

US Army Corps  
of Engineers

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**LANDFILL 7 COVER  
IMPROVEMENTS**  
*at the Former Griffiss Air Force Base  
Rome, New York*

**Engineer's Certification Report**

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*Conti Environmental, Inc.  
3001 South Clinton Avenue  
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*Prepared in Association with*



*EA Engineering, P.C. and Its Affiliate  
EA Science and Technology  
3 Washington Center  
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*May 2003*

**Engineer's Certification Report  
for Landfill 7 at the  
Former Griffiss Air Force Base  
Rome, New York**

Contract No. DACA41-01-D-0004

*Prepared for*

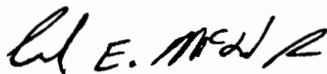
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Charles E. McLeod, Jr., P.E., Vice President/Project Manager  
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5/7/03

Date



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EA Engineering, P.C.

5/7/03

Date

May 2003  
Revision: 0  
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***May 2003***

**ENGINEER'S CERTIFICATION REPORT  
LANDFILL 7, FORMER GRIFFISS AIR FORCE BASE  
ROME, NEW YORK**

**ENGINEERING CERTIFICATION STATEMENT**

I hereby certify<sup>1</sup> under penalty of law as a Professional Engineer licensed in the State of New York that this document and all attachments were prepared by EA Engineering, P.C. and its affiliate EA Science and Technology under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The purpose of this document, the Engineer's Certification Report, is to present documentation that closure of Landfill 7, Former Griffiss Air Force Base, Rome, New York, was completed in general conformance with the United States Environmental Protection Agency and New York State Department of Environmental Conservation-approved Closure Plan for Landfill 7 (EA, March 2002). The EA Certifying Engineer, or his designated representative, was present daily during each construction phase, and documented the observations and data that are presented in this Engineer's Certification Report.



A handwritten signature in black ink, appearing to read "Chris Canonica", written over a horizontal line.

Christopher J. Canonica, P.E.  
Certifying Engineer  
New York State Professional Engineer  
No. 070876

EA Engineering P.C.  
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1. Certification/Certify means to state or declare a professional opinion of conditions whose true properties cannot be known at the time such certification is made, despite appropriate professional evaluation. The professional opinion made is based on limited observations and widely spaced tests. This certification of conditions in no way relieves any other party from meeting requirements imposed by contract or other means, nor does it warranty/guarantee the conditions of the constructed product.

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## 1. INTRODUCTION

### 1.1 STATEMENT OF PURPOSE

The U.S. Army Corps of Engineers (USACE)–Kansas City District issued Task Order No. 0002 under Contract No. DACA41-01-D-0004 to Conti Environmental, Inc. (Conti). Under this Task Order, EA Engineering, P.C. and its affiliate EA Science and Technology were retained as a subcontractor to provide certifying engineering of the closure activities at Landfill 7 at the former Griffiss Air Force Base, Rome, New York.

As part of the closure of Landfill 7 at the former Griffiss Air Force Base, Conti contracted EA to prepare the Engineer's Certification Report upon completion of construction activities at Landfill 7. This report details the activities that took place during the closure of Landfill 7, and documents compliance with the approved plans and specifications.

### 1.2 ORGANIZATION

Section 1 outlines the purpose of this Engineer's Certification Report. Section 2 includes a discussion of the site setting, site history, and site closure design. Section 3 presents a discussion of the as-built landfill cap features for the final cover system, including variances to the original design, which were requested and approved by the Air Force Real Property Agency (AFRPA) (formerly the Air Force Base Conversion Agency), U.S. Environmental Protection Agency (EPA), and New York State Department of Environmental Conservation (NYSDEC) during construction.

In addition to the sections discussed above, this Engineer's Certification Report includes applicable quality control documentation necessary to meet the requirements of the approved Closure Plan, the Record of Decision, and applicable portions of 6 NYCRR Part 360 regulations. This additional information is contained within a series of tables and appendixes included in this report. The combined report, tables, appendixes, and as-built drawings provide the following information required for construction and certification of the Landfill 7 cap:

- Pre-qualification testing results for the soil components of the cap
- Conformance test results for the low permeability soil
- Descriptions of earthwork construction activities
- Summaries of earthwork field compaction testing
- Summaries of laboratory hydraulic conductivity testing of the low permeability soil
- Summaries of analytical testing for borrow source materials.

Appendix A contains relevant correspondence amongst Conti, USACE, AFRPA, EPA, NYSDEC, and EA. Appendix B contains the daily quality control reports (DQCRs). Since closure activities for Landfills 2/3, 5, and 7 are all part of Task Order No. 0002, the DQCRs included with this Certification Report discuss activities related to each of the landfills. Reports are included for the time period that Landfill 7 was under construction. Appendix C contains

photographs of typical site conditions, as well as investigation, testing, and construction activities. Appendix D contains tables provided by the Professional Land Surveyor summarizing the as-built survey conditions. Appendix E contains laboratory reports for analytical testing of soil samples collected during the soil gas confirmatory test pit investigation. Appendix F contains laboratory reports for analytical testing of the common borrow fill material that was used in the electrical conduit trench. Appendix G contains laboratory reports for analytical testing of the low-permeability soil material that was installed. Appendix H contains laboratory reports for analytical testing of the topsoil material that was placed above the low permeability soil-material. Appendix I contains the precision, accuracy, representativeness, completeness, and comparability review by EA. Appendix J contains laboratory reports for the geotechnical testing of the low-permeability soil. Appendix K contains laboratory reports for the geotechnical testing performed on the topsoil material. Appendix L includes project submittals. Appendix M contains an as-built drawing set. Appendix N contains the Monitoring Well Abandonment Report.

### 1.3 PROJECT PARTICIPANTS

AFRPA and USACE retained Conti to finalize the design and implement the closure of Landfills 2/3, 5, and 7 under Task Order No. 0002 to the aforementioned contract. This task order included preparation of the documents necessary to support landfill closure activities, construction of the landfill cap, soil laboratory testing, land surveying, and construction of other applicable appurtenances. Various subcontractors provided support during these activities as follows:

- EA is the design engineer of record, and prepared the drawings and technical specifications for the closure of Landfill 7. Conti retained EA to provide construction oversight in order to prepare and stamp the Engineer's Certification Report required under 6 NYCRR Part 360-2.8 and the relevant parts of Part 360-2.13.
- Conti retained Severn Trent Laboratories of Edison, New Jersey to provide analytical testing services.
- Conti retained GeoTesting Express, Inc. of Boxborough, Massachusetts to provide geotechnical testing services.
- Conti retained LaFave, White, and McGivern, LS, P.C. of Boonville, New York to provide professional land surveying services.



## 2. SITE INFORMATION

### 2.1 SITE SETTING

Griffiss Air Force Base is a former U.S. Air Force installation covering approximately 3,552 acres in the lowlands of the Mohawk River Valley in Rome, New York. In 1987, EPA added Griffiss Air Force Base to the National Priorities List; and in 1990, the U.S. Air Force, NYSDEC, and EPA entered into a Federal Facilities Agreement. In 1993, Griffiss Air Force Base was designated for realignment under the federal Base Realignment and Closure Act and was subsequently deactivated.

Landfill 7 is located in the east-central portion of the base, between the main runway and Perimeter Road. The landfill covers an area of approximately 10.7 acres. The landfill does not have a baseliner system. Prior to recent closure construction activities, the entire landfill area was covered by grass. Jurisdictional wetlands are present along the area between the toe of the landfill and the runway.

### 2.2 SITE HISTORY

Griffiss Air Force Base was activated on 1 February 1942, under the title of Rome Air Depot. Throughout its active history, the mission of the base has varied. The original mission of the Rome Air Depot was the storage, maintenance, and shipment of material for the U.S. Army Air Corps. Upon creation of the U.S. Air Force in 1947, the depot was renamed Griffiss Air Force Base. The base became an electronics center in 1950, with the transfer of Watson Laboratory Complex (later Rome Laboratory). The 49th Fighter Interceptor Squadron was also added in that year. In June 1951, the Rome Air Development Center was established with the mission of accomplishing applied research, development, and testing of electronic air ground systems. The Headquarters of the Ground Electronics Engineering Installations Agency was added in June 1958 to engineer and install ground communications equipment throughout the world. On 1 July 1970, the 416th Bombardment Wing of the Strategic Air Command was activated with the mission of maintenance and implementation of both effective air refueling operations and long-range bombardment capability. Griffiss Air Force Base was designated for realignment under the Base Realignment and Closure Act in 1993, resulting in deactivation of the 416th Bombardment Wing in September 1995. To date, the Rome Laboratory and the Northeast Air Defense Sector continue to operate at their current locations. The New York Air National Guard operated the runway for the 10th Mountain Division deployments until October 1998 when they were relocated to Fort Drum. The Defense Finance and Accounting Services have established an operating location at the former Griffiss Air Force Base. Recent activities at the Base include the construction of a high school and the ongoing development of the Rome Business Park.

### 2.3 LANDFILL CAP DESIGN

This section discusses the design features of the landfill closure that were prepared to meet the requirements set forth in 6 NYCRR Part 360 dated 1 April 1987, and also in the Record of

Decision dated June 2000. Ecology and Environment, Inc., under contract to USACE–Kansas City District, prepared a Draft Design Analysis Report (E&E 1999<sup>1</sup>) for the design of landfill cover improvements for Landfill 7 at the former Griffiss Air Force Base in Rome, New York. EA was retained by Conti to use the Draft Design Analysis Report as the basis for preparation of the final design drawings and contract specifications.

In December 2001, USACE authorized EA to finalize the design for landfill cover improvements at Landfill 7 based on the Draft Design Analysis Report (E&E 1999). In March 2002, final versions of the Landfill 7 Closure Plan, Project Work Plan, Site Safety and Health Plan, Contractor Quality Control Plan, and Sampling and Analysis Plan were submitted to USACE. These documents were then forwarded to EPA and NYSDEC for approval. EPA approved the documents in a letter received on 24 April 2002, and NYSDEC approved the documents in a letter dated 3 May 2002. These letters are provided in Appendix A. In addition, replacement pages for these documents were submitted on 30 July 2002.

The Landfill 7 cover was designed to meet 6 NYCRR Part 360 regulations dated 1 April 1987, and the Record of Decision requirements. The final design included subgrade preparation, placement of an 18-in. thick layer of low permeability soil over the landfill, placement of topsoil (or approved alternate material) over the low permeability soil as the new top vegetative layer, and the installation of erosion control systems. Low permeability material was used in place of common fill material on the cap in areas that required additional fill material to achieve design grades. The low permeability soils were specified to have a hydraulic conductivity (i.e., rate of permeability) no greater than  $1 \times 10^{-5}$  cm/sec.

### **2.3.1 Requested Variances to Design of Final Cover System**

A variance related to the topsoil layer portion of the cap was approved as part of the Closure Plan. In accordance with Local Government Regulatory Relief Initiative Section A, a minimum 6-in. “topsoil” layer as required by 6 NYCRR Part 360-2.13(t) may be replaced by a minimum 6-in. layer of a material that is capable of sustaining plant growth, controlling erosion, and promoting evapotranspiration. This variance was not implemented for the topsoil layer on Landfill 7 since the material met the intent of the Specification Section 02921, Seeding and Topsoil, provided in the approved Closure Plan. Analytical and geotechnical data for the topsoil used for Landfill 7 are contained in Appendixes H and K, respectively, and this information is summarized in Tables 1 and 2. Additional details related to topsoil installation is provided in Section 3.2.2.

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1. Ecology and Environment, Inc. (E&E). 1999. Landfill 7 Draft Design Analysis Report for Griffiss Air Force Base, New York.

## **2.3.2 Landfill Cap Components**

### **2.3.2.1 Gas Venting Layer**

Waste was not received at Landfill 7 after 1954. Given the elapsed time since the waste placement and the nature of the material, it was determined that Landfill 7 had a minimal potential for active gas generation. Accordingly, there is a minimal requirement for active gas management and gas monitoring. A pre-construction methane/decomposition gas survey was conducted by FPM Group Ltd. for Conti in accordance with the Closure Plan. A gas venting layer was not required as a result of this investigation. Additional discussion related to the soil gas survey is presented in Section 3.1.3.

### **2.3.2.2 Low Permeability Soil Layer**

Low permeability soils from the Hanniker Brothers Sand and Gravel Mine were analyzed for use in the cap system for Landfill 7. Prior to construction, samples of the soil material were collected from this borrow source and sent to Severn Trent for analytical testing. GeoTesting Express performed the geotechnical analysis. EA's letter to Conti, dated 25 June 2002, stated that the Hanniker Brothers' low permeability soil was acceptable for use on this project and met the requirements of Closure Plan Specification Section 02377, Low Permeability Soil. A copy of the approval letter is provided in Appendix A. The results of analytical tests are summarized in Table 3, and geotechnical results are summarized in Tables 4 and 5. The data that support these results are found in Appendix G for the analytical tests and in Appendix J for the geotechnical tests.

### **2.3.2.3 Topsoil Layer**

EA and Conti collected samples from the topsoil source provided by the Harvey Construction Company. The samples were tested for geotechnical properties and analytical parameters prior to transporting material onto the site. The topsoil source was located off Route 49 in Utica, New York and was sampled on 11 June 2003. A review of the results indicated that the measured characteristics of the soil material were in accordance with the requirements for topsoil under the Closure Plan Specification Section 02921, Seeding and Topsoil. A letter dated 28 June 2002 summarizes the results and is provided in Appendix A. Additional details related to topsoil placement is provided in Section 3.2.2.

## **2.3.3 Stormwater Management**

Based on information presented in the Draft Final Remedial Investigation Report (Law 1996<sup>2</sup>) and observations at the site, Landfill 7 runoff discharges to Six Mile Creek, which is located approximately 400 ft to the east of the landfill. Six Mile Creek discharges to the New York State

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2. Law Environmental, Inc. 1996. Draft Final Remedial Investigation Report for 31 Areas of Concern Identified at Griffiss Air Force Base, New York.

Barge Canal, which is located 9,600 ft south of Landfill 7. Landfill 7 is not located within the 100-year floodplain of Six Mile Creek.

Runoff from areas that drain to the south discharge primarily as sheet flow to the wetlands located between the site and the base runway. Runoff collected in the swales adjacent to the gravel access road also discharges to this wetland area. Catch basins located within the wetland collect runoff, which is conveyed to Six Mile Creek via a culvert.

Water collected in the Perimeter Road swale adjacent to the western portion of the landfill is collected in a catch basin located in the northwest corner of the site, which drains through a culvert to the stream north of the landfill and into Six Mile Creek. Water collected in the Perimeter Road swale adjacent to the eastern portion of the landfill and north of the access road drains down the access road and then to the southern wetland area. The water collected in the Perimeter Road swale south of the access road is discharged overland through the eastern portion of the landfill and to the southern wetland area.

Results of stormwater calculations indicated that no significant change in the peak discharge would occur as a result of the proposed landfill cover construction. Therefore, the proposed landfill cover should not affect stormwater management in the area.

### 3. ENGINEERING CERTIFICATION

This section discusses the activities surrounding the implementation of the landfill closure. Each design component is briefly discussed to outline compliance with the approved plans and specifications. Approved changes incorporated during construction are provided in detail. Construction-related quality assurance/quality control reports and photographic documentation are provided in Appendixes B and C, respectively.

#### 3.1 SITE PREPARATION

Prior to construction, the Landfill 7 surface was covered with grass. Prior to any intrusive construction activities, a silt fence was installed around the perimeter of the landfill. A tractor/brushhog was used to mow the existing surface of Landfill 7; clearing of shrubs/overgrowth and grubbing of roots were not required. A Dig Safe permit was approved by Griffiss Local Development Corporation on 16 May 2002, which extended 20 ft beyond the delineated fenceline in all directions.

The demolition and removal of asphalt associated with the existing observation point overlooking the main runway was also performed as part of the site preparation activities. All demolished asphalt (approximately 3 yd<sup>3</sup>) was transported offsite for proper disposal. A Certificate of Disposal is provided in Appendix A.

In order to facilitate entry/exit along Perimeter Road, an additional stabilized construction entrance and gate were installed along Perimeter Road on the south cell at the southeast corner of the landfill. Conti and USACE discussed the installation of these items prior to their construction. A copy of the DQCR documenting this discussion is found in Appendix B.

##### 3.1.1 Erosion and Sedimentation Control

Silt fence was installed around the perimeter of the site prior to any disturbance of the native grass covering. A New York State Department of Transportation (NYSDOT) approved silt fence was substituted for the wire-reinforced silt fence as specified on Drawing C-4 of the Closure Plan for Landfill 7. This material was discussed during the Preparatory Phase Checklist meeting conducted at the site on 22 May 2002. The approved submittal for this material is provided in Appendix L. The location of the silt fence in the vicinity of the wetland in the southern corner of the landfill was realigned in order to avoid encroachment into the delineated wetlands. Hay bales were installed around the catch basin located in the northwest corner of the site as stated in the 10 June 2002 DQCR. In addition, dust monitoring was performed during all intrusive activities. Photographs depicting the erosion and sediment control features are provided in Appendix C.

### **3.1.2 Subgrade Preparation**

Once mowing of the existing vegetation was completed, the native grass cover was scarified with a bulldozer to a minimum depth of 6 in. using a minimum of 6 passes. The surface was then proof rolled and subsequently tracked with a dozer. No debris was exposed during this operation. A water truck was used for dust control as necessary throughout subgrade preparation. A typical section of the tracked landfill surface prior to the low permeability soil installation is shown with the pad construction in Photo Nos. 6 and 7 in Appendix C.

### **3.1.3 Soil Gas Confirmatory Test Pit Investigation**

A soil gas survey was conducted in May 2002 by FPM Group Ltd. for AFRPA. This survey was performed in accordance with 6 NYCRR Part 360 (2.15[a][2]) and concluded that Landfill 7 does not generate landfill gases that exceed the threshold value and that the approved soil cap will not be impacted by the current level of gas generation at the landfill. EA and Conti prepared a letter dated 4 June 2002 with this conclusion and the recommendation that a gas venting system is not required on Landfill 7.

At the request of NYSDEC, a test pit was excavated at Landfill 7 on 20 June 2002 with the purpose to confirm the presence of landfill gas and to identify a source of volatile organic compound concentrations at a location where landfill gas was detected by FPM during the soil gas survey. NYSDEC, USACE–New York District, and AFRPA personnel, along with Conti and EA personnel, were present for the test pit excavation. Two soil samples were collected from the pit and were sent to Severn Trent for analytical testing. Neither landfill gas nor volatile organic compounds were detected in the soil samples collected from the test pit excavation.

EA and Conti prepared a letter dated 18 July 2002 discussing the results of the test pit investigation. The results of the exploratory test pit investigation and analytical test results confirmed the recommendations proposed in the 4 June 2002 letter. Gas management was not necessary for Landfill 7 and, therefore, not incorporated into the landfill cap design. The May 2002 Landfill 7 Soil Gas Survey, the 4 June 2002 letter from EA discussing the results of the soil gas survey, and the 18 July 2002 letter from EA discussing the results of the soil gas field investigation are provided in Appendix A. A photograph showing the test pit investigation and gas screening is included in Appendix C. Table 6 presents a summary of the analytical results collected during the soil gas field investigation.

### **3.1.4 Decontamination Pad**

In order to facilitate truck movement in and out of Landfill 7, the decontamination pad was relocated to the north side of the utility corridor next to the main gate along Perimeter Road. A detailed description of this activity is found in the 6 June 2002 DQCR in Appendix B, and the relocated decontamination pad is depicted on the as-built drawings (Appendix M). Four layers of 10-mil linear low density polyethylene (LLDPE) were substituted for the 40 mil LLDPE liner

as specified on Sheet C-3, Closure Cap Details. Photo Nos. 5 and 6 showing the installation of the decontamination pad liner and stone, dated 6 and 7 June 2002 respectively, are found in Appendix C. Upon the completion of the landfill construction operations, this pad was removed and disposed of in accordance with the project specifications.

### **3.1.5 Utility Relocation**

Prior to construction, there were two underground utilities routed underneath the landfill. An underground cathodic protection line that extended from the runway area to the south of the landfill was abandoned in place, and the transformer associated with this line was relocated to an area north of the landfill by GLDC/GUSC. The underground utility that crosses the landfill from the runway to Perimeter Road was relocated outside the limits of waste along the access road that traverses the landfill. The existing lines and the relocated lines are depicted on the as-built drawings (Appendix M).

A total of approximately 700 linear ft of trench was excavated during the installation of the new electrical conduit. All materials were monitored for contamination during excavation, and the excavated material was placed onto Landfill 7 and covered with low permeability soil. The new conduit was placed in the trench and bedded in sand that was imported to the site. The bedding sand was sampled and sent to Severn Trent for analytical testing prior to being brought to the site. A 12-in. layer of dense, graded aggregate was installed above the bedding sand. Warning tape was installed approximately 12 in. above the buried conduit. The results of the analytical testing of the bedding sand showed that the material was acceptable for use in Landfill 7, and these results are provided in Appendix F and summarized in Table 7.

### **3.1.6 Limit of Waste Verification**

Based on field observations of the topography in the areas adjacent to the existing access road, it appeared that there may have been a discrepancy between the limit of waste identified on the design drawings and the actual limit of waste. Upon approval from USACE, a total of 12 test pits were excavated to determine the actual limit of waste. Six test pits were excavated along the eastern side of the existing access road on 1 August 2002, and an additional six test pits were excavated along the western side of the existing access road on 13 August 2002.

Based on the test pit excavation, the limit of waste north of the access road was relocated approximately 20 ft to the north. Test pits along the south side of the access road confirmed the design limits of waste and were not revised. The revised limit has also been added to Closure Plan Drawing C-1 and the as-built drawings located in Appendix M. A letter dated 4 October 2002 documenting activities related to the limit of waste verification is provided in Appendix A.

## **3.2 AS-BUILT LANDFILL CAP COMPONENTS**

Conti performed a 1-ft elevation contour topography survey prior to commencement of closure activities. In addition, Conti performed 1-ft elevation contour topography surveys in order to define the final subgrade surface, the final low permeability soil layer surface, and the final

topsoil surface. The survey results were reviewed to ensure that the minimum thickness of each of these layers was maintained during construction. In addition, pertinent site features (monitoring wells, access roads, drainage structures, etc.) were located during the surveys. Survey data are located in Appendix D, and as-built drawings depicting each of these layers are provided in Appendix M.

It should be noted that although the thickness of each layer was determined to be within the project parameters, an approximate 0.5-acre area located to the north of the access road has an average slope slightly less than the 2 percent requirement. Conti will repair this area in Spring 2003 based on weather and/or soil conditions. Topsoil meeting the requirements of the project specifications will be added to this area in order to achieve the minimum 2 percent slope, and the area will subsequently be hydroseeded. Upon completion of the regrading in this area, EA and Conti will prepare a letter along with revised drawings certifying that the additional work was performed in accordance with the approved Closure Plan. This letter will be submitted as an addendum to the Engineer's Certification Report.

### 3.2.1 Low Permeability Soil Layer

A minimum of 18 in. of low permeability soil with a permeability no greater than  $1 \times 10^{-5}$  cm/sec was installed over Landfill 7. Prior to transporting any material to the site, the low permeability soil was sampled at the borrow source (Hanniker Brothers Sand and Gravel Mine) and sent for geotechnical and analytical testing. Analytical testing was performed by Severn Trent, and GeoTesting Express performed geotechnical testing in accordance with the approved Sampling and Analysis Plan. Upon completion of analytical testing, EA and Conti received the results, compared the results to both the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 and the Eastern United States Background Concentrations, and prepared a letter to USACE which was forwarded to AFRPA. AFRPA then forwarded the letter to EPA and NYSDEC for concurrence. This letter, dated 25 June 2002, states that the Hanniker Brothers low permeability soils were acceptable for use on this project and meet the requirements of Closure Plan Specification Section 02377, Low Permeability Soil. This correspondence is provided in Appendix A. Soil samples were also taken during the construction activities.

The following tests were performed on the low permeability material:

Test	Test Standard	Test Frequency
Atterberg limits	ASTM D-4318	1 test per 1,000 yd <sup>3</sup> in place
Compaction characteristics	ASTM D-698	1 test per 5,000 yd <sup>3</sup> in place
Particle size analysis	ASTM D-422	1 test per 2,500 yd <sup>3</sup> in place
Moisture content	ASTM D-2216	1 test per 1,000 yd <sup>3</sup> in place
Chemical testing	EPA SW-846	1 test per source

In addition, moisture/density testing was performed throughout the installation process using a nuclear moisture/density meter. Shelby tube samples were also obtained for hydraulic conductivity testing.



The results of analytical tests are summarized in Table 3, and geotechnical results are summarized in Tables 4 and 5. The data that support these results are found in Appendix G for the analytical tests and in Appendix J for the geotechnical tests.

### **3.2.1.1 Test Pad Construction**

The first stage of low permeability soil installation consisted of constructing a test pad. The test pad was an approximate 100-ft<sup>2</sup> area located in the northern corner of the north cell of Landfill 7. The test pad was installed using all of the equipment, personnel, procedures, and materials that were to be used during future placement of low permeability soil. The construction method consisted of installing three 6-in. lifts of low permeability soil and one 6-in. lift of topsoil by the conclusion of a given workday.

A nuclear moisture/density gauge was used to measure the dry density and moisture of the soil material. Sand cones were also used to determine the moisture density of the soil, and the sand cone results were compared to the nuclear density gauge results to determine if any corrections/calibrations were necessary in order to obtain accurate results. Shelby tube samples were also obtained from the test pad in order to determine if the construction methods employed were suitable to obtain a minimum permeability of  $1 \times 10^{-5}$  cm/sec.

### **3.2.1.2 Low Permeability Soil Installation**

Low permeability soil installation began on 3 July 2002, and was completed on 28 August 2002. The material was spread using a D6 bulldozer. In addition to keeping the low permeability soil to a uniform thickness, the bulldozer also broke down any clumps of material that occurred during placement. Particles greater than 1 in. in diameter were removed. Each lift of material was spread to a loose thickness of approximately 8 in., achieving a final compacted thickness of approximately 6 in.

A padfoot roller provided the primary means of compaction. The material was compacted in accordance with the project requirements until the minimum 95 percent of the maximum dry density was achieved, as determined by the Standard Proctor test (ASTM D-698), and at a moisture content between 0 and 4 percent above optimum moisture. Three individual lifts of low permeability soil were required to achieve the minimum layer thickness of 18 in. The top surface of each lift was scarified prior to placement of the subsequent lift, promoting effective bonding of lifts.

The thickness of the lifts was controlled using marked grade stakes. Each grade stake was removed to ensure adequate compaction. Once the final surveys were completed, the thickness of the low permeability layer was determined by comparing the elevations of the top of subgrade and top of low permeability material layers. In all cases inside the designated limit of waste, the low permeability layer was constructed to a thickness of 18 in. or greater.

A representative from GeoTesting Express performed *in situ* moisture density testing on the low permeability soil material at a minimum rate of 1 test per acre per lift. The results of all moisture density tests performed on the material are summarized in Table 8. GeoTesting Express also performed laboratory hydraulic conductivity testing. A total of 33 samples were obtained from the low permeability material. The coefficients of permeability ranged from  $6.2 \times 10^{-6}$  cm/sec to  $1.9 \times 10^{-9}$  cm/sec. These test results indicate that the material meets the project requirements of  $1 \times 10^{-5}$  cm/sec. The laboratory results of the in-place permeability samples are provided in Appendix J and summarized in Table 5.

### 3.2.2 Topsoil Layer

The size and location of the work area was adjusted such that three successive 6-in. lifts of low permeability soil and one 6-in. lift of topsoil were installed in a single day. This construction approach was selected to minimize the potential maintenance of the underlying low permeability soil (e.g., moisture conditioning, re-testing, etc.). Placement of topsoil was accomplished by using a D6 bulldozer, and particles larger than 2 in. were removed from the material.

As discussed in Section 2.3.2.3, EA and Conti collected topsoil samples for geotechnical and analytical testing prior to bringing any material onsite. The geotechnical samples were submitted to GeoTesting Express, Boxborough, Massachusetts, and tested for grain size distribution (ASTM D422), organic content (AASHTO-T194), and pH (ASTM D-4972-01) as indicated in Table 2. The analytical composite and discrete samples were submitted to Severn Trent and analyzed for chemical characteristics.

The geotechnical test results conform to the requirements of Paragraph 2.2 of Specification Section 02921, which references NYSDOT 713-01 requirements, with the following variation:

- One sample had a pH of 5.1 which is lower than NYSDOT 713-01 minimum of 5.5. This variation was determined to be acceptable since the four additional tests had pH measurements above 5.5. In addition, the pH of the topsoil was field tested during placement by Conti at a rate of 1 test per acre, and these results were in accordance with the requirements specified in NYSDOT 713-01.

EA and Conti compared the analytical results to NYSDEC TAGM 4046 and Eastern United States Background Concentrations and found slightly elevated levels of the following parameters: zinc, beryllium, and iron. The concentrations were slightly above TAGM standards; however, these concentrations fall within the range of the average Eastern United States Background Concentrations. EA and Conti prepared a letter, dated 28 June 2002, to USACE summarizing the results, which was forwarded to AFRPA. AFRPA then forwarded the letter to EPA and NYSDEC for concurrence. This letter is provided in Appendix A. The results of analytical testing on the topsoil material are located in Appendix H, and are summarized in Table 1. The results of the geotechnical testing for the topsoil are located in Appendix K and summarized in Table 2. Photographic documentation depicting topsoil installation is provided in Appendix C.

### 3.2.2.1 Seeding and Mulching

Seeding and mulching were performed as stated in Section 02921, Seeding and Topsoil, of the contract documents. Photo No. 21 in Appendix C depicts the hydroseeding operation. A dense vegetative cover was established by October 2002.

### 3.2.3 Field Modification/Clarifications during Construction

The following field modifications/clarifications occurred during the construction of Landfill 7:

- **Stabilized Construction Entrance**—As discussed in Section 3.1, an additional stabilized construction entrance was included to access the site from Perimeter Road onto the south cell of Landfill 7. Also, the placement of the stabilized construction entrance along the north cell was relocated to the west slightly in order to facilitate vehicle access during construction.
- **Silt Fence**—As discussed in Section 3.1.1, the silt fence specified for use during this project was substituted for an NYSDOT-approved silt fence. This material was discussed during the Preparatory Phase Checklist meeting conducted at the site on 22 May 2002. The approved submittal for this material is provided in Appendix L. Also, the location of the silt fence in the vicinity of the wetland in the southern corner of the landfill was realigned in order to avoid encroachment into the delineated wetlands.
- **Decontamination Pad**—Four layers of 10-mil LLDPE were substituted for the 40-mil LLDPE liner as specified on Sheet C-3, Closure Cap Details (refer to Section 3.1.4). This modification was made since the 40-mil LLDPE material was unavailable locally, and it was determined that four layers of 10-mil LLDPE would function adequately when compared to a 40-mil layer of LLDPE. In addition, the location of the decontamination pad was relocated to the north side of the utility corridor in order to facilitate truck movement in and out of Landfill 7.
- **Soil Testing Requirements**—The 17 July 2002 letter from EA to Conti clarifies soil testing requirements presented in the Closure Plans for Landfill 7. Low permeability soil was tested for the properties and at the frequencies presented on Table 1 of the Closure Plan (Natural Material Quality Assurance Testing). This table was developed to conform to the requirements of 6 NYCRR Part 360-2.13 (j), and supercedes the frequencies and test locations (e.g., borrow source, in place) provided in Specification Section 02377. The test methods described in Section 02377 still applied with the following exception to Paragraph 3.14.
  - Paragraph 3.14 required that a set of six specimens be tested for hydraulic conductivity at a frequency of one test set (six specimens) per 5,000 yd<sup>3</sup> of material. This testing method was developed to establish acceptable zones (moisture/density-permeability relationships) for low permeability soil, and was required for each source and when a change in material is observed. EA notes that this method was

used to establish two acceptable zones for material at the approved low permeability soil source. Hydraulic conductivity testing was still performed at a frequency of one sample per 5,000 yd<sup>3</sup> of soil as shown in Table 4. However, the test was conducted on one specimen remolded to the optimum moisture content and 95 percent of maximum dry density rather than six specimens.

- **Monitoring Well Abandonment**—Monitoring well LF7MW15 was included in the Closure Plan as one of six wells to be abandoned during landfill capping activities at Landfill 7. This monitoring well was anticipated to be located on the south cell of Landfill 7. It was determined that the well had been previously abandoned, therefore, only five wells were abandoned related to Landfill 7. A Monitoring Well Abandonment Report is provided in Appendix N.
- **Fertilizer**—As discussed in approved Submittal 0006, a “19-19-19” fertilizer was used in place of a “20-20-20” fertilizer. The application rate was adjusted to 526 lb per acre in order to supply the same amount of nutrients as 500 lb of a “20-20-20” fertilizer per acre as required in the Closure Plan.
- **Low Permeability Soil Material Properties**—As discussed in the 25 June 2002 letter from EA to USACE, a number of samples of low permeability soil had a liquid limit less than 35. The specification requires a minimum liquid limit of 35, and the sample values ranged from 23.1 to 40.8. This variation was considered acceptable since the measured permeability values for representative samples are nearly three orders of magnitude lower than the maximum requirement of  $1 \times 10^{-5}$  cm/sec, and the plasticity indices for the same samples range from 9.5 to 24.5. In addition, the plasticity index is the primary indicator of clay properties and permeability.

Four samples had trace quantities of particles in excess of 1 in. This variation was considered acceptable since the samples had at least 97 percent of particles passing the 1-in. sieve, contained clay/silt fractions in excess of 87 percent, and were classified under the Unified Soil Classification System as CL (clay).

The concentrations of iron, nickel, zinc, beryllium, and chromium were above the New York State TAGM 4046 standards. However, each of these concentrations falls within the Eastern United States Background Concentrations. In addition, the concentration of magnesium was above the Eastern United States Background Concentration. The Onieda County Soil Conservation Service has classified the soil as Alton Gravelly Loam, which has a moderate lime concentration. The greater the lime concentration, the greater the probability of having elevated magnesium concentrations.

### **3.2.4 Precision, Accuracy, Representativeness, Completeness, and Comparability Review**

The analytical data received from Severn Trent during construction of the Landfill 7 cap were evaluated to determine if the soil data are usable based on a precision, accuracy, representativeness, completeness, and comparability review. This review was performed in accordance with the applicable sections of the Quality Assurance Project Plan and is provided in Appendix I.

All volatile organic compounds, semivolatile organic compounds, pesticides, polychlorinated biphenyls, and cyanide data for Landfill 7 are usable as reported based on the accuracy and precision review performed. Minor sample biases are identified and a detailed description of field/laboratory blank contamination, precision issues, and accuracy issues are provided in Appendix I. All metals data are usable with the exception of antimony. Major sample issues for antimony are identified and a detailed description of accuracy issues is provided in Appendix I.

### **3.2.5 Documentation Survey**

Documentation surveys of existing conditions and as-built conditions were performed by LaFave, White and McGivern, LS P.C. throughout construction of the Landfill 7 cap. Specifically, surveys were performed for the top of subgrade, the top of low permeability material, and the top of topsoil. A summary of the survey data is presented in Appendix D, and as-built drawings are provided in Appendix M.

## **3.3 STORMWATER MANAGEMENT**

Erosion and sediment control materials were installed prior to landfill closure activities to manage stormwater runoff, as stated in Section 3.1.1.

The drainage swales along the access road were constructed to maintain a minimum depth of 6 in., and the swales along Perimeter Road were constructed to maintain a minimum depth of 12 in. These swales were lined with biodegradable erosion control matting. Photographic documentation of these activities is provided in Appendix C.

The existing culvert located at the southwestern-most section of the landfill bordering the runway was removed. During construction, it was noted that the existing culvert had approximately 2-3 in. of cover material instead of the required 18 in. During the Preparatory Phase meeting for this activity, it was decided that approximately 12 in. of cover would be adequate in order to make the invert of the culvert at the same elevation as the upgradient and downgradient swales. The installed culvert is a 12-in. diameter 16-gauge corrugated metal pipe.

## **3.4 MONITORING WELL ABANDONMENT**

Monitoring wells HS7MW-1, LF7MW-3R, MW-16, MW-17, and LF7MW-18R on Landfill 7 were abandoned from 18 to 20 June 2002 by EA. These wells were located within the waste

mass or construction area of Landfill 7 and, therefore, would have inhibited landfill closure construction. The wells were abandoned in accordance with 6 NYCRR Part 360-2.11(a)(8)(vi) and the 1996 version of the Ground-Water Monitoring Well Decommissioning Procedures, Sections 2.2, 9.0, and 10.0. An EA field geologist supervised these activities.

The wells were abandoned in accordance with Specification Section 02670, Monitoring Well Decommissioning. Initial air monitoring was performed prior to any intrusive activities. Periodic air monitoring was completed as each well abandonment progressed. Materials collected during abandonment (including polyvinyl chloride, drill cuttings, concrete, and guard pipes) were temporarily staged on polyethylene sheeting and ultimately placed in drums. The drums were labeled as containing non-hazardous material. Prior to installation of the low permeability soil, the drums were emptied and the contents placed beneath the cap. The drums were then reused for additional well abandonment activities. The drilling equipment was decontaminated at the designated decontamination pad between each drilling location. The decontamination water was collected in a sump and pumped to a polyethylene tank. The majority of the decontamination water evaporated over the course of the summer, and the remainder of the water was ultimately discharged back to the surface of the landfill prior to the installation of the low permeability cap. The Monitoring Well Abandonment Report is provided in Appendix N.

## **Tables**

## LIST OF TABLES

<u>Number</u>	<u>Title</u>
1	Summary of analytical results for the topsoil material.
2	Summary of geotechnical results for the topsoil material.
3	Summary of analytical results on the low permeability soil material.
4	Summary of geotechnical results on the low permeability soil material.
5	Summary of in-place permeability testing on low permeability soil.
6	Summary of analytical results for collected soil samples.
7	Summary of analytical results for common fill material.
8	Summary of in-place moisture/density testing on low permeability soil material nuclear density ASTM D-2922.



TABLE 1 SUMMARY OF ANALYTICAL RESULTS FOR THE TOPSOIL MATERIAL

Sample ID	S3C-D- TS01-0602 355685 06/11/02 SOLID 1.0 ppb	S3C-C- TS01-0602 355686 06/11/02 SOLID 1.0 ppb	S3C-TSRB01- 0602 355687 06/11/02 WATER 1.0 ppb	S3C-TSFB01- 0602 355688 06/11/02 WATER 1.0 ppb	S3C-TS- TB-0602 355689 06/10/02 WATER 1.0 ppb	S3C-D- TSDup01-06 355690 06/10/02 SOLID 1.0 ppb	S3C-C- TSDup01-06 355691 06/10/02 SOLID 1.0 ppb	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>VOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY)</b>								
Chloromethane	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	NA
Bromomethane	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	NA
VinylChloride	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	200
Chloroethane	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	1,900
MethyleneChloride	3.6U	NR	3.0U	3.0U	3.0U	3.6U	NR	100
Acetone	110	NR	5.0U	5.0U	5.0U	100	NR	200
Carbon Disulfide	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	2,700
1,1-Dichloroethene	2.4U	NR	2.0U	2.0U	2.0U	2.4U	NR	400
1,1-Dichloroethane	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	200
<i>trans</i> -1,2-Dichloroethene	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	300
<i>cis</i> -1,2-Dichloroethene	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	NA
Chloroform	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	300
1,2-Dichloroethane	2.4U	NR	2.0U	2.0U	2.0U	2.4U	NR	100
2-Butanone	9.7	NR	5.0U	5.0U	5.0U	10	NR	300
1,1,1-Trichloroethane	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	800
Carbon Tetrachloride	2.4U	NR	2.0U	2.0U	2.0U	2.4U	NR	600
Bromodichloromethane	1.2U	NR	1.0U	1.0U	1.0U	1.2U	NR	NA
1,2-Dichloropropane	1.2U	NR	1.0U	1.0U	1.0U	1.2U	NR	NA
<i>cis</i> -1,3-Dichloropropene <sup>(a)</sup>	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	300
Trichloroethene	1.2U	NR	1.0U	1.0U	1.0U	1.2U	NR	700
Dibromochloromethane	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	NA
1,1,2-Trichloroethane	3.6U	NR	3.0U	3.0U	3.0U	3.6U	NR	NA

(a) Cleanup value listed reflects the combined values for the *cis* and *trans* isomers of 1,3-dichloropropene.

NOTE: TAGM = Technical and Administration Guidance Memorandum.

NA = Not applicable.

U = The compound was not detected at the indicated concentration.

NR = Not analyzed.

Sample ID	S3C-D- TS01-0602 355685 06/11/02 SOLID 1.0 ppb	S3C-C- TS01-0602 355686 06/11/02 SOLID 1.0 ppb	S3C-TSRB01- 0602 355687 06/11/02 WATER 1.0 ppb	S3C-TSFB01- 0602 355688 06/11/02 WATER 1.0 ppb	S3C-TS- TB-0602 355689 06/10/02 WATER 1.0 ppb	S3C-D- TSDup01-06 355690 06/10/02 SOLID 1.0 ppb	S3C-C- TSDup01-06 355691 06/10/02 SOLID 1.0 ppb	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Benzene	1.2U	NR	1.0U	1.0U	1.0U	1.2U	NR	60
<i>trans</i> -1,3-Dichloropropene <sup>(a)</sup>	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	300
Bromoform	4.8U	NR	4.0U	4.0U	4.0U	4.8U	NR	NA
4-Methyl-2-Pentanone	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	1,000
2-Hexanone	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	NA
Tetrachloroethene	1.2U	NR	1.0U	1.0U	1.0U	1.2U	NR	1,400
1,1,2,2-Tetrachloroethane	1.2U	NR	1.0U	1.0U	1.0U	1.2U	NR	600
Toluene	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	1,500
Chlorobenzene	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	1,700
Ethylbenzene	4.8U	NR	4.0U	4.0U	4.0U	4.8U	NR	5,500
Styrene	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	NA
Xylene (Total)	6.0U	NR	5.0U	5.0U	5.0U	6.0U	NR	1,200
Total Confident Concentration	120		0	0	0	110		
Volatile Organic Analytes								
Total Estimated Concentration	18		0	0	0	29		
Volatile Organic Analyte Tentatively Identified Compounds								

Sample ID	S3C-D- TS01-0602 355685 06/11/02 SOLID	S3C-C- TS01-0602 355686 06/11/02 SOLID 1.0 ppb	S3C-TSRB01- 0602 355687 06/11/02 WATER 1.0 ppb	S3C-TSFB01- 0602 355688 06/11/02 WATER 1.0 ppb	S3C-TS- TB-0602 355689 06/10/02 WATER	S3C-D- TSDup01-06 355690 06/10/02 SOLID	S3C-C- TSDup01-06 355691 06/10/02 SOLID 1.0 ppb	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>SEMIVOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY)</b>								
Phenol	NR	390U	10U	10U	NR	NR	400U	30 or MDL
2-Chlorophenol	NR	390U	10U	10U	NR	NR	400U	800
2-Methylphenol	NR	390U	10U	10U	NR	NR	400U	100 or MDL
4-Methylphenol	NR	390U	10U	10U	NR	NR	400U	900
2-Nitrophenol	NR	390U	10U	10U	NR	NR	400U	330 or MDL
2,4-Dimethylphenol	NR	390U	10U	10U	NR	NR	400U	NA
2,4-Dichlorophenol	NR	390U	10U	10U	NR	NR	400U	400
4-Chloro-3-methylphenol	NR	390U	10U	10U	NR	NR	400U	260 or MDL
2,4,6-Trichlorophenol	NR	390U	10U	10U	NR	NR	400U	NA
2,4,5-Trichlorophenol	NR	390U	10U	10U	NR	NR	400U	100
2,4-Dinitrophenol	NR	1,600U	40U	40U	NR	NR	1,600U	200 or MDL
4-Nitrophenol	NR	1,600U	40U	40U	NR	NR	1,600U	100 or MDL
4,6-Dinitro-2-methylphenol	NR	1,600U	40U	40U	NR	NR	1,600U	NA
Pentachlorophenol	NR	1,600U	40U	40U	NR	NR	1,600U	1,000
bis(2-Chloroethyl)ether	NR	39U	1.0U	1.0U	NR	NR	40U	NA
1,3-Dichlorobenzene	NR	390U	10U	10U	NR	NR	400U	1,600
1,4-Dichlorobenzene	NR	390U	10U	10U	NR	NR	400U	8,500
1,2-Dichlorobenzene	NR	390U	10U	10U	NR	NR	400U	7,900
bis(2-chloroisopropyl)ether	NR	390U	10U	10U	NR	NR	400U	NA
N-Nitroso-di-n-propylamine	NR	39U	1.0U	1.0U	NR	NR	40U	NA
Hexachloroethane	NR	39U	1.0U	1.0U	NR	NR	40U	NA
Nitrobenzene	NR	39U	1.0U	1.0U	NR	NR	40U	NA
Isophorone	NR	390U	10U	10U	NR	NR	400U	200 or MDL
bis(2-Chloroethoxy)methane	NR	390U	10U	10U	NR	NR	400U	4,400
1,2,4-Trichlorobenzene	NR	39U	1.0U	1.0U	NR	NR	40U	NA
								3,400

(b) Value listed reflects the combined value for the 2,4/2,6-dinitrotoluene mixture.

NOTE: J = Data indicate the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.  
 MDL = Method detection limit.

Sample ID	S3C-D- TS01-0602 355685 06/11/02 SOLID	S3C-C- TS01-0602 355686 06/11/02 SOLID 1.0 ppb	S3C-TSRB01- 0602 355687 06/11/02 WATER 1.0 ppb	S3C-TSFB01- 0602 355688 06/11/02 WATER 1.0 ppb	S3C-TS- TB-0602 355689 06/10/02 WATER	S3C-D- TSDup01-06 355690 06/10/02 SOLID	S3C-C- TSDup01-06 355691 06/10/02 SOLID 1.0 ppb	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>SEMIVOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY) (Continued)</b>								
Naphthalene	NR	390U	10U	10U	NR	NR	400U	13,000
4-Chloroaniline	NR	390U	10U	10U	NR	NR	400U	220 or MDL
Hexachlorobutadiene	NR	79U	2.0U	2.0U	NR	NR	80U	NA
2-Methylnaphthalene	NR	390U	10U	10U	NR	NR	400U	36,400
Hexachlorocyclopentadiene	NR	390U	10U	10U	NR	NR	400U	NA
2-Chloronaphthalene	NR	390U	10U	10U	NR	NR	400U	NA
2-Nitroaniline	NR	790U	20U	20U	NR	NR	800U	430 or MDL
Dimethylphthalate	NR	390U	10U	10U	NR	NR	400U	2,000
Acenaphthylene	NR	390U	10U	10U	NR	NR	400U	41,000
2,6-Dinitrotoluene <sup>(b)</sup>	NR	79U	2.0U	2.0U	NR	NR	80U	1,000
3-Nitroaniline	NR	790U	20U	20U	NR	NR	800U	500 or MDL
Acenaphthene	NR	390U	10U	10U	NR	NR	400U	50,000
Dibenzofuran	NR	390U	10U	10U	NR	NR	400U	6,200
2,4-Dinitrotoluene <sup>(b)</sup>	NR	79U	2.0U	2.0U	NR	NR	80U	NA
Diethylphthalate	NR	390U	10U	10U	NR	NR	400U	7,100
4-Chlorophenyl-phenylether	NR	390U	10U	10U	NR	NR	400U	NA
Fluorene	NR	390U	10U	10U	NR	NR	400U	50,000
4-Nitroaniline	NR	790U	20U	20U	NR	NR	800U	NA
N-Nitrosodiphenylamine	NR	390U	10U	10U	NR	NR	400U	NA
4-Bromophenyl-phenylether	NR	390U	10U	10U	NR	NR	400U	NA
Hexachlorobenzene	NR	39U	1.0U	1.0U	NR	NR	40U	410
Phenanthrene	NR	17J	10U	10U	NR	NR	19J	50,000
Anthracene	NR	390U	10U	10U	NR	NR	400U	50,000
Carbazole	NR	390U	10U	10U	NR	NR	400U	NA
Di-n-butylphthalate	NR	390U	10U	10U	NR	NR	400U	8,100
Fluoranthene	NR	28J	10U	10U	NR	NR	33J	50,000
Pyrene	NR	30J	10U	10U	NR	NR	37J	50,000
Butylbenzylphthalate	NR	390U	10U	10U	NR	NR	400U	50,000
3,3'-Dichlorobenzidine	NR	790U	20U	20U	NR	NR	800U	NA
Benzo(a)anthracene	NR	9.5J	1.0U	1.0U	NR	NR	17J	224 or MDL

Sample ID	S3C-D-TS01-0602 355685 06/11/02 SOLID	S3C-C-TS01-0602 355686 06/11/02 SOLID	S3C-TSRB01-0602 355687 06/11/02 WATER	S3C-TSFB01-0602 355688 06/11/02 WATER	S3C-TS-TB-0602 355689 06/10/02 WATER	S3C-D-TSDup01-06 355690 06/10/02 SOLID	S3C-C-TSDup01-06 355691 06/10/02 SOLID	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Units	ppb	ppb	ppb	ppb			ppb	
<b>SEMIVOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY) (Continued)</b>								
Chrysene	NR	15J	10U	10U	NR	NR	19J	600
bis(2-Ethylhexyl)phthalate	NR	390U	10U	10U	NR	NR	400U	50,000
Di-n-octylphthalate	NR	390U	10U	10U	NR	NR	400U	50,000
Benzo(b)fluoranthene	NR	17J	1.0U	1.0U	NR	NR	15J	1,100
Benzo(k)fluoranthene	NR	39U	1.0U	1.0U	NR	NR	40U	1,100
Benzo(a)pyrene	NR	11J	1.0U	1.0U	NR	NR	14J	62 or MDL
Indeno(1,2,3-cd)pyrene	NR	39U	1.0U	1.0U	NR	NR	9.1J	3,200
Dibenz(a,h)anthracene	NR	39U	1.0U	1.0U	NR	NR	40U	14 or MDL
Benzo(g,h,i)perylene	NR	390U	10U	10U	NR	NR	400U	50,000
Total Confident Conc. BNAs (s)		0	0	0			0	
Total Estimated Conc. BNA TICs (s)		6,460	0	0			10,000	

Sample ID	S3C-D-TS01-0602 355685 06/11/02 SOLID	S3C-C-TS01-0602 355686 06/11/02 SOLID	S3C-TSRB01-0602 355687 06/11/02 WATER	S3C-TSFB01-0602 355688 06/11/02 WATER	S3C-TS-TB-0602 355689 06/10/02 WATER	S3C-D-TSDup01-06 355690 06/10/02 SOLID	S3C-C-TSDup01-06 355691 06/10/02 SOLID	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Units	ppb	ppb	ppb	ppb			ppb	
<b>POLYCHLORINATED BIPHENYLS<sup>(c)</sup></b>								
Aroclor-1016	NR	79U	0.52U	0.52U	NR	NR	80	NA
Aroclor-1221	NR	79U	0.52U	0.52U	NR	NR	80	NA
Aroclor-1232	NR	79U	0.52U	0.52U	NR	NR	80	NA
Aroclor-1242	NR	79U	0.52U	0.52U	NR	NR	80	NA
Aroclor-1248	NR	79U	0.52U	0.52U	NR	NR	80	NA
Aroclor-1254	NR	79U	0.52U	0.52U	NR	NR	80	NA
Aroclor-1260	NR	79U	0.52U	0.52U	NR	NR	80	NA
Aroclor-1262	NR	79U	0.52U	0.52U	NR	NR	80	NA
Aroclor-1268	NR	79U	0.52U	0.52U	NR	NR	80	NA
<b>(c) The recommended soil cleanup objectives for total polychlorinated biphenyls in subsurface soil is 10,000 ppb.</b>								

Sample ID	S3C-D-TS01-0602 355685 06/11/02 SOLID	S3C-C-TS01-0602 355686 06/11/02 SOLID	S3C-TSRB01-0602 355687 06/11/02 WATER	S3C-TSFB01-0602 355688 06/11/02 WATER	S3C-TS-TB-0602 355689 06/10/02 WATER	S3C-D-TSDup01-06 355690 06/10/02 SOLID	S3C-C-TSDup01-06 355691 06/10/02 SOLID	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>PESTICIDES</b>								
Aldrin	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	40
alpha-BHC	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	110
beta-BHC	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	200
delta-BHC	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	300
gamma-BHC (Lindane)	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	60
Chlordane	NR	79U	0.52U	0.52U	NR	NR	80U	540
4,4'-DDD	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	2,900
4,4'-DDE	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	2,100
4,4'-DDT	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	2,100
Dieldrin	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	40
Endosulfan I <sup>(d)</sup>	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	900
Endosulfan II <sup>(d)</sup>	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	900
Endosulfansulfate	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	1,000
Endrin	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	100
Endrin aldehyde	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	NA
Endrin ketone	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	NA
Heptachlor	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	100
Heptachlor epoxide	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	20
Methoxychlor	NR	7.9U	0.052U	0.052U	NR	NR	8.0U	***
Toxaphene	NR	79U	0.52U	0.52U	NR	NR	80U	NA

(d) Soil cleanup criteria are provided for "Endosulfan" without specification if they are for Endosulfan I or Endosulfan II.

Sample ID	S3C-D-TS01-0602 355685 06/11/02 SOLID	S3C-C-TS01-0602 355686 06/11/02 SOLID	S3C-TSRB01-0602 355687 06/11/02 WATER	S3C-TSFB01-0602 355688 06/11/02 WATER	S3C-TS-TB-0602 355689 06/10/02 WATER	S3C-D-TSDup01-06 355690 06/10/02 SOLID	S3C-C-TSDup01-06 355691 06/10/02 SOLID	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>WET CHEMISTRY</b>								
Total Cyanide (ppb)	NR	0.5U	0.01U	0.01U	NR	NR	0.5U	NA

Sample ID	S3C-C-TS01-0602	S3C-TSRB01-0602	S3C-TSFB01-0602	S3C-D-TSDup01-06	Eastern United States Background Criteria (ppm)	New York TAGM Recommended Soil Cleanup Objective Criteria (ppm)
Lab Sample Number	355686	355687	355688	355690		
Sampling Date	06/11/02	06/11/02	06/11/02	06/10/02		
Matrix	SOLID	WATER	WATER	SOLID		
Dilution Factor - NA		1.0	1.0			
Units	ppm	ppm	ppm	ppm		
<b>METALS</b>						
Aluminum	6,970	0.077JB	0.078JB	7,130	33,000	SB
Antimony	0.034B	0.002U	0.002U	0.018B	NA	SB
Arsenic	3.5J	0.00067JB	0.00053JB	3.2J	3-12	7.5 or SB
Barium	28J	0.001U	0.001U	27.7J	15-600	300 or SB
Beryllium <sup>(e)</sup>	<b>0.19</b>	0.001U	0.001U	<b>0.23</b>	0-1.75	0.16 or SB
Cadmium	0.15	0.001U	0.001U	0.11B	NA	1 or SB
Calcium	929J	5U	5U	1,540J	130-35,000	SB
Chromium	4.8J	0.002U	0.002U	4.8J	1.5-40	10 or SB
Cobalt	3.3	0.001U	0.001U	3.1	2.5-60	30 or SB
Copper	12.6J	0.00034B	0.002U	11.8J	1-50	25 or SB
Iron <sup>(e)</sup>	<b>13,400</b>	0.1U	0.1U	<b>16,900</b>	2,000-550,000	2,000 or SB
Lead	10.4	0.001U	0.001U	8.5	4-61	SB
Magnesium	1,710J	5U	5U	1,650J	100-5,000	SB
Manganese	449J	0.015U	0.015U	403J	50-5,000	SB
Mercury	0.05B	0.0002U	0.0002U	0.045B	0.0001-0.2	0.1
Nickel	7.1J	0.002U	0.00037JB	6.9J	0.5-25	13 or SB
Potassium	428JB	0.14JB	0.12JB	530JB	8,500-43,000	SB
Selenium	0.29B	0.005U	0.005U	0.37B	0.1-3.9	2 or SB
Silver	0.066B	0.001U	0.001U	0.051B	NA	SB
Sodium	598U	5U	5U	600U	6,000-8,000	SB
Thallium	0.084B	0.001U	0.001U	0.09U	NA	SB
Vanadium	8.4	0.005U	0.005U	8.6	1-300	150 or SB
Zinc <sup>(e)</sup>	<b>31.9J</b>	0.003B	0.0052B	<b>32J</b>	9-50	20 or SB

(e) Bold values indicate that the compound was detected at a concentration above TAGM cleanup objectives, but below Eastern United States Background criteria.

NOTE: B = The concentration of the analyte is between the instrument detection limit and the contract required detection limit.  
SB = Site background.





TABLE 3 SUMMARY OF ANALYTICAL RESULTS ON THE LOW PERMEABILITY SOIL MATERIAL

Sample ID	SI-D-LP10-0602	SI-D-LP Dup01-0602	SI-LPFB01-0602	SI-LPRB01-0602	SI-LPRB02-0602	SI-LPTB-0602	SI-C-LP05-0602	SI-C-LPDup01-0602	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	355969	355973	355968	355966	355967	355971	355970	355972	
Sampling Date	6/1/2002	6/1/2002	6/1/2002	6/1/2002	6/1/2002	6/24/2002	6/1/2002	6/1/2002	
Matrix	SOLID	SOLID	WATER	WATER	WATER	WATER	SOLID	SOLID	
Dilution Factor	1.0		1.0	1.0	1.0	1.0			
Units	ppb		ppb	ppb	ppb	ppb	ppb		
<b>VOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY)</b>									
Chloromethane	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	NA
Bromomethane	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	NA
VinylChloride	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	200
Chloroethane	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	1,900
Methylene Chloride	3.6U	3.5U	3.0U	3.0U	3.0U	3.0U	NR	NR	100
Acetone	39	30	5.0U	5.0U	5.0U	5.0U	NR	NR	200
Carbon Disulfide	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	2,700
1,1-Dichloroethene	2.4U	2.4U	2.0U	2.0U	2.0U	2.0U	NR	NR	400
1,1-Dichloroethane	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	200
<i>trans</i> -1,2-Dichloroethene	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	300
<i>cis</i> -1,2-Dichloroethene	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	NA
Chloroform	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	300
1,2-Dichloroethane	2.4U	2.4U	2.0U	2.0U	2.0U	2.0U	NR	NR	100
2-Butanone	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	300
1,1,1-Trichloroethane	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	800
Carbon Tetrachloride	2.4U	2.4U	2.0U	2.0U	2.0U	2.0U	NR	NR	600
Bromodichloromethane	1.2U	1.2U	1.0U	1.0U	1.0U	1.0U	NR	NR	NA
1,2-Dichloropropane	1.2U	1.2U	1.0U	1.0U	1.0U	1.0U	NR	NR	NA
<i>cis</i> -1,3-Dichloropropene <sup>(a)</sup>	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	NA
Trichloroethene	1.2U	1.2U	1.0U	1.0U	1.0U	1.0U	NR	NR	700
Dibromochloromethane	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NR	NA
1,1,2-Trichloroethane	3.6U	3.5U	3.0U	3.0U	3.0U	3.0U	NR	NR	NA

(a) Cleanup value listed reflects the combined values for the *cis* and *trans* isomers of 1,3-dichloropropene.

NOTE: TAGM = Technical and Administration Guidance Memorandum.  
 U = The compound was not detected at the indicated concentration.  
 NR = Not analyzed.  
 NA = Not applicable.

Sample ID	SI-D-LP10-0602	SI-D-LP Dup01-355973	SI-LPFB01-0602	SI-LPRB01-0602	SI-LPRB02-0602	SI-LPTB-0602	SI-C-LPDup01-0602	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	355969	355973	355968	355966	355967	355971	355972	
Sampling Date	6/1/2002	6/1/2002	6/1/2002	6/1/2002	6/1/2002	6/24/2002	6/1/2002	
Matrix	SOLID	SOLID	WATER	WATER	WATER	WATER	SOLID	
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0		
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppb	
<b>VOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY) (Continued)</b>								
Benzene	1.2U	1.2U	1.0U	1.0U	1.0U	1.0U	NR	60
<i>trans</i> -1,3-Dichloropropene <sup>(a)</sup>	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NA
Bromoform	4.8U	4.7U	4.0U	4.0U	4.0U	4.0U	NR	NA
4-Methyl-2-Pentanone	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	1,000
2-Hexanone	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NA
Tetrachloroethene	1.2U	1.2U	1.0U	1.0U	1.0U	1.0U	NR	1,400
1,1,2,2-Tetrachloroethane	1.2U	1.2U	1.0U	1.0U	1.0U	1.0U	NR	600
Toluene	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	1,500
Chlorobenzene	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	1,700
Ethylbenzene	4.8U	4.7U	4.0U	4.0U	4.0U	4.0U	NR	5,500
Styrene	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	NA
Xylene (Total)	6.0U	5.9U	5.0U	5.0U	5.0U	5.0U	NR	1,200
Total Confident Concentration	39	30	0	0	0	0	0	
Volatile Organic Analytes								
Total Estimated Concentration	0	0	0	0	0	0	0	
Volatile Organic Analytes Tentatively Identified Compounds								

Sample ID	SI-D-LP10-0602	SI-D-LP10-0602	SI-LPFB01-0602	SI-LPRB01-0602	SI-LPRB02-0602	SI-LPTB-0602	SI-C-LP05-0602	SI-C-LP05-0602	New York TAGM
Lab Sample Number	355969	355973	355968	355966	355967	355971	355970	355972	Recommended
Sampling Date	6/1/2002	6/1/2002	6/1/2002	6/1/2002	6/1/2002	6/24/2002	6/1/2002	6/1/2002	Soil Cleanup
Matrix	SOLID	SOLID	WATER	WATER	WATER	WATER	SOLID	SOLID	Objective
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0			Criteria (ppb)
Units			ppb	ppb	ppb		ppb	µg/Kg	
<b>SEMIVOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY)</b>									
Phenol	NR	NR	10U	11U	11U	NR	400U	410U	30 or MDL
2-Chlorophenol	NR	NR	10U	11U	11U	NR	400U	410U	800
2-Methylphenol	NR	NR	10U	11U	11U	NR	400U	410U	100 or MDL
4-Methylphenol	NR	NR	10U	11U	11U	NR	400U	410U	900
2-Nitrophenol	NR	NR	10U	11U	11U	NR	400U	410U	330 or MDL
2,4-Dimethylphenol	NR	NR	10U	11U	11U	NR	400U	410U	NA
2,4-Dichlorophenol	NR	NR	10U	11U	11U	NR	400U	410U	400
4-Chloro-3-methylphenol	NR	NR	10U	11U	11U	NR	400U	410U	260 or MDL
2,4,6-Trichlorophenol	NR	NR	10U	11U	11U	NR	400U	410U	NA
2,4,5-Trichlorophenol	NR	NR	10U	11U	11U	NR	400U	410U	100
2,4-Dinitrophenol	NR	NR	40U	44U	45U	NR	1,600U	1,600U	200 or MDL
4-Nitrophenol	NR	NR	40U	44U	45U	NR	1,600U	1,600U	100 or MDL
4,6-Dinitro-2-methylphenol	NR	NR	40U	44U	45U	NR	1,600U	1,600U	NA
Pentachlorophenol	NR	NR	40U	44U	45U	NR	1,600U	1,600U	1,000
bis(2-Chloroethyl)ether	NR	NR	1.0U	1.1U	1.1U	NR	40U	41U	NA
1,3-Dichlorobenzene	NR	NR	10U	11U	11U	NR	400U	410U	1,600
1,4-Dichlorobenzene	NR	NR	10U	11U	11U	NR	400U	410U	8,500
1,2-Dichlorobenzene	NR	NR	10U	11U	11U	NR	400U	410U	7,900
bis(2-chloroisopropyl)ether	NR	NR	10U	11U	11U	NR	400U	410U	NA
N-Nitroso-di-n-propylamine	NR	NR	1.0U	1.1U	1.1U	NR	40U	41U	NA
Hexachloroethane	NR	NR	1.0U	1.1U	1.1U	NR	40U	41U	NA
Nitrobenzene	NR	NR	1.0U	1.1U	1.1U	NR	40U	41U	NA
Isophorone	NR	NR	1.0U	1.1U	1.1U	NR	40U	41U	200 or MDL
bis(2-Chloroethoxy)methane	NR	NR	10U	11U	11U	NR	400U	410U	4,400
1,2,4-Trichlorobenzene	NR	NR	1.0U	1.1U	1.1U	NR	400U	410U	NA
Naphthalene	NR	NR	10U	11U	11U	NR	400U	410U	3,400
4-Chloroaniline	NR	NR	10U	11U	11U	NR	400U	410U	13,000
									220 or MDL

(b) Value listed reflects the combined value for the 2,4/2,6-dinitrotoluene mixture.

NOTE: MDL = Method detection limit.

Sample ID	S1-D-LP10-0602	S1-D-LPDup01-0602	S1-LPFB01-0602	S1-LPRB01-0602	S1-LPRB02-0602	S1-LPTB-0602	S1-C-LP05-0602	S1-C-LPDup01-0602	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	355969	355973	355968	355966	355967	355971	355970	355972	
Sampling Date	6/1/2002	6/1/2002	6/1/2002	6/1/2002	6/1/2002	6/24/2002	6/1/2002	6/1/2002	
Matrix	SOLID	SOLID	WATER	WATER	WATER	WATER	SOLID	SOLID	
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0			
Units		ppb	ppb	ppb	ppb		ppb	µg/Kg	
<b>SEMIVOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY) (Continued)</b>									
Hexachlorobutadiene	NR	NR	2.0U	2.2U	2.2U	NR	80U	81U	NA
2-Methylnaphthalene	NR	NR	10U	11U	11U	NR	400U	410U	36,400
Hexachlorocyclopentadiene	NR	NR	10U	11U	11U	NR	400U	410U	NA
2-Chloronaphthalene	NR	NR	10U	11U	11U	NR	400U	410U	NA
2-Nitroaniline	NR	NR	20U	22U	22U	NR	800U	810U	430 or MDL
Dimethylphthalate	NR	NR	10U	11U	11U	NR	400U	410U	2,000
Acenaphthylene	NR	NR	10U	11U	11U	NR	400U	410U	41,000
2,6-Dinitrotoluene <sup>(b)</sup>	NR	NR	2.0U	2.2U	2.2U	NR	80U	81U	1,000
3-Nitroaniline	NR	NR	20U	22U	22U	NR	800U	810U	500 or MDL
Acenaphthene	NR	NR	10U	11U	11U	NR	400U	410U	50,000
Dibenzofuran	NR	NR	10U	11U	11U	NR	400U	410U	6,200
2,4-Dinitrotoluene <sup>(b)</sup>	NR	NR	2.0U	2.2U	2.2U	NR	80U	81U	NA
Diethylphthalate	NR	NR	10U	11U	11U	NR	400U	410U	7,100
4-Chlorophenyl-phenylether	NR	NR	10U	11U	11U	NR	400U	410U	NA
Fluorene	NR	NR	10U	11U	11U	NR	400U	410U	50,000
4-Nitroaniline	NR	NR	20U	22U	22U	NR	800U	810U	NA
N-Nitrosodiphenylamine	NR	NR	10U	11U	11U	NR	400U	410U	NA
4-Bromophenyl-phenylether	NR	NR	10U	11U	11U	NR	400U	410U	NA
Hexachlorobenzene	NR	NR	1.0U	1.1U	1.1U	NR	40U	41U	410
Phenanthrene	NR	NR	10U	11U	11U	NR	400U	410U	50,000
Anthracene	NR	NR	10U	11U	11U	NR	400U	410U	50,000
Carbazole	NR	NR	10U	11U	11U	NR	400U	410U	NA
Di-n-butylphthalate	NR	NR	10U	11U	11U	NR	400U	410U	8,100
Fluoranthene	NR	NR	10U	11U	11U	NR	400U	410U	50,000
Pyrene	NR	NR	10U	11U	11U	NR	400U	410U	50,000
Butylbenzylphthalate	NR	NR	10U	11U	11U	NR	400U	410U	50,000
3,3'-Dichlorobenzidine	NR	NR	20U	22U	22U	NR	800U	810U	50,000
Benzo(a)anthracene	NR	NR	1.0U	1.1U	1.1U	NR	40U	41U	224 or MDL
Chrysene	NR	NR	10U	11U	11U	NR	400U	410U	600
bis(2-Ethylhexyl)phthalate	NR	NR	10U	11U	11U	NR	400U	410U	50,000

Sample ID	SI-D-LP10-0602	SI-D-LPDup01-0602	SI-LPFB01-0602	SI-LPRB01-0602	SI-LPRB02-0602	SI-LPTB-0602	SI-C-LP05-0602	SI-C-LPDup01-0602	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	355969	355973	355968	355966	355967	355971	355970	355972	62 or MDL 3,200 14 or MDL 50,000
Sampling Date	6/1/2002	6/1/2002	6/1/2002	6/1/2002	6/1/2002	6/24/2002	6/1/2002	6/1/2002	
Matrix	SOLID	SOLID	WATER	WATER	WATER	WATER	SOLID	SOLID	
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0			
Units			ppb	ppb	ppb		ppb	µg/Kg	
<b>SEMIVOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY) (Continued)</b>									
Di-n-octylphthalate	NR	NR	10U	11U	11U	NR	400U	410U	50,000
Benzo(b)fluoranthene	NR	NR	1.0U	1.1U	1.1U	NR	40U	41U	1,100
Benzo(k)fluoranthene	NR	NR	1.0U	1.1U	1.1U	NR	40U	41U	1,100
Benzo(a)pyrene	NR	NR	1.0U	1.1U	1.1U	NR	40U	41U	62 or MDL
Indeno(1,2,3-cd)pyrene	NR	NR	1.0U	1.1U	1.1U	NR	40U	41U	3,200
Dibenz(a,h)anthracene	NR	NR	1.0U	1.1U	1.1U	NR	40U	41U	14 or MDL
Benzo(g,h,i)perylene	NR	NR	10U	11U	11U	NR	400U	410U	50,000
Total Confident Conc. BNAs (s)	0	0				0			
Total Estimated Conc. BNA TICs (s)	0	0				0			

Sample ID	SI-D-LP10-0602	SI-D-LPDup01-0602	SI-LPFB01-0602	SI-LPRB01-0602	SI-LPRB02-0602	SI-LPTB-0602	SI-C-LP05-0602	SI-C-LPDup01-0602	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	355969	355973	355968	355966	355967	355971	355970	355972	62 or MDL 3,200 14 or MDL 50,000
Sampling Date	6/1/2002	6/1/2002	6/1/2002	6/1/2002	6/1/2002	6/24/2002	6/1/2002	6/1/2002	
Matrix	SOLID	SOLID	WATER	WATER	WATER	WATER	SOLID	SOLID	
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0			
Units			µg/L	µg/L	µg/L		µg/kg	µg/kg	
<b>POLYCHLORINATED BIPHENYLS<sup>(c)</sup></b>									
Atroclor-1016	NR	NR	0.51U	0.52U	0.51U	NR	80U	82U	NA
Atroclor-1221	NR	NR	0.51U	0.52U	0.51U	NR	80U	82U	NA
Atroclor-1232	NR	NR	0.51U	0.52U	0.51U	NR	80U	82U	NA
Atroclor-1242	NR	NR	0.51U	0.52U	0.51U	NR	80U	82U	NA
Atroclor-1248	NR	NR	0.51U	0.52U	0.51U	NR	80U	82U	NA
Atroclor-1254	NR	NR	0.51U	0.52U	0.51U	NR	80U	82U	NA
Atroclor-1260	NR	NR	0.51U	0.52U	0.51U	NR	80U	82U	NA
Atroclor-1262	NR	NR	0.51U	0.52U	0.51U	NR	80U	82U	NA
Atroclor-1268	NR	NR	0.51U	0.52U	0.51U	NR	80U	82U	NA

(c) The recommended soil cleanup objectives for total polychlorinated biphenyls in subsurface soil is 10,000 ppb.

Sample ID	SI-D-LP10-0602 355969 6/1/2002 SOLID 1.0	SI-D-LPDup01-0602 355973 6/1/2002 SOLID 1.0	SI-LPFB01-0602 355968 6/1/2002 WATER 1.0	SI-LPRB01-0602 355966 6/1/2002 WATER 1.0	SI-LPRB02-0602 355967 6/1/2002 WATER 1.0	SI-LPTB-0602 355971 6/24/2002 WATER 1.0	SI-C-LP05-0602 355970 6/1/2002 SOLID	SI-C-LPDup01-0602 355972 6/1/2002 SOLID	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>PESTICIDES</b>									
Aldrin	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	40
alpha-BHC	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	110
beta-BHC	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	200
delta-BHC	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	300
gamma-BHC (Lindane)	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	60
Chlordane	NR	NR	0.51U	0.52U	5.0U	NR	80U	82U	540
4,4'-DDD	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	2,900
4,4'-DDE	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	2,100
4,4'-DDT	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	2,100
Dieldrin	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	40
Endosulfan I <sup>(d)</sup>	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	900
Endosulfan II <sup>(d)</sup>	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	900
Endosulfansulfate	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	1,000
Endrin	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	100
Endrin aldehyde	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	NA
Endrin ketone	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	NA
Heptachlor	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	100
Heptachlor epoxide	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	20
Methoxychlor	NR	NR	0.051U	0.052U	0.50U	NR	8.0U	8.2U	NA
Toxaphene	NR	NR	0.51U	0.52U	5.0U	NR	80U	82U	NA

(d) Soil cleanup criteria are provided for "Endosulfan" without specification if they are for Endosulfan I or Endosulfan II.

Sample ID	SI-D-LP10-0602 355969 6/1/2002 SOLID 1.0	SI-D-LPDup01-0602 355973 6/1/2002 SOLID 1.0	SI-LPFB01-0602 355968 6/1/2002 WATER 1.0	SI-LPRB01-0602 355966 6/1/2002 WATER 1.0	SI-LPRB02-0602 355967 6/1/2002 WATER 1.0	SI-LPTB-0602 355971 6/24/2002 WATER 1.0	SI-C-LP05-0602 355970 6/1/2002 SOLID	SI-C-LPDup01-0602 355972 6/1/2002 SOLID	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>WET CHEMISTRY</b>									
Total Cyanide (ppb)	NR	NR	0.01U	0.01U	0.01U	NR	0.5U	0.5U	NA

Sample ID	SI-D-LP10-0602 LPDUP01-0602 355969 6/1/2002 SOLID ppm	SI-D-LPFB01-0602 355968 6/1/2002 WATER ppm	SI-LPRB01-0602 355966 6/1/2002 WATER ppm	SI-LPRB02-0602 355967 6/1/2002 WATER ppm	SI-LPTB-0602 355971 6/24/2002 WATER ppm	SI-C-LP05-0602 355970 6/1/2002 SOLID ppm	SI-C-LPDUP01-0602 355972 6/1/2002 SOLID ppm	Eastern United States Background Criteria (ppm)	New York TAGM Recommended Soil Cleanup Objective Criteria (ppm)
<b>METALS</b>									
Aluminum	NR	0.2U	0.2U	0.2U	NR	13,400	11,500	33,000	SB
Antimony	NR	0.00023B	0.00071B	0.00086B	NR	0.24U	0.24U	NA	SB
Arsenic	NR	0.005U	0.005U	0.005U	NR	2.8	3.8	3-12	7.5 or SB
Barium	NR	0.001U	0.001U	0.001U	NR	117J	77.4J	15-600	300 or SB
Beryllium	NR	0.001U	0.001U	0.001U	NR	0.48	0.41	0-1.75	0.16 or SB
Cadmium	NR	0.001U	0.001U	0.001U	NR	0.044B	0.064B	NA	1 or SB
Calcium	NR	0.21B	1.2B	0.04B	NR	5,130J	28,300J	130-35,000	SB
Chromium	NR	0.002U	0.002U	0.002U	NR	14.6J	9.8J	1.5-40	10 or SB
Cobalt	NR	0.001U	0.001U	0.00058B	NR	6.6	6.9	2.5-60	30 or SB
Copper	NR	0.002U	0.00037B	0.00047B	NR	13.8	12.5	1-50	25 or SB
Iron	NR	0.1U	0.1U	0.1U	NR	23,300	23,800	2,000-550,000	2,000 or SB
Lead	NR	0.001U	0.001U	0.00009B	NR	7.1	5.3	4-61	SB
Magnesium	NR	0.083B	0.091B	0.110B	NR	7,070J	12,000J	100-5,000	SB
Manganese	NR	0.015U	0.015U	0.015U	NR	473J	645J	50-5,000	SB
Mercury	NR	0.0001B	0.0002U	0.000091B	NR	0.02B	0.019B	0.0001-0.2	0.1
Nickel	NR	0.002U	0.000068B	0.00017B	NR	20.9J	17.2J	0.5-25	13 or SB
Potassium	NR	0.3B	0.31B	0.31B	NR	1,540J	1,770J	8,500-43,000	SB
Selenium	NR	0.00039B	0.005U	0.005U	NR	0.24B	0.24B	0.1-3.9	2 or SB
Silver	NR	0.001U	0.001U	0.001U	NR	0.067B	0.056B	NA	SB
Sodium	NR	1.1B	1.4B	1.0B	NR	<603U	71.2B	6,000-8,000	SB
Thallium	NR	0.001U	0.000042B	0.000066B	NR	0.089B	0.068B	NA	SB
Vanadium	NR	0.005U	0.005U	0.00035B	NR	16.5	12.3	1-300	150 or SB
Zinc	NR	0.0052B	0.0037B	0.01U	NR	32.8J	28.3J	9-50	20 or SB

NOTE: J = Data indicate the presence of a compound that meets the identification criteria. The result is less than the quantitative limit but greater than zero.  
 The concentration given is an approximate value.  
 B = The concentration of the analyte is between the instrument detection limit and the contract required detection limit.  
 SB = Site background.

TABLE 4 SUMMARY OF GEOTECHNICAL RESULTS ON THE LOW PERMEABILITY SOIL MATERIAL

Sample ID	Date Collected	Sample Location		Grain Size Analysis			Perm (cm/sec)	WC (%)	Dens (PCF)	Atterberg Limits			Nat WC (%)	Proctor Data	Comments
		Lift	Coordinates	Passing 1"	Passing #4	Passing #200				min. 100%	min. 80%	min. 50%			
Project Requirements				min 100%	min. 80%	min. 50%	min 1.0 E-5			min. 35	max. 40				
SI-C-LP01	5/31/2002	Borrow Source		100	92	78	---	17	---	30	15.7	14.3	---	16.3	Source TP-1: D422, D4318, D2216, D698
SI-C-LP02	5/31/2002	Borrow Source		100	100	91	---	15	---	29.6	16.3	13.3	15.3	15.2	Source TP-1: D422, D4318, D2216, D698
SI-C-LP03	5/31/2002	Borrow Source		100	98	87	---	18	---	26.8	15.1	11.7	---	15.2	Source TP-1: D422, D4318, D2216, D698
SI-D-LP04	5/31/2002	Borrow Source		---	---	---	---	16	---	23.1	12.8	10.3	15.6	---	Source TP-1: D4318, D2216
SI-D-LP11	5/31/2002	Borrow Source		---	---	---	---	16	---	27.8	16.3	11.4	17.1	---	Source TP-3: D4318, D2216
SI-C-LP06	6/12/2002	Borrow Source		97	79	79	1.40E-08	14.6	118.1	26.2	15	11.2	15.3	12.6	Source TP-3: 422, 4318, 2216, 698, 5084
SI-D-LP12	6/13/2002	Borrow Source		---	---	---	---	15	---	28.2	17.1	11.1	---	---	Source TP-4: D4318, D2216
SI-C-LP07	6/13/2002	Borrow Source		98	87	87	---	17	---	30.8	16.9	13.9	15.1	15.2	Source TP-4: D422, D4318, D2216, D698
SI-C-LP08	6/13/2002	Borrow Source		99	92	92	---	15	---	32.3	17.6	14.7	17.1	15.9	Source TP-5: D422, D4318, D2216, D698
SI-C-LP11	6/13/2002	Borrow Source		100	97	87	---	17	---	30.4	17.1	13.3	13.5	14.9	Source TP-10: D422, D4318, D2216, D698
LF7TS10702	7/3/2002	1 16+90, 0+78		---	---	---	4.60E-08	15.7	116.3	---	---	---	---	---	Shelby tube @ Test Pad, D2216
LF7TS20702	7/3/2002	2 17+48, 1+15		---	---	---	1.90E-08	15.3	116.5	---	---	---	---	---	Shelby tube @ Test Pad, D2216
LF7TS30702	7/3/2002	3 17+00, 1+61		---	---	---	1.20E-07	15.1	110	---	---	---	---	---	Shelby tube @ Test Pad, D2216
LF7TS40702	7/11/2002	3 17+00, 2+70		---	---	---	1.00E-07	13.5	112.1	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7TS50702	7/11/2002	1 15+95, 1+01		---	---	---	6.30E-08	17.7	112.8	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7TS60702	7/11/2002	2 16+50, 0+98		---	---	---	5.90E-08	13.9	120.7	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7-B1-0702	7/11/2002	---		99	84	84	---	---	---	28.6	16.3	12.3	13.8	14.3	Bucket sample: D2216, D422, D4318, D698
LF7TS70702	7/15/2002	2 15+64, 2+52		---	---	---	1.90E-07	14.7	119.9	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7TS80702	7/16/2002	3 15+19, 1+84		---	---	---	8.90E-08	13.9	119	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7TS90702	7/16/2002	1 14+68, 1+21		---	---	---	4.00E-08	15.4	117.4	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7-B3-0702	7/18/2002	---		100	99	75	2.90E-08	14.9	110.3	26.2	15.3	10.8	14.6	---	Bucket sample: D422, D4318, D698, D5084
LF7TS100702	7/22/2002	3 13+18, 2+50		---	---	---	4.10E-08	14.5	118.1	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7TS110702	7/23/2002	1 11+65, 1+12		---	---	---	3.10E-07	13.5	116.4	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7TS120702	7/24/2002	2 11+50, 1+01		---	---	---	6.00E-09	15.8	122.4	23	14.2	8.8	15.8	---	Shelby tube (includes D2216, 5084, 4318)
LF7-B4-0702	7/24/2002	---		100	97	78	---	---	---	27.4	16.4	11	14.1	---	Bucket sample: D422, D4318
LF7TS130702	7/25/2002	3 16+71, 3+62		---	---	---	2.10E-08	15.2	117.1	27.2	16.4	10.8	15.2	---	Shelby tube (includes D2216, 5084, 4318)
LF7TS140702	7/29/2002	1 14+60, 4+45		---	---	---	2.90E-07	15.5	120.1	27.5	16.8	10.7	15.5	---	Shelby tube (includes D2216, 5084, 4318)
LF7TS150702	7/29/2002	2 15+75, 3+50		---	---	---	4.80E-08	15.8	117.2	29.9	17.3	12.6	15.8	---	Shelby tube (includes D2216, 5084, 4318)
LF7TS160702	7/30/2002	3 14+35, 3+50		---	---	---	3.00E-08	13.6	117.4	27.7	15.8	11.9	13.6	---	Shelby tube (includes D2216, 5084, 4318)
LF7TS170702	7/30/2002	1 12+70, 3+80		---	---	---	4.20E-08	15.1	117.1	26.7	16.6	10.1	15.1	---	Shelby tube (includes D2216, 5084, 4318)
LF7-B5-0702	7/30/2002	---		100	99	85	6.60E-07	---	---	17.7	12.2	5.4	16.6	15.2	Bucket sample: D422, D4318, D698, D5084
LF7TS180702	7/31/2002	2 11+56, 3+80		---	---	---	3.80E-08	14.5	113.8	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7-B6-0802	8/1/2002	---		100	97	70	---	---	---	19.7	12.5	7.2	12.5	---	Bucket sample: D422, D4318
LF7TS190802	8/6/2002	1 10+50, 3+79		---	---	---	9.00E-08	15.4	118	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7TS200802	8/6/2002	3 9+33, 4+40		---	---	---	6.60E-07	15.5	115.9	22.7	15.6	7.2	15.5	---	Shelby tube (includes D2216, 5084, 4318)



Sample ID	Date Collected	Sample Location		Grain Size Analysis			Perm (cm/sec)	WC (%)	Dens (PCF)	Atterberg Limits			Nat WC (%)	Proctor		Comments
		Lift	Coordinates	Passing 1"	Passing #4	Passing #200				LL	PL	PI		Data Opt WC	Max D Dens	
LF7TS210802	8/7/2002	2	10+00, 2+70	---	---	---	3.30E-08	13.3	119.8	---	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7-B7-0802	8/7/2002	---	---	100	99	85	6.60E-07	13.5	122.6	25.4	15.4	10.0	13.8	---	---	Bucket sample: D422, D4318, D698, D5084
LF7TS220802	8/8/2002	1	13+70, 2+40	---	---	---	5.50E-08	15.5	120.7	---	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7TS230802	8/8/2002	2	17+30, 1+85	---	---	---	6.20E-06	14.7	120	30.9	15.9	15.0	14.7	---	---	Shelby tube (includes D2216, 5084, 4318)
LF7TS240802	8/12/2002	3	13+00, 3+20	---	---	---	2.10E-07	15.8	114	27.9	16.1	11.8	15.8	---	---	Shelby tube (includes D2216, 5084, 4318)
LF7-B8-0802	8/12/2002	---	---	100	100	81	---	---	---	24.4	12.6	11.7	13.7	---	---	Bucket sample: D422, D4318
LF7TS250802	8/13/2002	1	7+95, 2+60	---	---	---	6.10E-08	16.1	117.7	---	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7TS260802	8/14/2002	3	7+85, 3+80	---	---	---	5.20E-08	14.3	118.6	27.9	15.7	12.2	14.3	---	---	Shelby tube (includes D2216, 5084, 4318)
LF7TS270802	8/15/2002	2	6+75, 3+30	---	---	---	3.00E-08	14.3	118.9	---	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7-B9-0802	8/19/2002	---	---	---	---	88	1.40E-06	14.7	110.3	27.9	14.6	13.3	13.3	15.6	116.5	Bucket sample: D422, D4318, D698, D5084
LF7TS280802	8/20/2002	1	4+30, 1+61	---	---	---	2.10E-08	16.4	113.5	34.2	18.7	15.6	16.4	---	---	Shelby tube (includes D2216, 5084, 4318)
LF7TS290802	8/21/2002	2	4+45, 0+76	---	---	---	2.20E-08	14.9	114.8	29.8	17.0	12.7	14.9	---	---	Shelby tube (includes D2216, 5084, 4318)
LF7TS300802	8/26/2002	3	6+25, 0+85	---	---	---	6.80E-08	16.9	114.6	37.2	20.6	16.6	16.9	---	---	Shelby tube (includes D2216, 5084)
LF7-B10-0802	8/22/2002	---	---	100	92	80	---	---	---	27.8	16.3	11.6	14.4	---	---	Bucket sample: D422, D4318
LF7TS310802	8/27/2002	1	8+75, 0+85	---	---	---	2.30E-07	15.3	112.1	36.1	17.0	19.1	15.3	---	---	Shelby tube (includes D2216, 5084, 4318)
LF7TS320802	8/28/2002	2	8+35, 1+75	---	---	---	3.40E-07	15.9	111.3	---	---	---	---	---	---	Shelby tube (includes D2216, 5084)
LF7-B11-0802	8/28/2002	---	---	100	93	79	8.00E-07	14.7	110.2	29.3	15.5	13.8	14.6	15.0	114.0	Bucket sample: D422, D4318, D698, D5084
LF7TS330802	8/28/2002	3	9+25, 0+90	---	---	---	2.10E-08	16.7	111.3	29.7	13.8	15.9	16.7	---	---	Shelby tube (includes D2216, 5084, 4318)

TABLE 5 SUMMARY OF IN-PLACE PERMEABILITY TESTING ON LOW PERMEABILITY SOIL

Sample ID	Date Collected	Lift	Coordinates	WC (%)	D Dens (PCF)	Permeability (cm/sec)	Comments
<b>Project Requirements</b>							
LF7TS10702	7/3/2002	1	16+90, 0+78	15.7	116.3	1.00E-05	Shelby tube @ Test Pad, D2216
LF7TS20702	7/3/2002	2	17+48, 1+15	15.3	116.5	4.60E-08	Shelby tube @ Test Pad, D2216
LF7TS30702	7/3/2002	3	17+00, 1+61	15.1	110.0	1.90E-08	Shelby tube @ Test Pad, D2216
LF7TS40702	7/10/2002	3	17+00, 2+70	13.5	112.1	1.20E-07	Shelby tube (includes D2216, 5084)
LF7TS50702	7/11/2002	1	15+95, 1+01	17.7	112.8	1.00E-07	Shelby tube (includes D2216, 5084)
LF7TS60702	7/11/2002	2	16+50, 0+98	13.9	120.7	6.30E-08	Shelby tube (includes D2216, 5084)
LF7TS70702	7/15/2002	2	15+64, 2+52	14.7	119.9	5.90E-08	Shelby tube (includes D2216, 5084)
LF7TS80702	7/16/2002	3	15+19, 1+84	13.9	119.0	1.90E-07	Shelby tube (includes D2216, 5084)
LF7TS90702	7/16/2002	1	14+68, 1+21	15.4	117.4	8.90E-08	Shelby tube (includes D2216, 5084)
LF7TS100702	7/22/2002	3	13+18, 2+50	14.5	118.1	4.00E-08	Shelby tube (includes D2216, 5084)
LF7TS110702	7/23/2002	1	11+65, 1+12	13.5	116.4	4.10E-08	Shelby tube (includes D2216, 5084)
LF7TS120702	7/24/2002	2	11+50, 1+01	15.8	122.4	3.10E-07	Shelby tube (includes D2216, 5084)
LF7TS130702	7/25/2002	3	16+71, 3+62	15.2	117.1	6.00E-09	Shelby tube (includes D2216, 5084, 4318)
LF7TS140702	7/29/2002	1	14+60, 4+45	15.5	120.1	2.10E-08	Shelby tube (includes D2216, 5084, 4318)
LF7TS150702	7/29/2002	2	15+75, 3+50	15.8	117.2	2.90E-07	Shelby tube (includes D2216, 5084, 4318)
LF7TS160702	7/30/2002	3	14+35, 3+50	13.6	117.4	4.80E-08	Shelby tube (includes D2216, 5084, 4318)
LF7TS170702	7/30/2002	1	12+70, 3+80	15.1	117.1	3.00E-08	Shelby tube (includes D2216, 5084, 4318)
LF7TS180702	7/31/2002	2	11+56, 3+80	14.5	113.8	4.20E-08	Shelby tube (includes D2216, 5084, 4318)
LF7TS190802	8/6/2002	1	10+50, 3+79	15.4	118.0	3.80E-08	Shelby tube (includes D2216, 5084)
LF7TS200802	8/6/2002	3	9+33, 4+40	15.5	115.9	9.00E-08	Shelby tube (includes D2216, 5084, 4318)
LF7TS210802	8/7/2002	2	10+00, 2+70	13.3	119.8	6.60E-07	Shelby tube (includes D2216, 5084, 4318)
LF7TS220802	8/8/2002	1	13+70, 2+40	15.5	120.7	3.30E-08	Shelby tube (includes D2216, 5084)
LF7TS230802	8/8/2002	2	17+30, 1+85	14.7	120.0	5.50E-08	Shelby tube (includes D2216, 5084)
LF7TS240802	8/12/2002	3	13+00, 3+20	15.8	114.0	6.20E-06	Shelby tube (includes D2216, 5084, 4318)
LF7TS250802	8/13/2002	1	7+95, 2+60	16.1	117.7	2.10E-07	Shelby tube (includes D2216, 5084, 4318)
LF7TS260802	8/14/2002	3	7+85, 3+80	14.3	118.6	6.10E-08	Shelby tube (includes D2216, 5084)
LF7TS270802	8/15/2002	2	6+75, 3+30	14.3	118.9	5.20E-08	Shelby tube (includes D2216, 5084, 4318)
LF7TS280802	8/20/2002	1	4+30, 1+61	16.4	113.5	3.00E-08	Shelby tube (includes D2216, 5084)
LF7TS290802	8/21/2002	2	4+45, 0+76	14.9	114.8	2.10E-08	Shelby tube (includes D2216, 5084, 4318)
LF7TS300802	8/26/2002	3	6+25, 0+85	16.9	114.6	2.20E-08	Shelby tube (includes D2216, 5084, 4318)
LF7TS310802	8/27/2002	1	8+75, 0+85	15.3	112.1	6.80E-08	Shelby tube (includes D2216, 5084, 4318)
LF7TS320802	8/28/2002	2	8+35, 1+75	15.9	111.3	2.30E-07	Shelby tube (includes D2216, 5084, 4318)
LF7TS330802	8/28/2002	3	9+25, 0+90	16.7	111.3	3.40E-07	Shelby tube (includes D2216, 5084)
						2.10E-08	Shelby tube (includes D2216, 5084, 4318)

TABLE 6 SUMMARY OF ANALYTICAL RESULTS FOR COLLECTED SOIL SAMPLES

Sample ID	LF7-D-TP01-0602	LF7-C-TP01-0602	LF7TP01TB01-0602	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	357833	357832	357834	
Sampling Date	6/25/2002	06/20/02	06/20/02	
Matrix	SOLID	SOLID	WATER	
Dilution Factor			1.0	
Units	ppb	ppb		
<b>VOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY)</b>				
Chloromethane	6.0U	NR	5.0U	NA
Bromomethane	6.0U	NR	5.0U	NA
Vinyl Chloride	6.0U	NR	5.0U	200
Chloroethane	6.0U	NR	5.0U	1,900
Methylene Chloride	3.6U	NR	3.0U	100
Acetone	6.0U	NR	5.0U	200
Carbon Disulfide	6.0U	NR	5.0U	2,700
1,1-Dichloroethene	2.4U	NR	2.0U	400
1,1-Dichloroethane	6.0U	NR	5.0U	200
<i>trans</i> -1,2-Dichloroethene	6.0U	NR	5.0U	300
<i>cis</i> -1,2-Dichloroethene	6.0U	NR	5.0U	NA
Chloroform	6.0U	NR	5.0U	300
1,2-Dichloroethane	2.4U	NR	2.0U	100
2-Butanone	6.0U	NR	5.0U	300
1,1,1-Trichloroethane	6.0U	NR	5.0U	800
Carbon Tetrachloride	2.4U	NR	2.0U	600
Bromodichloromethane	1.2U	NR	1.0U	NA
1,2-Dichloropropane	1.2U	NR	1.0U	NA
<i>cis</i> -1,3-Dichloropropene <sup>(a)</sup>	6.0U	NR	5.0U	300
Trichloroethene	1.2U	NR	1.0U	700
Dibromochloromethane	6.0U	NR	5.0U	NA
1,1,2-Trichloroethane	3.6U	NR	3.0U	NA
Benzene	1.2U	NR	1.0U	60
<i>trans</i> -1,3-Dichloropropene <sup>(a)</sup>	6.0U	NR	5.0U	300
Bromoform	4.8U	NR	4.0U	NA
4-Methyl-2-Pentanone	6.0U	NR	5.0U	1,000
2-Hexanone	6.0U	NR	5.0U	NA
Tetrachloroethene	1.2U	NR	1.0U	1,400
1,1,2,2-Tetrachloroethane	1.2U	NR	1.0U	600
Toluene	6.0U	NR	5.0U	1,500
Chlorobenzene	6.0U	NR	5.0U	1,700
Ethylbenzene	4.8U	NR	4.0U	5,500
Styrene	6.0U	NR	5.0U	NA
Xylene (Total)	6.0U	NR	5.0U	1,200
Total Confident Concentration	0			
Volatiles Organic Analytes				
Total Estimated Concentration	0			
Volatiles Organic Analyte				
Tentatively Identified Compounds				
(a) Cleanup value listed reflects the combined values for the <i>cis</i> and <i>trans</i> isomers of 1,3-dichloropropene.				
NOTE: TAGM = Technical and Administration Guidance Memorandum.				
U = The compound was not detected at the indicated concentration.				
NR = Not analyzed.				
NA = Not applicable.				

Sample ID	LF7-C-TP01-0602	LF7TP01TB01-0602	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	357832	357834	
Sampling Date	06/20/02	06/20/02	
Matrix	SOLID	WATER	
Dilution Factor	1.0		
Units	µg/Kg		
<b>SEMIVOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY)</b>			
Phenol	420U	NR	30 or MDL
2-Chlorophenol	420U	NR	800
2-Methylphenol	420U	NR	100 or MDL
4-Methylphenol	420U	NR	900
2-Nitrophenol	420U	NR	330 or MDL
2,4-Dimethylphenol	420U	NR	NA
2,4-Dichlorophenol	420U	NR	400
4-Chloro-3-methylphenol	420U	NR	260 or MDL
2,4,6-Trichlorophenol	420U	NR	NA
2,4,5-Trichlorophenol	420U	NR	100
2,4-Dinitrophenol	1,700U	NR	200 or MDL
4-Nitrophenol	1,700U	NR	100 or MDL
4,6-Dinitro-2-methylphenol	1,700U	NR	NA
Pentachlorophenol	1,700U	NR	1,000
bis(2-Chloroethyl)ether	42U	NR	NA
1,3-Dichlorobenzene	U	NR	1,600
1,4-Dichlorobenzene	420U	NR	8,500
1,2-Dichlorobenzene	420U	NR	7,900
bis(2-chloroisopropyl)ether	420U	NR	NA
N-Nitroso-di-n-propylamine	42U	NR	NA
Hexachloroethane	42U	NR	NA
Nitrobenzene	42U	NR	200 or MDL
Isophorone	420U	NR	4,400
bis(2-Chloroethoxy)methane	420U	NR	NA
1,2,4-Trichlorobenzene	42U	NR	3,400
Naphthalene	420U	NR	13,000
4-Chloroaniline	420U	NR	220 or MDL
Hexachlorobutadiene	85U	NR	NA
2-Methylnaphthalene	420U	NR	36,400
Hexachlorocyclopentadiene	420U	NR	NA
2-Chloronaphthalene	420U	NR	NA
2-Nitroaniline	850U	NR	430 or MDL
Dimethylphthalate	420U	NR	2,000
Acenaphthylene	420U	NR	41,000
2,6-Dinitrotoluene <sup>(b)</sup>	85U	NR	1,000
3-Nitroaniline	850U	NR	500 or MDL
Acenaphthene	420U	NR	50,000
Dibenzofuran	420U	NR	6,200
2,4-Dinitrotoluene <sup>(b)</sup>	85U	NR	NA
Diethylphthalate	420U	NR	7,100
4-Chlorophenyl-phenylether	420U	NR	NA
Fluorene	420U	NR	50,000
4-Nitroaniline	850U	NR	NA
(b) Value listed reflects the combined value for the 2,4/2,6-dinitrotoluene mixture.			
NOTE: MDL = Method detection limit.			

Sample ID	LF7-C-TP01-0602	LF7TP01TB01-0602	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	357832	357834	
Sampling Date	06/20/02	06/20/02	
Matrix	SOLID	WATER	
Dilution Factor	1.0		
Units	µg/Kg		
<b>SEMIVOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY) (Continued)</b>			
N-Nitrosodiphenylamine	420U	NR	NA
4-Bromophenyl-phenylether	420U	NR	NA
Hexachlorobenzene	42U	NR	410
Phenanthrene	420U	NR	50,000
Anthracene	420U	NR	50,000
Carbazole	420U	NR	NA
Di-n-butylphthalate	420U	NR	8,100
Fluoranthene	420U	NR	50,000
Pyrene	420U	NR	50,000
Butylbenzylphthalate	420U	NR	50,000
3,3'-Dichlorobenzidine	850U	NR	NA
Benzo(a)anthracene	42U	NR	224 or MDL
Chrysene	420U	NR	600
bis(2-Ethylhexyl)phthalate	420U	NR	50,000
Di-n-octylphthalate	420U	NR	50,000
Benzo(b)fluoranthene	42U	NR	1,100
Benzo(k)fluoranthene	42U	NR	1,100
Benzo(a)pyrene	42U	NR	62 or MDL
Indeno(1,2,3-cd)pyrene	42U	NR	3,200
Dibenz(a,h)anthracene	42U	NR	14 or MDL
Benzo(g,h,i)perylene	420U	NR	50,000
Total Confident Concentration Base Neutral Analytes	0		
Total Estimated Concentration Base Neutral Analytes Tentatively Identified Compounds	1,250		

Sample ID	LF7-C-TP01-0602	LF7TP01TB01-0602	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	357832	357834	
Sampling Date	06/20/02	06/20/02	
Matrix	SOLID	WATER	
Dilution Factor	1.0		
Units	µg/kg		
<b>POLYCHLORINATED BIPHENYLS <sup>(c)</sup></b>			
Aroclor-1016	85U	NR	NA
Aroclor-1221	85U	NR	NA
Aroclor-1232	85U	NR	NA
Aroclor-1242	85U	NR	NA
Aroclor-1248	85U	NR	NA
Aroclor-1254	85U	NR	NA
Aroclor-1260	85U	NR	NA
Aroclor-1262	85U	NR	NA
Aroclor-1268	85U	NR	NA
(c) The recommended soil cleanup objective for total polychlorinated biphenyls in subsurface soil is 10,000 ppb.			

Sample ID	LF7-C-TP01-0602	LF7TP01TB01-0602	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	357832	357834	
Sampling Date	06/20/02	06/20/02	
Matrix	SOLID	WATER	
Dilution Factor	1.0		
Units	µg/kg		
<b>PESTICIDES</b>			
Aldrin	8.5U	NR	40
alpha-BHC	8.5U	NR	110
beta-BHC	8.5U	NR	200
delta-BHC	8.5U	NR	300
gamma-BHC(Lindane)	8.5U	NR	60
Chlordane	85U	NR	540
4,4'-DDD	8.5U	NR	2,900
4,4'-DDE	8.5U	NR	2,100
4,4'-DDT	8.5U	NR	2,100
Dieldrin	8.5U	NR	40
Endosulfan I <sup>(e)</sup>	8.5U	NR	900
Endosulfan II <sup>(e)</sup>	8.5U	NR	900
Endosulfan sulfate	8.5U	NR	1,000
Endrin	8.5U	NR	100
Endrinaldehyde	8.5U	NR	NA
Endrinetone	8.5U	NR	NA
Heptachlor	8.5U	NR	100
Heptachlorepoide	8.5U	NR	20
Methoxychlor	8.5U	NR	***
Toxaphene	85U	NR	NA
(d) Values listed reflect the combined standards for "Total PCBs."			
(e) Soil cleanup criteria are provided for "Endosulfan" without specification if they are for Endosulfan I or Endosulfan II.			

Sample ID	LF7-C-TP01-0602	LF7TP01TB01-0602	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	357832	357834	
Sampling Date	06/20/02	06/20/02	
Matrix	SOLID	WATER	
Dilution Factor	NA	NA	
Units (see parameter)			
<b>WET CHEMISTRY</b>			
Total Cyanide (ppb)	0.5U	NR	NA

Sample ID	LF7-C-TP01-0602		
Lab Sample Number	357832		
Sampling Date	6/20/2002		
Matrix	SOLID	Eastern United States Background Criteria (ppm)	New York TAGM Recommended Soil Cleanup Objective Criteria (ppm)
Dilution Factor	NA		
Units	ppm		
<b>METALS</b>			
Aluminum	4,370J	33,000	SB
Antimony	0.27U	NA	SB
Arsenic	0.90	3-12	7.5 or SB
Barium	9.90J	15-600	300 or SB
Beryllium	<b>0.20</b>	0-1.75	0.16 or SB
Cadmium	0.03B	NA	1 or SB
Calcium	10,800J	130-35,000	SB
Chromium	3.10J	1.5-40	10 or SB
Cobalt	2.40	2.5-60	30 or SB
Copper	7.50J	1-50	25 or SB
Iron	<b>8,220</b>	2,000-550,000	2,000 or SB
Lead	2.60	4-61	SB
Magnesium	3,600	100-5,000	SB
Manganese	343J	50-5,000	SB
Mercury	0.14U	0.0001-0.2	0.1
Nickel	5.20	0.5-25	13 or SB
Potassium	530BJ	8,500-43,000	SB
Selenium	0.68U	0.1-3.9	2 or SB
Silver	0.14U	NA	SB
Sodium	678U	6,000-8,000	SB
Thallium	0.01B	NA	SB
Vanadium	4.60	1-300	150 or SB
Zinc	16.10J	9-50	20 or SB
<p>NOTE: J = Data indicate the presence of a compound that meets the identification criteria. The result is less than the quantitative limit but greater than zero. The concentration given is an approximate value.</p> <p>B = The concentration of the analyte is between the instrument detection limit and the contract required detection limit.</p> <p>SB = Site background.</p> <p>Bold values indicate that the compound was detected at a concentration above TAGM cleanup objectives, but below Eastern United States background criteria.</p>			

TABLE 7 SUMMARY OF ANALYTICAL RESULTS FOR COMMON FILL MATERIAL

Sample ID	S3A-CF01-0602 355444 06/10/02 SOLID	S3ACCFD UP01-0602 355445 06/10/02 SOLID	S3ADCFD UP01-0602 355446 06/10/02 SOLID	S3A-CF-RB01-0602 355447 06/10/02 WATER	S3A-CF-FB01-0602 355448 06/10/02 WATER	S3A-CF-TB01-0602 355449 06/10/02 WATER	S3A-D-CF01-0602 355503 06/10/02 SOLID	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	Sampling Date	Matrix	Dilution Factor	Units	µg/L	µg/L	µg/Kg	
<b>VOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY)</b>								
Chloromethane	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	NA
Bromomethane	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	NA
Vinyl Chloride	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	200
Chloroethane	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	1,900
Methylene Chloride	NR	NR	0.9J	3.0U	3.0U	3.0U	3.1U	100
Acetone	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	200
Carbon Disulfide	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	2,700
1,1-Dichloroethene	NR	NR	2.1U	2.0U	2.0U	2.0U	2.1U	400
1,1-Dichloroethane	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	200
<i>trans</i> -1,2-Dichloroethene	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	300
<i>cis</i> -1,2-Dichloroethene	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	NA
Chloroform	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	300
1,2-Dichloroethane	NR	NR	2.1U	2.0U	2.0U	2.0U	2.1U	100
2-Butanone	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	300
1,1,1-Trichloroethane	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	800
Carbon Tetrachloride	NR	NR	2.1U	2.0U	2.0U	2.0U	2.1U	600
Bromodichloromethane	NR	NR	1.0U	1.0U	1.0U	1.0U	1.0U	NA
1,2-Dichloropropane	NR	NR	1.0U	1.0U	1.0U	1.0U	1.0U	NA
<i>cis</i> -1,3-Dichloropropene <sup>(a)</sup>	NR	NR	5.2U	5.0U	5.0U	5.0U	5.2U	NA
Trichloroethene	NR	NR	1.0U	1.0U	1.0U	1.0U	1.0U	700

(a) Cleanup value listed reflects the combined values for the *cis* and *trans* isomers of 1,3-Dichloropropene.

NOTE: TAGM = Technical and Administration Guidance Memorandum.  
 NR = Not analyzed.  
 U = The compound was not detected at the indicated concentration.  
 NA = Not applicable.  
 J = Data indicate the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.



Sample ID	S3A-C-CF01- 0602 355444 06/10/02 SOLID	S3ACCFD UP01-0602 355445 06/10/02 SOLID	S3ADCFD UP01-0602 355446 06/10/02 SOLID	S3A-CF-RB01- 0602 355447 06/10/02 WATER	S3A-CF-FB01- 0602 355448 06/10/02 WATER	S3A-CF-TB01- 0602 355449 06/10/02 WATER	S3A-D-CF01- 0602 355503 06/10/02 SOLID	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
Lab Sample Number	Sampling Date	Matrix	Dilution Factor	Units	µg/Kg	µg/L	µg/Kg	
<b>VOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY) (Continued)</b>								
Dibromochloromethane	NR	NR	NR	5.0U	5.0U	5.0U	5.2U	NA
1,1,2-Trichloroethane	NR	NR	NR	3.0U	3.0U	3.0U	3.1U	NA
Benzene	NR	NR	NR	1.0U	1.0U	1.0U	1.0U	60
<i>trans</i> -1,3-Dichloropropene <sup>(a)</sup>	NR	NR	NR	5.0U	5.0U	5.0U	5.2U	NA
Bromoform	NR	NR	NR	4.0U	4.0U	4.0U	4.2U	NA
4-Methyl-2-Pentanone	NR	NR	NR	5.0U	5.0U	5.0U	5.2U	1,000
2-Hexanone	NR	NR	NR	5.0U	5.0U	5.0U	5.2U	NA
Tetrachloroethene	NR	NR	NR	1.0U	1.0U	1.0U	1.0U	1,400
1,1,2,2-Tetrachloroethane	NR	NR	NR	1.0U	1.0U	1.0U	1.0U	600
Toluene	NR	NR	NR	5.0U	5.0U	5.0U	5.2U	1,500
Chlorobenzene	NR	NR	NR	5.0U	5.0U	5.0U	5.2U	1,700
Ethylbenzene	NR	NR	NR	4.0U	4.0U	4.0U	4.2U	5,500
Styrene	NR	NR	NR	5.0U	5.0U	5.0U	5.2U	NA
Xylene (Total)	NR	NR	NR	5.0U	5.0U	5.0U	5.2U	1,200
Total Confident Concentration				0	0	0	0	
<b>Volatiles Organic Analytes</b>								
Total Estimated Concentration				0	0	0	0	
<b>Volatiles Organic Analyte Tentatively Identified Compounds</b>								

Sample ID	S3A-C- CF01-0602 355444 06/10/02 SOLID 1.0 µg/Kg	S3ACCFDU P01-0602 355445 06/10/02 SOLID 1.0 µg/Kg	S3ADCFD UP01-0602 355446 06/10/02 SOLID	S3A-CF- RB01-0602 355447 06/10/02 WATER 1.0 µg/L	S3A-CF- FB01-0602 355448 06/10/02 WATER 1.0 µg/L	S3A-CF- TB01-0602 355449 06/10/02 WATER	S3A-D- CF01-0602 355503 06/10/02 SOLID	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>SEMIVOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY)</b>								
Phenol	340U	340U	NR	11U	10U	NR	NR	30 or MDL
2-Chlorophenol	340U	340U	NR	11U	10U	NR	NR	800
2-Methylphenol	340U	340U	NR	11U	10U	NR	NR	100 or MDL
4-Methylphenol	340U	340U	NR	11U	10U	NR	NR	900
2-Nitrophenol	340U	340U	NR	11U	10U	NR	NR	330 or MDL
2,4-Dimethylphenol	340U	340U	NR	11U	10U	NR	NR	NA
2,4-Dichlorophenol	340U	340U	NR	11U	10U	NR	NR	400
4-Chloro-3-methylphenol	340U	340U	NR	11U	10U	NR	NR	260 or MDL
2,4,6-Trichlorophenol	340U	340U	NR	11U	10U	NR	NR	NA
2,4,5-Trichlorophenol	340U	340U	NR	11U	10U	NR	NR	100
2,4-Dinitrophenol	1,400U	1,400U	NR	44U	40U	NR	NR	200 or MDL
4-Nitrophenol	1,400U	1,400U	NR	44U	40U	NR	NR	100 or MDL
4,6-Dinitro-2-methylphenol	1,400U	1,400U	NR	44U	40U	NR	NR	NA
Pentachlorophenol	1,400U	1,400U	NR	44U	40U	NR	NR	1,000
bis(2-Chloroethyl)ether	34U	34U	NR	1.1U	1.0U	NR	NR	NA
1,3-Dichlorobenzene	340U	340U	NR	11U	10U	NR	NR	1,600
1,4-Dichlorobenzene	340U	340U	NR	11U	10U	NR	NR	8,500
1,2-Dichlorobenzene	340U	340U	NR	11U	10U	NR	NR	7,900
bis(2-chloroisopropyl)ether	340U	340U	NR	11U	10U	NR	NR	NA
N-Nitroso-di-n-propylamine	34U	34U	NR	1.1U	1.0U	NR	NR	NA
Hexachloroethane	34U	34U	NR	1.1U	1.0U	NR	NR	NA
Nitrobenzene	34U	34U	NR	1.1U	1.0U	NR	NR	NA
Isophorone	340U	340U	NR	11U	10U	NR	NR	200 or MDL
bis(2-Chloroethoxy)methane	340U	340U	NR	11U	10U	NR	NR	4,400
1,2,4-Trichlorobenzene	34U	34U	NR	1.1U	1.0U	NR	NR	NA
Naphthalene	340U	340U	NR	11U	10U	NR	NR	3,400
4-Chloroaniline	340U	340U	NR	11U	10U	NR	NR	13,000
Hexachlorobutadiene	69U	69U	NR	2.2U	2.0U	NR	NR	220 or MDL
NOTE: MDL = Method detection limit.								

Sample ID	S3A-C- CF01-0602 355444 06/10/02 SOLID 1.0 µg/Kg	S3ACCFDU P01-0602 355445 06/10/02 SOLID 1.0 µg/Kg	S3ADCFD UP01-0602 355446 06/10/02 SOLID	S3A-CF- RB01-0602 355447 06/10/02 WATER 1.0 µg/L	S3A-CF- FB01-0602 355448 06/10/02 WATER 1.0 µg/L	S3A-CF- TB01-0602 355449 06/10/02 WATER	S3A-D- CF01-0602 355503 06/10/02 SOLID	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>SEMIVOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY) (Continued)</b>								
2-Methylnaphthalene	340U	340U	NR	11U	10U	NR	NR	36,400
Hexachlorocyclopentadiene	340U	340U	NR	11U	10U	NR	NR	NA
2-Chloronaphthalene	340U	340U	NR	11U	10U	NR	NR	NA
2-Nitroaniline	690U	690U	NR	22U	20U	NR	NR	430 or MDL
Dimethylphthalate	340U	340U	NR	11U	10U	NR	NR	2,000
Acenaphthylene	340U	340U	NR	11U	10U	NR	NR	41,000
2,6-Dinitrotoluene <sup>(b)</sup>	69U	69U	NR	2.2U	2.0U	NR	NR	1,000
3-Nitroaniline	690U	690U	NR	22U	20U	NR	NR	500 or MDL
Acenaphthene	340U	340U	NR	11U	10U	NR	NR	50,000
Dibenzofuran	340U	340U	NR	11U	10U	NR	NR	6,200
2,4-Dinitrotoluene <sup>(b)</sup>	69U	69U	NR	2.2U	2.0U	NR	NR	NA
Diethylphthalate	340U	340U	NR	11U	10U	NR	NR	7,100
4-Chlorophenyl-phenylether	340U	340U	NR	11U	10U	NR	NR	NA
Fluorene	340U	340U	NR	11U	10U	NR	NR	50,000
4-Nitroaniline	690U	690U	NR	22U	20U	NR	NR	NA
N-Nitrosodiphenylamine	340U	340U	NR	11U	10U	NR	NR	NA
4-Bromophenyl-phenylether	340U	340U	NR	11U	10U	NR	NR	NA
Hexachlorobenzene	34U	34U	NR	1.1U	1.0U	NR	NR	410
Phenanthrene	340U	340U	NR	11U	10U	NR	NR	50,000
Anthracene	340U	340U	NR	11U	10U	NR	NR	50,000
Carbazole	340U	340U	NR	11U	10U	NR	NR	NA
Di-n-butylphthalate	340U	340U	NR	11U	10U	NR	NR	8,100
Fluoranthene	340U	340U	NR	11U	10U	NR	NR	50,000
Pyrene	340U	340U	NR	11U	10U	NR	NR	50,000
Butylbenzylphthalate	340U	340U	NR	11U	10U	NR	NR	50,000
3,3'-Dichlorobenzidine	690U	690U	NR	22U	20U	NR	NR	50,000
Benzo(a)anthracene	34U	34U	NR	1.1U	1.0U	NR	NR	NA
Chrysene	340U	340U	NR	11U	10U	NR	NR	224 or MDL
bis(2-Ethylhexyl)phthalate	340U	340U	NR	11U	10U	NR	NR	600
								50,000

(b) Value listed reflects the combined value for the 2,4,2,6-dinitrotoluene mixture.

Sample ID	S3A-C- CF01-0602 355444 06/10/02 SOLID 1.0 µg/Kg	S3ACCFDU P01-0602 355445 06/10/02 SOLID 1.0 µg/Kg	S3ADCFD UP01-0602 355446 06/10/02 SOLID 1.0 µg/L	S3A-CF- RB01-0602 355447 06/10/02 WATER 1.0 µg/L	S3A-CF- FB01-0602 355448 06/10/02 WATER 1.0 µg/L	S3A-CF- TB01-0602 355449 06/10/02 WATER 1.0 µg/L	S3A-D- CF01-0602 355503 06/10/02 SOLID 1.0 µg/L	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>SEMIVOLATILE COMPOUNDS (GAS CHROMATOGRAPH/MASS SPECTROMETRY) (Continued)</b>								
Di-n-octylphthalate	340U	340U	NR	11U	10U	NR	NR	50,000
Benzo(b)fluoranthene	34U	34U	NR	1.1U	1.0U	NR	NR	1,100
Benzo(k)fluoranthene	34U	34U	NR	1.1U	1.0U	NR	NR	1,100
Benzo(a)pyrene	34U	34U	NR	1.1U	1.0U	NR	NR	62 or MDL
Indeno(1,2,3-cd)pyrene	34U	34U	NR	1.1U	1.0U	NR	NR	3,200
Dibenz(a,h)anthracene	34U	34U	NR	1.1U	1.0U	NR	NR	14 or MDL
Benzo(g,h,i)perylene	340U	340U	NR	11U	10U	NR	NR	50,000
Total Confident Concentration Base Neutral Analytes	0	0	0	0	0	0	0	
Total Estimated Concentration Base Neutral Analytes Tentatively Identified Compounds	0	0	0	0	0	0	0	

Sample ID	S3A-C-CF01- 0602 355444 06/10/02 SOLID 1.0 µg/kg	S3ACCFDUP 01-0602 355445 06/10/02 SOLID 1.0 µg/kg	S3ADCFDU P01-0602 355446 06/10/02 SOLID 1.0 µg/L	S3A-CF-RB01- 0602 355447 06/10/02 WATER 1.0 µg/L	S3A-CF- FB01-0602 355448 06/10/02 WATER 1.0 µg/L	S3A-CF- TB01-0602 355449 06/10/02 WATER 1.0 µg/L	S3A-D- CF01-0602 355503 06/10/02 SOLID 1.0 µg/L	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>POLYCHLORINATED BIPHENYLS<sup>(c)</sup></b>								
Aroclor-1016	69U	70U	NR	0.55U	0.50U	NR	NR	NA
Aroclor-1221	69U	70U	NR	0.55U	0.50U	NR	NR	NA
Aroclor-1232	69U	70U	NR	0.55U	0.50U	NR	NR	NA
Aroclor-1242	69U	70U	NR	0.55U	0.50U	NR	NR	NA
Aroclor-1248	69U	70U	NR	0.55U	0.50U	NR	NR	NA
Aroclor-1254	69U	70U	NR	0.55U	0.50U	NR	NR	NA
Aroclor-1260	69U	70U	NR	0.55U	0.50U	NR	NR	NA
Aroclor-1262	69U	70U	NR	0.55U	0.50U	NR	NR	NA
Aroclor-1268	69U	70U	NR	0.55U	0.50U	NR	NR	NA
<b>(C) The recommended soil cleanup objectives for total polychlorinated biphenyls in subsurface soil is 10,000 ppb.</b>								

Sample ID	S3A-C- CF01-0602 355444 06/10/02 SOLID 1.0 µg/kg	S3ACCFD UP01-0602 355445 06/10/02 SOLID 1.0 µg/kg	S3ADCFDU P01-0602 355446 06/10/02 SOLID	S3A-CF- RB01-0602 355447 06/10/02 WATER 1.0 µg/L	S3A-CF- FB01-0602 355448 06/10/02 WATER 1.0 µg/L	S3A-CF- TB01-0602 355449 06/10/02 WATER	S3A-D- CF01-0602 355503 06/10/02 SOLID	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>PESTICIDES</b>								
Aldrin	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	40
alpha-BHC	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	110
beta-BHC	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	200
delta-BHC	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	300
gamma-BHC(Lindane)	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	60
Chlordane	6.9U	7.0U	NR	0.55U	0.50U	NR	NR	540
4,4'-DDD	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	2,900
4,4'-DDE	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	2,100
4,4'-DDT	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	2,100
Dieldrin	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	40
Endosulfan I <sup>(d)</sup>	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	900
Endosulfan II <sup>(d)</sup>	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	900
Endosulfan sulfate	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	1,000
Endrin	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	100
Endrin aldehyde	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	NA
Endrin ketone	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	NA
Heptachlor	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	100
Heptachlor epoxide	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	20
Methoxychlor	6.9U	7.0U	NR	0.055U	0.050U	NR	NR	***
Toxaphene	6.9U	7.0U	NR	0.55U	0.50U	NR	NR	NA

(d) Soil cleanup criteria is provided for "Endosulfan" without specification if they are for Endosulfan I or Endosulfan II.

Sample ID	S3A-C- CF01-0602 355444 06/10/02 SOLID NA	S3ACCFD P01-0602 355445 06/10/02 SOLID NA	S3ADCFDU UP01-0602 355446 06/10/02 SOLID NA	S3A-CF- RB01-0602 355447 06/10/02 WATER NA	S3A-CF- FB01-0602 355448 06/10/02 WATER NA	S3A-CF- TB01-0602 355449 06/10/02 WATER NA	S3A-D- CF01-0602 355503 06/10/02 SOLID NA	New York TAGM Recommended Soil Cleanup Objective Criteria (ppb)
<b>WET CHEMISTRY</b>								
Total Cyanide (ppb)	0.5U	0.5U	NR	0.01U	0.01+A180U	NR	NR	NA

Sample ID Lab Sample Number Sampling Date Matrix Dilution Factor - NA Units	S3A-C-CF01-0602 355444 06/11/02 SOLID 1.0 ppm	S3A-C-CFDUP01-0602 355445 06/11/02 SOLID 1.0 ppm	S3A-CF-RB01-0602 355447 06/11/02 WATER 1.0 ppm	S3A-CF-FB01-0602 355448 06/10/02 WATER 1.0 ppm	Eastern United States Background Criteria (ppm)	New York TAGM Recommended Soil Cleanup Objective Criteria (ppm)
<b>METALS</b>						
Aluminum	2630	0.025B	0.066BJ	0.064BJ	33,000	SB
Antimony	0.016B	0.016B	0.00078B	0.0008B	NA	SB
Arsenic	1.4J	1.4J	0.003BJ	0.0026BJ	3-12	7.5 or SB
Barium	8.8J	8.8J	0.001U	0.001U	15-600	300 or SB
Beryllium	0.075B	0.088B	0.001U	0.001U	0-1.75	0.16 or SB
Cadmium	0.024B	0.021B	0.001U	0.001U	NA	1 or SB
Calcium	1,390J	1,380J	0.24B	0.001U	130-35,000	SB
Chromium	2.3J	2.5J	0.00029BJ	0.00082BJ	1.5-40	10 or SB
Cobalt	1.8	1.9	0.000049B	0.000036B	2.5-60	30 or SB
Copper	5.5J	5.9J	0.002U	0.002U	1-50	25 or SB
Iron <sup>(e)</sup>	5,600	5,680	0.1U	0.1U	2,000-550,000	2,000 or SB
Lead	1	1.1	0.000041B	0.001U	4-61	SB
Magnesium	1,290J	1,300J	5U	5U	100-5,000	SB
Manganese	178J	183J	0.015U	0.015U	50-5,000	SB
Mercury	0.1U	0.1U	0.0002U	0.0002U	0.0001-0.2	0.1
Nickel	3.8J	4.2J	0.00013BJ	0.00045BJ	0.5-25	13 or SB
Potassium	423BJ	411BJ	0.15BJ	0.15BJ	8,500-43,000	SB
Selenium	0.52U	0.52U	0.00038B	0.005U	0.1-3.9	2 or SB
Silver	0.018B	0.02B	0.001U	0.001U	NA	SB
Sodium	520U	521U	5U	5U	6,000-8,000	SB
Thallium	0.026B	0.028B	0.000058B	0.000036B	NA	SB
Vanadium	3.1	3.4	0.005U	0.005U	1-300	150 or SB
Zinc	11J	11.3J	0.0033B	0.013	9-50	20 or SB

(e) Bold values indicate that the compound was detected at a concentration above TAGM cleanup objectives, but below Eastern United States Background criteria.

NOTE: B = The concentration of the analyte is between the instrument detection limit and the contract required detection limit.  
 SB = Site background.

TABLE 8 SUMMARY OF IN-PLACE MOISTURE/DENSITY TESTING ON LOW PERMEABILITY SOIL MATERIAL NUCLEAR DENSITY ASTM D-2922

Test Date	Sample ID/ Location	Sample Location Coordinates	Results				
			Moisture Content (%)	Pass/ Fail	Wet Density (pcf)***	Dry Density (pcf)	Pass/ Fail
7/3/2002	TPL1T1	16+99,0+82	16.3	P	134.9	119.4	P
7/3/2002	TPL1T2	16+90,0+78	16.4	P	133.0	117.8	P
7/3/2002	TPL2T5	17+25,0+90	15.0	P	133.6	119.4	P
7/3/2002	TPL2T6	17+48,1+15	16.0	P	131.2	116.2	P
7/10/2002	L1T1	17+35,1+80	15.1	P	138.8	119.9	P
7/10/2002	L1T2	17+30,2+25	15.3	P	133.5	115.7	P
7/10/2002	L1T3	16+93,2+71	14.9	P	135.5	117.9	P
7/10/2002	L2T4	16+96,1+84	16.2	P	134.8	116.0	P
7/10/2002	L2T5	17+12,2+09	15.2	P	133.8	116.2	P
7/10/2002	L2T6	17+02,2+70	14.7	P	138.4	120.7	P
7/10/2002	L3T7	17+57,1+82	14.9	P	135.9	118.2	P
7/10/2002	L3T8	16+97,2+12	15.1	P	131.7	114.5	P
7/10/2002	L3T9	17+00,2+70	14.8	P	134.9	117.5	P
7/10/2002	L1T10	16+70,2+55	14.8	P	136.6	119.0	P
7/10/2002	L1T11	16+24,2+03	15.0	P	135.0	117.4	P
7/10/2002	L2T12	16+67,1+95	15.7	P	136.9	118.4	P
7/10/2002	L2T13	16+16,2+76	16.0	P	135.2	116.6	P
7/11/2002	L1T14	16+67,1+36	14.9	P	135.7	118.1	P
7/11/2002	L1T15	15+95,1+01	15.1	P	137.9	119.8	P
7/11/2002	L2T16	16+50,0+98	14.8	P	138.5	120.6	P
7/11/2002	L2T17	15+91,1+36	14.7	P	138.2	120.5	P
7/11/2002	L3T18	17+52,1+85	14.7	P	137.0	119.4	P
7/11/2002	L3T19	17+03,0+90	14.6	P	138.5	120.9	P
7/11/2002	L3T20	16+56,0+96	15.4	P	133.1	115.3	P
7/11/2002	L3T21	15+95,1+85	14.9	P	136.1	118.8	P
7/11/2002	L3T22	16+58,2+26	15.9	P	135.2	116.7	P
7/11/2002	L3T23	16+05,2+50	14.9	P	135.4	118.3	P
7/15/2002	L1T24	15+48,2+27	15.1	P	137.7	119.6	P
7/15/2002	L1T25	15+58,1+03	15.1	P	136.4	118.4	P
7/15/2002	L1T26	15+10,2+33	15.0	P	139.0	120.8	P
7/15/2002	L1T27	15+15,1+07	17.1	P	133.4	113.9	P
7/15/2002	L2T28**	15+51,1+01	14.9	P	136.5	118.8	P
7/15/2002	L2T29**	15+12,1+44	15.0	P	134.7	117.1	P
7/15/2002	L2T30**	15+64,2+52	15.9	P	134.0	115.6	P
7/15/2002	L2T31**	15+18,2+61	15.9	P	133.3	115.0	P
7/15/2002	L3T32**	15+50,1+72	15.3	P	137.4	119.1	P
7/15/2002	L3T33	15+60,2+61	14.8	P	137.0	119.4	P
7/16/2002	L3T34**	15+19,1+84	14.9	P	137.0	119.6	P
7/16/2002	L3T35**	15+24,2+76	15.1	P	137.2	119.2	P
7/16/2002	L1T36	14+50,2+42	15.1	P	139.6	121.2	P
7/16/2002	L1T37	14+79,1+84	15.3	P	138.4	120.0	P
7/16/2002	L1T38	14+68,1+21	15.2	P	138.4	120.1	P
7/16/2002	L2T39	14+65,2+69	15.7	P	136.5	118.0	P
7/16/2002	L2T40	14+73,1+75	15.0	P	137.4	119.5	P

Note: L1T1 = Lift No. Test No.

Test Date	Sample ID/ Location	Sample Location Coordinates	Results				
			Moisture Content (%)	Pass/ Fail	Wet Density (pcf)***	Dry Density (pcf)	Pass/ Fail
7/16/2002	L2T41	14+87,1+03	15.7	P	137.0	118.4	P
7/16/2002	L3T42	14+55,2+40	15.1	P	138.1	119.9	P
7/16/2002	L3T43	14+00,1+00	14.9	P	137.5	121.2	P
7/17/2002	L1T44	14+27,2+40	15.0	P	135.1	117.4	P
7/17/2002	L1T45	14+21,0+98	15.7	P	139.1	120.2	P
7/17/2002	L2T46	14+18,1+20	14.9	P	137.9	120.7	P
7/17/2002	L2T47	14+30,2+83	14.9	P	138.6	120.6	P
7/17/2002	L3T48	14+22,1+25	15.0	P	136.6	118.7	P
7/17/2002	L3T49	14+35,2+04	15.0	P	138.9	121.0	P
7/18/2002	L1T50	13+58,1+31	15.1	P	139.9	121.5	P
7/18/2002	L1T51	13+52,2+73	15.4	P	137.8	119.4	P
7/18/2002	L2T52	13+49,0+98	14.9	P	138.1	120.1	P
7/18/2002	L2T53	13+40,2+95	15.0	P	137.2	119.3	P
7/18/2002	L3T54	13+55,1+00	15.7	P	135.7	117.3	P
7/18/2002	L3T55	13+62,2+00	15.9	P	137.3	118.4	P
7/18/2002	L3T56	13+60,2+85	14.9	P	135.6	118.0	P
7/18/2002	L1T57	13+25,2+40	14.9	P	141.4	123.0	P
7/18/2002	L1T58	13+15,1+20	14.9	P	137.8	119.9	P
7/22/2002	L1T59	12+90,2+39	15.2	P	139.0	120.6	P
7/22/2002	L1T60	12+55,1+01	15.1	P	136.3	118.4	P
7/22/2002	L2T61	13+15,2+40	16.2	P	132.8	114.4	P
7/22/2002	L2T62	13+20,1+03	14.9	P	135.9	118.2	P
7/22/2002	L3T63	13+35,1+00	15.0	P	136.9	119.1	P
7/22/2002	L3T64	13+18,2+50	15.6	P	138.1	119.5	P
7/22/2002	L2T65	12+74,1+11	16.7	P	134.4	115.1	P
7/22/2002	L2T66	12+91,2+34	16.1	P	130.2	112.2	P
7/22/2002	L3T67	12+60,1+21	15.1	P	136.9	118.9	P
7/23/2002	L3T68	12+80,2+45	15.0	P	139.9	121.6	P
7/23/2002	L1T69	12+30,1+97	14.9	P	139.9	121.7	P
7/23/2002	L1T70	11+85,1+12	16.1	P	136.4	117.4	P
7/23/2002	L1T71	11+50,1+02	14.9	P	141.7	123.3	P
7/24/2002	L2T74	12+30,1+95	14.9	P	139.4	121.4	P
7/24/2002	L2T75	12+15,1+07	15.3	P	138.2	119.9	P
7/24/2002	L2T77	11+50,1+01	15.0	P	136.5	118.6	P
7/24/2002	L3T80	12+61,1+96	15.8	P	137.8	119.0	P
7/24/2002	L3T81	11+86,1+35	14.9	P	138.0	120.0	P
7/24/2002	L3T82	11+45,1+05	15.2	P	138.4	120.1	P
7/23/2002	L1T72	17+39,3+50	15.0	P	138.5	120.4	P
7/23/2002	L2T73	17+51,3+50	15.1	P	139.5	121.1	P
7/24/2002	L3T76	17+55,3+45	14.9	P	139.9	121.7	P
7/24/2002	L1T78	17+32,4+33	15.1	P	141.1	122.8	P
7/24/2002	L1T79	17+20,3+74	14.9	P	140.1	121.9	P
7/24/2002	L2T83	16+80,3+70	15.5	P	137.9	119.4	P
7/24/2002	L2T84	16+80,4+40	15.1	P	137.5	119.5	P
7/25/2002	L1T85	16+20,3+57	15.0	P	136.8	122.3	P
7/25/2002	L1T86	16+53,4+69	15.3	P	137.0	122.2	P
7/25/2002	L3T87	16+71,3+62	16.1	P	137.5	118.4	P
7/25/2002	L3T88	16+88,4+40	15.2	P	138.4	120.1	P
7/25/2002	L2T89	16+15,3+80	15.3	P	138.4	120.0	P



Test Date	Sample ID/ Location	Sample Location Coordinates	Results				
			Moisture Content (%)	Pass/ Fail	Wet Density (pcf)***	Dry Density (pcf)	Pass/ Fail
7/25/2002	L2T90	16+10,4+55	15.0	P	138.3	120.3	P
7/25/2002	L3T91	16+18,3+60	16.7	P	134.2	115.0	P
7/25/2002	L3T92	16+17,4+60	15.7	P	136.3	117.8	P
7/29/2002	L1T93	15+70,3+60	14.9	P	127.5	114.3	P
7/29/2002	L1T94	15+65,4+56	15.8	P	134.0	119.0	P
7/29/2002	L1T95	14+60,4+45	16.4	P	134.3	118.7	P
7/29/2002	L1T96	14+75,3+80	17.3	P	135.3	118.6	P
7/29/2002	L2T97	15+75,3+50	15.1	P	139.0	120.8	P
7/29/2002	L2T98	15+80,4+60	17.0	P	135.6	115.9	P
7/29/2002	L2T99	14+85,3+80	15.4	P	135.6	117.5	P
7/29/2002	L2T100	14+90,4+50	15.5	P	134.2	116.2	P
7/29/2002	L3T101	15+60,3+57	15.3	P	136.1	118.0	P
7/29/2002	L3T102	15+70,4+50	14.9	P	128.0	111.4	P
7/29/2002	L3T103	14+63,3+85	14.9	P	139.1	121.0	P
7/29/2002	L3T104	14+65,4+60	15.4	P	135.3	117.2	P
7/29/2002	L1T105	14+17, 3+75	14.9	P	133.8	119.8	P
7/29/2002	L1T106	14+25, 4+45	15.0	P	136.1	121.7	P
7/30/2002	L1T107	13+43,4+59	14.9	P	140.2	122.0	P
7/30/2002	L1T108	13+50,3+98	16.2	P	138.4	119.1	P
7/30/2002	L2T109	14+30,3+95	15.0	P	137.0	119.1	P
7/30/2002	L2T110	14+40,4+40	15.0	P	136.7	118.9	P
7/30/2002	L2T111	13+64,4+35	15.2	P	137.2	119.1	P
7/30/2002	L2T112	13+70,3+70	15.3	P	138.5	120.1	P
7/30/2002	L3T113	14+35,3+50	15.1	P	137.3	119.3	P
7/30/2002	L3T114	14+30,4+45	16.4	P	134.8	115.9	P
7/30/2002	L3T115	13+40,4+45	16.0	P	137.7	118.7	P
7/30/2002	L3T116	13+42,4+52	15.1	P	137.8	119.7	P
7/30/2002	L1T117	12+70,3+80	15.9	P	138.4	119.4	P
7/30/2002	L1T118	12+75,4+40	15.0	P	139.2	121.0	P
7/30/2002	L2T119	12+80,4+35	16.6	P	137.5	118.0	P
7/30/2002	L2T120	12+75,3+55	15.4	P	138.2	119.8	P
7/31/2002	L1T121	11+63,2+85	15.1	P	139.6	121.2	P
7/31/2002	L1T122	11+60,3+60	14.9	P	140.6	122.3	P
7/31/2002	L1T123	11+58,4+40	15.4	P	137.2	118.8	P
7/31/2002	L2T124	11+56,3+80	15.3	P	132.6	115.0	P
7/31/2002	L2T125	11+55,4+45	14.9	P	137.7	120.0	P
7/31/2002	L2T126	11+40,2+60	15.0	P	136.1	118.3	P
7/31/2002	L3T127	12+20,4+35	14.9	P	137.3	119.4	P
7/31/2002	L3T128	12+24,3+30	16.7	P	132.8	113.8	P
7/31/2002	L3T129	11+75,4+25	15.7	P	134.4	116.2	P
7/31/2002	L3T130	11+60,2+70	17.0	P	134.7	115.1	P
7/31/2002	L3T131	11+60,3+60	15.3	P	136.0	118.0	P
8/1/2002	L1T132	11+12,3+95	15.3	P	137.9	119.6	P
8/1/2002	L1T134	10+70,4+10	15.6	P	138.2	119.5	P
8/1/2002	L2T135	11+30,4+04	15.4	P	137.7	119.3	P
8/1/2002	L1T136	9+60,4+15	15.7	P	140.1	121.0	P
8/1/2002	L2T137	11+25,3+12	15.9	P	136.9	118.1	P
8/1/2002	L3T139	11+15,4+20	14.9	P	136.6	118.8	P
8/6/2002	L3T141	11+30,2+89	15.7	P	138.4	119.7	P

Test Date	Sample ID/ Location	Sample Location Coordinates	Results				
			Moisture Content (%)	Pass/ Fail	Wet Density (pcf)***	Dry Density (pcf)	Pass/ Fail
8/6/2002	L2T142	9+45,4+30	18.0	P	136.2	115.4	P
8/6/2002	L2T143	10+30,4+39	18.9	P	133.1	111.9	P
8/6/2002	L1T144	10+50,3+79	15.4	P	135.6	117.4	P
8/6/2002	L1T145	10+00,3+60	18.7	P	134.1	113.0	P
8/6/2002	L1T146	9+85,3+10	17.9	P	134.6	114.2	P
8/6/2002	L1T147	10+60,3+21	18.0	P	132.8	112.6	P
8/6/2002	L3T148	9+33,4+40	16.6	P	137.8	118.2	P
8/6/2002	L2T149	10+35,4+25	16.6	P	136.6	117.1	P
8/6/2002	L2T150	9+40,3+85	17.4	P	137.4	117.0	P
8/6/2002	L2T151	10+15,3+90	16.0	P	138.5	119.4	P
8/6/2002	L2T152	10+80,3+40	16.8	P	135.4	115.9	P
8/6/2002	L1T153	9+95,3+40	18.0	P	135.0	114.5	P
8/6/2002	L1T154	10+60,2+75	17.6	P	136.0	115.6	P
8/6/2002	L1T155	10+01,2+77	16.6	P	131.6	112.8	P
8/7/2002	L3T157	9+60,3+70	15.3	P	140.2	121.6	P
8/7/2002	L3T158	10+02,3+20	14.9	P	135.3	117.7	P
8/7/2002	L2T159	10+00,2+70	15.6	P	138.8	120.1	P
8/7/2002	L3T161	10+35,3+82	16.6	P	137.2	117.7	P
8/7/2002	L3T162	10+55,3+20	16.3	P	146.5	126.0	P
8/7/2002	L3T163	10+60,2+90	14.9	P	137.1	119.3	P
8/1/2002	L1T133	11+10,2+00	14.9	P	140.6	122.3	P
8/1/2002	L2T138	11+08,2+03	15.4	P	138.2	119.7	P
8/6/2002	L3T140	11+20,2+01	18.2	P	133.9	113.2	P
8/7/2002	L1T156	10,+50,1+98	14.9	P	138.3	120.5	P
8/7/2002	L2T160	10+40,1+90	16.1	P	138.1	118.9	P
8/7/2002	L3T164	10+40,2+15	18.1	P	133.0	112.7	P
8/8/2002	L1T165	13+70,2+40	15.5	P	138.6	120.0	P
8/8/2002	L1T166	15+15,2+20	17.1	P	135.9	116.1	P
8/8/2002	L1T167	16+90,1+95	15.2	P	135.2	117.3	P
8/8/2002	L2T168	13+75,2+50	15.6	P	136.7	118.3	P
8/8/2002	L2T169	14+80,2+40	14.9	P	139.0	120.9	P
8/8/2002	L2T170	15+30,2+15	14.9	P	137.9	120.0	P
8/8/2002	L2T171	16+35,2+10	16.2	P	135.5	116.6	P
8/8/2002	L2T172	17+30,1+85	14.8	P	137.8	120.1	P
8/8/2002	L3T173	13+75,2+47	16.7	P	135.5	116.1	P
8/8/2002	L3T174	14+20,2+40	15.5	P	135.4	117.3	P
8/8/2002	L3T175	15+25,2+30	15.6	P	136.8	118.4	P
8/8/2002	L3T176	16+35,2+15	16.2	P	136.7	117.6	P
8/12/2002	L1T177	12+95,3+15	17.7	P	133.6	113.5	P
8/12/2002	L1T178	12+10,2+40	17.4	P	133.2	113.4	P
8/12/2002	L1T179	11+35,1+51	15	P	138.6	120.5	P
8/12/2002	L1T180	11+05,1+20	15.4	P	138.6	120.1	P
8/12/2002	L2T181	13+00,3+27	15.6	P	137.9	119.3	P
8/12/2002	L2T182	12+75,2+50	15.8	P	134.1	115.8	P
8/12/2002	L2T183	11+90,2+25	15.3	P	131.7	114.3	P
8/12/2002	L2T184	11+20,1+75	15.8	P	137.5	118.7	P
8/12/2002	L3T185	13+00,3+20	16.7	P	137.1	117.5	P
8/12/2002	L3T186	12+75,2+50	15.5	P	137.1	118.6	P
8/12/2002	L3T187	11+80,2+10	14.7	P	136.4	118.9	P
8/12/2002	L3T188	11+70,1+65	14.9	P	139.2	121.1	P

Test Date	Sample ID/ Location	Sample Location Coordinates	Results				
			Moisture Content (%)	Pass/ Fail	Wet Density (pcf)***	Dry Density (pcf)	Pass/ Fail
8/13/2002	L1T189	8+30,2+56	14.9	P	141.6	123.2	P
8/13/2002	L1T190	8+10,3+20	14.8	P	139.3	121.4	P
8/13/2002	L1T191	7+60,4+25	15.5	P	136.5	118.1	P
8/13/2002	L1T192	7+95,2+60	14.8	P	138.4	120.6	P
8/13/2002	L1T193	7+25,2+70	15.9	P	137.2	118.4	P
8/13/2002	L2T194	8+40,2+75	15.2	P	139.4	121.0	P
8/13/2002	L2T195	8+05,3+60	15.3	P	139.0	120.6	P
8/13/2002	L2T196	7+65,4+45	14.9	P	140.2	122.0	P
8/13/2002	L1T197	7+55,3+50	15.0	P	139.2	121.0	P
8/13/2002	L1T198	6+90,3+75	15.1	P	136.5	118.5	P
8/13/2002	L1T199	7+00,4+20	15.3	P	138.5	120.1	P
8/14/2002	L3T200	8+25,3+00	14.9	P	140.0	121.8	P
8/14/2002	L3T201	7+85,3+80	15.0	P	137.7	119.7	P
8/14/2002	L3T202	7+50,4+40	16.3	P	138.7	119.3	P
8/14/2002	L2T203	7+90,2+65	14.8	P	140.4	122.2	P
8/14/2002	L2T204	7+55,3+65	15.0	P	138.8	120.7	P
8/14/2002	L2T205	7+15,4+21	15.5	P	137.8	119.3	P
8/14/2002	L2T206	7+35,2+75	15.0	P	142.2	123.8	P
8/14/2002	L2T207	6+99,3+40	17.1	P	137.6	117.5	P
8/14/2002	L2T208	6+70,3+97	15.4	P	138.2	119.7	P
8/15/2002	L3T209	7+75,2+85	15.0	P	140.2	121.8	P
8/15/2002	L3T210	7+40,3+60	15.4	P	139.6	121.0	P
8/15/2002	L3T211	7+20,4+20	15.8	P	137.6	118.9	P
8/15/2002	L3T212	7+40,2+65	14.9	P	138.7	120.8	P
8/15/2002	L3T213	7+12,3+40	15.7	P	138.2	119.5	P
8/15/2002	L3T214	6+60,4+05	14.9	P	139.3	121.2	P
8/15/2002	L1T215	6+85,2+92	14.9	P	133.7	116.3	P
8/15/2002	L1T216	6+66,3+40	15.1	P	135.8	118.0	P
8/15/2002	L1T217	6+50,3+80	16.2	P	133.7	115.1	P
8/15/2002	L2T218	7+00,2+60	15.0	P	138.2	120.2	P
8/15/2002	L2T219	6+75,3+30	14.9	P	139.2	121.2	P
8/15/2002	L2T220	6+55,4+00	15.4	P	137.0	118.8	P
8/19/2002	L3T221	6+70,2+60	14.8	P	134.7	117.4	P
8/19/2002	L3T222	6+60,3+10	15.0	P	134.6	117.1	P
8/19/2002	L3T223	6+50,3+90	15.2	P	138.2	120.1	P
8/19/2002	L1T224	6+15,2+60	15.2	P	136.2	118.2	P
8/19/2002	L1T225	5+70,3+15	16.8	P	136.3	116.7	P
8/19/2002	L1T226	5+45,2+35	15.7	P	137.8	119.1	P
8/19/2002	L2T227	5+90,3+00	14.9	P	136.9	119.2	P
8/19/2002	L2T228	5+40,2+80	15.4	P	138.4	120.0	P
8/19/2002	L2T229	5+10,2+25	15.8	P	137.4	118.6	P
8/19/2002	L2T230	6+30,2+60	14.9	P	140.1	122.0	P
8/20/2002	L3T231	5+60,2+60	18.0	P	135.3	114.7	P
8/20/2002	L3T232	5+40,3+00	17.7	P	136.8	116.3	P
8/20/2002	L1T233	4+30,1+61	17.8	P	133.3	113.2	P
8/20/2002	L1T234	3+60,1+00	16.3	P	133.8	115.0	P
8/20/2002	L2T235	4+65,1+96	15.7	P	137.1	118.6	P
8/20/2002	L2T236	4+18,1+50	17.1	P	135.6	115.9	P

Test Date	Sample ID/ Location	Sample Location Coordinates	Results				
			Moisture Content (%)	Pass/ Fail	Wet Density (pcf)***	Dry Density (pcf)	Pass/ Fail
8/20/2002	L3T237	4+70,1+91	16.4	P	136.0	116.9	P
	L3T238	NC	NC	NA	NC	NC	NA
8/20/2002	L3T239	4+25, 1+50	15.8	P	135.6	117.1	P
8/21/2002	L1T240	4+60,1+20	15.3	P	135.9	117.9	P
8/21/2002	L1T241	4+40,0+72	15.0	P	133.6	116.2	P
8/21/2002	L1T242	5+04,1+25	15.0	P	138.4	120.4	P
8/21/2002	L1T243	5+85,1+00	14.9	P	142.9	124.4	P
8/21/2002	L1T244	5+80,1+55	14.9	P	138.3	120.4	P
8/21/2002	L2T245	4+45,0+74	16.3	P	138.0	118.6	P
8/21/2002	L2T246	4+75,1+17	15.8	P	137.1	118.3	P
8/21/2002	L2T247	5+30, 1+55	16.3	P	138.6	119.2	P
8/21/2002	L2T248	5+30,1+01	15.4	P	136.7	118.5	P
8/21/2002	L3T249	4+60,0+99	15.0	P	136.8	119.0	P
8/21/2002	L3T250	3+94,0+75	16.0	P	139.1	119.9	P
8/22/2002	L3T251	5+20,0+96	16.3	P	136.9	117.7	P
8/22/2002	L3T252	5+25,1+50	14.9	P	135.8	118.2	P
8/22/2002	L1T253	6+10,1+75	16.8	P	138.5	118.6	P
8/22/2002	L1T254	6+18,0+98	14.9	P	139.7	121.6	P
8/22/2002	LST257	5+75,0+99	15.7	P	137.8	119.1	P
8/22/2002	LS2T258	5+65,1+95	24.7	P	139.6	121.8	P
8/22/2002	L2T259	6+35,1+65	24.9	P	141.3	123.0	P
8/26/2002	L3T260	6+25,0+85	17.2	P	134.0	114.3	P
8/26/2002	L3T261	6+30,1+35	15.6	P	137.7	117.1	P
8/26/2002	L3T262	6+30,1+85	16.8	P	132.4	113.4	P
8/22/2002	L1T255	6+85,0+80	14.9	P	138.5	120.6	P
8/22/2002	L1T256	6+75,1+80	15.5	P	136.7	118.4	P
8/26/2002	L2T263	6+85,1+50	15.4	P	135.7	117.6	P
8/26/2002	L2T264	6+70,2+10	16.1	P	135.1	116.3	P
8/26/2002	L3T265	6+55,1+25	15.8	P	133.8	115.6	P
8/26/2002	L3T266	6+75,2+00	15.5	P	136.3	118.0	P
8/26/2002	L1T267RT	7+85,1+90	15.1	P	132.5	115.1	P
8/26/2002	L1T268RT	7+85,0+80	15.1	P	137.0	118.9	P
8/26/2002	L1T269RT	8+15,1+20	14.7	P	132.7	115.7	P
8/26/2002	L1T270RT	8+25,1+35	15.0	P	134.9	117.2	P
8/26/2002	L1T271RT	7+20,1+95	15.2	P	131.1	113.7	P
8/26/2002	L1T272RT	7+20,0+95	15.5	P	138.3	119.7	P
8/27/2002	L1T273RT	8+75,0+85	15.0	P	138.6	120.6	P
8/27/2002	L1T274RT	8+70,2+05	15.1	P	138.4	120.3	P
8/27/2002	L1T275RT	9+50,0+95	16.5	P	136.0	116.8	P
8/27/2002	L1T276RT	9+20,1+55	15.3	P	136.5	118.4	P
8/27/2002	L2T277	7+10,1+1-	15.7	P	133.7	115.5	P
8/27/2002	L2T278	7+15,2+05	16.8	P	135.0	115.6	P
8/27/2002	L2T279	7+90,0+80	14.6	P	136.4	119.2	P
8/27/2002	L2T280	7+75,1+40	14.6	P	135.8	118.6	P
8/27/2002	L2T281	7+85,2+20	15.3	P	134.8	117.0	P
8/27/2002	L2T282	7+25,1+00	15.3	P	133.7	115.9	P

NOTE: NC = Not Collected  
NC = Not Collected  
RT = Retest results; retest required following reworking of the soil.

Test Date	Sample ID/ Location	Sample Location Coordinates	Results				
			Moisture Content (%)	Pass/ Fail	Wet Density (pcf)***	Dry Density (pcf)	Pass/ Fail
8/27/2002	L3T283	7+15,1+85	15.5	P	135.8	117.6	P
8/27/2002	L3T284	7+65,1+95	14.7	P	135.7	118.4	P
8/27/2002	L3T285	7+70,1+25	16.2	P	135.7	116.7	P
8/28/2002	L2T286	8+25,1+20	15.2	P	138.0	119.8	P
8/28/2002	L2T287	8+35,1+75	16.2	P	137.7	118.5	P
8/28/2002	L2T288	8+20,2+15	14.8	P	136.8	119.2	P
8/28/2002	L2T289	9+50,1+50	15.5	P	135.3	117.2	P
8/28/2002	L2T290	9+20,1+05	14.9	P	135.1	117.5	P
8/28/2002	L3T291	8+10,1+00	14.8	P	137.0	119.3	P
8/28/2002	L3T292	8+10,2+00	14.9	P	136.1	118.4	P
8/28/2002	L3T293	8+90,2+15	15.5	P	137.0	118.6	P
8/28/2002	L3T294	8+75,1+85	16.0	P	133.9	115.5	P
8/28/2002	L3T295	8+85,0+95	16.1	P	134.9	116.1	P
8/28/2002	L3T296	9+25,0+90	16.0	P	134.4	115.8	P
8/28/2002	L3T297	9+10,1+75	16.1	P	135.6	116.9	P

**Appendixes**

**(Provided on Attached Compact Disc)**