reusable soil was calculated and divided into three distinct areas, each measuring less than 500 cubic yards (cy). The first area consisted of all of the potentially reusable soil from Area 2 (approximately 300 cy). The second and third areas were created by taking all of the potentially reusable soil in Area 3 (approximately 750 cy) and splitting it into a northern half and a southern half.

The three areas were sampled by collecting five discrete samples from each of the three areas at random locations within the test pits that had been excavated throughout the areas. The discrete samples were collected using decontaminated sampling equipment, placed into laboratory supplied glassware, and preserved at 4° C. The samples were transported to STL for laboratory compositing and analysis under full chain-of-custody procedures. STL analyzed the subsequent composite soil sample for TCL VOCs using USEPA Method 8260B.

Analytical results of the potentially reusable soil sampling indicated that all but one of the samples (ESPS-03) were below the NYSDEC TAGM #4046 soil cleanup levels for VOCs. Sample ESPS-03 contained a tetrachloroethene concentration of 6,400 µg/kg. Due to the close proximity of this result to the NYSDEC

TAGM #4046 soil cleanup level for tetrachloroethene (1,400 µg/kg), NYSDEC's onsite representative agreed that soil from this area, as well as soil from the other two areas, was acceptable for use as backfill.

The analytical results for the samples are summarized in Table 4 and included in Appendix L.

3.2 Post-Excavation Sampling and Analysis

Post-excavation sampling and analysis were performed during the OU-2 IRM activities in accordance with the OU-2 IRM Work Plan, with the exception of the following:

- In compliance with NYSDEC's August 18, 2003 letter, an additional ten post-excavation samples were collected along the bottom of the excavation. An eleventh floor sample was anticipated; however, as described in Section 2.3.4, this sample was originally scheduled in the RCRA-hazardous area and was eliminated since it was completely under water, and excavation in this area was completed into the confining clay layer.

- After the OU-2 IRM Work Plan was submitted, an additional building was removed at the site, allowing further excavation to be completed at the southwest corner. This additional excavation necessitated that one additional sidewall sample (PES-01) be collected to account for the new limits of excavation.

- A field decision was made to add two sidewall samples (PES-02 and PES-04) at the west end of the excavation to provide more complete coverage of the final limits of excavation.

These additional samples brought the total number of post-excavation samples to 21, plus one resample [PES-10 (R)].

Post-excavation sidewall samples were collected at the approximate locations established in the OU-2 IRM Work Plan. Sidewall samples PES-02 and PES-04 were field located to account for large areas that did not appear to be covered by the sampling plan provided in the OU-2 IRM Work Plan. All sidewall samples were collected from approximately 8 to 9 feet bgs. Bottom samples were collected within 40- by 40-foot grids over the anticipated limits of excavation. In certain areas, field conditions dictated that the actual shape of a grid area be altered, but an overall area of 1,600 square feet was maintained for all grids. Samples were then collected from the floor of the excavation at the approximate center of the grid. All post-excavation sample locations are identified on Figure 5.

Post-excavation samples (both sidewall and floor) were collected by collecting five discrete samples at each location using decontaminated stainless steel trowels and/or bowls. Material was removed from the sidewall or floor, placed directly into laboratory-supplied glassware, and preserved at 4° C. The samples were transported to STL for laboratory compositing and analysis under full chain-of-custody procedures. STL analyzed the subsequent composite soil sample for TCL VOCs using USEPA Method 8260B.

Analytical results of the post-excavation sampling indicated that all but two of the samples (PES-10 and PES-13) were below the NYSDEC TAGM 4046 soil cleanup levels for VOCs. The analytical results for sample PES-10 contained a tetrachloroethene concentration of 11,000 micrograms per kilogram (µg/kg), compared to the NYSDEC TAGM 4046 soil cleanup level for tetrachloroethene (1,400 µg/kg). Although sample PES-10 did not exceed the NYSDEC TAGM 4046 soil cleanup level for VOCs by more than an order of magnitude, it was decided that additional material from this area would be removed. An additional 6 to 8 inches of material was

excavated and removed, and the area was resampled [PES-10 (R)]. The analytical results of the resample indicated that the new floor of the excavation in this area was below the NYSDEC TAGM 4046 soil cleanup level for VOCs; therefore, no further excavation was required in this area.

Sample PES-13 contained a tetrachloroethene concentration of 2,600 µg/kg. Due to the close proximity of this result to the NYSDEC TAGM 4046 soil cleanup level for tetrachloroethene (1,400 µg/kg), NYSDEC's onsite representative agreed that no further excavation was required in this area.

The analytical results for the post-excavation samples are summarized in Table 5 and included in Appendix M.

3.3 Imported Backfill Sampling and Analysis

Imported backfill material was sampled and analyzed prior to being transported to the site. The analytical results of the backfill material were compared to NYSDEC TAGM #4046 soil cleanup levels to determine suitability for use as backfill.

3.3.1 No. 2 and No. 3 Crushed Limestone

Two select fill materials, No. 2 and No. 3 crushed limestone, were imported to the site from LaFarge North America (LaFarge), located in Lockport, New York. LaFarge provided BBLES with analytical results of samples collected from the crushed limestone materials before they were imported and placed onsite. The samples were collected by LaFarge and analyzed by Lionville Laboratories, Inc. for TCL VOCs using USEPA Method 8260B, for TCL semivolatile organic compounds (SVOCs) using USEPA Method 8270, for Target Analyte List (TAL) metals using Method 6010, for polychlorinated biphenyls (PCBs) using USEPA Method 8082, and for pesticides using USEPA Methods 8081. BBLES compared the results to NYSDEC TAGM #4046 cleanup levels, and determined that both backfill materials were acceptable. The analytical results for these samples are summarized in Table 6 and included in Appendix N.

3.3.2 Bank Run Gravel

Prior to importing and placing backfill materials at the site, BBL requested that a general fill material be identified by Modern and be approved for use. This backfill source was identified in the event that the potentially clean soil excavated from the site could not be reused for backfill. The material selected was bank run gravel located at LaFarge's Elba, New York borrow source. On October 8, 2003, BBLES collected five discrete samples from each of two locations at the borrow source, which were preserved at 4 C and transported to STL under full chain-of-custody procedures. At STL, each set of five samples was composited to form two samples. STL analyzed the subsequent composite soil samples for TCL VOCs using USEPA Method 8260B, for TCL SVOCs using USEPA Method 8270, for TAL Metals using Method 6010, for PCBs using USEPA Method 8082, and for pesticides and herbicides using USEPA Methods 8081 & 8151. The analytical results were compared to NYSDEC TAGM #4046 soil cleanup objectives and the bank run gravel was determined to be suitable for use as backfill. The analytical results for these samples are summarized in Table 6 and included in Appendix O. Based on the quantity of potentially clean soil that was reused for backfill, this backfill source was not used during the implementation of the OU-2 IRM.

3.3.3 Recycled Concrete

A second backfill material, recycled concrete from SRA, was also approved for use as a general fill material. On October 13, 2003, BBLES observed STL collect a composite sample of the recycled concrete source material on behalf of SRA. After collecting the sample, STL analyzed the sample for TCL VOCs using USEPA Method 8260B, for TCL SVOCs using USEPA Method 8270, for TAL Metals using Method 6010, for PCBs using USEPA Method 8082, and for pesticides and herbicides using USEPA Methods 8081 & 8151.

The analytical results were compared to NYSDEC TAGM #4046 soil cleanup objectives and the recycled concrete was determined to be suitable for use as backfill. The analytical results for this sample are summarized in Table 6 and included in Appendix P.

3.4 Quality Assurance/Quality Control

As described in the OU-2 IRM Work Plan, both field and laboratory quality control checks were implemented for the OU-2 IRM sampling and analysis activities. This section describes the quality control samples collected during the OU-2 IRM activities, which included rinse blanks on sampling equipment, field duplicates of samples, and matrix spike and matrix spike duplicates of samples. Quality control samples were only collected for samples collected by BBLES. Samples collected by others (i.e., recycled concrete and crushed limestone samples) did not include quality control samples. Therefore, quality control samples were collected only for post-excavation and potentially reusable soil samples.

3.4.1 Rinse Blanks

Rinse blanks were used to monitor the cleanliness of the sampling equipment and the effectiveness of the cleaning procedures. Rinse blanks were prepared by passing analyte-free water (supplied by the laboratory) over cleaned sampling equipment (sampling trowels and sampling bowls), and collecting the water in laboratory-supplied glassware. The collected samples were preserved at 4° C, transported to STL under full chain-of-custody procedures, and analyzed for TCL VOCs using USEPA Method 8260B. A total of three rinse blanks were collected during the OU-2 IRM activities: two post-excavation rinse blanks (PES-RB and PES-RB-2) and one potentially clean soil rinse blank (ESPS-RB). VOCs were not detected in any of the three rinse blank samples (Tables 4 and 5).

3.4.2 Duplicate Samples

Duplicate soil samples were collected to check the reproducibility of the sampling methods. Duplicate soil samples were prepared by collecting two samples from the same location, using the same techniques described in Section 3.1 and 3.2. The collected samples were preserved at 4° C, transported to STL under full chain-of-custody procedures, and analyzed for TCL VOCs using USEPA Method 8260B. A total of three duplicate samples were collected during the OU-2 IRM activities: two post-excavation duplicates (PES-DUP-1 and PES-DUP-2) and one potentially clean soil duplicate (ESPS-DUP).

Sample duplicates were compared to their respective samples to verify the reproducibility of sampling methods. The first post-excavation sample duplicate (PES-DUP-1) was collected at sample location PES-15. The second post-excavation sample duplicate (PES-DUP-2) was collected at sample location PES-19. The potentially

reusable soil duplicate sample (ESPS-DUP) was collected at ESPS-02. The comparison of all duplicate samples indicated that the sampling methods are reproducible (Tables 4 and 5).

3.4.3 Matrix Spike/Matrix Spike Duplicate

Triple volume samples were collected at three locations to perform matrix spike (MS) and matrix spike duplicate (MSD) analyses. The MS serves as a measure of method accuracy in a given method. The MS and MSD together serve as a measure of the method precision in a given method. MS/MSD samples were collected at PES-08, PES-20, and ESPS-03. MS/MSD data are included in STL's full data reports.

3.5 Data Validation

At the completion of the OU-2 IRM activities, STL provided a full data package to BBL for the laboratory analyses associated with the project. BBL performed a review of the data package, and generated the data validation reports included in Appendix Q. The findings of the Volatile Analyses data validation reports are summarized below.

- Methylene chloride was detected in the associated method blank for several of the samples analyzed. Based on this information, the data for methylene chloride has been qualified as nondetect for all but two of the samples.

- The calibration standards for several compounds fell outside of the acceptable range; therefore qualifying some of the data as estimated, as indicated by a "J" flag on the summary tables.

- The duplicate sample for the potentially reusable soil sampling was unacceptable for tetrachloroethene (sample = 17 µg/kg; duplicate = 170 µg/kg). Based on this deviation, both samples were qualified as estimated. All other duplicate analyses were acceptable.

- The MS/MSD recoveries were below control limits for 1,1-dichloroethene in PES-20, and below control limits for benzene, toluene, chlorobenzene, and trichloroethene for both PES-08 and PES-20. Based on this information, the compounds for both samples have been qualified as estimated.

Separate data validation reports were generated for the semivolatile, pesticide, PCB, herbicide, and metals analyses. The data validation report found the results of the semivolatile, pesticide, PCB, and herbicide analyses to be acceptable. The findings of the Metals Analysis data validation report are summarized below.

- The MS/MSD recoveries were below control limits for antimony, barium, copper, nickel, and zinc. All data for antimony, barium, copper, nickel, and zinc have been qualified as estimated.

- The laboratory duplicate results were above the control limits for iron and zinc. Based on these deviations, the iron and zinc data has been qualified as estimated.

- Serial dilution results for aluminum, barium, iron, and manganese were unacceptable. Therefore, the data for these analytes have been qualified as estimated.

4. Conclusions

The objectives of the OU-2 IRM activities were two-fold: to remove VOC-impacted soil from the site and to eliminate the migration of VOC constituents of concern from the SDA/source area to the shallow groundwater. The completed OU-2 IRM activities at the site have met the project objectives as follows:

- *VOC-impacted soils have been removed from the site and appropriately managed.* The completed OU-2 IRM for the site included the excavation and removal of impacted soil within the limits of excavation. The impacted waste and debris were then transported to an approved offsite waste disposal facility.

- *The potential for migration of VOCs from the SDA/source area to the shallow groundwater has been eliminated.* Analytical results of post-excavation floor and sidewall sampling indicate that the VOC-impacted soil has been removed from the SDA/source area, thus eliminating the potential for any future migration of VOCs into the underlying groundwater.

- *Soil samples were collected and analyzed to determine the final limits of excavation, as well as to provide sufficient analysis of impacted materials to verify that site soils could be used for backfill.* Samples were collected and analyzed from the excavation floor and sidewalls to verify that the limits of excavation achieved the IRM objectives. In addition, samples were collected and analyzed from the reusable soil onsite to verify that it was suitable for use as backfill material at the site.

- *Air monitoring for health and safety was performed at the site during IRM activities.* Perimeter air monitoring, as well as air monitoring at the point of excavation, was performed and documented throughout the OU-2 IRM activities with no exceedances being observed.

- *The excavated area was backfilled, and the site was restored.* The entire excavation was backfilled with a combination of crushed limestone, reused site soils, and recycled concrete, restoring the site to the original grades.

As summarized above, and as detailed in this report, the objectives of the OU-2 IRM have been achieved by the activities performed at the site. Therefore, upon the NYSDEC's approval of this IRM Final Report for OU-2, we are requesting that the NYSDEC provide a letter stating that No Further Action (NFA) is necessary for OU-2 at the Envirotek II Superfund Site.

Tables

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TABLE 1

SUMMARY OF NONHAZARDOUS WASTE DISPOSAL
IRM FINAL REPORT FOR OU-2
ENVIROTEK II SITE
TONAWANDA, NEW YORK

Manifest Document Numbers	Out of Service Date	Total Number of Loads	Total Weight (tons)	Transporter	Disposal Location
00001 - 00017	10/9/2003	17	398.03	Modern Disposal Services, Inc.	Modern Landfill, Inc., Model City, NY
00018 - 00038	10/10/2003	22	553.09	Modern Disposal Services, Inc.	Modern Landfill, Inc., Model City, NY
00038 - 00094	10/13/2003	55	1319.26	Modern Disposal Services, Inc.	Modern Landfill, Inc., Model City, NY
00095 - 00146	10/14/2003	52	1328.38	Modern Disposal Services, Inc.	Modern Landfill, Inc., Model City, NY
00147 - 00166	10/16/2003	19	436.34	Modern Disposal Services, Inc.	Modern Landfill, Inc., Model City, NY
00167 - 00195	10/17/2003	29	742.97	Modern Disposal Services, Inc.	Modern Landfill, Inc., Model City, NY
00196 - 00243	10/21/2003	48	1152.23	Modern Disposal Services, Inc.	Modern Landfill, Inc., Model City, NY
00244 - 00249	10/22/2003	6	144.15	Modern Disposal Services, Inc.	Modern Landfill, Inc., Model City, NY
		248	6074.45	Total Tonnage	

Notes:
1. Manifest number 00036 was used twice.
2. Manifest number 00079 was skipped.
3. Manifest number 00164 was skipped.

TABLE 2

SUMMARY OF HAZARDOUS WASTE DISPOSAL
IRM FINAL REPORT FOR OU-2
ENVIROTEK II SITE
TONAWANDA, NEW YORK

Manifest Document Number	Out of Service Date	Estimated Weight (tons)	Actual Weight (tons)	Transporter	Disposal Location
X3001	10/15/2003	22	24.09	Frank's Vacuum Truck Service	CWM Chemical Services, LLC, Model City, NY
X3002	10/15/2003	22	24.67	Frank's Vacuum Truck Service	CWM Chemical Services, LLC, Model City, NY
X3003	10/15/2003	30	30.61	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3004	10/15/2003	30	32.60	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3005	10/15/2003	30	31.06	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3006	10/15/2003	30	32.04	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3007	10/15/2003	22	30.20	Frank's Vacuum Truck Service	CWM Chemical Services, LLC, Model City, NY
X3008	10/15/2003	22	24.99	Frank's Vacuum Truck Service	CWM Chemical Services, LLC, Model City, NY
X3009	10/16/2003	30	31.50	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3010	10/16/2003	30	36.74	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3011	10/16/2003	31	40.16	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3012	10/16/2003	31	36.81	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3013	10/16/2003	31	31.18	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3014	10/16/2003	22	24.05	Frank's Vacuum Truck Service	CWM Chemical Services, LLC, Model City, NY
X3015	10/16/2003	22	22.46	Frank's Vacuum Truck Service	CWM Chemical Services, LLC, Model City, NY
X3016	10/16/2003	30	32.87	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3017	10/16/2003	30	32.29	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3018	10/16/2003	30	31.54	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3019	10/17/2003	22	14.94	Frank's Vacuum Truck Service	CWM Chemical Services, LLC, Model City, NY
X3020	10/17/2003	22	17.01	Frank's Vacuum Truck Service	CWM Chemical Services, LLC, Model City, NY
X3021	10/17/2003	30	29.32	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3022	10/17/2003	22	19.65	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3023	10/17/2003	30	26.89	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3024	10/17/2003	24	22.89	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3025	10/17/2003	30	30.50	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3026	10/17/2003	30	35.78	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3027	10/17/2003	30	26.34	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3028	10/17/2003	30	34.57	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3029	10/17/2003	30	32.81	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3030	10/17/2003	30	27.77	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3031	10/20/2003	29	31.29	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3032	10/20/2003	30	40.31	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3033	10/20/2003	29	30.91	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3034	10/20/2003	30	30.38	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
X3035	10/20/2003	30	32.40	Buffalo Fuel Corporation	CWM Chemical Services, LLC, Model City, NY
			1033.62	Total Tonnage	

TABLE 3

SUMMARY OF BACKFILL
IRM FINAL REPORT FOR OU-2
ENVIROTEK II SITE
TONAWANDA, NEW YORK

Backfill Item	Estimated Quantity
#3 Crushed Limestone	1,793 tons
Reused Site Soil	1,940 cubic yards
#2 Recycled Concrete	6,027 tons
#2 Crushed Limestone	1,274 tons

Notes:

1. Reused site soil volume was estimated based on measurements of stockpiles, and in situ volume calculations.
2. Tonnage of all other materials is reported as provided by scale at each respective source.
3. Crushed limestone (both #2 and #3) was provided by the LaFarge Corporation, Lockport, NY.
4. Recycled concrete was provided by Swift River Associates, Tonawanda, NY.

ANALYTICAL SUMMARY OF POTENTIALLY REUSABLE SOIL SAMPLES
IRM FINAL REPORT FOR OU-2
ENVIROTEK II SITE
TONAWANDA, NEW YORK

Sample I.D. Sample Date Sample Location Sample Depth	NYSDEC TAGM 4046 Soil Cleanup Objectives	ESPS-01 10/9/2003 Stockpile 1 NA	ESPS-02 10/13/2003 Stockpile 2 NA	ESPS-DUP 10/13/2003 ESPS-02 NA	ESPS-03 10/13/2003 Area 2 0-2'	ESPS-04 10/13/2003 Area 3 North 0-6'	ESPS-05 10/13/2003 Area 3 South 0-6'	ESPS-RB 10/15/2003 Rinse Blank NA
Volatile Organic Compounds								
1,1-Dichloroethane	200	ND	ND	ND	2 J	ND	ND	ND
1,2-Dichloroethane	100	ND	ND	ND	1 J	ND	ND	ND
1,2-Dichloroethene (total)	300	4 J	1 J	3 J	43	6	2 J	ND
Tetrachloroethane	1,400	8	17 J	170 J	**6400 D**	68	38	ND
1,1,1-Trichloroethane	800	ND	ND	ND	20	3 J	1 J	ND
Trichloroethene	700	32	6	16	160	26	10	ND

Notes

1. New York State Department of Environmental Conservation (NYSDEC) Technical and Adminstrative Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives (HWR-94-4046) expresses cleanup objectives in milligrams per kilogram (mg/kg).
2. Only compounds with detectable concentrations are reported in this table.
3. All results are reported in µg/kg (parts per billion).
4. ND : Not Detected.
5. NA : Not Applicable.
6. J : Indicates an estimated value.
7. B : Indicates the analyte was found in the associated blank.
8. D : Indicates the compound was identified at a secondary dilution.

ANALYTICAL SUMMARY OF POST EXCAVATION SAMPLES
IRM FINAL REPORT FOR OU-2
ENVIROTEK II SITE
TONAWANDA, NEW YORK

Sample I.D. Sample Date Sample Location	NYSDEC TAGM 4046 Soil Cleanup Objectives	PES-01 10/9/2003 South Wall	PES-02 10/9/2003 West Wall	PES-03 10/9/2003 Floor	PES-04 10/9/2003 North Wall	PES-05 10/9/2003 South Wall	PES-06 10/9/2003 Floor	PES-07 10/13/2003 Floor
Acetone	200	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	1,900	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	300	10	7	12	3 J	6 J	11	ND
Ethylbenzene	5,500	ND	ND	2 J	ND	ND	ND	ND
Methylcyclohexane	NA	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	100	ND J	ND	ND	ND	ND	34 B	ND
Tetrachloroethane	1,400	37	6	87	6	270	20	11
Toluene	1,500	ND	ND	2 J	ND	ND	ND	ND
1,1,1-Trichloroethane	800	2 J	ND	2 J	ND	2 J	ND	ND
Trichloroethene	700	49	22	47	11	25	5 J	7
Vinyl chloride	200	ND	ND	ND	ND	ND	4 J	ND
Total Xylenes	1,200	ND	4 J	13 J	6 J	ND	ND	ND

Notes:

1. New York State Department of Environmental Conservation (NYSDEC) Technical and Adminstrative Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives (HWR-94-4046) expresses cleanup objectives in milligrams per kilogram (mg/kg).
2. Only compounds with detectable concentrations are reported in this table.
3. All results are reported in µg/kg (parts per billion).
4. ND : Not Detected.
5. NA : Not Applicable.
6. J : Indicates an estimated value.
7. B : Indicates the analyte was found in the associated blank.
8. D : Indicates the compound was identified at a secondary dilution.

ANALYTICAL SUMMARY OF POST EXCAVATION SAMPLES
IRM FINAL REPORT FOR OU-2
ENVIROTEK II SITE
TONAWANDA, NEW YORK

Sample I.D. Sample Date Sample Location	NYSDEC TAGM 4046 Soil Cleanup Objectives	PES-08 10/13/2003 North Wall	PES-09 10/13/2003 Floor	PES-10 10/13/2003 Floor	PES -10 (R) 10/15/2003 Floor	PES-11 10/15/2003 South Wall	PES-12 10/15/2003 North Wall	PES-13 10/17/2003 Floor
Acetone	200	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	1,900	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	300	ND	7	15	20	ND	1 J	ND
Ethylbenzene	5,500	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane	NA	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	100	ND	ND	ND	ND J	ND J	ND J	ND
Tetrachloroethane	1,400	3 J	140	**11,000 D**	17	8	34	**2,600**
Toluene	1,500	ND J	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	800	ND	ND	9	ND	ND	ND	ND
Trichloroethene	700	3 J	6	50	4 J	1 J	11	ND
Vinyl chloride	200	ND	ND	ND	2 J	ND	ND	ND
Total Xylenes	1,200	2 J	ND	ND	ND	ND	ND	ND

Notes:

1. New York State Department of Environmental Conservation (NYSDEC) Technical and Adminstrative Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives (HWR-94-4046) expresses cleanup objectives in milligrams per kilogram (mg/kg).
2. Only compounds with detectable concentrations are reported in this table.
3. All results are reported in µg/kg (ppb).
4. ND : Not Detected.
5. NA : Not Applicable.
6. J : Indicates an estimated value.
7. B : Indicates the analyte was found in the associated blank.
8. D : Indicates the compound was identified at a secondary dilution.

ANALYTICAL SUMMARY OF POST EXCAVATION SAMPLES
IRM FINAL REPORT FOR OU-2
ENVIROTEK II SITE
TONAWANDA, NEW YORK

Sample I.D. Sample Date Sample Location	NYSDEC TAGM 4046 Soil Cleanup Objectives	PES-14 10/20/2003 Floor	PES-15 10/20/2003 North Wall	PES-DUP-1 10/20/2003 PES-15	PES-16 10/21/2003 Floor	PES-17 10/21/2003 South Wall	PES-18 10/21/2003 Floor	PES-19 10/21/2003 South Wall
Acetone	200	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	1,900	27 J	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene (total)	300	26 J	10 J	7 J	39	ND	3 J	ND
Ethylbenzene	5,500	65	ND	ND	140	ND	ND	ND
Methylcyclohexane	NA	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	100	ND J	ND J	ND J	ND J	ND J	ND J	ND J
Tetrachloroethane	1,400	280	290	210	210 J	24	44	13
Toluene	1,500	21 J	ND	ND	20 J	ND	2 J	ND
1,1,1-Trichloroethane	800	400	32	35	ND	ND	2 J	ND
Trichloroethene	700	27 J	55	39	20 J	2 J	6	2 J
Vinyl chloride	200	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	1,200	320	ND	ND	680	ND	ND	ND

Notes:

1. New York State Department of Environmental Conservation (NYSDEC) Technical and Adminstrative Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives (HWR-94-4046) expresses cleanup objectives in milligrams per kilogram (mg/kg).
2. Only compounds with detectable concentrations are reported in this table.
3. All results are reported in µg/kg (ppb).
4. ND : Not Detected.
5. NA : Not Applicable.
6. J : Indicates an estimated value.
7. B : Indicates the analyte was found in the associated blank.
8. D : Indicates the compound was identified at a secondary dilution.

ANALYTICAL SUMMARY OF POST EXCAVATION SAMPLES
IRM FINAL REPORT FOR OU-2
ENVIROTEK II SITE
TONAWANDA, NEW YORK

Sample I.D. Sample Date Sample Location	NYSDEC TAGM 4046 Soil Cleanup Objectives	PES-DUP-2 10/21/2003 PES-19	PES-20 10/21/2003 East Wall	PES-21 10/22/2003 Floor	PES-RB 10/15/2003 Rinse Blank	PES-RB-2 10/22/2003 Rinse Blank
Acetone	200	ND	ND	150	ND	ND
1,1-Dichloroethane	1,900	ND	16	7 J	ND	ND
1,2-Dichloroethene (total)	300	ND	18	41	ND	ND
Ethylbenzene	5,500	ND	3 J	30	ND	ND
Methylcyclohexane	NA	ND	2 J	ND	ND	ND
Methylene chloride	100	ND J	ND J	ND	ND J	ND
Tetrachloroethane	1,400	19	250	520 J	ND	ND
Toluene	1,500	ND	6 J	20 J	ND	ND
1,1,1-Trichloroethane	800	ND	120	16 J	ND	ND
Trichloroethene	700	2 J	41 J	44	ND	ND
Vinyl chloride	200	ND	ND	ND	ND	ND
Total Xylenes	1,200	ND	21	78 J	ND	ND

Notes:

1. New York State Department of Environmental Conservation (NYSDEC) Technical and Adminstrative Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives (HWR-94-4046) expresses cleanup objectives in milligrams per kilogram (mg/kg).
2. Only compounds with detectable concentrations are reported in this table.
3. All results are reported in µg/kg (ppb).
4. ND : Not Detected.
5. NA : Not Applicable.
6. J : Indicates an estimated value.
7. B : Indicates the analyte was found in the associated blank.
8. D : Indicates the compound was identified at a secondary dilution.

TABLE 6

ANALYTICAL SUMMARY OF IMPORTED BACKFILL SAMPLE
IRM FINAL REPORT FOR OU-2
ENVIROTEK II SITE
TONAWANDA, NEW YORK

Sample I.D. / Sample Date / Sample Location	NYSDEC TAGM 4046 Soil Cleanup Objectives[1]	Crushed Limestone #1 6/2/2003 Lockport, NY	Crushed Limestone #2 6/2/2003 Lockport, NY	Crushed Limestone #3 6/2/2003 Lockport, NY	Bank Run Gravel IBS-01 10/8/2003 Elba, NY	Bank Run Gravel IBS-02 10/8/2003 Elba, NY	Concrete 10/13/2003 SRA
Volatile Organic Compounds	See Note 2						
Acetone	200	97	110	120	ND	ND	31
Methylene chloride	100	22	8	18	ND J	ND J	31 B
2-Butanone	300	ND	33	62	ND	ND	ND
Toluene	1,500	1 J	ND	1 J	ND	ND	ND
Semivolatile Organic Compounds	See Note 2						
Chrysene	400	29 J	27 J	18 J	ND	ND	ND
Di-n-butylphthalate	8,100	ND	ND	63 J	ND	ND	ND
bis (2-Ethylhexyl) phthalate	50,000	18 J	ND	17 J	ND	ND	ND
Fluoranthene	50,000	38 J	34 J	19 J	ND	ND	ND
Phenanthrene	50,000	40 J	34 J	25 J	ND	ND	ND
Polychlorinated Biphenyls	See Note 2	ND	ND	ND	ND	ND	ND
Pesticides	See Note 2						
4,4'-DDT	2,100	ND	ND	ND	1.2 J	ND	43
Herbicides	See Note 2	NA	NA	NA	ND	ND	ND
Metals (Total)							
Aluminum	SB	769	687	772	6,760 J	5900 J	8,300
Antimony	SB	ND	ND	ND	ND J	ND J	ND
Arsenic	7.5 or SB	3.1	3.1	3.2	5.9	5.2	4.7
Barium	300 or SB	10.8	14.5	12.5	30.9 J	34.6 J	75.8
Beryllium	0.16 or SB	0.16	0.17	0.18	0.4	0.38	1
Cadmium	1 or SB	2.3	1.7	1.5	ND	ND	ND
Calcium	SB	192,000	185,000	180,000	96,600	67,600	122,000
Chromium	10 or SB	4.2	4	4.3	10	7.9	13.6
Cobalt	30 or SB	1.5	1.4	1.5	7.1	9.1	3.9
Copper	25 or SB	3.6	3.6	3.8	38.7 J	41.6 J	20.8
Iron	2,000 or SB	7,250	6,950	7,370	17100 J	19600 J	10,700
Lead	SB	224	68.7	105	10.2	9	171
Magnesium	SB	96,800	96,600	95,700	11,100	9,040	21,000
Manganese	SB	695	740	760	470	463 J	571
Mercury	0.1	ND	ND	ND	ND	ND	0.068
Nickel	13 or SB	4	3.7	4.2	23.3 J	23.3 J	11.2
Potassium	SB	1,020	883	1,040	1,350	1,120	1,360
Selenium	2 or SB	ND	ND	ND	ND	ND	ND
Silver	SB	ND	ND	ND	ND	ND	ND
Sodium	SB	337	326	337	ND J	171	533
Thallium	SB	ND	ND	ND	ND	ND	ND
Vanadium	150 or SB	3.1	2.7	2.8	13.1	24.1	15.6
Zinc	20 or SB	422	289	279	83 J	97.7 J	128

Notes:

1. New York State Department of Environmental Conservation (NYSDEC) Technical and Adminstrative Guidance Memorandum (TAGM) 4046: Determination of Soil CleanupObjectives (HWR-94-4046) expresses cleanup objectives in milligrams per kilogram (mg/kg).
2. Only compounds with detectable concentrations are reported in this table.
3. Metals results are reported in mg/kg (parts per million), all other results are reported in mg/kg (parts per billion).
4. ND : Not Detected.
5. SB : Site Background.
6. NA : Not Analyzed.
7. ND J : The analyte was not detected above the reproted detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

Figures

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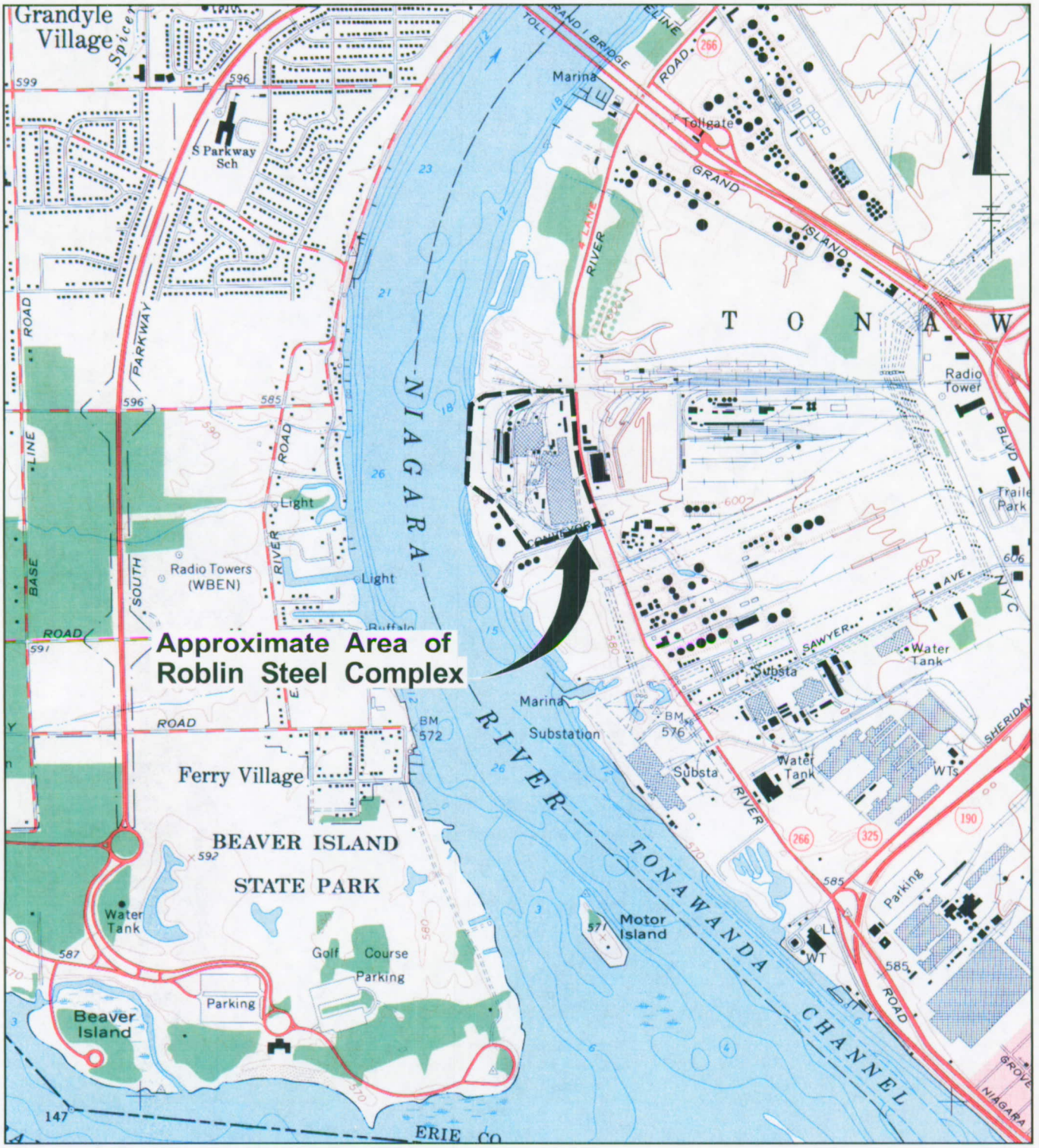
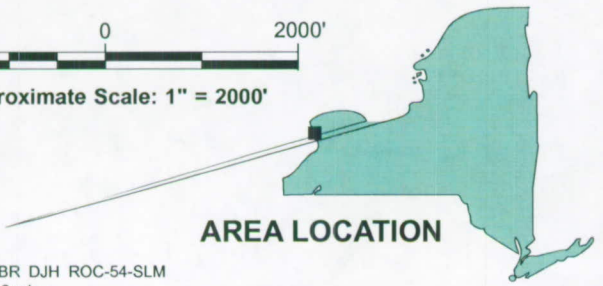


REFERENCE: BASE MAP SOURCE USGS 7.5 MINUTE QUAD. SERIES BUFFALO NW, NEW YORK, ONTARIO, 1965.

2000' 0 2000'

Approximate Scale: 1" = 2000'



AREA LOCATION

12/03 SYR-D54-LBR DJH ROC-54-SLM
58002006/58002n02.cdr

ENVIROTEK II SITE
TONAWANDA NEW YORK
INTERIM REMEDIAL MEASURES FINAL REPORT FOR OPERABLE UNIT NO. 2

SITE LOCATION MAP

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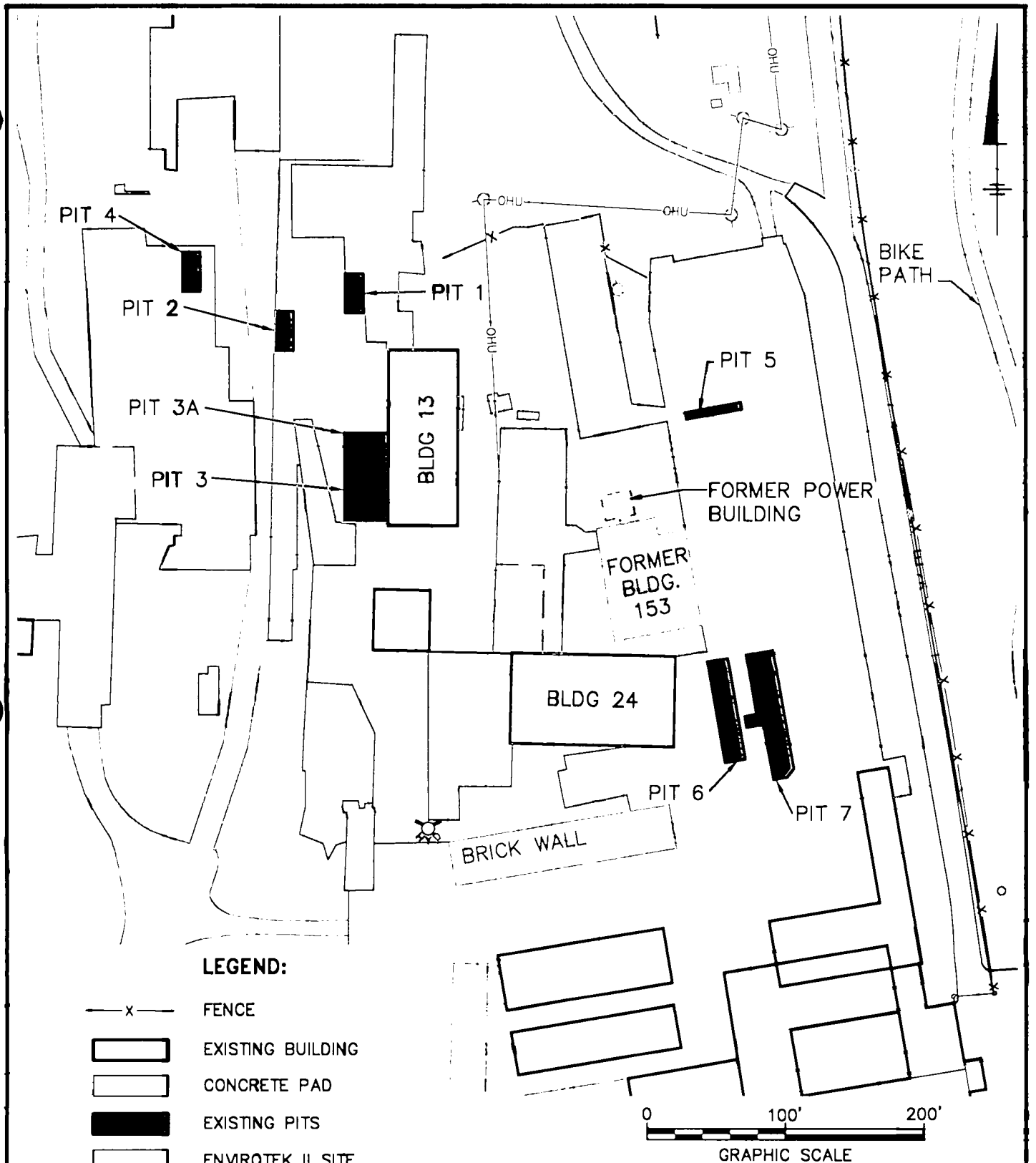
FIGURE 1



NOTE:

1. BASE MAP PREPARED FROM BLASLAND, BOUCK & LEE, INC. SURVEY DATED OCTOBER 1999.

X: 58002X06.DWG
L: OFF=REF*, ON=*
P: PAGESET/PLT-BL
12/5/03 SYR-54-JMS RCB ROC-85-SLM
58002006/58002B11.DWG

ENVIROTEK II SITE TONAWANDA, NEW YORK
INTERIM REMEDIAL MEASURES FINAL REPORT FOR OPERABLE UNIT NO. 2

SITE MAP

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FIGURE 2

LEGEND:

- FENCE
- EXISTING BUILDING
- CONCRETE PAD
- EXISTING PITS
- NO REUSABLE SOIL BACKFILL USED (SEE NOTE 2)
- **FINAL LIMITS OF** EXCAVATION
- PROPOSED LIMITS OF EXCAVATION
- FINAL LIMITS OF RCRA HAZARDOUS EXCAVATION
- LIMIT OF REUSED SOIL
- STAGING AREA
- ABANDONED CONCRETE FOUNDATION
- OH — EXISTING OVERHEAD UTILITY LINES
- UNIDENTIFIED PIPE

NOTE:

1. BASE MAP PREPARED FROM BLASLAND, BOUCK & LEE, INC. SURVEY DATED OCTOBER 1999.
2. REUSABLE SOIL USED AS BACKFILL AT 6–8' BELOW GRADE IN ALL AREAS EXCEPT AS NOTED.

0 50' 100'

GRAPHIC SCALE

ENVIROTEK II SITE TONAWANDA, NEW YORK
INTERIM REMEDIAL MEASURES FINAL REPORT FOR OPERABLE UNIT NO. 2

LIMITS OF EXCAVATION

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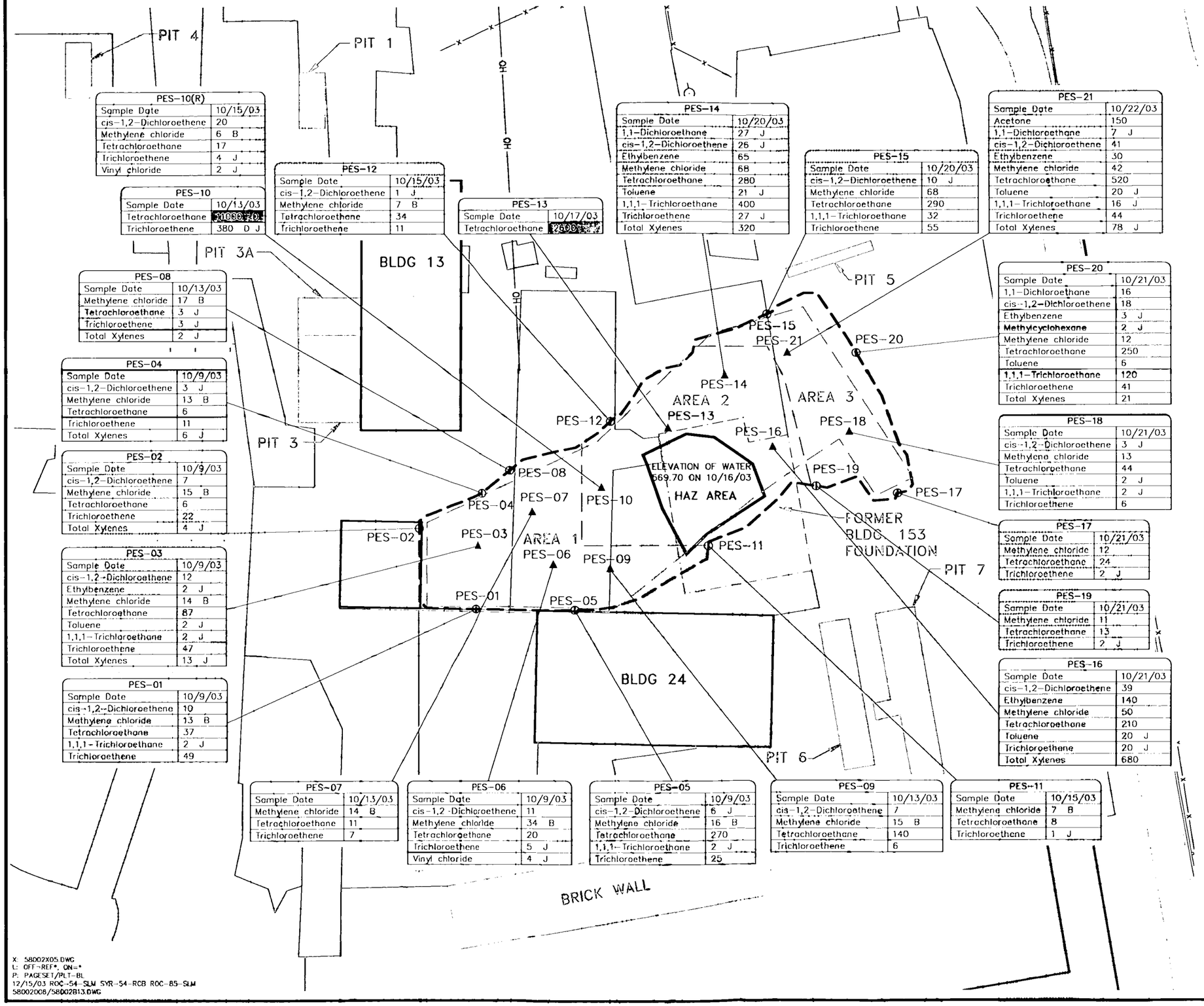
FIGURE 3

X: 58002X05.DWG
L: OFF=REF*, ON=*
P: PAGESET/PLT-BL
12/15/03 ROC-54-SLM SYR→54-RCB ROC-85-SLM
58002008/58002B12.DWG



PES-10(R)	
Sample Date	10/15/03
cis-1,2-Dichloroethene	20
Methylene chloride	6 B
Tetrachloroethane	17
Trichloroethene	4 J
Vinyl chloride	2 J

PES-10	
Sample Date	10/13/03
Tetrachloroethane	1000 D
Trichloroethene	380 D J

PES-12	
Sample Date	10/15/03
cis-1,2-Dichloroethene	1 J
Methylene chloride	7 B
Tetrachloroethane	34
Trichloroethene	11

PES-13	
Sample Date	10/17/03
Tetrachloroethane	2600

PES-14	
Sample Date	10/20/03
1,1-Dichloroethane	27 J
cis-1,2-Dichloroethene	26 J
Ethylbenzene	65
Methylene chloride	68
Tetrachloroethane	280
Toluene	21 J
1,1,1-Trichloroethane	400
Trichloroethene	27 J
Total Xylenes	320

PES-15	
Sample Date	10/20/03
cis-1,2-Dichloroethene	10 J
Methylene chloride	68
Tetrachloroethane	290
1,1,1-Trichloroethane	32
Trichloroethene	55

PES-21	
Sample Date	10/22/03
Acetone	150
1,1-Dichloroethane	7 J
cis-1,2-Dichloroethene	41
Ethylbenzene	30
Methylene chloride	42
Tetrachloroethane	520
Toluene	20 J
1,1,1-Trichloroethane	16 J
Trichloroethene	44
Total Xylenes	78 J

PES-08	
Sample Date	10/13/03
Methylene chloride	17 B
Tetrachloroethane	3 J
Trichloroethene	3 J
Total Xylenes	2 J

PES-04	
Sample Date	10/9/03
cis-1,2-Dichloroethene	3 J
Methylene chloride	13 B
Tetrachloroethane	6
Trichloroethene	11
Total Xylenes	6 J

PES-02	
Sample Date	10/9/03
cis-1,2-Dichloroethene	7
Methylene chloride	15 B
Tetrachloroethane	6
Trichloroethene	22
Total Xylenes	4 J

PES-03	
Sample Date	10/9/03
cis-1,2-Dichloroethene	12
Ethylbenzene	2 J
Methylene chloride	14 B
Tetrachloroethane	87
Toluene	2 J
1,1,1-Trichloroethane	2 J
Trichloroethene	47
Total Xylenes	13 J

PES-01	
Sample Date	10/9/03
cis-1,2-Dichloroethene	10
Methylene chloride	13 B
Tetrachloroethane	37
1,1,1-Trichloroethane	2 J
Trichloroethene	49

PES-20	
Sample Date	10/21/03
1,1-Dichloroethane	16
cis-1,2-Dichloroethene	18
Ethylbenzene	3 J
Methylcyclohexane	2 J
Methylene chloride	12
Tetrachloroethane	250
Toluene	6
1,1,1-Trichloroethane	120
Trichloroethene	41
Total Xylenes	21

PES-18	
Sample Date	10/21/03
cis-1,2-Dichloroethene	3 J
Methylene chloride	13
Tetrachloroethane	44
Toluene	2 J
1,1,1-Trichloroethane	2 J
Trichloroethene	6

PES-17	
Sample Date	10/21/03
Methylene chloride	12
Tetrachloroethane	24
Trichloroethene	2 J

PES-19	
Sample Date	10/21/03
Methylene chloride	11
Tetrachloroethane	13
Trichloroethene	2 J

PES-16	
Sample Date	10/21/03
cis-1,2-Dichloroethene	39
Ethylbenzene	140
Methylene chloride	50
Tetrachloroethane	210
Toluene	20 J
Trichloroethene	20 J
Total Xylenes	680

PES-07	
Sample Date	10/13/03
Methylene chloride	14 B
Tetrachloroethane	11
Trichloroethene	7

PES-06	
Sample Date	10/9/03
cis-1,2-Dichloroethene	11
Methylene chloride	34 B
Tetrachloroethane	20
Trichloroethene	5 J
Vinyl chloride	4 J

PES-05	
Sample Date	10/9/03
cis-1,2-Dichloroethene	6 J
Methylene chloride	16 B
Tetrachloroethane	270
1,1,1-Trichloroethane	2 J
Trichloroethene	25

PES-09	
Sample Date	10/13/03
cis-1,2-Dichloroethene	7
Methylene chloride	15 B
Tetrachloroethane	140
Trichloroethene	6

PES-11	
Sample Date	10/15/03
Methylene chloride	7 B
Tetrachloroethane	8
Trichloroethene	1 J

LEGEND:

- EXISTING BUILDING
- CONCRETE PAD
- EXISTING PITS
- FENCE
- FINAL LIMITS OF EXCAVATION
- PROPOSED LIMITS OF EXCAVATION
- ABANDONED CONCRETE FOUNDATION
- EXISTING OVERHEAD UTILITY LINES
- POST-EXCAVATION SIDEWALL SAMPLE LOCATION
- POST-EXCAVATION FLOOR SAMPLE LOCATION

PES-13	
Sample Date	10/17/03
Tetrachloroethane	2600

SAMPLE ANALYTICAL RESULTS (ug/kg)

B — ANALYTE FOUND IN ASSOCIATED BLANK

D — SAMPLE WAS DILUTED

J — ESTIMATED VALUE

EXCEEDS NYSDEC TAGM #4046 SOIL CLEANUP OBJECTIVES BY LESS THAN ONE ORDER OF MAGNITUDE

NOTE:

1. BASE MAP PREPARED FROM BLASLAND, BOUCK & LEE, INC. SURVEY DATED OCTOBER 1999.

0 50' 100'

GRAPHIC SCALE

ENVIROTEK II SITE TONAWANDA, NEW YORK
INTERIM REMEDIAL MEASURES FINAL REPORT FOR OPERABLE UNIT NO. 2

POST-EXCAVATION SOIL SAMPLE LOCATIONS AND RESULTS

BBL BLASLAND, BOUCK & LEE, INC. engineers, scientists, economists

FIGURE 4

X: 58002X05.DWG
L: OFF-REF*, ON=*
P: PAGESET/PLT-BL
12/15/03 ROC-54-SLM SYR-54-RCB ROC-85-SLM
58002008/58002B13.DWG

Appendices

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Appendix A

Relevant Correspondence

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Appendix A-1

NYSDEC Letter to BBL Dated August 18, 2003 and BBL Letter to NYSDEC Dated September 16, 2003

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2999
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

August 18, 2003

Mr. William B. Popham, Vice President
Blasland, Bouck & Lee, Inc.
155 Corporate Woods, Suite 150
Rochester, New York 14623-1465

Dear Mr. Popham:

Envirotek II - Roblin Steel Property
Tonawanda (T), Erie Co.
DEC Hazardous Waste Site No. 915056

The New York State Departments of Health (DOH) and Environmental Conservation (DEC) have completed a detailed review of the April 2003 Interim Remedial Measures Work Plan for Operable Unit 2. This document contains a general Work Plan, Technical Specifications, a Citizen Participation Plan, a Sampling and Analysis Plan, a Site Health and Safety Plan and a Quality Assurance Project Plan. Although the subject work plan is comprehensive and well written, the Departments have identified one item that must be addressed before the work plan can be approved. This item is summarized below. Please note that while the Technical Drawings were reviewed, the Technical Specifications were not.

- It is stated in the last sentence of Section 3.4 that VOC contaminated soil "is now limited to the upper 10 feet of soil" in the SDA/Source Area. Please be advised that any contaminated soils below this depth (i.e., 10 feet) may continue to act as a source of groundwater contamination that could influence the remedy selection process for Operable Unit 3 - Groundwater. As a result, an attempt should be made to excavate these soils to the extent practicable. Also, confirmatory samples of the excavation floor should be collected and analyzed to confirm that the excavation has been completed to a depth sufficient to protect groundwater.

While this comment changes some subsections of the work plan, we do not believe these changes are sufficient to require resubmittal of the entire plan. This letter, therefore, transmits formal Department approval of the April 2003 Interim Remedial Measures Work Plan for Operable Unit 2 contingent upon receipt of an acceptable response to the above comment. Should you have any comments or questions concerning this letter, please feel free to contact me at (716) 851-7220.

Sincerely yours,

Glenn M. May

Glenn M. May
Engineering Geologist I

GMM/tml

cc: Mr. Daniel King, NYSDEC, Region 9
Mr. Matthew Forcucci, NYSDOH, Buffalo

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Transmitted Via U.S. Mail

September 16, 2003

Mr. Daniel King, P.E.
Division of Environmental Remediation
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Envirotek II Site
Response to NYSDEC August 18, 2003 Comment Letter
Operable Unit No. 2 Interim Remedial Measures Work Plan
Tonawanda, New York
BBL Project #: 0580.58002

Dear Mr. King:

This letter prepared by Blasland, Bouck & Lee, Inc. (BBL) on behalf of the Envirotek II Site Potentially Responsible Parties (PRP) Group is in response to Mr. Glenn May's (New York State Department of Environmental Protection [NYSDEC]) correspondence dated August 18, 2003, regarding the NYSDEC's review of the *Interim Remedial Measures* (IRM) *Work Plan* (BBL, April 2003) for the Envirotek II Site located in Tonawanda, New York.

As discussed with the NYSDEC over the last several months, it is the PRP Group's intent through the implementation of this IRM to remove all volatile organic compound- (VOC-) contaminated soils at the site to meet or approach Technical and Administrative Guidance Memorandum (TAGM) #4046 levels. Upon completion of the OU-2 IRM, it is the PRP Group's expectation that the final remedy for Operable Unit 3 – Groundwater will be Monitored Natural Attenuation (MNA).

As you are aware, groundwater is present at the site approximately 8 feet below ground surface (bgs). Therefore, as referenced in the OU-2 IRM Work Plan, excavation is not anticipated below 10 feet bgs. This was based on previous soil boring analytical data, as well as the potential of excavating approximately 2 feet of saturated soils.

In an effort to implement MNA for OU-3, the PRP Group agrees with the NYSDEC in their comment regarding removing additional soils (below 10 feet bgs), if necessary, to the extent practicable to eliminate such soils from continuing to act as a source of groundwater contamination. As such, as discussed with Mr. Glenn May, confirmatory soil samples will be collected from the bottom of the

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excavation at approximately 40-foot by 40-foot (1,600 square feet) intervals to demonstrate protection of groundwater.

Per the NYSDEC August 18, 2003 correspondence, your receipt of this correspondence constitutes the NYSDEC's final approval of the OU-2 IRM Work Plan. With this approval, field activities are anticipated to commence in the next 3 to 4 weeks. When a site mobilization date has been confirmed, the NYSDEC will be notified.

We appreciate the NYSDEC's cooperation in this effort. If you have any questions, please contact me at (585) 292-6740, ext. 22.

Sincerely,

BLASLAND, BOUCK & LEE, INC.

William B. Popham
Vice President

WBP/mey

cc: Mr. Glenn May, New York State Department of Environmental Conservation
Mr. Joseph White, P.E., New York State Department of Environmental Conservation
Glen R. Bailey, Esq., New York State Department of Environmental Conservation
Mr. Mark Van Valkenburg, New York State Department of Health
Mr. Matthew Forcucci, New York State Department of Health
Mr. Paul Kranz, P.E., Erie County Department of Environmental Planning
Envirotek II Technical Committee
Envirotek II Executive Committee

Appendix A-2

BBL Letter to the NYSDEC Dated February 14, 2003

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engineers & scientists

Transmitted Via U.S. Mail

February 14, 2003

Mr. Daniel King, P.E.
Division of Environmental Remediation
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: IRM Meeting Summary
Envirotek II Site
Tonawanda, New York
RI/FS Order on Consent (Index #: B9-0407-92-05)
BBL Project #: 58002

Dear Mr. King:

As a follow-up to our February 3, 2003 meeting with the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH), Blasland, Bouck & Lee, Inc. (BBL) has prepared this letter summarizing our general understanding of the key points of the discussion. The objective of the meeting was to discuss the technical and administrative procedures necessary to implement an additional Interim Remedial Measure (IRM) at the Envirotek II site (site) to address volatile organic compound- (VOC-) impacted soil. In addition, we also discussed related activities and topics associated with the site, including:

- NYSDEC requirements and schedule for performance of the soil IRM, in such a manner that it can be considered the final soil remedy for the site;
- Technical and procedural requirements for implementing a monitored natural attenuation (MNA) remedy for groundwater;
- NYSDEC considerations for the Proposed Remedial Action Plan (PRAP) and Record of Decision (ROD);
- Remedial Schedule; and
- Notification procedures for citizen participation (CP).

These topics and the resolutions reached are discussed in more detail below.

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The soil IRM that BBL presented to the NYSDEC includes the removal of the majority of VOCs, with the overall remedial action goal of eliminating source materials in order to approach the NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 4046: *Determination of Soil Cleanup Objective and Cleanup Levels*. The areas to be excavated were determined from a review of the remedial investigation (RI) data, as well as data from the latest round of sampling completed during the waste characterization activities. It was agreed that the soil IRM is intended to serve as the final remedy for soil media at the site. The soil IRM will be completed during the upcoming construction season, pursuant to the schedule discussed below. Based on the attached schedule, the tentative start date for construction is targeted at August 25, 2003.

The implementation of the soil IRM would provide an added benefit by improving site groundwater quality, thereby enhancing the preferred groundwater remedy of MNA. As discussed, MNA would involve some form of longer-term groundwater monitoring to assess common natural attenuation processes, such as trends in VOC concentrations and geochemical properties. The NYSDEC stated that it will be necessary to present the final groundwater remedy for the site to the NYSDEC as part of a focused feasibility study (FFS), following completion of the soil IRM. In this submittal, a monitoring plan will be presented that outlines groundwater sampling, analytical, and reporting requirements for the proposed remedy. Approval of the FSS and monitoring plan by the NYSDEC would allow for the modification or amendment of the existing Administrative Order on Consent (AOC) between the PRP Group and the NYSDEC and, thus, eliminate the need for remedial design/remedial action (RD/RA) process and negotiation.

Based on these presentations, the NYSDEC was in general agreement that these remedial alternatives are technically appropriate for this site. To allow the NYSDEC the option of issuing a no further action (NFA) notice following remediation of the soil with groundwater impacts present, the administrative concept of classifying varying media as operable units (OUs) was discussed. Each OU could then be managed independently and be more effectively addressed in the PRAP and ROD required for the site. It was further determined that the initial IRM approved by the NYSDEC (letter dated November 21, 2002) for the site to remediate waste present in the Boiler House and Waste Pit No. 6 would also be termed an OU to streamline site remedial activities. Therefore, the OUs proposed for the site would be as follows:

- OU-1 – waste;
- OU-2 – soil; and
- OU-3 – groundwater.

Prior to performing the soil IRM, BBL will prepare a relatively comprehensive soil IRM Work Plan that will present the following key items, identified by the NYSDEC as relevant:

- Historical site soil data;
- Remedial action objectives;
- Rationale for the limits of excavation and explanation of historical data outliers relative to TAGM 4046;
- Drawings and specifications for the IRM site activities;
- CP requirements;
- Project schedule; and

- Other plans, including a revised Health and Safety Plan, a Sampling and Analysis Plan, a Construction Quality Assurance Plan, an Erosion and Sediment Control Plan, and a Decontamination Plan.

Technical issues associated with the IRM Work Plan were discussed, such as the frequency of sampling clean areas for use of site fill and the requirements, if any, for confirmatory sampling. The NYSDEC agreed to provide guidance on these areas before submittal of the draft plan and stated that BBL could begin work on the preparation of this IRM Work Plan.

After submittal and final approval of the IRM Work Plan, the NYSDEC will initiate a CP effort, including the mailing of a fact sheet and the scheduling of a public availability session. Unlike other public forums within Superfund, this CP session would not include provisions for the public to submit formal comments; public review would only be reserved until after the PRAP is released. The tentative date for release of the fact sheet is slated for June 23, 2003, with the actual public availability session to be held by the NYSDEC prior to the initiation of field activities.

During the final review and approval phase of both the Certification Report for the soil IRM and the FFS for groundwater, the NYSDEC will create and issue the PRAP for the site. To expedite the process, the NYSDEC now affords the opportunity for outside consultants to prepare the first draft of the PRAP. This option was offered to the Envirotek II site PRP Group for implementation at the site. The NYSDEC offered to transmit the work completed to date on the PRAP to the PRP Group, if desired. It is our understanding that the NYSDEC would like to issue the PRAP by January 15, 2004. The public comment period would then follow the release of the PRAP. Considering this schedule, the NYSDEC anticipates issuing a ROD sometime in the second quarter of 2004.

Based on our discussions, BBL has updated the schedule for remedial activities, incorporating the CP and groundwater FFS activities (see Attachment A). This schedule will be updated, as appropriate, and incorporated into the IRM Work Plan.

I believe the information provided herein accurately reflects our discussions during the meeting. We sincerely appreciate the cooperative nature and support of the NYSDEC as the PRP Group implements the soil IRM. If you have any questions or comments, please do not hesitate to contact me at (585) 292-6740, ext. 22.

Sincerely,

BLASLAND, BOUCK & LEE, INC.

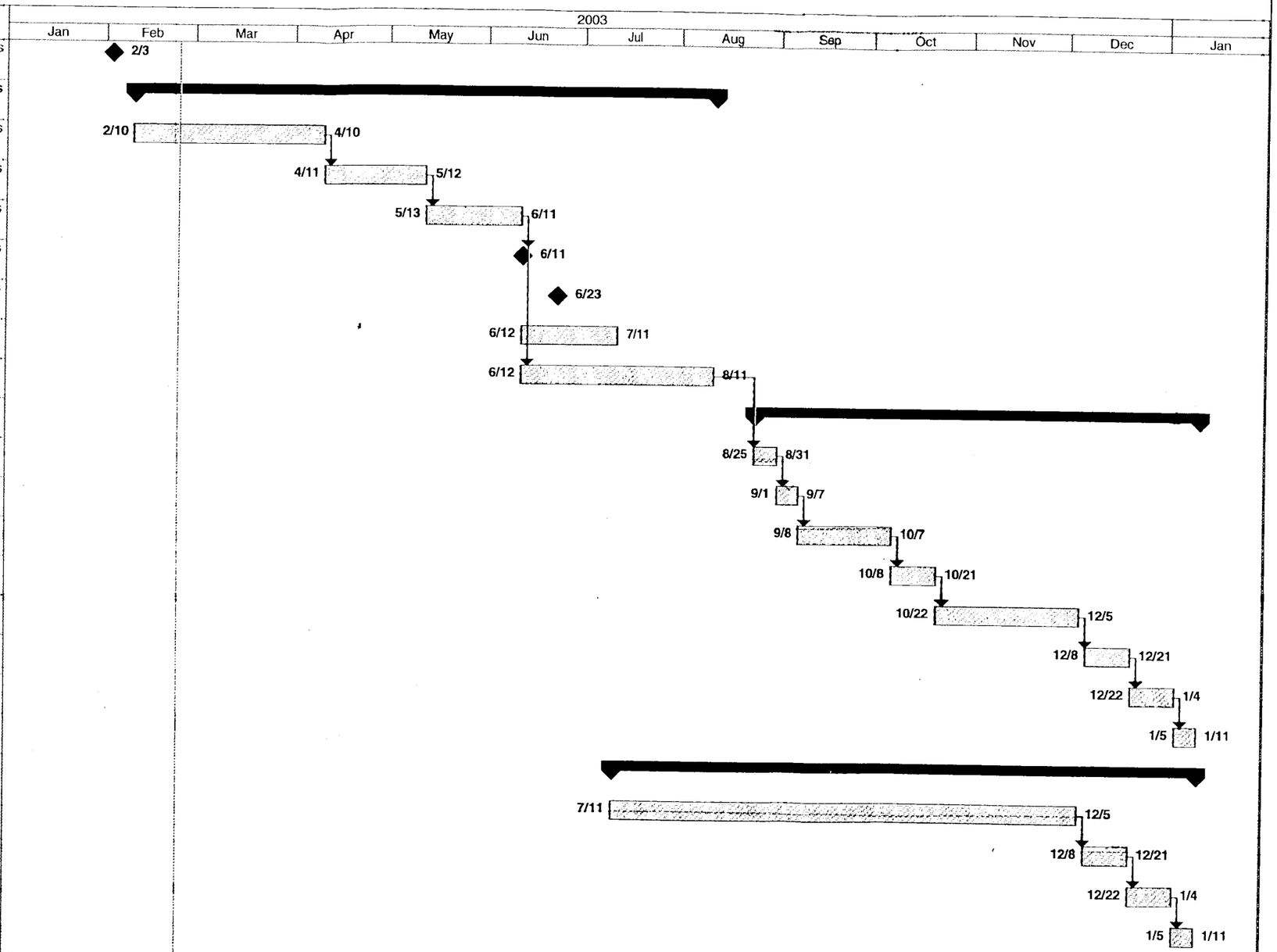
William B. Popham
Vice President

DMR/mey

cc: Mr. John W. Hyden, Ph.D., P.E., New York State Department of Environmental Conservation
Mr. Matthew Forcucci, New York State Department of Health
Envirotek II Site Executive Committee
Envirotek II Site Technical Committee
Mr. Matthew C. Plautz, P.E., Blasland, Bouck & Lee, Inc.
Mr. Douglas M. Ruszczyk, Blasland, Bouck & Lee, Inc.

Attachment A
Interim Remedial Measure
Envirotek II Site
Tonawanda, New York

ID	Task Name	Duration
1	**NYSDEC Meeting**	0 days
2	**IRM Work Plan**	**183 days**
3	IRM Work Plan Preparation	60 days
4	NYSDEC Review and Comment to IRM Work Plan	32 days
5	Response to NYSDEC Work Plan Comments	30 days
6	Fact Sheet Mailing	0 days
7	Public Availability Session	0 days
8	NYSDEC Approval of Final IRM Work Plan	30 days
9	Preparation of Bid Document and Selection of Remedial Contractor	61 days
10	**IRM Site Activities**	**140 days**
11	Mobilization and Site Preparation	7 days
12	Power Building Demolition	7 days
13	Soil Excavation and Offsite Disposal	30 days
14	Site Restoration and Demobilization	14 days
15	**IRM Final Report Preparation**	45 days
16	NYSDEC Review and Comment to IRM Final Report	14 days
17	Response to NYSDEC IRM Final Report Comments	14 days
18	NYSDEC Approval of IRM Final Report	7 days
19	**Focused Feasibility Study for Groundwater**	**185 days**
20	Focused FS for Groundwater and Monitoring Plan	148 days
21	NYSDEC Review and Comment to Focused FS and Monitoring Plan	14 days
22	Response to NYSDEC Focused FS Comments and Monitoring Plan	14 days
23	NYSDEC Approval of Focused FS and Monitoring Plan	7 days



Project: IRM Schedule
Date: Mon 2/24/03

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

Notes: (1) This schedule is subject to change based on the IRM Work Plan to be developed and approved by the NYSDEC. (2) The date of the public availability session is tentative and needs to occur prior to initiation of the field activities.

Appendix A-3

NYSDEC Letters to BBL Dated November 5 and 19, 2003

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New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2999
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

NOV 1 1 2003

November 5, 2003

Mr. William B. Popham, Vice President
Blasland, Bouck & Lee, Inc.
155 Corporate Woods, Suite 150
Rochester, New York 14623-1465

Dear Mr. Popham:

IRM Final Report for Operable Unit 1
Envirotek II - Roblin Steel Property
DEC Hazardous Waste Site No. 915056
Tonawanda (T), Erie Co.

The New York State Departments of Health (DOH) and Environmental Conservation (DEC) have completed a detailed review of the subject document that describes the IRM activities completed for Operable Unit 1 and find it acceptable. This letter, therefore, transmits formal Department approval of the IRM Final Report for Operable Unit 1 dated June 2003.

Should you have any comments or questions concerning this letter, please feel free to contact me at (716) 851-7220.

Sincerely yours,

Glenn M May

Glenn M. May
Engineering Geologist I

GMM/tml

cc: Mr. Daniel King, NYSDEC, Region 9
Mr. Matthew Forcucci, NYSDOH, Buffalo

eDocs Name: letter.hw.915056.2003-11-05.IRMOU1RptApproval.pdf

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2999
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

November 19, 2003

Mr. William B. Popham, Vice President
Blasland, Bouck & Lee, Inc.
155 Corporate Woods, Suite 150
Rochester, New York 14623-1465

Dear Mr. Popham:

IRM Final Report for Operable Unit 1
Envirotek II - Roblin Steel Property
Tonawanda (T), Erie Co., Registry No. 915056

As a follow-up to our November 5, 2003 letter approving the IRM Report for Operable Unit 1, please be advised that based upon the extent of the remedial activities completed at Waste Pit No. 6 and the Boiler House, no additional remedial activities will be required for Operable Unit 1.

Should you have any comments or questions concerning this letter, please feel free to contact me at (716) 851-7220.

Sincerely yours,

Glenn M. May

Glenn M. May
Engineering Geologist I

GMM/tml

cc: Mr. Daniel King, NYSDEC, Region 9
Mr. Matthew Forcucci, NYSDOH, Buffalo

eDocs Name: letter.hw.915056.2003-11-19.IrmOu1RptApproval.pdf

Appendix B

Photograph Log

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Photograph #1: Potentially reusable soil stockpiles. (Note: the camera date stamp should read 10/9/2003)

Photograph #2: West end of the excavation, with some water at the floor. (Note: the camera date stamp should read 10/9/2003)

BBL Blasland, Bouck & Lee, Inc.	ENVIROTEK Tonawanda, New York	Envirotek OU-2 IRM	Date: Oct. 2003 Project No: 58003.002

Photograph #3: North wall of the excavation. (Note: the camera date stamp should read 10/10/2003)

Photograph #4: Proposed eastern limits of excavation with concrete removed. (Note: the camera date stamp should read 10/13/2003)

BBL Blasland, Bouck & Lee, Inc.	ENVIROTEK Tonawanda, New York	Envirotek OU-2 IRM	Date: Oct. 2003 Project No: 58003.002

Photograph #5: Placing #3 crushed limestone backfill at the west end of the excavation.

Photograph #6: Test pits excavated for in-situ sampling of reusable soil.

BBL Blasland, Bouck & Lee, Inc.	ENVIROTEK Tonawanda, New York	Envirotek OU-2 IRM	Date: Oct. 2003 Project No: 58003.002

Photograph #7: NAPL-coated material removed from beneath the hazardous waste area.

Photograph #8: Hazardous waste excavation (under water).

Photograph #9: Test pit adjacent to hazardous waste area to delineate extent of waste. This material was removed.

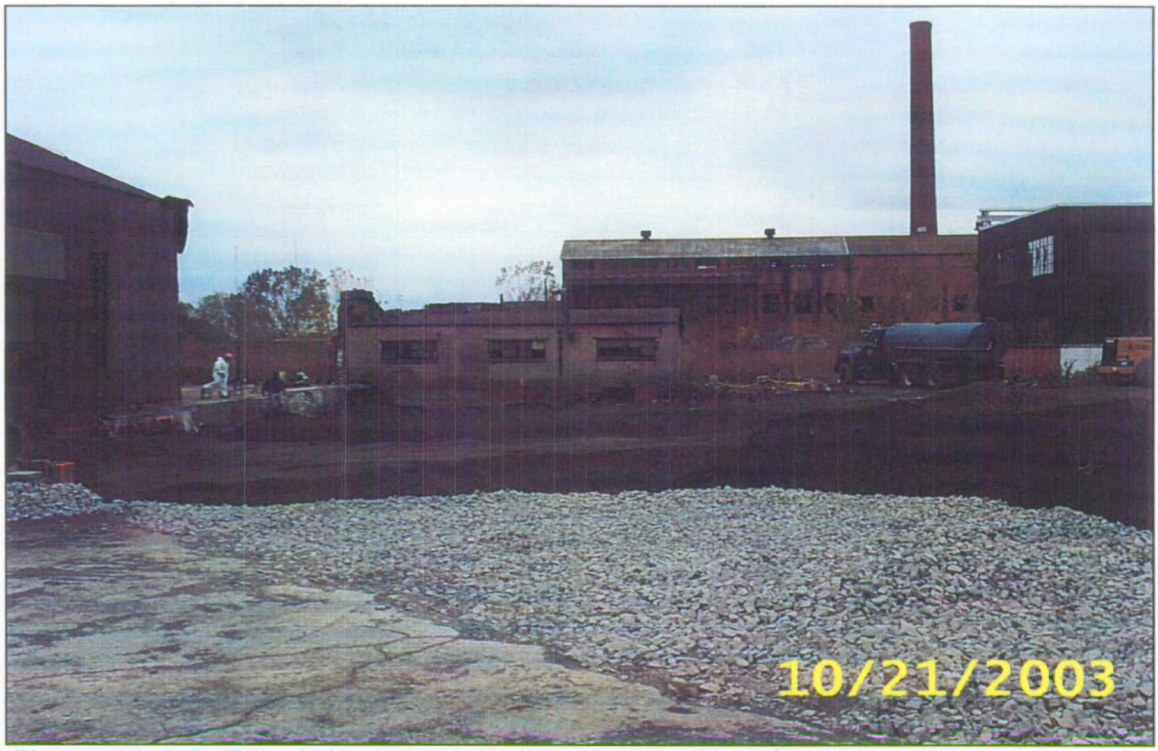
Photograph #10: Placing #3 crushed limestone up to, and into hazardous waste area.

Photograph #11: NAPL being contained in the hazardous waste excavation.

Photograph #12: North wall of the excavation, with reusable soil ramp at west end.

Photograph #13: Reusable soil being compacted at the west end of the excavation.

Photograph #14: Steel pipe exposed during excavation at east end.



Photograph #15: Recycled concrete being placed and compacted.

Photograph #16: Apparent containment structure exposed in the unidentified pit.

Photograph #17: Final limits of eastern excavation.

Photograph #18: Stratification of backfill materials.

Photograph #19: Limits of reusable soil at northeastern corner.

Photograph #20: 12" lift of #2 crushed limestone at surface.