Prepared for

LCP Steering Committee
65 Ross Road
Brunswick, Georgia 31520

CLOSE-OUT REPORT: NORTH AREA REVISION 0

LCP CHEMICALS-GEORGIA BRUNSWICK, GEORGIA

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December 1997

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1. INTRODUCTION

1.1 Terms of Reference

This removal close-out report was prepared for the LCP Site Steering Committee (the Committee) by GeoSyntec Consultants (GeoSyntec) as part of the removal response action at the former LCP Chemicals-Georgia site in Brunswick, Georgia. The removal response action is required by the US Environmental Protection Agency (USEPA) Unilateral Administrative Order (UOA) No. 94-201. Mr. Paul Peronard, USEPA On-Scene Coordinator (OSC), requested this close-out report. This report was written by Mr. Jonathan Brandes and Mr. Kirk Wills and reviewed by Mr. Kirk Kessler, P.G. in accordance with GeoSyntec's internal review policy.

1.2 Purpose

The purpose of this report is to document the removal response activities performed in several areas north of B-Street (i.e., North Area) at the LCP site and to define the post-removal residual conditions of this area.

1.3 Removal Response Documents

GeoSyntec prepared the following project documents relating to the North Area removal activities:

- *Phase I Removal Action Work Plan, LCP Chemicals Site, Brunswick,* Georgia, dated July 1994;
- *Quality Assurance Project Plan for Site Characterization Activities related to the LCP Chemicals-Brunswick Site Removal Action,* dated July 1994;

- *Health and Safety Plan for Removal Activities, LCP Chemicals-Brunswick* Site, dated May 1995;
- *Work Plan, Removal Response Action, LCP Chemicals-Georgia Facility, Brunswick, Georgia*, dated 1 May 1995 (update to July 1994 plan);
- *Phase 11 Characterization Sampling Plan, LCP Chemicals-Georgia, Brunswick, Georgia, dated 22 June 97;*
- *Soil and Waste Removal Work Plan, Phase IIIA Removal Response Activities, Former LCP Chemicals - Georgia Site, Brunswick,* Georgia, dated 15 September 1995;
- *Soil and Waste Removal, Transportation, and Disposal Work Plan and Engineering Drawings, Phase IIIB Removal Response Activities, Former LCP Chemicals - Georgia Site, Brunswick, Georgia, dated 13 November 1995;*
- *Final Report Laboratory Test Results North Disposal Area Bleach Muds Filter Press Evaluation, LCP Chemicals - Georgia Site, Brunswick, Georgia*, dated November 1995;
- *Removal Plan, Category 2 Areas, LCP Chemicals - Georgia Site, Brunswick,* Georgia, dated 15 September 1995;
- *North Disposal Area Sheet Piling Bid Package, LCP Chemicals - Georgia Site, Brunswick, Georgia*, dated 19 February 1996
- *Memorandum - Statistical Analysis for Lead in North Central Distillation Area Samples*, dated 25 November 1996; and
- *Surface-Water Management Plan, Former LCP Chemicals Site, Brunswick, Georgia,* and dated 11 April 1997.

1.4 Organization

The remainder of this report is organized as follows:

- background information is presented in Section 2;
- characterization and delineation sampling is summarized in Section 3;
- removal excavation activities are covered in Section 4;
- confirmational soil sampling is presented in Section 5; and
- backfill and revegetation activities are summarized in Section 6.

2. BACKGROUND

2.1 General

The North Area includes all the removal areas north of B Street except for the North Separator. The North Separator removal activities are documented in a separate close-out report. The following comprise the North Area (see Figure 1 for reference):

- North Removal Area;
- North Removal Expansion Area;
- Northwest Field;
- Waste Disposal Impoundment;
- North Rail Yard;
- Bunker C Tank Area;
- Secondary Bunker C Tank Area;
- North Central Area; and
- Raw Brine Tank Enclosures.

2.2 North Removal Area

The North Removal Area is an approximately 2.9 acre (1.3 hectare) area located at the northwest portion of the site. It is bounded at the north and west by a salt marsh, the east by the North Removal Expansion Area and by the Northwest Field at the south. A segment of the former Brunswick-Altamaha Canal is aligned through the North Removal Area. The North Removal Area may also be described as the area encompassing the North Disposal Area and area to the south. The North Disposal Area

was originally used to describe an area containing a black tar-like sludge overlain by white bleach mud, located within the trace of the former canal. The term North Removal Area was later used to define the North Disposal Area and the area to the immediate south, characterized by black stained soils.

2.3 North Removal Expansion Area

The North Removal Expansion Area is an approximately 2.3 acre (1.0 hectare) area located directly east of the North Removal Area. This area designation originated as a result of substantial lateral expansion of the North Removal Area experienced during removal excavation. This area is bounded on the north and west by the North Removal Area, the east by the Waste Disposal Impoundment and North Rail Yard, and south by B Street. Prior to commencing removal response activities in this area, the majority of this area was overgrown with brush and small trees. The North Removal Expansion Area contains various concrete slabs, concrete tank supports and the two brick buildings.

2.4 Northwest Field

The Northwest Field is an approximately 1.8 acre (0.7 hectare) area located directly north of the western portion of B Street. It is bounded on the north by the North Removal Area, the south by B Street, and the east by the North Removal Expansion Area and a salt marsh on the west. The former Brunswick-Altamaha Canal is aligned through the western portion of the Northwest Field. This area contains two concrete slabs, associated concrete sumps, LCP production well No. 4 and associated pump house. The western edge (adjacent to marsh) of this area has been referred to as the Surficial Anomaly.

2.5 Waste Disposal Impoundment

The Waste Disposal Impoundment is an approximately 1.3 acre (0.5 hectare) area enclosed on the north, east and west sides by approximately 3-ft (1-m) high concrete walls. It is bounded on the north by the North Removal Area, the south and east by the North Central Area and the North Removal Expansion Area on the west. Material contained within the impoundment was divided by an east-west aligned, approximately 2-ft (0.6-m) high, soil berm. The section north of the berm represented approximately one-third of the total Waste Disposal Impoundment surface area. This portion contained a thin layer of black granular material overlain by approximately 1 ft (0.3 m) of lime softening mud. The area south of the berm contained approximately 3 ft (1 m) of lime softening mud overlying sand. During removal response activities the Waste Disposal Impoundment was used as a non-hazardous waste staging and truck loading area.

2.6 North Rail Yard

The North Rail Yard was the northern extension of the site's main railroad spur. At the start of the removal response action it contained three railroad tracks and approximately 3-ft (1-m) high concrete walls on the east and west sides. The North Rail Yard covers approximately 1.0 acre (0.4 hectares). It is bounded on the north by the Waste Disposal Impoundment, the south by B Street, the east by the North Central Area and Bunker C Tank Area, and by the North Removal Expansion Area on the west.

2.7 Bunker C Tank Area

The Bunker C Tank Area covers approximately 0.5 acres (0.2 hectares) and is bounded on the north and east by the North Central Area, the North Rail Yard on the west and B Street on the south. This area housed eight brick-lined bunker C fuel tanks and two fiberglass tanks within an approximately 3-ft (1-m) high concrete containment wall. Each fuel tank was approximately 30-ft (10-m) high and 26 ft (8 m) in diameter. Starting at the north tank, the first six tanks were numbered 92 through 97. The

southern most tank and the second from south were numbered 108 and 107, respectively. During former facility operations, the Bunker C Tanks were used to store fuel oil for operations of a boiler and power house. Some of the tanks were later used for temporary storage of untreated waste water. At the start of the removal response action, each tank contained one or more of the following phases: water, oil, and bottom sludge.

2.8 Secondary Bunker C Tank Area

The Secondary Bunker C Tank Area is located between the power house and boiler house. This area contained three tanks that were also used for storage of bunker C fuel oil and two approximately 100-ft (30-m) tall steel smoke stacks. Each tank was mounted on an approximately 10-ft (3-m) high concrete tank support.

2.9 North Central Area

The North Central Area covers approximately 6.8 acre (2.8 hectare). It is bounded on the north by the Waste Disposal Impoundment and theater area, on the south by B Street, on the east by the Northeast Field and the Bunker C Tank Area and Waste Disposal Impoundment on the west. The North Central Area contains the boiler house, power house, locker room, cooling tower and the former refinery distillation area. The distillation area includes two approximately 150-ft (46-m) tall brick stacks, various brick buildings and tank supports all over grown with large trees. The Secondary Bunker C Area is within the limits of the North Central Area, but it is considered a separate removal area.

2.10 Raw Brine Tank Enclosures

Four concrete wall tank enclosures and two steel holding tanks located at the northeastern portion of the site remained from the refinery operations. The two tanks were approximately 50-ft (15 m) high and 60-ft (18-m) diameter. During Chlor-alkali

plant operations, the two tanks were used for storage of raw brine solution. The two tanks and two former tank location (west of the tanks) were enclosed with approximately 150-ft by 150-ft (46- by 46-m) 5-ft (1.5-m) high concrete walls. A soil berm was present on the west side between the two eastern-most enclosures, which created an impoundment used to store brine sludge from the holding tanks. At the start of the Removal Action, the two tanks, the three eastern enclosures and the southwest enclosures contained salt mud. No visible salt mud has been observed in the northwest enclosure.

3. CHARACTERIZATION AND DELINEATION SAMPLING

3.1 Overview

Characterization and delineation sampling at the North Area was conducted between July 1994 and April 1997. Characterization sampling and excavation activities proceeded concurrently in several removal areas. The sampling generally concentrated on individual removal areas. More than 900 characterization and delineation samples were collected at the North Area. Analytical results are listed in Tables 1 through 18 and sample locations are presented in Drawings 1 and 3. Also, bulk samples were collected from various removal areas for waste compatibility testing. Results of waste compatibility testing are presented in Appendix A.

3.2 Sampling Methods

3.2.1 General

Characterization and delineation sampling were conducted using various methods. Surface and shallow subsurface samples were collected from hand auger borings and test trenches. Deep subsurface soil samples were collected using one of the following methods: Strataprobe™ direct-push sampling; rotary drilling; or hollow stem auger drilling. Either grab or composite samples were collected. When collecting composite samples, a grab sample for volatile organic compounds (VOCs) analysis was collected from a composite sample aliquot. The grab sample was not homogenized prior to placement into a separate glass sample jar for VOC analyses.

3.2.2 Hand Auger Sampling

Samples were collected from hand auger borings by advancing a hand auger bucket to the desired depth, emptying the soil from the auger into a stainless steel bowl and homogenizing the sample with a stainless steel scoop. After homogenizing, the sample was placed in a glass sample jar for chemical analyses. Samples were collected from typical depth ranges of: 0 to 1 ft (0 to 0.3 m); 1 to 2 ft (0.3 to 0.6 m); 2 to 3 ft (0.6 to 1 m); and occasionally deeper. The typical sample identification convention for hand

auger samples was to use a Julian date prefix completed by a sequential numerical suffix (e.g., 96158-04 on Table 1). Also, some hand auger samples were given a "HA" designation after the Julian date followed by a sequential numerical suffix (e.g., 950223-HA2-1 on Table 1).

3.2.3 Test Trench Sampling

Test trenches were excavated using a hydraulic excavator. Samples were collected from the trench sidewalls and subgrades. In cases of trench depths less than 4 ft (1.2 m), sampling personnel entered the trench to obtain the in-situ sample using a trowel or stainless steel scoop. In deeper test trenches, the hydraulic excavator was used to carefully remove a portion of the in-situ sidewall or subgrade. A stainless steel scoop was used to collect sample from the soil in the bucket and transfer it to a stainless steel bowl. The sample was collected from the center of the bucket to ensure that it never came into contact with the bucket. The sample was homogenized in the stainless steel bowl using the stainless steel scoop. Once homogenized, the sample was placed in a glass sample jar for chemical analyses. The typical sample identification convention for test trench samples was to use a Julian date prefix completed by "TT" and a sequential numerical suffix (e.g., 950220-TT9-1 on Table 1).

3.2.4 Strataprobe™ Sampling

Subsurface soil along the alignment of the former Brunswick-Altamaha Canal was characterized using a Strataprobe™ direct-push subsurface sampling rig, in general accordance with the *Phase II Characterization Sampling Plan, LCP Chemicals-Georgia, Brunswick,* Georgia, dated 22 June 1995. The Strataprobe™ is a truck-mounted, hydraulic cylinder and hammer driven direct-push drill rig. The Strataprobe™ utilized 1.5 in. (3.8 cm) diameter rods to drive a 2-in. (5-cm) diameter, 2-ft (0.6-m) long split spoon sampler lined with acetate. Borings were advanced to an approximate depth of 25 ft (7.6 m) collecting a continuous split spoon soil core. Soil boring logs were prepared from visual inspection of the core. Soil samples were collected at approximately 5-ft (1.5-m) intervals for chemical analyses. The typical sample identification convention for Strataprobe™ samples was to use a Julian date

prefix completed by "PB" and a sequential numerical suffix (e.g., 950192-PB9-3 on Table 1).

3.2.5 Mud Rotary Drilling

Mud rotary drilling was used for collection of subsurface soil samples at four geotechnical boring locations around the designed perimeter of the sheet pile wall in the North Disposal Area. Continuous soil cores were collected by advancing a 5-ft (1.5-m) long soil-coring device ahead of the drill bit. Soil boring logs were prepared from visual inspection of the core. Soil samples were collected from approximately 1-ft (0.3-m) intervals at various depths to a maximum of 40 ft (12 m) for physical and chemical analyses. The typical sample identification convention for Mud rotary samples was to use a Julian date prefix completed by "NDB" and a sequential numerical suffix (e.g., 950268-NDB1-3 on Table 1)

3.2.6 Auger Drilling

Auger drilling was conducted at several locations along the alignment of the former Brunswick-Altamaha Canal. Solid stem augers were first used to drill to an approximate depth of 20 ft (6.1 m). Soil boring logs were prepared from visual inspection of cuttings from the solid stem auger boring. The drill rig was then off-set and a hollow stem boring was advanced to approximately 20 ft (6.1 m) to collect samples for chemical analyses. Samples were collected from various depth intervals primarily using split spoons, although Shelby tubes were utilized at one location. The boring locations were designated by "AC" followed by a sequential numerical suffix (e.g., AC3). The typical sample identification convention for hollow stem auger samples was to use the boring location designation followed by a letter or numerical suffix (e.g., AC3-C and AC5-12 on Table 1).

3.3 Analytical Data Table Organization

The analytical results for samples collected from the North Area are listed in Tables 1 through 18. Tables 1 through 9 each contain total analytical results for one of the nine

removal areas. Table 10 lists the parameters used to calculate Total VOCs and Total semi-volatile organic compounds (SVOCs). Tables 11 through 18 each contain Toxic Characteristic Leaching Procedure (TCLP) results for one of the nine removal areas. The sample records in Tables 1 through 9 are compiled according to the following categorization: (i) "characterization" - characterization samples not removed as part of the excavation activities; (ii) "removed characterization" - characterization samples which have been subsequently removed due to excavation; (iii) "final confirmational" - post-excavation confirmational samples which have not been removed from excavation; (iv) "removed confirmational" - confirmational samples removed due to excavation (i.e., interim confirmational samples); (v) "stockpile" - samples obtained from excavation material stockpiles, generally for purpose of final characterization prior to disposal; (vi) "borrow fill" - samples obtained from off-site borrow soils used for backfill in that particular removal area; (vii) "tank samples" – samples of or obtained from tanks and (viii) "concrete or brick" - miscellaneous samples of concrete, brick or similar debris obtained for the purpose of characterization or disposal characterization. The sample records in Tables 11 through 18 are compiled according to the following categorization: (i) "stockpile" – samples obtained from excavation material stockpiles; (ii) "Characterization" – in-situ characterization samples; (iii) "Treated Stockpile" – samples obtained from excavation stockpiles that have been chemically treated; and (iv) "Tank Samples" – samples obtained from material inside tanks.

3.4 North Removal Area Characterization Sampling

3.4.1 Sample Collection and Analytical Results

Characterization and delineation soil sampling at the North Removal Area was conducted between October 1994 and March 1997. Characterization and excavation activities were performed concurrently at this area. Soil samples were collected using the following methods: (i) hand auger borings; (ii) test trenches; (iii) hollow stem auger borings; (iv) Strataprobe™ borings; and (v) mud rotary borings. A total of 436 samples were collected to characterize and delineate the area. The maximum, minimum and average values are presented in the table below. Table 1 is a complete listing of North Removal Area total analytical results. Analytical results of TCLP testing for the North Removal Area are given on Table 11.

	Barium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	PCBs (mg/kg)	PAHs (mg/kg)	CPAHs (mg/kg)	SVOC (mg/kg)	VOC (mg/kg)
max.	720	93,200	174	4,400	2,080	587	4,880	2,500
min.	ND	ND	ND	ND	ND	ND	ND	ND
avg.	26.9	1,650	2.4	11.9	65.7	8.6	93.7	43.0

avg. – average of all samples using half the detection limit for non-detects
ND – non-detect
PCBs - polychlorinated biphenyls
PAHs - polyaromatic hydrocarbons
CPAHs - carcinogenic polyaromatic hydrocarbons

Soil samples for geotechnical testing were collected from the mud rotary borings. These samples were tested for particle size distribution and physical properties. Results from this testing was used to determine specifications for sheet piling installation (discussed in section 4.3.2 of this report). North Disposal Area geotechnical testing results are presented in Appendix B. Also, a bench-scale filter press test was completed on the bleach mud material in the North Disposal Area. These test results are presented in Appendix C.

3.4.2 Discussion

Material present in the North Removal Area is characterized by elevated lead and PAHs concentrations. The western section, including the North Disposal Area, primarily showed lead Toxicity Characteristic Leaching Procedure (TCLP) concentrations below the 5.0 mg/L Resource Conservation Recovery Act (RCRA) threshold limit. Material in this area was designated for excavation and non-hazardous waste management. The material in the northeast portion consistently showed TCLP lead concentration greater than the threshold limit. This material was characterized as hazardous (D008). As described later in section 4.4.3 of this report, this material was subsequently chemically treated to meet non-hazardous TCLP standards.

3.5 North Removal Expansion Area Characterization Sampling

3.5.1 Sample Collection and Analytical Results

Characterization and delineation soil sampling was conducted at the North Removal Expansion Area between October 1994 and September 1996. Most of the characterization samples were collected in the heavily vegetated portion between July and September 1996. These sampling activities were prompted by excessive lead concentrations in the North Removal Area eastern sidewall confirmational samples. Characterization soil samples were collected primarily from hand auger borings. A total of 125 samples were collected to characterize and delineate the area. The maximum, minimum and average values are presented in the table below. A complete listing of total analysis is located in Table 2 and TCLP results are presented in Table 12.

	Barium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	PCBs (mg/kg)	PAHs (mg/kg)	CPAHs (mg/kg)	SVOC (mg/kg)	VOC (mg/kg)
max.	31.8	92,800	320	7.5	727	67.2	727	2,530
min.	ND	ND	ND	ND	ND	ND	ND	ND
avg.	18.1	3,120	7.8	0.44	50.9	2.8	56.0	122

avg. – average of all samples using half the detection limit for non-detects
ND – non-detect

3.5.2 Treatability Testing

Treatability testing was performed on the soil from the North Removal Expansion Area to determine if it could be treated to meet disposal requirements for non-hazardous material. Two bulk samples were collected from excavated material stockpiles. The samples were each mixed with Type I Portland Cement at 5, 10, 15, 20, 25 and 30 percent by weight. Once mixed, the samples were allowed approximately 24 hours to cure before testing by TCLP for lead. Test results showed that a mix of 20 percent cement decreased the TCLP lead results below the 5.0 mg/L threshold limit. Treatability test results are presented in Appendix D. The remediation contractor performed further treatability testing on the impacted soil and concluded that a mix

containing approximately 18 percent cement by weight worked effectively. The contractor's design mix was used in full-scale operation.

3.5.3 Discussion

The impacted soil from the North Removal Expansion Area consistently showed TCLP lead concentrations greater than the RCRA lead threshold limit of 5.0 mg/L. As described later in section 4.4.3 of this report, the stockpiled soil was subsequently chemically treated to meet non-hazardous TCLP standards.

3.6 Northwest Field Characterization Sampling

3.6.1 Sample Collection and Analytical Results

Characterization and delineation soil sampling at the Northwest Field was conducted between December 1994 and October 1996. Soil samples were collected using the following methods: (i) hand auger borings; (ii) test trenches; and (iii) Strataprobe™ borings. A total of 125 samples were collected to characterize and delineate the area. The maximum, minimum and average values are presented in the table below. A complete listing of total analysis is located in Table 3 and TCLP results are presented in Table 13.

	Barium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	PCBs (mg/kg)	PAHs (mg/kg)	CPAHs (mg/kg)	SVOC (mg/kg)	VOC (mg/kg)
max.	133	1,760	468	4,300	28.4	19.4	46.1	75.4
min.	ND	ND	ND	ND	ND	ND	ND	ND
avg.	22.1	113	6.8	58.3	1.1	0.50	4.0	1.1

avg. – average of all samples using half the detection limit for non-detects
ND – non-detect

3.6.2 Discussion

The western side (Surficial Anomaly) of the Northwest Field was characterized below clean-up goals. Therefore, no excavation was required in this section of the Northwest Field. Surface soil samples collected over the eastern approximately two-thirds of the area exhibited total PCB concentrations above 50 mg/kg. Material containing PCBs above 50 mg/kg is regulated by the Toxic Substance Control Act (TSCA) and requires disposal as TSCA waste. This section of the Northwest Field was designated as an approximately 0.5-ft (0.15-m) deep TSCA excavation area. Characterization sample 96285-06 from an area in the northern portion of the Northwest Field showed mercury and total PCBs results above clean-up goals, but total PCBs below 50 mg/kg. This area was designated to be excavated and managed as non-hazardous waste.

3.7 Waste Disposal Impoundment Characterization Sampling

3.7.1 Sample Collection and Analytical Results

Characterization and delineation soil sampling at the Waste Disposal Impoundment was conducted between July 1994 and April 1996. Samples of lime softening mud, black granular material and underlying sand were collected from hand auger borings. A total of 23 samples were collected to characterize and delineate the area. The maximum, minimum and average values are presented in the table below. A complete listing of total analysis is located in Table 4 and TCLP results are presented in Table 14.

	Barium (mg/kg)	Lead mg/kg)	Mercury (mg/kg)	PCBs (mg/kg)	PAHs (mg/kg)	CPAHs (mg/kg)	SVOC (mg/kg)	VOC (mg/kg)
max.	28.4	8,790	90.9	5.0	537	202	537	21.6
min.	ND	ND	ND	ND	ND	ND	ND	ND
avg.	13.4	846	9.4	0.47	53.7	17.3	54.9	4.1

avg. – average of all samples using half the detection limits for non-detects
ND – non-detect

3.7.2 Discussion

The lime softening mud was characterized as non-hazardous waste. The black granular material in the berm and northern section showed TCLP lead concentrations above the RCRA threshold limit of 5.0 mg/L. This material was designated for excavation and stockpiling. Once the excavated material was stockpiled, it was characterized to determine proper disposal. Stockpile analytical results are discussed in section 4.6.5 of this report.

3.8 North Rail Yard Characterization Sampling

3.8.1 Sample Collection and Analytical Results

Characterization and delineation soil sampling at the North Rail Yard was conducted between July 1994 and June 1996. Soil samples were primarily collected from hand auger borings. A total of 53 samples were collected to characterize and delineate the area. The maximum, minimum and average values are presented in the table below. A complete listing of total analysis is located in Table 5 and TCLP results are presented in Table 15.

	Barium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	PCBs (mg/kg)	PAHs (mg/kg)	CPAHs (mg/kg)	SVOC (mg/kg)	VOC (mg/kg)
max.	112	1,780	17.4	55.6	39.2	7.8	96.2	1.6
min.	1.20	ND	ND	ND	ND	ND	0.060	ND
avg.	25.7	298	1.7	4.9	2.7	0.73	6.1	0.11

avg. – average of all samples using half the detection limit for non-detects
ND – non-detect

3.8.2 Discussion

An excavation area, with lead and total PCBs above site removal clean-up goals, was delineated at the north end of the North Rail Yard. Total PCB concentrations were

generally below 50 mg/kg. One of the original characterization samples collected in 1995 (GPT-30-1) was analyzed by TCLP and showed a TCLP lead concentration of 6.1 mg/L, which is slightly over the RCRA threshold limit of 5.0 mg/L. This sample is an in-situ characterization sample, it is not considered representative of the excavated material from the entire excavation area. The characterization program delineated the excavation area. No additional TCLP analysis was requested by the OSC. Based on the total lead results from several samples and other site experience, the excavated material in this area was designated for non-hazardous waste management. The southern portion of the North Rail Yard was characterized below site removal clean-up goals.

3.9 Bunker C Tank Area Characterization Sampling

3.9.1 Tank Sampling and Analytical Results

Samples were collected from three phases (water, oil and bottom sludge) contained within the tank and analyzed to characterize the materials. Five water samples were collected from five tanks. Mercury concentrations ranged from 3.58 to 88.4 mg/L, therefore, the water was treated through the site waste water treatment system. Three tanks contained an oil phase. The oil phase was sampled for constituents with removal clean-up goals and parameters such as ignitability, reactivity and heat value. From the three oil samples lead and total PCBs were non-detect and mercury concentrations were 2.86, 4.17 and 29.6 mg/L. The bottom sludge contained within the tanks was sampled prior to tank dismantlement and again after tank demolition. The bottom sludge samples showed analytical results above site removal clean-up goals for one or more of the following parameters: barium; lead; mercury; total PAHs; and total VOCs. Two of the bottom sludge samples showed TCLP mercury above the RCRA threshold limit of 0.20 mg/L and one sample showed TCLP lead and TCLP mercury above threshold limits. Total analytical results for the Bunker C are listed in Table 6 and TCLP results are listed in Table 16.

3.9.2 Soil Sampling and Analytical Results

Characterization and delineation soil sampling at the Bunker C Tank Area was conducted between July 1994 and October 1996. Soil samples were collected from

hand auger borings. A total of 29 samples were collected to characterize and delineate the area. The maximum, minimum and average values are presented in the table below. A complete listing of total analysis is located in Table 6 and TCLP results are presented in Table 16.

	Barium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	PCBs (mg/kg)	PAHs (mg/kg)	CPAHs (mg/kg)	SVOC (mg/kg)	VOC (mg/kg)
Max.	3.0	1,130	35.3	21.6	224	98.3	330	361
min.	ND	ND	ND	ND	ND	ND	ND	ND
avg.	27.5	164	6.2	3.3	20.6	7.4	29.2	35.7

avg. – average of all samples using half the detection limit for non-detects
ND – non-detect

3.9.3 Discussion

The three phases contained within the tanks were managed separately. The water was treated through the site waste water treatment plant. The oil was shipped off-site for fuel blending and the bottom sludge was designated as either hazardous or non-hazardous waste based on the analytical results. The bottom sludge contained within six of the eight Bunker C Tanks was characterized as hazardous waste. The sludge contained in the remaining two tanks was characterized as non-hazardous waste.

Surface soil present within the Bunker C Area containment wall is characterized by elevated lead concentrations and also some samples with elevated SVOC and mercury concentrations. No characterization samples were analyzed by TCLP. Based on characterization sampling, the southern approximately one-half of the area was designated for an approximately 1-ft (0.3-m) deep excavation and the northern half was planned to be excavated approximately 2 ft (0.6 m) deep. Although no TCLP analysis was performed, the excavated material was designated for non-hazardous waste management based on the total analyses and other site experience.

3.10 Secondary Bunker C Tank Area Characterization Sampling

3.10.1 Tank Sampling and Analytical Results

The two northern most tanks were essentially empty, therefore no sampling was required. The southern most tank contained bottom sludge. One sample (sample 96326-01) was collected from the bottom sludge. The sample was analyzed for mercury, lead and PCBs. The mercury concentration was 15.1 mg/kg, lead was 166 mg/kg and total PCBs were non-detect. Table 7 is a listing of total analytical results. No TCLP testing was performed.

3.10.2 Soil Sampling and Analytical Results

Characterization and delineation soil sampling at the Secondary Bunker C Tank Area was conducted in August and November 1996. Soil samples were collected from hand auger borings at typical depth intervals of 0 to 1 ft (0 to 0.3 m), 2 to 3 ft (0.6 to 1 m) and from the ground surface. A total of 13 samples were collected to characterize and delineate the area. Analytical results from 10 of the 13 samples are below site removal clean-up goals. Two, 0 to 1 ft (0 to 0.3 m) samples showed total PCBs at 30.0 and 105 mg/kg. One surface sample showed mercury at 109 mg/kg. Table 7 is a listing of total analytical results. No TCLP testing was performed.

3.10.3 Discussion

The bottom sludge contained within the southern tank showed analytical results below site removal clean-up goals. As a conservative measure, this material was managed under the removal action material disposal program as a non-hazardous waste.

An approximately 1-ft (0.3-m) deep excavation area was delineated at the Secondary Bunker C Tank Area. The excavated material was designated to be stockpiled and sampled to confirm non-hazardous waste disposal.

3.11 North Central Area Characterization Sampling

3.11.1 Sample Collection and Analytical Results

Characterization and delineation soil sampling at the North Central Area was conducted between March 1995 and May 1997. Soil samples were collected from hand auger borings. A total of 127 samples were collected to characterize and delineate the area. Lead and mercury were the main constituents above site removal clean-up goals. The maximum, minimum and average values are presented in the table below. A complete listing total of analytical results is located in Table 8 and TCLP results are presented in Table 17.

	Barium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	PCBs (mg/kg)	PAHs (mg/kg)	CPAHs (mg/kg)	SVOC (mg/kg)	VOC (mg/kg)
Max.	691	5,830	548	12.2	13.9	2.1	15.5	1.6
min.	ND	ND	ND	ND	ND	ND	ND	ND
avg.	50.6	282	16.1	0.46	0.53	0.096	0.57	0.046

avg. – average of all samples using half the detection limits for non-detects
ND – non-detect.

3.11.2 Discussion

The North Central Area was divided into four areas, three of which are excavation areas. The three excavation areas are referred to as: (i) the boiler house area; (ii) the central area; and (iii) the northern area. The fourth area is the heavily vegetated distillation area. The excavated material from the boiler house excavation was designated for hazardous waste management due to the presence of metallic mercury beads. The central area was designated for an approximately 1-ft (0.3-m) deep excavation and non-hazardous waste management. An approximately 1-ft (0.3-m) deep excavation was delineated in the northern area. Due to the relatively high concentration of lead in this area, the excavated material was designated to be stockpiled and sampled to determine proper disposal.

Initially, 17 characterization sample were collected from the distillation area. From these 17 samples lead concentrations ranged from 14.3 to 4428 mg/kg. Due to the dense large trees, thick vegetation and abundance of concrete structures, excavation was assessed as marginally feasible. The USEPA On-Scene Coordinator (OSC) amended the lead removal clean-up level to 1000 mg/kg for this area, and requested statistical analysis of the data be performed to compare the area average concentration to the amended clean-up goal. The statistical analysis from the 17 samples showed that using a 90 percent confidence level, the upper confidence interval of the mean concentration was 1234.15 mg/kg. The statistical analysis also suggested the collection of 10 additional samples to better characterize the sample population. Ten additional sample locations were selected from a random grid generator and approved by the OSC. The additional samples were collected and analyzed for lead. The statistical analysis was performed once more using all 27 sample results. Using a 95 percent confidence level, the upper confidence interval of the mean concentration was 937.48 mg/kg. Excavation of the distillation area was not required. The statistical analysis was performed as discussed in *Memorandum - Statistical Analysis for Lead in North Central Distillation Area Samples*, dated 25 November 1996.

3.12 Raw Brine Enclosures Characterization Sampling

3.12.1 Sample Collection and Analytical Results

Characterization and delineation soil sampling at the Raw Brine Enclosures was conducted between October 1994 and November 1996. Salt mud and soil samples were collected from hand auger borings. A total of 40 samples were collected to characterize and delineate the enclosures. The mercury concentrations from salt mud sample collected from the southwest enclosure were higher than the other three enclosures containing salt mud. From the six salt mud samples collected from the southwest enclosure, mercury concentrations ranged from 23.0 to 79.7 mg/kg with an average concentration of 37.5 mg/kg. From the 12 salt mud samples collected from the other three enclosures containing salt mud, mercury concentrations range from 1.2 to 46.0 mg/kg with an average concentration of 16.6 mg/kg. Analytical results from the soil samples collected below salt mud and from the northwest enclosure (contains no salt

mud) were below site removal clean-up levels. A complete listing of total analytical results is provided in Table 9 and TCLP results are presented in Table 18.

3.12.2 Discussion

The salt mud contained within the southwest enclosure was designated for removal, based upon the average concentration exceeding the removal clean-up goal for mercury. This material was approved by the OSC for use as deep backfill in the South Removal Area excavation. No other enclosures were designated for removal excavation by the OSC. Salt mud in the eastern three enclosures was covered with approximately 1 ft (0.3 m) of borrow fill for esthetics and to eliminate contact by foot traffic as approved by the OSC.

4. MATERIAL REMOVAL EXCAVATION AND TREATMENT

4.1 Overview

This section of the report summarizes the removal excavation and treatment activities performed at the North Area. The North Area consists of nine separate removal areas. These nine removal areas include all of the excavation activities that occurred north of B Street, except for the north separator. The removal activities commenced on 22 April 1996 at the Waste Disposal Impoundment, and culminated at the Waste Disposal Impoundment on 02 May 1997. Excavation of the nine removal areas often occurred simultaneously. The general sequence of excavation is as follows: (i) Waste Disposal Impoundment; (ii) North Removal Area; (iii) Northwest Field; (iv) North Removal Expansion Area; (v) North Rail Yard; (vi) Secondary Bunker C Tank Area; (vii) North Central Area; (viii) Raw Brine Enclosures; and (ix) Bunker C Tank Area. The extents and depths of the removal operations are presented on Drawing 2.

The removal action at the nine removal areas was completed by excavating impacted soil using conventional excavation equipment. The excavated soil was managed according to results of TCLP testing, generally performed on material stockpiles following excavation. Non-hazardous waste was hauled to the staging area located at the Waste Disposal Impoundment (WDI) where it was temporarily stockpiled and loaded onto trucks for shipment to an Subtitle D disposal facility in Savannah, Georgia. Hazardous waste hauled to the Material Staging Area (MSA) located south of the former Cell Building Area was temporarily stockpiled and loaded onto rail cars for shipment to a Subtitle C/TSCA disposal facility in Emelle, Alabama.

Confirmational soil samples were collected at the base and sidewalls of daily excavation areas (excavation grids) as described in Section 5 of this report. Additional excavation was required for areas where the confirmational sample(s) exceeded the USEPA site removal clean-up goals. This process was repeated until acceptable results were obtained. The open excavation areas were backfilled as described in Section 6 of this report.

After all removal activities were complete, the North Area was graded for surface water drainage and seeded for erosion and dust control. The grading plan was designed to promote gentle sheet flow of runoff toward the marsh.

4.2 Equipment

The conventional excavation equipment utilized by the remediation contractor consisted of numerous hydraulic excavators: LB 2800 track hoe; LB 2800 LS long stick track hoe; Kobelco 200 LC track hoe; Komatsu 200 track hoe; Caterpillar 330 track hoe; Daewoo 450 H track hoe; and a Caterpillar 436 rubber tire backhoe. The hydraulic excavators were utilized for excavating, management of excavated material and for loading non-hazardous waste onto trucks for shipment to an off-site disposal facility. The Komatsu track hoe could be outfitted with a grappler or hoe ram attachment. The hoe ram was used to break up concrete foundations, and the grappler was used for clearing activities, as well as demolition of concrete structures and handling of concrete debris. The Caterpillar 436 rubber tire backhoe was used primarily for small excavations and in areas not accessible to the larger excavators.

Front-end loaders were utilized for management of excavated material. Two types of front-end loaders were utilized: Caterpillar 963 track loader; and Caterpillar IT 28 loader. The track loaders were utilized for their ability to traverse through muddy terrain, and in areas where debris could puncture the tires on the rubber tire loader.

Transportation equipment consisted of Terex articulated off-road dump trucks and Ford tandem axle dump trucks. The trucks were utilized to transport the excavated material to the appropriate staging areas.

The demolition contractor utilized two cranes during demolition activities; a 50 ton rubber tire crane and a 100 ton track type crane. Several man lifts were also used. A Daewoo 450 H hydraulic excavator, which could be equipped with grappler and shears, was also used. The grappler was primarily used for the demolition work and the shears for cutting up rubber-lined tanks and overhead piping. Oxygen/propane cutting torches were used to cut up the steel tanks and above ground piping slated for removal.

4.3 North Removal Area Excavation and Treatment Activities

4.3.1 General

The North Removal Area was the largest excavation area north of B Street. An excavation ranging in depth between approximately 2 and 13 ft (0.6 and 4 m) located adjacent to the salt marsh required sheet piling for shoring of the excavation sidewalls. Excavation activities commenced on 13 May 1996 and continued through 27 January 1997.

4.3.2 Sheet piling

Included within the North Removal Area was an area known as the north disposal area. Here refinery sludge and bleach mud from former plant operations was deposited within a section of the former Altamaha-Brunswick Canal. The use of sheet piling was prompted by the proximity of the excavation to the salt marsh, excessive design depth of excavation, soil conditions, and the shallow depth of the ground-water table. Sheet piling was installed around the perimeter of the approximately 70-by 220-ft (21-by 67-m) area to facilitate excavation. The sheet piling was installed in general accordance with Section 02178 of the Sheet Pile Bid Package.

Equipment utilized by the sheet piling contractor consisted of a 100 ton track type crane, hydraulic vibratory hammer, diesel generator and oxygen/acetylene torches. The sheet piles were delivered to the site by truck and unloaded in close proximity to the work area. The sheet piles consisted of Arbed AZ13 and AZ26 double steel sheet piles. The lengths of the sheet piles were 45 and 50 ft (14 and 15 m).

The installation of sheet piles commenced on 23 April 1996 at the northeast corner and proceeded counter-clockwise around the disposal area. An approximately 40-ft (12-m) long template constructed with steel I-beams was installed to help align the sheet piles during installation. An approximate 3 in (7.6 cm) hole was cut in the top of every sheet pile. The sheet piles were rigged to the crane cables through these holes. The 100

ton crane was used to place the double sheet pile in the template. The crane would then be used to lift and place the hydraulic vibratory hammer on top of the pile. The pile was driven by the vibration created by the hammer. The double pile was driven approximately 32 ft (10 m). The hammer was set down and another double sheet pile would be set into position. The sheet pile was aligned so the channel was interlocked with the adjacent sheet pile, and was driven in the same manner. The sheet piles were checked with a level to ensure that they were installed plumb. After driving 40 linear feet (12 m) of sheet piling, the template was removed and set up for the next sheet pile segment to be installed. After the template was removed, the sheet piles that were driven only 32 ft (10 m) were driven down to the design depth of approximately 42 ft (13 m) or refusal. This process was repeated for the installation of sheet piles around the perimeter of the north disposal area. On average, approximately 40 linear ft (12 m) of sheet piling was installed per day. After the sheet piling was installed, an access road was constructed on the west side with imported borrow fill. This gave the excavation equipment access to all sides of the sheet pile area.

After excavation within and around the perimeter of the sheet piling area was complete, the sheet piles were extracted. The sheet piles were removed in the reverse order of installation. A film of sediment remained on the sheet pile after they were pulled. A sample was collected from this sediment, which showed concentrations of lead and VOCs over the site removal clean-up goals. This prompted the decontamination of every sheet pile pulled. A rack was constructed on the decon pad at the Waste Disposal Impoundment to allow the piles to be propped on their sides to facilitate decontamination of both sides without having to flip over the sheet pile. The sheet piles were washed using pressure washers. The piles were loaded on trucks and transported off-site after the washing was complete.

4.3.3 Excavation Sequence

Prior to the start of excavation activities, the trees and brush within the limits of the excavation areas were cleared. The cleared material was stockpiled outside the limit of excavation. The proposed excavation limits from the *Phase IIIB Removal Response Activities Engineering Drawings, Former LCP Chemicals - Georgia Site, Brunswick, Georgia,* dated 13 November 1995, were located and marked by a professional land surveyor. Additional clearing was necessary during removal activities due to additional excavation prompted by confirmational sidewall samples exceeding the removal clean-up goals.

Excavation commenced at the North Removal Area on 13 May 1996 at the southern end and proceeded north. The excavated material was temporarily stockpiled adjacent to the excavation areas. The waste was hauled to the WDI staging area once the area was prepared to receive waste. Confirmational sidewall samples collected on the east side of the excavation area at the south end of the North Removal Area showed lead results above the site removal clean-up goal. This prompted the characterization of the wooded area located east of the North Removal Area. This additional area was designated as the North Removal Expansion Area. Excavation within this area is covered in the next sub-section of this report.

Excavation within the sheet piling area commenced on 29 May 1996 at the northern end and proceeded concurrently with the excavation at the south end of the North Removal Area. Initially the top layer of bleach mud was excavated. This layer ranged between 3- and 5-ft (1- and 1.5-m) thick. Two LB-2800 LS long stick track hoes were used to excavate within the sheet piling area. The entire area within the confines of the sheet piling was excavated from the perimeter using these track hoes. Once the initial layer of bleach mud waste was excavated, the underlying tar-like sludge and impacted soil were excavated. This excavation commenced at the south end and proceeded north. The excavation depths ranged between 5.5 and 11 ft (1.7 and 3.4 m). At this depth, ground water intrusion was a recurrent problem. A drainage ditch was excavated through the center of the piling area to a sump excavated on the east side. Ground water was pumped from this sump.

Once an area was excavated to a visually clean sand or marsh clay layer, confirmational subgrade samples were collected as described in Section 5 of this report. To isolate the subgrade area after sampling, a soil berm was pushed up across the leading edge of the excavation grid. This berm prevented the ground water from washing contaminated material back into the sampled grid. This process was repeated for the remainder of the sheet piling excavation. After approximately one half of the sheet piling was excavated and the confirmational subgrade samples showed acceptable results, backfilling commenced at the southern end.

Once the sheet piling area was backfilled, removal activities commenced around the perimeter of the sheet piling area. The surface of the access road constructed on the west side of the sheet piling area was scraped to remove waste inadvertently spilled during the sheet piling excavation. After this material was excavated and disposed, the remainder of the access road was excavated and the soil was used as backfill within the piling area.

Excavation activities continued south of the sheet piling area and also around the perimeter of the North Separator. Confirmational sidewall samples exceeding the site removal clean-up goal for lead were encountered on the east side of the North Separator. These "failing" samples prompted characterization of the wooded area immediately to the east. The additional characterization sampling defined another area for excavation. The wooded area was cleared prior to commencing the removal activities. The excavation commenced on the west side and proceeded east. The TCLP lead concentrations were greater than the RCRA threshold limit of 5.0 mg/L, therefore cement stabilization was required in order to dispose of the material as non-hazardous waste. Cement stabilization is described in the North Removal Expansion Area sub-section of this report.

The excavation subgrade material varied across the entire removal area. It consisted mostly of brown sand. Hydrocarbon-stained sand, gray marsh clay, and gray sand were also encountered.

4.3.4 Description of Excavated Material

The excavated material consisted of: brown sandy soil; bleach mud; hydrocarbon sludge; wet, gray and brown sand; hydrocarbon stained soil; black, sticky, tar-like hydrocarbon product; and debris consisting of old lumber, concrete, brick, clinker material, scrap metal, roots, stumps, and steel cable. A black, light non-aqueous phase liquid (LNAPL) was encountered in an excavation grid between the sheet piling area and the Waste Disposal Impoundment.

4.3.5 Material Management

The majority of material excavated at the North Removal Area was managed as non-hazardous waste. Initially, the excavated material was stockpiled on plastic sheeting adjacent to the excavation area. Once a sufficient stockpile of waste had accumulated, the material was loaded onto trucks for shipment to a non-hazardous (Subtitle D) waste disposal facility. After the Waste Disposal Impoundment was set up to receive waste, the excavated material was hauled to this staging area. This reduced congestion around the excavation area. An access road was constructed between the North Removal Area and the southwest corner of the Waste Disposal Impoundment to facilitate the transport of excavated material.

Material excavated from the area north of the Waste Disposal Impoundment required cement stabilization prior to disposal as a non-hazardous (Subtitle D) waste. The material was managed as hazardous waste until it was stabilized with cement. This material was hauled to the pugmill operation set up at the North Removal Expansion Area. The pugmill operation is discussed in the North Removal Expansion Area section of this report.

4.3.6 Excavation Quantities

A total of approximately 9,345 yd^3 (7,145 m^3) was excavated at the North Removal Area. All of the waste was disposed of as non-hazardous (Subtitle D) waste. This

removal volume exceeded the original estimated removal volume of 6,700 yd^3 (5,123 m^3). The reasons for the removal volume increase can be attributed to encountering material with analytical results above site removal clean-up goals in areas deeper than originally anticipated, and excavation of areas not originally anticipated. The depth of excavation ranged between 1 and 11 ft (0.3 and 3.4 m).

4.4 North Removal Expansion Area Excavation and Treatment Activities

4.4.1 General

Excavation activities at the North Removal Expansion Area commenced on 14 August 1996 and continued through 3 March 1997. The TCLP lead concentrations for the excavated material were greater than the RCRA threshold limit of 5.0 mg/L, therefore, cement stabilization was required for disposal of the material as non-hazardous waste. The excavated material was stabilized with cement using a pugmill.

4.4.2 Excavation Sequence

The dense vegetation was cleared prior to the start of excavation activities. Numerous concrete foundations and tank supports were uncovered. The limits of excavation were staked out by the owner's representative based on characterization sample data for the area.

The excavation commenced at the former tank car service building and proceeded north (see Figure 1). The excavated material was temporarily stockpiled adjacent to the excavation area and sampled to determine the disposal route. When TCLP lead results from the stockpile samples failed the RCRA requirement for non-hazardous waste, treatability testing was performed on the material as discussed in Section 3.5.2 of this report. The excavated material stockpiles were relocated to the concrete slabs within the area to allow for excavation and backfill of the open excavation grids.

Generally, backfilling of excavation grids was completed after receipt of confirmational sampling results to verify attainment of the removal clean-up goals.

Safety considerations required that backfilling be completed immediately after excavation to the design depth in a few deep excavation areas adjacent to concrete structures. In these limited cases, confirmational samples were collected to document the post-removal conditions of the subgrade soils.

The excavation subgrade varied across the entire removal area. It consisted mostly of brown sand. Hydrocarbon-stained sand was also prominent across the subgrade of the deeper excavations.

The removal action at the North Removal Expansion Area also included the excavation around the two tank supports at the northern end of the removal area and the cleaning and plugging of sumps encountered. Cleaning and plugging sumps is discussed in a separate closeout report.

4.4.3 Pugmill Operations

Treatability studies showed that cement stabilization of the D008 lead-contaminated soil would attain the TCLP non-hazardous standard. A pugmill operation was set up to perform the cement stabilization. The pugmill operation commenced with cement stabilization on 19 November 1996 and was completed on 13 February 1997. The pugmill equipment consisted of a power screen, conveyors equipped with scales, feed metering unit, pugmill, cement pig and a cement silo. The equipment was set up at the north end of the North Rail Yard so that the impacted soil was fed into the power screen at the north end of the North Removal Expansion Area and the cement-stabilized soil was directed into the WDI staging area.

A power screen was used to separate debris from the impacted soil. The excavated material from the North Removal Expansion Area contained debris, consisting of bricks, concrete, roots, stumps, metal, and old lumber. Removal of this debris was important in order to prevent damage to the pugmill equipment. The excavated material was fed through the power screen. The separated debris was periodically hauled to the Waste Disposal Impoundment for staging. The screened material was passed onto a conveyor belt and transported to the feed metering unit. The feed metering unit

consisted of a dump bin with two rotating augers mounted on the bottom. The turning of the augers passed the soil through the feed metering unit onto a conveyor. This equipment regulated the rate at which soil was fed into the pugmill. The soil then entered the pugmill where Type I Portland Cement and water were added according to the mix plan prepared from the contractor's treatability study. The soil, cement and water were mixed together in the pugmill by rotating paddles. After mixing was complete, the material was fed onto another conveyor which dumped the cement stabilized soil at the south west corner of the WDI staging area. A Caterpillar 963 track type loader was used to clear the stabilized material from beneath the conveyor. The cement stabilized material from each day's production was stockpiled separately and labeled for identification purposes.

On average, the pugmill was able to stabilize approximately 532 tons of impacted soil per day. A total of approximately 18,268 tons of impacted soil was stabilized at the pugmill operation.

4.4.4 Description of Excavated Material

The excavated material consisted predominantly of a brown sandy soil with debris consisting of brick, concrete, old lumber, scrap metal, roots and stumps. A wet, gray and brown hydrocarbon-stained sand and veins of black, tar-like sludge were also encountered.

4.4.5 Material Management

The majority of soil excavated at the North Removal Expansion Area was managed as hazardous waste, which required cement stabilization prior to disposal as non-hazardous waste. All of the cement-stabilized material and debris were disposed of as non-hazardous waste. The material excavated at the south end of the removal area, and some VOC-contaminated soil encountered at the north end, did not require cement stabilization and was hauled directly to the WDI staging area for non-hazardous disposal.

Sampling of the cement stabilized material was conducted to assure the material met the requirements for Subtitle D waste disposal. Samples were analyzed for lead by the TCLP method. The analytical results were available in approximately three days. Once the analytical results showed that a stockpile met Subtitle D disposal requirements, the stockpile was released for shipment to the disposal facility. A hydraulic excavator equipped with rock teeth on the bucket was used to break up the stockpiles of cement stabilized material. This material was added to the main load out stockpile and disposed with other non-hazardous waste.

4.4.6 Excavation Quantities

A total of approximately 9,075 yd^3 (6,938 m^3) of soil was excavated at the North Removal Expansion Area, which was disposed as non-hazardous (Subtitle D) waste. This removal volume exceeded the original estimated removal volume of 6,530 yd^3 (4,993 m^3). The reasons for the removal volume increase can be attributed to encountering material with analytical results above site removal clean-up goals in areas deeper than originally anticipated, and excavation of areas not originally anticipated. The depth of excavation ranged between 0.5 and 10.5 ft (0.15 and 3.2 m).

4.5 Northwest Field Excavation Activities

4.5.1 General

Excavation activities commenced on 7 August 1996 and were completed on 29 October 1996. The removal action included the excavation of the North Removal Area access road (west trackmobile road).

4.5.2 Excavation Sequence

The Northwest Field became identified as an area necessitating removal excavation based on sampling results obtained along the alignment of the west trackmobile road (see Figure 1). Additional characterization sampling defined the lateral extent of the

area for excavation. The owner's representative staked out the limits of excavation based on characterization sample data. Some clearing was necessary at the northern end of the removal area. Excavation of soil at the Northwest Field started along the west trackmobile road on the east side of the removal area and proceeded west.

The excavation subgrade consisted primarily of native brown sand. Sticky, black stained sand was also encountered across sections of the shallow excavation areas. The excavation grids were backfilled once the confirmational subgrade soil sample data showed results below removal action clean-up goals. The west trackmobile road was reconstructed by placing crushed limerock over geotextile filter fabric on a compacted soil base.

Several concrete structures are located at the north east end of the Northwest Field removal area. The circular concrete foundation was used for temporary storage of piping removed from the Cell Building Area during demolition activities. After the piping was removed, the surface of the circular slabs were scraped to remove debris and soil. The slabs were also washed with water supplied by a water tanker to remove possible residual contamination on the concrete surface. The concrete foundations contained a sump located on the east side. The western section of the sump extended up under the foundation and was accessible from two 2- by 2-ft (0.6- by 0.6-m) openings. This section of the sump was manually cleaned and filled with flowable fill. The 10- by 12-ft (3- by 3.6-m) eastern section of the sump was large enough to be excavated with the backhoe. After the excavation was complete, the sump was washed, the water pumped out and the sump backfilled with imported borrow fill. The borrow fill was placed to within 1 ft (0.15 m) of the top of the concrete. The remainder of the sump was filled with flowable fill. Another sump, approximately 10 by 50 ft (3 by 15 m), was encountered to the north of the circular concrete foundation. This sump was also excavated, the bottom drain plugged with concrete and backfilled with imported borrow fill.

4.5.3 Description of Excavated Material

The majority of soil at the Northwest Field consisted of a brown sandy soil. A hard, black hydrocarbon product was also encountered across the excavation area. An isolated pocket of a granular, light gray and yellow colored material was encountered to the south of LCP production well No. 4 pump house. A sample collected from this material indicated elevated PCB concentration. The sumps excavated at the Northwest Field contained some soil mixed with debris consisting of brick, concrete, metal sheeting, pipes, and rebar. Graphite anode fragments were encountered in the northern sump.

Metallic mercury was encountered within the excavation north of the circular concrete foundation. The mercury was encountered in and around a 6 in (15 cm) cast iron pipe. Hand excavation was necessary to recover the mercury and the accompanying soil. The pipe was plugged with concrete.

4.5.4 Material Management

The majority of soil excavated at the Northwest Field was managed as hazardous (Subtitle C/TSCA) waste based on characterization sample data that showed PCB concentrations above the TSCA limit of 50 mg/kg. The excavated waste was direct loaded onto trucks and hauled to the Material Staging Area for hazardous waste disposal. Excavated soil from a northern excavation grid contained elemental mercury and was stockpiled, sampled (sample 96295-NWF-21) and managed as hazardous waste. This same grid required additional excavation due to lead exceeding site removal clean-up goal. The additional material excavated was stockpiled, sampled (sample 96297-NWF-28) and managed as non-hazardous waste. The soil excavated from the northern half of the west trackmobile road was managed as non-hazardous waste based on initial characterization data. The non-hazardous waste was hauled to the WDI staging area.

4.5.5 Excavation Quantities

A total of approximately 2,070 yd^3 (1,583 m^3) was excavated at the Northwest Field removal area. Approximately 1,750 yd^3 (1,338 m^3) was disposed as hazardous (Subtitle C/TSCA) waste, and approximately 320 yd^3 (245 m^3) was disposed as non-hazardous (Subtitle D) waste. The depth of excavation along the west trackmobile road ranged between 1 to 3 ft (0.3 to 1 m). A superficial scrape was performed at the northern-most section of the roadway. The depth of excavation for the remainder of the removal area ranged between 0.5 and 4 ft (0.15 to 1.2 m), averaging approximately 2 ft (0.6 m) at the north end and 0.7 ft (0.2 m) for the south area.

4.6 Waste Disposal Impoundment Excavation and Staging Area Activities

4.6.1 General

The majority of material was excavated from the waste disposal impoundment between 22 April 1996 and 15 May 1996. The material consisted of a lime softening mud and a black granular material. The lime softening muds were characterized as non-hazardous. The black granular material was stockpiled and sampled to determine the proper disposal route. Between 15 May 1996 and 21 April 1997 the impoundment was used as a temporary staging area for non-hazardous waste.

4.6.2 Excavation Sequence

Excavation at the Waste Disposal Impoundment commenced at the northeast corner of the impoundment. The removal area was divided by a soil berm. The northern portion of the impoundment contained only a thin layer (less than 1 ft (0.3m)) of the lime softening mud overlying a hard, black, tar-like material that was known to contain high concentrations of lead. The thin layer of lime softening mud was excavated and stockpiled. Once the majority of lime softening mud had been removed, the tar-like material was carefully excavated and stockpiled in a separate pile. The stockpiles of material were sampled to verify the proper disposal. The southern half of the

impoundment contained a layer of the lime softening mud approximately 3 ft (1 m) deep. This material had been previously characterized and could be direct loaded onto trucks for Subtitle D disposal. The excavation of the southern portion commenced at the southern end and proceeded north. The excavated material was stockpiled adjacent to the load out platform. With the exception of the extreme northwest corner of the impoundment, no confirmational subgrade samples were collected prior to use as a staging area.

4.6.3 Staging Area Operations

The Waste Disposal Impoundment was chosen for the non-hazardous waste staging area due its close proximity to other removal areas and due to the presence of an approximate 3-ft (1-m) high concrete containment wall. Non-hazardous waste from other removal areas was temporarily stockpiled within this area until loaded onto trucks for shipment to an off-site disposal facility. The residual impacted soil was excavated after the material stockpile had been loaded out.

A truck loading operation was established at the Waste Disposal Impoundment for the load out of non-hazardous waste for shipment to an off site disposal facility. An access road was constructed through the north end of the impoundment. A vehicle decontamination pad was constructed at the northwest corner of the impoundment. The truck loading operation activities proceeded as follows.

The tarp covering the truck bed was rolled up and the supporting bows were removed. A 4 mil polypropylene liner was installed in the truck bed. The haul trucks consisted of primarily aluminum bed trailers. A steel bed tandem truck was used for hauling debris that could possibly damage the aluminum beds. Roll-off containers were used for hauling the wooden rail cross ties. Once the liner was installed, the trucks were positioned adjacent to the stockpile of waste. A hydraulic excavator was utilized to carefully load the impacted waste onto the trucks. After the truck was loaded with approximately 21 tons of waste, the truck was driven onto the vehicle decontamination pad. Here, the residual waste on the top rails or on the sides of the trailer that inadvertently spilled during loading was cleaned off. The truck tires were washed with

pressure washers to remove any waste. After the decontamination was complete, the weights of the trucks were checked on the site's scales to ensure the trucks were in compliance with DOT weight regulations. The bows were replaced and the tarp restored. Manifests were completed and the non-hazardous waste was hauled to a Subtitle D disposal facility in Savannah, Georgia.

4.6.4 Description of Excavated Material

The excavated material consisted of a white to light gray, lime softening mud and a hard, black, granular and tar-like hydrocarbon product. During the additional excavation following the staging area activities, a wet, gray sand with a turpentine-like odor was encountered.

4.6.5 Material Management

The majority of the waste excavated at the Waste Disposal Impoundment was managed as non-hazardous waste. Some of the material excavated at the northern portion of the impoundment, which was stockpiled for sampling, exceeded the RCRA lead threshold limit of 5.0 mg/L. This waste, represented by stockpile samples 96115-WDI-01 and 97091-WDIS, was managed as hazardous waste and hauled to the Material Staging Area.

4.6.6 Excavation Quantities

A total of approximately 2,560 yd^3 (1,957 m^3) of material was originally excavated at the Waste Disposal Impoundment. Approximately 2,235 yd^3 (1,709 m^3) was disposed of as non-hazardous waste and approximately 325 yd^3 (248 m^3) was disposed as hazardous waste. An additional approximately 3,521 yd^3 (2,692 m^3) of material was excavated after the area was used as a staging area. Approximately 3,355 yd^3 (2,565 m^3) was disposed of as non-hazardous waste and approximately 166 yd^3 (127 m^3) was disposed of as hazardous waste.

4.7 North Rail Yard Excavation Activities

4.7.1 General

Excavation activities at the North Rail Yard commenced on 19 September 1996 and were completed on 3 October 1996. The excavation at the North Rail Yard encompassed approximately the northern one-third of the north rail corridor.

4.7.2 Excavation Sequence

The four railroad tracks were removed prior to the start of excavation activities. The steel rails were decontaminated using a pressure washer. Wipe samples were collected from the steel rails and analyzed for PCBs. The steel rails were disposed of once they were cleaned satisfactorily (determined by the wipe sample analytical data). The railroad cross ties were extracted and disposed. The former tank car paint shop and several small shacks were demolished by the demolition contractor.

The owner's representative staked out the limits of excavation based on characterization sample data for the area. Some clearing of small trees and brush was necessary at the northern end of the rail yard. Excavation commenced at the southern limit and proceeded north. The excavated material was direct loaded onto trucks and hauled to the WDI staging area. The excavation subgrade consisted mainly of a native brown sand. A stained sand was encountered across the subgrade of the deeper excavation areas.

Two brick lined valve boxes were unearthed during excavation activities at the North Rail Yard. The northern valve box was connected to a 12 in (30 cm) and an 8 in (20 cm) cast iron, water lines. This valve box was left in place. The southern valve box was connected to a 12 in (30 cm) cast iron water line. This valve box was removed. The soil around these boxes was excavated and hauled to the WDI staging area. Both areas were backfilled once confirmational subgrade soil samples were collected.

The concrete walls on the east and west sides of the North Rail Yard were extracted after removal activities in the area were complete. The walls were removed per the design specifications of the site-wide grading plan.

4.7.3 Description of Excavated Material

The excavated material consisted primarily of railroad ballast gravel and a brown sandy soil. Debris consisting of rail spikes, plates, and bolts were also encountered. Demolition debris consisting of scrap metal, concrete, corrugated fiberglass and wood, was also removed. A gray to dark gray stained sand, with a distinct hydrocarbon odor, was encountered in the two deeper excavations around the valve boxes.

4.7.4 Material Management

All of the impacted soil excavated at the North Rail Yard excavation was managed as non-hazardous waste and hauled to the WDI staging area. The wooden railroad cross ties extracted were also managed as non hazardous waste.

4.7.5 Excavation Quantities

A total of approximately 1,140 yd^3 (872 m^3) was excavated at the North Rail Yard. This removal volume exceeded the original estimated removal volume of 800 yd^3 (612 m^3). The reasons for the removal volume increase can be attributed to encountering material with analytical results above site removal clean-up goals in areas deeper than originally anticipated and over excavation.

4.8 Bunker C Tank Area Excavation and Tank Removal Activities

4.8.1 General

Excavation activities at the Bunker C Tank Area commenced on 24 February 1997 and were completed on 20 March 1997. A small area located on the north side of the northern concrete wall was excavated on 25 September 1996. The Bunker C Tank Area is shaped in the form of an "L" and is bounded on all sides by an approximate 3-ft (1-m) high concrete wall. Removal activities included the demolition of the eight former oil storage tanks and two fiberglass tanks.

4.8.2 Tank Removal Activities

The existing eight former oil storage tanks were demolished before the excavation could commence. Demolition activities commenced in September 1996. The cat walks and overhead piping were removed first. The general demolition procedure is described as follows. The top of the steel tank was rigged to the crane and was cut off utilizing oxygen/propane torches. A 100-ton crane was used to support and lower the removed steel to the ground. Once on the ground, the steel tops were cut into sections to fit in a roll-off container for disposal. With the top removed, a wrecking ball was used to knock in the (inner) brick lining. Manlifts were used to position workers with oxygen/propane cutting torches on the sides of the tanks. The steel tank was cut up into manageable sections, rigged to the crane and lowered to the ground. The interior surfaces of the steel sections were covered with an oil product. This material was washed off using a pressure washer before the steel sections were cut up and placed into roll-off containers. This procedure was followed for all eight tanks. The interior brick lining was collected and disposed. The southern two tanks contained approximately 3 ft (1 m) of wet sludge. After the majority of the tank was demolished this sludge was excavated using a track hoe. The majority of brick debris was removed during this phase of removal activities. The bottoms of the steel tanks were washed and cut into sections once the debris and sludge were removed. The two fiberglass storage tanks located at the south end of the tank area were crushed and the debris loaded into a roll-off container for disposal. The concrete containment wall on the north, south, and west

sides was extracted after the tank demolition was complete. The concrete walls were replaced with a soil berm to keep the area isolated. The sections of concrete wall removed were pressure washed, sampled and used as rip rap on site.

4.8.3 Excavation Sequence

The excavation of impacted soil within the Bunker C Tank Area commenced at the southern end and proceeded north, along the western limit. The hydraulic excavator was positioned on the perimeter of the removal area, to minimize contact with the contaminated material. The reach of the hydraulic excavator limited the width of the grid. The removal design plan depth of excavation was 1 ft (0.3 m) for the southern half and 2 ft (0.6 m) for the northern half of the Bunker C Tank Area. Some areas were excavated deeper to remove veins of heavily stained material. The eastern section was excavated last. The majority of excavation was below the water table. The excavated material was direct loaded onto trucks and hauled to the WDI staging area.

4.8.4 Description of Excavated Material

The excavated material consisted primarily of a wet, brown sand mixed with a black hydrocarbon product. Debris consisting of bricks, concrete, scrap metal, fiberglass tank fragments, and various sections of steel piping were encountered. A brown and dark gray stained sand, with a distinct hydrocarbon odor, was encountered in the excavation grids at the north end of the Bunker C Tank Area. The material excavated from the eastern branch consisted of a brown sandy soil and a black, tar-like material. Metal remnants resembling the appearance of old drum pieces were also removed.

4.8.5 Material Management

The brick debris and sludge remaining in the Bunker C Tanks was managed as hazardous waste and was hauled to the Material Staging Area. All of the non-hazardous material excavated was hauled to the WDI staging area.

4.8.6 Excavation Quantities

A total of approximately 2,860 yd^3 (2,187 m^3) was removed from the Bunker C Tank Area. Approximately 350 yd^3 (268 m^3) was disposed as hazardous (Subtitle C/TSCA) waste. This material consisted of the brick and residual sludge removed from the tanks during demolition work. The remaining 2,510 yd^3 (1,919 m^3) of excavated material was disposed as non-hazardous (Subtitle D) waste. The original removal estimate was exceeded. The reasons for the removal volume increase can be attributed to encountering material with analytical results above site removal clean-up goals in areas deeper than originally anticipated and excavation of areas not originally anticipated. The final depth of excavation ranged between 2 and 5 ft (0.6 and 1.5 m). The average depth of excavation was approximately 2.7 ft (0.8m).

4.9 Secondary Bunker C Tank Area Excavation and Tank Removal Activities

4.9.1 General

Excavation and related removal activities at the Secondary Bunker C Tank Area commenced on 13 November 1996 and were completed on 14 November 1996. Removal activities included the demolition of the three former oil storage tanks, and two 100-ft (30-m) high metal stacks.

4.9.2 Tank Removal Activities

The demolition work commenced with the removal of the concrete block wall around the tanks and stacks. This wall was removed using a Daewoo 450H track hoe with grappler. The concrete was sampled and used as rip rap on site.

The three existing former oil storage tanks and the two stacks were demolished before the excavation could commence. Demolition activities commenced in September 1996. The three former oil storage tanks were demolished in the same manner as the tanks at the Bunker C Tank Area. The main difference was that these

tanks were elevated on concrete tank supports, and did not contain as much oil product. The brick debris was hauled to the WDI staging area. The concrete tank supports were broken up and used as deep backfill at the South Removal Area excavation.

For the demolition of the two 100-ft (30-m) high stacks, the demolition contractor utilized two cranes: 50-ton rubber tire crane; and a 100-ton track type crane. A man basket was suspended from the 50-ton crane and raised to the top of the stack. Two holes were burned through the metal at the top of the stack. The cables from the 100-ton crane were rigged through these two holes. An approximate 6-ft (1.8-m) long, half-diameter section of the stack was then cut off below the cables using an oxygen/propane cutting torch. Once freed, the steel section was lowered to the ground, where it was cut into smaller sections and loaded into roll-off containers for disposal. This process was repeated for the remainder of the smokestack.

4.9.3 Excavation Sequence

The excavation of impacted soil at the Secondary Bunker C Tank area commenced at the southern end and proceeded north. The buildings on both sides restricted the excavation. Initially, the excavated material was pulled to the north by the track hoe until there was enough clearance to swing the track hoe around to load the material onto trucks. The track hoe was unable to excavate all the areas around the former tank and smokestack concrete foundations. Hand excavation was necessary in these areas. Removal of the metallic mercury encountered below the boiler flue duct required hand work due to accessibility constraints. The entire excavation spanned an area approximately 30 by 105 ft (9 by 32 m) and was excavated in two days.

4.9.4 Description of Excavated Material

The excavated material consisted primarily of a brown sandy soil containing brick and other demolition debris and a black, "tar-like", hydrocarbon product. Metallic mercury was also encountered.

Several pipes were encountered during excavation. A 6 in (15 cm) pipe which was severed at the north and south ends of the excavation contained a black petroleum product. Both ends were sealed with concrete. The other pipes encountered were left intact.

4.9.5 Material Management

The majority of waste removed from the Secondary Bunker C Tank Area was managed as non-hazardous waste. The material was hauled to the WDI staging area. The material was stockpiled separately from the other waste and sampled to ensure that it met the requirements for disposal as non-hazardous (Subtitle D) waste. The sample analytical data showed that the material was in accordance with Subtitle D disposal requirements. The excavated material containing metallic mercury was managed as hazardous waste and hauled to the Material Staging Area.

4.9.6 Excavation Quantities

A total of approximately 340 yd^3 (60 m^3) of waste was removed at the Secondary Bunker C Tank Area. Of this total, approximately 325 yd^3 (248 m^3) was disposed as non-hazardous (Subtitle D) waste and 15 yd^3 (12 m^3) was disposed as hazardous (Subtitle C/TSCA) waste. Approximately 60 yd^3 (46 m^3) of the non-hazardous waste consisted of the brick debris removed from the tanks. The average depth of excavation was approximately 1.5 ft (0.5 m).

4.10 North Central Area Excavation Activities

4.10.1 General

The North Central Area consists of three separate excavation areas: north; central; and boiler house. Removal excavation activities commenced on 14 November 1996 at the north excavation area and culminated on 31 March 1997 at the boiler house excavation area.

4.10.2 Excavation Sequence

Removal activities commenced at the north excavation area. The removal action was prompted by the discovery of remnants of steel drums in the area. After the drums were sampled, removed, and disposed, the area was cleared for excavation. The cleared brush was staged in an area adjacent to the excavation. The owner's representative staked out the limits of excavation based on characterization sample data. The design plan depth of excavation was 1 ft (0.3 m). The excavation area is located adjacent to the northeast corner of the Waste Disposal Impoundment and is bounded on the west side by an approximate 3 ft (1 m) high concrete wall. The excavated material was stockpiled within the Waste Disposal Impoundment and sampled to determine the disposal route.

Removal activities at the central area commenced on 10 March 1997 and continued through 20 March 1997. The owner's representative staked out the limits of excavation based on characterization sample data. The excavation was initiated on the east side adjacent to the former cooling tower and culminated on the north side of the eastern segment of the Bunker C Tank Area. The design plan depth of excavation was 1 ft (0.3 m). The excavated soil was managed as non-hazardous waste and hauled directly to the WDI staging area.

Removal activities at the boiler house excavation area commenced on 23 January 1997 and were completed on 3 March 1997. A gravel-filled sump, which was found to contain metallic mercury prompted removal activities. A concrete slab existed around the sump. A 20-ft (6-m) section of the concrete slab around the sump was initially removed. The depth of excavation was dependent upon the depth to which the metallic mercury was found. Beads of metallic mercury were encountered coming out from beneath the remaining concrete slab on the south side of the excavation. This prompted the removal of the remainder of the slab. Beads of metallic mercury were encountered beneath the entire slab. The impacted soil was excavated and hauled directly to the Material Staging Area. An area approximately 16 by 20 ft (5 by 6 m) was excavated down to a practical limit of excavation of approximately 12 ft (4 m). Excavation below this depth was not practical due to the flowing sand encountered. Sand continually washed out from beneath the boiler house building foundation. It is suspected that the

metallic mercury beads were from a soil horizon above the 12 ft (4 m) depth, but due to the flowing sand conditions the mercury was driven deeper during excavation. Excavation was stopped to prevent the metallic mercury from being driven deeper. Confirmational subgrade samples were collected and the open excavation was pumped down and immediately backfilled.

The excavation subgrade consisted mainly of a native brown sand. A stained sand was encountered across the subgrade of the central excavation area adjacent to the southern side of the eastern segment of the Bunker C Tank Area.

4.10.3 Description of Excavated Material

The excavated material consisted primarily of a brown sandy soil. Debris consisting of brick, concrete, scrap metal, and wood were also encountered. Clumps of a black, tar-like material, and a gray to dark gray stained sand with a hydrocarbon odor were also encountered in areas adjacent to the Bunker C Tank Area. Small beads of metallic mercury were encountered in the tan sand at the boiler house excavation area.

4.10.4 Material Management

The material excavated at the north area had a TCLP lead result of 1.6 mg/L, which is below the RCRA threshold limit of 5.0 mg/L, therefore, the material was managed as non-hazardous waste. All of the waste excavated from the central area was managed as non-hazardous waste. The non-hazardous waste was hauled to the WDI staging area.

All of the soil and concrete excavated at the boiler house area was managed as hazardous waste and hauled to the Material Staging Area. The material was managed as hazardous waste due to the presence of metallic mercury.

4.10.5 Excavation Quantities

A total of approximately 2,080 yd^3 (1590 m^3) was excavated at the North Central Area. Of this quantity, approximately 300 yd^3 (29 m^3) was disposed as hazardous (Subtitle C/TSCA) waste and approximately 1,780 yd^3 (1361 m^3) was disposed as non-hazardous (Subtitle D) waste. The depth of excavation for the north area ranged between 1 and 1.5 ft (0.3 and 0.5 m), while the depth of excavation for the central area ranged between 0.3 and 5 ft (0.1 and 1.5 m). The depth of excavation at the boiler house ranged between 1 and 12 ft (0.3 and 3.7 m). The increase in depth of excavation can be attributed to "failing" confirmational samples and over excavation.

4.11 Raw Brine Enclosures Excavation Activities

4.11.1 General

The Raw Brine Enclosures consist of five separate areas, all located in the northeast quadrant of the site. The southwest Raw Brine Enclosure was the only one, which required excavation. Excavation at the southwest Raw Brine Enclosure commenced on 12 February 1997 and was completed on 24 February 1997. Two of the enclosures contained steel storage tanks, which were demolished.

4.11.2 Excavation Sequence

Before excavation activities could commence at the southwest Raw Brine Enclosure an approximate 20-ft (6-m) section of the concrete containment wall was removed on the west side. Excavation commenced at the western side. The depth of salt mud ranged between 1 and 2.5 ft (0.3 and 0.8 m) deep.

A brown sand was encountered beneath the salt mud material. Once the salt mud had been removed from the Southwest Raw Brine Enclosure, the remaining soil within the enclosure was leveled out to fill in the low-lying areas. During excavation, several old production lines were encountered. The open pipes encountered were plugged with concrete.

4.11.3 Description of Excavated Material

The excavated material consisted of a soft, white and light gray colored salt mud. Some brown sand and organic debris were also excavated. Several small diameter metal pipes and concrete debris were also encountered. The pipes and a few stumps required disposal. The concrete was used as rip rap on site.

4.11.4 Material Management

Salt mud excavated from the southwest enclosure was used as backfill in the bottom of the South Removal Area excavation, per approval of the OSC. A minimum of 3 ft (1m) of imported borrow fill was placed over the salt mud during backfill of the South Removal Area. The salt sludge removed during demolition of the two steel storage tanks in the eastern enclosures was spread on the ground surface within the corresponding enclosures. The material was allowed to air dry to the point where it could be spread evenly over the enclosure area with a dozer. When the material had dried out significantly the enclosures were covered with approximately 1 ft (0.3 m) of imported borrow fill.

4.11.5 Excavation Quantities

A total of approximately 1,340 yd^3 (1025 m^3) was excavated at the Southwest Raw Brine Enclosure. All of the salt mud material was reclaimed for use as deep backfill. The original removal estimate of 1,250 yd^3 (956 m^3) was exceeded. This increase can be attributed to the excavation of some of the underlying soil.

4.12 Summary of North Area Removal Quantities

A total of approximately 34,331 yd^3 (26,248 m^3) of waste was excavated from the nine removal areas included within the North Area. Of this total, approximately 30,085 yd^3 (23,001 m^3) was disposed as non-hazardous waste, 2,906 yd^3(2,222 m^3) was

disposed as hazardous waste, and 1,340 yd^3 (1,025 m^3) was reclaimed for use as deep backfill.

4.13 Water Management

Ground water was usually encountered at an approximate depth of 2 to 3 ft (0.6 to 1 m) below ground surface. Ground water intrusion was a recurrent problem for excavations deeper than 3 ft (1 m). Water entering the excavation from rain events was also encountered over the duration of the removal activities. Portable gas powered 3-in (7.6-cm) diameter centrifugal pumps were primarily used to dewater excavation areas. The North Removal Area and the North Removal Expansion Area were the two main excavations requiring dewatering. The distance of the removal areas from the wastewater treatment plant posed the greatest obstacle for the dewatering activities. Intermediate storage of the water pumped from the excavation areas was required. A 20,000 gallon portable tank was positioned at the north end of the North Removal Expansion Area. Water from the excavations was pumped to this tank. A 4-in (10.2-cm) diameter diesel powered centrifugal pump was used to transfer the water to a manhole adjacent to B street. For a brief time, the water was pumped to the northern two Bunker C Tanks before being pumped to the site sewer system. The site sewer system was used to convey water to Manhole 20. Water from Manhole 20 was pumped to the site wastewater treatment plant.

The site wastewater treatment system utilized brine mud impoundment 3 and 4 for storage of untreated wastewater. A 20-mil PVC geomembrane liner was installed over the brine mud in impoundment 3. Water was pumped from Manhole 20 to the south end of impoundment 3 and gravity drained into impoundment 4. Water from impoundment 4 was pumped to an approximate 250,000 gallon econo tank. From the econo tank water was treated through the treatment system which uses a coagulation/precipitation process. After the brine mud impoundments were excavated, the water from Manhole 20 was pumped directly to the econo tank at the water treatment plant.

5. CONFIRMATIONAL SAMPLING

5.1 Purpose

Confirmational soil samples were collected in general accordance with the *Soil and Waste Removal Work Plan, Phase IIIA Removal Response Activities, Former LCP Chemicals - Georgia Site, Brunswick, Georgia.* To confirm the vertical limit of excavation, one composite sample was collected from the subgrade of each grid excavated. An excavation grid was either the area excavated in one day, or an area of approximately 2,500 ft^2 (232 m^2). To confirm the horizontal limit of excavation, a three-point vertical composite sample was collected approximately every 100 linear ft (30 m) around the perimeter of the excavations. Analytical results form the confirmational samples were compared to the USEPA-established site removal clean-up goals to assess whether additional excavation was required beyond the design removal plan. The site clean-up goals are listed below.

Constituent	Clean-Up Goal
Total Mercury	20 mg/kg
Total Lead	500 mg/kg
Total Barium	1,000 mg/kg
Total PCBs	25 mg/kg
Total VOCs	80 mg/kg
Total SVOCs	400 mg/kg
Total PAHs	100 mg/kg
Total CPAHs	50 mg/kg

5.2 Sample Collection Methods

5.2.1 Subgrade Samples

Confirmational subgrade samples were generally composite samples but grab samples were collected from some (usually small) excavation grids. Since the maximum depth of excavation ranged from approximately 1 ft (0.3 m) to 11 ft (3.4 m)

confirmational subgrade sample collection methods differed based on the depth of excavation. In areas of shallow excavation, personnel were able to enter the excavation and use a stainless steel scoop to collect each point of the composite sample directly from the subgrade. In areas were the depth of excavation was greater than 4 ft (1.2 m), a hydraulic excavator was utilized to collect subgrade samples. The hydraulic excavator was used to carefully remove a portion of the in-situ subgrade for each point of the composite sample. A stainless steel scoop was used to collect the sample from the top of the soil in the bucket and transfer it to a stainless steel bowl. The sample was collected from soil in the center of the bucket to ensure that it never came into contact with the bucket. The number of points in a composite sample depended on the size of the excavation grid, and varied from two to five points. Once all points of a composite sample were collected, the sample was homogenized in the stainless steel bowl using the stainless steel scoop then placed in a glass sample jar for chemical analyses. In excavation areas where VOC concentration exceeded the removal clean-up goal, a grab sample was collected from one of the composite sample's aliquot. The grab sample was not homogenized prior to placing into a separate sample jar for VOC analyses. Sample locations were plotted on a scaled drawing at the center of the excavation grid.

5.2.2 Sidewall Samples

Confirmational sidewall samples were generally three-point vertical composites. Sidewall samples were usually collected using a stainless steel scoop. In some cases a hydraulic excavator was used to remove a portion of the sidewall similar to the method used for subgrade sample collection. Once all points of the composite sample were collected, the sample was homogenized in a stainless steel bowl and placed in a glass sample jar for chemical analyses. In excavation areas where the VOC concentration exceeded the removal clean-up goal, a grab sample was collected from one of the composite sample's aliquot. The grab sample was not homogenized prior to placing into a separate sample jar for VOC analyses. The sidewall sample locations were measured and plotted on a scaled drawing.

5.2.3 Sample Analysis and Quality Control

Once a sample was collected, it was analyzed at the on-site laboratory for the removal action constituent list. The on-site laboratory was equipped for a rapid turnaround of results and also to meet Level II data quality objectives. Sample results were usually received within 24 hours. An excavation grid was backfilled if the corresponding confirmational analytical results were acceptable. If the analytical results were not acceptable, additional excavation and re-sampling was conducted in the corresponding excavation grid. Split samples were collected during the confirmational sampling and sent off-site for Level IV analysis as a quality control check of the on-site laboratory. In addition, the on-site laboratory participated in a routine performance evaluation program administered by the EPA.

As a quality assurance measure, blind duplicate samples (laboratory is not aware that sample is a duplicate) were collected for approximately 5 percent of the samples. A duplicate sample was collected by filling a second sample jar after homogenizing a sample. These samples were analyzed to test the ability of the laboratory to repeat analytical results. The blind duplicate samples are listed as "dup of ..." in the attached analytical tables. Location of removed confirmational samples are presented in Drawing 1. Locations of final confirmational samples are shown in Drawing 3.

5.3 North Removal Area Confirmational Analytical Results

A total of 151 confirmational subgrade and sidewall samples were collected from the North Removal Area. Due to unacceptable analytical results, additional excavation and re-sampling were required at the associated subgrade or sidewall of 47 of the 151 sample locations. These 47 sample locations were removed during the additional excavation. The remaining 104 samples represent the post-excavation conditions at the subgrade and sidewalls of the North Removal Area. From the 104 final confirmational samples, analytical results are below site removal clean-up goals except for 10 samples. From these 10 samples: two samples have lead concentrations of 507 and 769 mg/kg; one sample has lead and total VOCs at 538 and 121, respectively; one sample has total SVOCs and total VOCs at 105 and 99.9, respectively; and six samples have total VOCS

ranging from 88.4 to 468 mg/kg. The samples were approved as final confirmational samples by the OSC. A complete list of North Removal Area removed and final confirmational analytical results is located in Table 1.

5.4 North Removal Expansion Area Confirmational Analytical Results

A total of 66 confirmational subgrade and sidewall samples were collected from the North Removal Expansion Area. Due to unacceptable analytical results, additional excavation and re-sampling were required at the associated subgrade or sidewall of 20 of the 66 sample locations. These 20 sample locations were removed during the additional excavation. The remaining 46 samples represent the existing subgrade and sidewalls of the North Removal Expansion Area. From the 46 final confirmational samples, the analytical results are below site removal clean-up goals except for 11 subgrade samples which exceed either the lead or total VOCs goals. These sample locations are covered by a minimum of 3 ft (1 m) of borrow and were approved as final confirmational samples by the OSC. A complete listing of North Expansion Area removed and final confirmational analytical results is located in Table 2.

5.5 Northwest Field Confirmational Analytical Results

A total of 26 confirmational subgrade and sidewall samples were collected from the Northwest Field. Due to unacceptable analytical results, additional excavation and re-sampling were required at the associated subgrade or sidewall of 4 of the 26 sample locations. These 4 sample locations were removed during the additional excavation. The remaining 22 samples represent the existing subgrade and sidewalls of the Northwest Field. The analytical results from the 22 final confirmational samples are below site removal clean-up goals. A complete list of Northwest Field removed and final confirmational analytical results is located in Table 3.

5.6 Waste Disposal Impoundment Confirmational Analytical Results

A total of 44 confirmational subgrade and sidewall samples were collected from the Waste Disposal Impoundment. Due to unacceptable analytical results, additional excavation and re-sampling were required at the associated subgrade or sidewall of 13 of the 44 sample locations. These 13 sample locations were removed during the additional excavation. The remaining 31 samples represent the existing subgrade and sidewalls of the Waste Disposal Impoundment. The analytical results from the final 31 confirmational samples are below site removal clean-up goals except for three samples. Subgrade samples 96143-WDI-04, 97092-WDI-14 and 97104-WDI-26 show total VOC concentrations of 89.1, 116, and 85.5, respectively. A complete list of Waste Disposal Impoundment removed and final confirmational analytical results is located in Table 5.

5.7 North Rail Yard Confirmational Analytical Results

A total of 7 confirmational subgrade and sidewall samples were collected from the North Rail Yard. Due to unacceptable analytical results, additional excavation and re-sampling were required at the associated subgrade of 1 of the 7 sample locations. This sample location was removed during the additional excavation. The remaining 6 samples represent the existing subgrade and sidewalls of North Rail Yard. The analytical results for the six final confirmational samples are below site removal clean-up goals except for two samples. Subgrade samples 96270-NRY-06 and 96274-NRY-07 show total VOC concentrations of 364 and 751 respectively. Both samples were approved as final confirmational samples by the OSC. A complete list of North Rail Yard removed and final confirmational analytical results is located in Table 5.

5.8 Bunker C Tank Area Confirmational Analytical Results

A total of 23 confirmational subgrade and sidewall samples were collected from the Bunker C Tank Area. Due to unacceptable analytical results, additional excavation and re-sampling were required at the associated subgrade or sidewall of 3 of the 23 sample locations. These 3 sample locations were removed during the additional excavation.

The remaining 20 samples represent the existing subgrade and sidewalls of the Bunker C Tank Area. The analytical results for the 20 final confirmational samples are below site removal clean-up goals except for two samples. Samples 97057-BCF-08 and 97065-BCF-21 show total VOCs at 164 and 135 mg/kg, respectively. Both samples were approved as final confirmational samples by the OSC. A complete listing of Bunker C Tank Area removed and final confirmational analytical results is located in Table 6.

5.9 Secondary Bunker C Tank Area Confirmational Analytical Results

Two subgrade and one sidewall confirmational samples were collected from the Secondary Bunker C Tank Area. No additional excavation was performed at this area. Therefore, the three confirmational samples represent the existing conditions of this area. The confirmational analytical results are below site removal clean-up goals. A complete listing of confirmational analytical results is located in Table 7.

5.10 North Central Area Confirmational Analytical Results

A total of 46 confirmational subgrade and sidewall samples were collected from the North Central Area. Due to analytical results exceeding the clean-up goals, additional excavation and re-sampling were required at the associated subgrade or sidewall of 13 of the 46 sample locations. These 13 sample locations were removed during the additional excavation. The remaining 33 samples represent the existing subgrade and sidewalls of the North Central Area. A complete listing of North Central Area removed and final confirmational analytical results is located in Table 8.

The final confirmational samples from the North Central Area are below site removal clean-up goals except for two samples. Sample 97072-01 has a lead concentration of 501 mg/kg and sample 97086-07 has a mercury concentration of 578 mg/kg. Sample 97086-07 is the confirmational subgrade sample collected at an approximate depth range of 10 to 12 ft (3 to 3.7) from the subgrade of the approximate 16 by 20 ft (5 by 6 m) boiler house excavation area (discussed in section 4.10.2 of this

report). Due to unstable excavation sidewall conditions, this area required backfilling immediately after collecting the confirmational subgrade sample. Beads of metallic mercury were present in the subgrade and the sample. This excavation area was re-opened to determine if the metallic mercury was present under the boiler house structure. The area was excavated below the depth of the boiler house foundation (approximately 6 ft (2 m)) and two hand auger samples (97105-01 and 97105-02) were collected under the structure. The results for both samples showed non-detectable mercury concentrations and no visible mercury was observed under the boiler house.

5.11 Southwest Raw Brine Enclosure Analytical Results

A total of 10 confirmational subgrade and sidewall samples were collected from the Southwest Raw Brine Enclosure. No additional excavation beyond the design removal plan was performed in the Southwest Raw Brine Enclosure. Therefore, all 10 confirmational samples represent the existing conditions at the Southwest Raw Brine Enclosure. The analytical results for the confirmational samples are below clean-up goals except for one sample. Sample 97051-RBT-10 has a lead concentration of 516 mg/kg. Based on this result, sample 97055-RBT-11, which has a lead concentration of 198 mg/kg, was collected from the same excavation grid. A complete listing of Raw Brine Enclosures final confirmational analytical results is located in Table 9.

6. BACKFILL AND VEGETATION

The excavation grids were backfilled once the confirmational soil samples showed acceptable analytical results. The open excavations were backfilled with fill imported to the site from off-site borrow areas. The fill was sampled and chemically analyzed prior to use to ensure that it was not contaminated. The fill was primarily placed with a dozer, except for a few deep excavation areas and areas with limited access where the initial lift of fill was placed using a track hoe. The backfill was placed in approximately 1-ft (0.3 m) loose lifts and compacted by tracking with a dozer or using the track hoe bucket.

Once the backfill was graded to the final elevations per the *Surface-Water Management Plan, Former LCP Chemicals Site, Brunswick, Georgia,* dated 11 April 1997, grass seed was planted on the entire area to minimize erosion from surface water runoff and reduce the amount of dust generated by wind. The backfill was prepared for seeding using conventional farming equipment. Fertilizer and Bermuda grass seed were spread and the area was covered with hay mulch. A sprinkler system was installed to irrigate the seeded area.

TABLES

TABLE 1 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
North Removal Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization									
642-SLA	NA	157 B	16.1 S	<0.0300	0.0900	--	--	--	2.72
950192-PB9-3	15	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950192-PB9-4	21	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950193-PB10-1	5	<38.8	<7.76	<0.770	ND	2.53	91.2	91.2	ND
950193-PB10-2	10	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950193-PB10-3	15	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950193-PB10-4	21	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950193-PB10-5	26	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950193-PB11-1	5	<38.8	<7.76	<0.770	ND	154	636	636	ND
950193-PB11-2	10	<38.8	<7.76	<0.770	ND	ND	47.2	47.2	ND
950193-PB11-3	15	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950193-PB11-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950193-PB11-5	26	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950193-PB12-2	13	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950194-PB12-3	18	<38.8	22.4	<0.770	ND	2.64	145	145	28.5
950194-PB12-4	21	<38.8	<7.76	<0.770	ND	ND	144	144	26.0
950194-PB12-5	26	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950194-PB13-2	14	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950194-PB13-3	20.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950194-PB13-4	26	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950194-PB14-1	8	<38.8	<7.76	<0.770	ND	ND	1.34	1.34	ND
950194-PB14-2	11	<38.8	<7.76	<0.770	ND	ND	40.6	40.6	ND
950194-PB14-3	17	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950194-PB14-4	19	<38.8	102	<0.770	ND	243	786	786	46.0
950194-PB14-5	25	<38.8	20.8	<0.770	ND	394	630	630	34.7
950194-PB15-1	5	<38.8	536	<0.770	ND	304	344	344	60.5
950194-PB15-2	11	<38.8	<7.76	<0.770	ND	587	760	760	13.7
950194-PB15-3	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950194-PB15-4	26	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950195-PB16-2	7	<38.8	<7.76	<0.770	ND	ND	ND	ND	0.310
950195-PB16-3	14	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950195-PB16-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950195-PB17-1	4	104	17.4	<0.770	ND	137	273	273	247
950195-PB17-2	8	<38.8	<7.76	<0.770	ND	0.790	21.6	21.6	19.6
950195-PB17-3	11	<38.8	<7.76	<0.770	ND	ND	105	105	20.4
950195-PB17-4	14	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950195-PB17-5	18	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950195-PB17-6	24	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950195-PB18-2	14	<38.8	<7.76	<0.770	ND	ND	ND	ND	0.150
950195-PB18-3	17	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950195-PB18-4	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950195-PB19-1	5	<38.8	334	<0.770	ND	0.620	21.4	21.4	10.8
950195-PB19-2	11	<38.8	29.2	<0.770	ND	0.580	3.21	3.21	9.00
950195-PB19-3	17	66.8	<7.76	<0.770	ND	ND	ND	ND	0.120
950195-PB19-4	23	91.3	<7.76	<0.770	ND	ND	ND	ND	ND
950199-PB21-2	11	83.7	12.3	4.38	ND	ND	ND	ND	0.630
950199-PB21-3	17	108	<7.76	<0.770	ND	ND	ND	ND	0.650
950199-PB21-4	20	75.9	45.5	<0.770	ND	ND	ND	ND	ND
950199-PB21-5	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950199-PB22-1	5	<38.8	<7.76	<0.770	ND	ND	ND	ND	0.430

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

B - Concentration detected below CRDL
ND - Analytes not detected in this sample

TABLE 1 - Continued
North Removal Area

LCP Chemicals Removal Action
22-Oct-97

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization continued									
950199-PB22-2	8	<38.8	<7.76	<0.770	ND	ND	ND	ND	0.770
950199-PB22-3	11	48.9	<7.76	<0.770	ND	ND	ND	ND	0.140
950199-PB22-4	20	133	<7.76	<0.770	ND	ND	ND	ND	ND
950199-PB22-5	23	112	<7.76	<0.770	ND	ND	ND	ND	ND
950199-PB23-1	5	59.2	<7.76	<0.770	ND	ND	ND	ND	1.77
950199-PB23-2	11	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950199-PB23-3	17	<38.8	<7.76	<0.770	ND	ND	ND	ND	4.71
950199-PB23-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	0.800
950199-PB23-5	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950199-PB24-1	5	109	<7.76	<0.770	ND	ND	41.2	41.2	8.43
950199-PB24-2	8	112	<7.76	<0.770	ND	0.570	54.6	54.6	25.6
950199-PB24-3	14	67.7	<7.76	<0.770	ND	ND	ND	ND	ND
950199-PB24-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950199-PB24-5	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950200-PB25-1	3	<38.8	143	1.62	ND	ND	3.85	3.85	9.29
950200-PB25-2	11	<38.8	113	<0.770	ND	ND	42.2	42.2	13.9
950200-PB25-3	15	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950200-PB25-4	18	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950200-PB25-6	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950200-PB26-1	8	<38.8	<7.76	<0.770	ND	1.64	48.9	48.9	130
950200-PB26-2	10	<38.8	<7.76	<0.770	ND	7.19	81.2	81.2	109
950200-PB26-3	14	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950200-PB26-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950200-PB26-5	22	<38.8	<7.76	<0.770	ND	ND	ND	ND	0.340
950200-PB27-1	5	<38.8	11.3	<0.770	ND	ND	5.53	5.53	52.6
950200-PB27-2	10	<38.8	<7.76	<0.770	ND	ND	ND	ND	0.210
950200-PB27-3	16	<38.8	11.2	<0.770	ND	ND	ND	ND	8.81
950200-PB27-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950200-PB27-5	22	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950201-PB20-5	8	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950201-PB20-6	10	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950201-PB28-1	5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950201-PB28-2	10	5.00	<3.75	<0.310	ND	ND	ND	3.94	7.80
950201-PB28-3	17	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950201-PB28-4	19	<38.8	<7.76	<0.770	ND	ND	21.5	21.5	11.3
950201-PB28-5	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950201-PB29-2	10	<38.8	53.3	<0.770	ND	ND	1.17	1.17	1.76
950201-PB29-3	16	<38.8	<7.76	<0.770	ND	ND	2.05	2.05	0.370
950201-PB29-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950201-PB29-5	24	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950201-PB30-1	7	<38.8	<7.76	<0.770	ND	ND	18.7	18.7	0.940
950201-PB30-2	11	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950201-PB30-3	14	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950201-PB30-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950201-PB30-5	22	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950213-PB56-2	7.5-8.5	<38.8	<7.76	<0.770	ND	ND	6.98	6.98	7.23
950213-PB56-3	11.5-12.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	3.12
950213-PB56-4	14.5-15.5	<38.8	<7.76	<0.770	ND	ND	5.48	5.48	3.69
950213-PB56-5	20.5-21.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	1.28
950213-PB56-6	25.5-26.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950213-PB57-1	4.5-5.5	<38.8	<7.76	<0.770	ND	2.42	31.9	31.9	57.3
950213-PB57-2	10.5-11.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950213-PB57-3	16.5-17.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950213-PB57-4	20.5-21.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

TABLE 1 - Continued
North Removal Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization continued									
950213-PB57-5	23.5-24.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950213-PB58-2	6.5-7.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950213-PB58-3	11.5-12.5	<38.8	<7.76	<0.770	ND	1.46	1.46	1.46	1.88
950213-PB58-4	17.5-18.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	0.820
950213-PB58-5	22.5-23.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950213-PB58A-1	24.5-25.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950216-PB59-2	5.5-6.5	<38.8	<7.76	<0.770	ND	ND	66.2	66.2	19.4
950216-PB59-3	10.5-11.5	<38.8	<7.76	<0.770	ND	1.84	82.2	82.2	31.5
950216-PB59-4	14.5-15.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	1.52
950216-PB59-5	19.5-20.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950216-PB59-6	24.5-25.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950216-PB60-2	5.5-6.5	<38.8	<7.76	<0.770	ND	7.32	177	177	64.3
950216-PB60-3	7.5-8.5	<38.8	<7.76	<0.770	ND	ND	29.2	29.2	12.9
950216-PB60-4	13.5-14.5	<38.8	<7.76	<0.770	ND	ND	12.4	12.4	8.07
950216-PB60-5	14.5-15.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	1.89
950216-PB61-2	5.5-6.5	<38.8	<7.76	<0.770	ND	ND	15.6	15.6	52.7
950216-PB61-3	10.5-11.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	3.11
950216-PB61-4	15.5-16.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950216-PB61-5	24.5-25.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950216-PB62-2	10.5-11.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950216-PB62-3	21	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950216-PB62-4	25	<38.8	<7.76	<0.770	ND	ND	0.850	0.850	ND
950219-PB63-3	24.5-25.5	<38.8	<7.76	6.92	ND	ND	ND	ND	ND
950219-PB64-4	15.5-16.5	<38.8	<7.76	6.57	ND	ND	ND	ND	ND
950219-PB64-5	24.5-25.5	<38.8	<7.76	6.71	ND	ND	ND	ND	1.67
950219-PB65-1	5.5-6.5	<38.8	233	5.03	ND	ND	63.4	63.4	5.06
950219-PB65-2	10.5-11.5	<38.8	<7.76	5.67	ND	ND	ND	ND	ND
950219-PB65-3	15.5-16.5	<38.8	<7.76	6.51	ND	ND	ND	ND	ND
950219-PB65-4	22.5-23.5	<38.8	<7.76	6.55	ND	ND	ND	ND	ND
950219-PB66-1	5.5-6.5	<38.8	<7.76	1.88	ND	9.15	259	259	2.63
950219-PB66-2	7.5-8.5	<38.8	30.1	2.10	ND	ND	ND	ND	ND
950219-PB66-3	15.5-16.5	<38.8	<7.76	2.06	ND	ND	ND	ND	ND
950219-PB66-4	20.5-21.5	<38.8	<7.76	2.01	ND	ND	ND	ND	ND
950219-PB66-5	25.5-26.5	<38.8	<7.76	14.9	ND	ND	ND	ND	3.01
950221-PB71-2	10.5-11.5	<38.8	53.3	<0.770	ND	ND	ND	ND	ND
950221-PB71-3	15.5-16.5	39.3	71.7	<0.770	ND	ND	1.51	1.51	2.34
950221-PB71-4	20.5-21.5	<38.8	24.2	1.28	ND	ND	ND	ND	ND
950221-PB71-5	25.5-26.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950221-PB72-1	6.5-7.5	51.4	39.9	<0.770	ND	ND	47.7	47.7	ND
950221-PB72-2	15.5-16.5	<38.8	15.2	<0.770	ND	ND	ND	ND	ND
950221-PB72-3	20.5-21.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950221-PB73-1	4.5-5.5	42.4	<7.76	12.9	ND	ND	6.60	6.60	10.2
950221-PB73-2	9.5-10.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950221-PB73-3	15.5-16.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950221-PB73-4	20.5-21.5	57.9	<7.76	<0.770	ND	ND	0.930	0.930	2.65
950221-PB73-5	25.5-26.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950223-HA2-1	2-3	<30.2	<6.03	<0.600	ND	ND	25.6	25.6	21.1
950223-HA2-2	5.5-6.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950223-HA2-3	7-8	<51.0	2.90	<0.120	ND	ND	ND	ND	ND
950227-PB83-2	3.5-4.5	<53.0	4.80	<0.120	ND	1.20	19.3	52.3	10.2
950227-PB83-3	11.5-12.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950227-PB83-4	17.5-18.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950227-PB83-5	22.5-23.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950227-PB84-2	4.5-5.5	<38.8	<7.76	<0.770	ND	ND	19.1	19.1	43.2

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

LCP Chemicals Removal Action
22-Oct-97

TABLE 1 - Continued
North Removal Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization continued									
950227-PB84-3	11.5-12.5	<38.8	<7.76	<0.770	ND	ND	2.17	2.17	ND
950227-PB84-4	18.5-19.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950227-PB84-5	22.5-23.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950227-PB85-2	6.5-7.5	<38.8	<7.76	<0.770	ND	16.5	67.4	67.4	19.1
950227-PB85-3	13.5-14.5	<38.8	<7.76	<0.770	ND	ND	139	139	137
950227-PB85-4	22.5-23.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950250-HA11-3	5-6	<38.8	348	<0.770	ND	ND	12.8	12.8	16.8
950250-HA12-3	5-6	<38.8	28.7	<0.770	ND	14.1	337	337	46.1
950250-HA13-3	5-6	<38.8	35.4	<0.770	ND	ND	261	261	97.0
950254-HA14-3	5-6	<38.8	1440	<0.770	ND	ND	164	164	217
950254-HA15-1	0-1	<30.2	62.0	<0.600	ND	ND	ND	ND	ND
950254-HA15-2	2-3	<30.2	8.90	<0.600	ND	ND	3.48	3.48	19.4
950254-HA15-3	5-6	<38.8	8.53	<0.770	ND	ND	32.8	32.8	63.1
950254-HA16-1	0-1	<30.2	20.2	<0.600	ND	ND	ND	ND	3.34
950254-HA16-2	2-3	<30.2	6.21	<0.600	ND	ND	0.650	0.650	ND
950254-HA16-3	5-6	<38.8	8.67	<0.770	ND	ND	4.38	4.38	168
950254-HA17-1	0-1	<30.2	7.32	<0.600	ND	ND	ND	ND	0.150
950254-HA17-2	2-3	<30.2	6.23	<0.600	ND	ND	ND	ND	0.130
950254-HA17-3	5-6	<38.8	12.7	<0.770	ND	ND	12.2	12.2	49.1
950254-HA18-1	0-1	<30.2	8.77	<0.600	ND	ND	ND	ND	ND
950254-HA18-2	2-3	<30.2	<6.03	<0.600	ND	ND	ND	ND	7.90
950254-HA18-3	5-6	<38.8	9.07	<0.770	ND	ND	17.0	17.0	159
950262-HA24-1	0-1	<30.2	143	<0.600	ND	ND	17.9	17.9	140
950262-HA24-2	2-3	<30.2	10.0	<0.600	ND	ND	7.50	7.50	ND
950262-HA24-3	5-6	<38.8	11.2	<0.770	ND	ND	ND	ND	ND
950262-HA25-1	0-1	<30.2	134	1.86	ND	ND	ND	ND	ND
950262-HA25-2	2-3	<30.2	158	0.600	ND	ND	ND	ND	ND
950262-HA25-3	5-6	<38.8	18.0	<0.770	ND	ND	ND	ND	ND
950262-HA26-1	0-1	<30.2	355	0.850	ND	1.54	3.29	3.29	ND
950262-HA26-2	2-3	<30.2	298	<0.600	ND	9.65	33.0	33.0	59.0
950262-HA26-3	5-6	<38.8	29.8	<0.770	ND	ND	4.85	4.85	2.52
950268-NDB1-3	11-11.5	<38.8	11.3	<0.770	ND	ND	ND	ND	ND
950268-NDB1-4	15-15.5	<38.8	11.0	<0.770	ND	ND	1.09	1.09	ND
950269-NDB1-5	20-21.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950269-NDB1-6	31-33	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950269-NDB1-7	38-39	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950270-NDB2-1	1-2	<30.2	8.42	<0.600	25.2	1.58	17.8	17.8	ND
950270-NDB2-2	3-4	<38.8	120	<0.770	ND	28.1	197	197	17.0
950270-NDB2-3	7-8	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950270-NDB2-4	21-22	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950270-NDB2-5	35-36	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950271-NDB3-2	6-8	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950271-NDB3-3	15-16	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950271-NDB3-4	19-20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950271-NDB3-5	23-24	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950271-NDB3-6	35-36	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950271-NDB3-7	39-40	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950275-NDB4-2	7-8	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950275-NDB4-3	13-14	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950275-NDB4-4	17-18	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950275-NDB4-5	35-36	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950276-HA27-3	5-6	<38.8	<7.76	<0.770	ND	ND	234	234	15.5
950276-HA28-1	0-1	<30.2	256	1.25	ND	ND	ND	ND	ND
950276-HA28-2	2-3	<30.2	144	<0.600	ND	ND	ND	ND	ND

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

TABLE 1 - Continued
North Removal Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization continued									
950276-HA28-3	5-6	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950276-HA29-3	5-6	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950348-HA37-3	5-6	<34.9	93.3	<0.690	ND	ND	11.9	11.9	7.38
950348-HA39-3	5-6	<31.2	162	<0.620	ND	ND	44.1	44.1	59.3
950348-HA40-3	5-6	<34.6	105	<0.690	ND	ND	75.8	75.8	83.1
96151-NRA-18A	2.5	--	12.3	--	--	--	--	--	--
96151-NRA-18B	1.5	--	12.8	--	--	--	--	--	--
96151-NRA-18C	0.5	--	51.0	--	--	--	--	--	--
96158-02	2-3	--	16.8	--	--	--	--	--	--
96158-04	2-3	--	<5.86	--	--	--	--	--	--
96207-01	0-1	--	165	8.90	ND	--	--	--	--
96207-02	1-2	--	<12.7	<0.620	ND	--	--	--	--
96207-04	0-1	--	34.7	<0.600	ND	--	--	--	--
96207-05	1-2	--	<12.0	<0.600	ND	ND	ND	ND	--
96207-06	0-1	--	204	12.6	ND	--	--	--	--
96207-07	0-1	--	74.3	0.340	ND	--	--	--	--
96207-08	1-2	--	<12.1	<0.610	ND	ND	ND	ND	--
96207-09	0-1	--	<11.9	0.370	ND	--	--	--	--
96207-10	0-1	--	61.5	0.520	ND	ND	ND	ND	--
96239-01	0-1	--	150	0.740	ND	--	--	--	--
dup of 96239-01	0-1	--	149	0.630	ND	--	--	--	--
96239-03	1-1.5	--	87.1	0.730	ND	--	--	--	--
96239-04	0-1	--	64.4	0.660	ND	--	--	--	--
96239-05	1-2	--	72.2	<0.560	ND	--	--	--	--
96239-06	2-3	--	35.6	<0.670	ND	ND	ND	ND	--
96239-07	0-1	--	46.6	0.500	ND	--	--	--	--
96239-08	1-2	--	<10.8	<0.540	ND	--	--	--	--
96239-09	0-1	--	215	11.0	28.3	--	--	--	--
96239-10	1-2	--	613	3.73	2.59	--	--	--	--
96239-13	1-2	--	<10.5	<0.510	ND	--	--	--	--
96239-14	0-1	--	45.7	0.670	3.29	--	--	--	--
96239-15	0-1	--	44.4	<0.540	ND	--	--	--	--
96240-05	2-3	--	186	0.880	ND	--	--	--	--
96240-07	2-3	--	377	<0.500	ND	--	--	--	--
96240-09	2-3	--	554	<0.510	ND	--	--	--	--
96242-07	0-1	--	832	1.23	ND	--	--	--	--
96242-08	0-1	--	1580	2.15	ND	--	--	--	--
96242-09	0-1	--	922	<0.680	ND	--	--	--	--
96248-03	5-6	--	79.8	--	--	ND	ND	ND	1.14
96248-04	0-1	--	194	--	--	--	--	--	--
96248-05	2-3	--	68.9	--	--	ND	ND	ND	ND
96248-06	5-6	--	182	--	--	ND	ND	ND	11.7
96248-10	0-1	--	412	0.800	ND	--	--	--	--
96248-12	1-2	--	45.0	<0.570	ND	--	--	--	--
96270-07	2-3	--	27.4	3.85	ND	--	--	--	--
96284-01	0-1	--	653	1.42	ND	--	--	--	--
96284-02	1.5-2	--	204	<0.580	ND	--	--	--	--
96284-03	0-0.5	--	347	1.30	ND	--	--	--	--
96296-08	0-1	--	24.8	<0.560	ND	--	--	--	--
96296-09	2-3	--	<12.2	<0.610	ND	--	--	--	--
96296-10	0-1	--	327	<0.560	ND	--	--	--	--
dup of 96296-10	0-1	--	338	<0.610	ND	--	--	--	--
96296-12	2-3	--	18.9	<0.620	ND	--	--	--	--
96298-01	0-1	--	71.5	0.730	ND	--	--	--	--

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

TABLE 1 - Continued
North Removal Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization continued									
96298-02	1-2	--	32.0	<0.560	ND	--	--	--	--
96312-10	0-1	--	81.2	<0.560	ND	--	--	--	--
96312-11	1-2	--	12.7	<0.620	ND	--	--	--	--
96312-12	0-1	--	207	0.810	ND	--	--	--	--
96312-13	1-2	--	214	1.62	ND	--	--	--	--
AC3-C	10-11	9.39 B	8.69	<0.0100	0.0300	ND	0.130	0.230	0.440
AC4-C	8-9	22.0 B	29.7	0.0100 B	0.320	0.840	15.7	28.6	9.43
AC5-12	12-14	13.2 B	14.4	0.950	2.39	0.0600	0.440	0.940	0.120
AC5-8	8-10	37.9 B	51.7	2.20	11.4	0.240	1.26	2.93	0.960
AC6-10	10-12	3.00 B	2.09	<0.0300	0.00580	ND	0.0300	0.0800	0.130
AC6-2	2-4	5.80 B	18.6	0.370	0.350	0.0600	3.84	8.58	1.68
AC6-6	6-8	15.6 B	9.19	0.100	0.100	ND	2.75	5.31	1.91
LC-642-WAB	2-3	720	43.0	<0.210	ND	--	--	--	--
Removed Characterization									
641-SLC	NA	17.8 B	4780	0.280 N	0.900	5.90	98.9	199	118
950192-PB9-1	5	<38.8	99.8	<0.770	ND	119	331	331	46.9
950192-PB9-2	10	<38.8	<7.76	<0.770	ND	ND	4.31	4.31	ND
950193-PB12-1	7	<38.8	<7.76	<0.770	ND	8.08	330	330	54.7
950194-PB13-1	5	<38.8	<7.76	<0.770	ND	ND	243	243	97.2
950195-PB16-1	4	<38.8	<7.76	<0.770	ND	1.64	1.64	1.64	146
950195-PB18-1	5	109	<7.76	3.10	ND	ND	ND	ND	0.320
950198-PB20-1	2	114	918	<0.600	ND	180	1006	1006	3.13
950198-PB20-2	4	94.6	140	<0.770	ND	ND	12.4	12.4	3.97
950198-PB20-3	6	<38.8	<7.76	<0.770	ND	ND	ND	ND	1.95
950199-PB21-1	5	<38.8	8660	1.50	ND	ND	ND	ND	ND
950201-PB20-4	6	<38.8	14.6	<0.770	ND	ND	6.27	6.27	ND
950201-PB29-1	7	<38.8	<7.76	<0.770	ND	ND	ND	ND	3.07
950213-PB56-1	1.5-2.5	<30.2	231	1.85	4.40	5.19	99.3	99.3	ND
950213-PB58-1	2.5-3.5	<30.2	<6.03	<0.600	ND	ND	271	271	0.480
950216-PB59-1	2.5-3.5	<30.2	<6.03	<0.600	ND	7.07	9.84	9.84	ND
950216-PB60-1	1.5-2.5	<30.2	<6.03	<0.600	ND	ND	ND	ND	ND
950216-PB61-1	2.5-3.5	<30.2	<6.03	<0.600	ND	ND	88.9	88.9	40.1
950216-PB62-1	3.5-4.5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950219-PB63-1	5.5-6.5	<38.8	<7.76	44.1	ND	ND	127	127	27.7
950219-PB63-2	10.5-11.5	<38.8	<7.76	56.7	ND	ND	ND	ND	ND
950219-PB64-1	2.5-3.5	<30.2	19.1	4.73	ND	ND	4.46	4.46	6.62
950219-PB64-2	5.5-6.5	39.4	1270	6.71	ND	ND	ND	ND	2.71
950219-PB64-3	10.5-11.5	<38.8	<7.76	6.28	ND	ND	ND	ND	ND
950220-TT9-1	2-3	<30.2	9.01	1.62	ND	ND	7.01	7.01	21.4
950220-TT9-2	2-3	<30.2	8.18	4.07	ND	ND	ND	ND	ND
950220-TT9-3	2-3	<30.2	793	8.03	ND	ND	ND	ND	0.710
950220-TT9-4	4.5-5.5	<38.8	<7.76	4.05	ND	ND	41.1	41.1	49.2
950220-TT9-5	4.5-5.5	<38.8	21.1	5.23	ND	ND	6.49	6.49	22.1
950220-TT9-6	4.5-5.5	<38.8	<7.76	63.4	ND	ND	0.520	0.520	1.70
950221-PB71-1	4.5-5.5	64.1	12.8	2.34	ND	2.48	89.5	89.5	5.50
950222-ND-1	4.5-5.5	<38.8	22.8	<0.770	ND	ND	ND	2.40	0.130
950222-ND-2	3.5-4.5	<38.8	12.0	<0.770	ND	ND	ND	ND	0.330
950227-PB83-1	1.5-2.5	<30.2	<6.03	<0.600	ND	ND	568	568	104
950227-PB84-1	1.5-2.5	<30.2	13.3	<0.600	ND	ND	112	112	50.7
950227-PB85-1	1.5-2.5	<30.2	<6.03	<0.600	ND	12.9	73.2	73.2	ND
950250-HA11-1	0-1	<30.2	43000	2.07	ND	ND	66.9	66.9	9.77
950250-HA11-2	2-3	<30.2	9000	<0.600	ND	ND	1.49	1.49	ND
950250-HA12-1	0-1	<30.2	703	0.620	ND	3.71	11.8	11.8	15.7
950250-HA12-2	2-3	<30.2	12.2	<0.600	ND	ND	0.650	0.650	0.120

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

B - Concentration detected below CRDL
ND - Analytes not detected in this sample

TABLE 1 - Continued
North Removal Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Removed Characterization continued									
950250-HA13-1	0-1	<30.2	10600	<0.600	ND	ND	ND	ND	3.59
950250-HA13-2	2-3	<30.2	120	<0.600	ND	8.82	182	182	10.8
950254-HA14-1	0-1	<30.2	11600	<0.600	ND	4.70	10.6	10.6	7.65
950254-HA14-2	2-3	<30.2	1120	<0.600	ND	121	241	241	666
950268-NDB1-1	3-3.5	<38.8	16.8	2.57	ND	3.91	114	114	50.1
950268-NDB1-2	5.5-7.25	<38.8	12.7	<0.770	ND	2.02	23.5	23.5	4.18
950271-NDB3-1	3-4	<38.8	9.57	1.20	ND	3.65	123	123	22.3
950275-NDB4-1	3-4	<38.8	<7.76	<0.770	ND	ND	113	113	48.8
950276-HA27-1	0-1	32.0	1040	<0.600	ND	ND	ND	ND	ND
950276-HA27-2	2-3	<30.2	<6.03	<0.600	ND	ND	245	245	7.12
950276-HA29-1	0-1	<30.2	48.3	<0.600	ND	ND	ND	ND	ND
950276-HA29-2	2-3	<30.2	<6.03	<0.600	ND	ND	2.01	2.01	ND
950299-HA30	0-3	--	--	--	ND	--	--	--	--
950299-HA31	0-4	--	--	--	0.410	--	--	--	--
950348-HA37-1	1-2	<26.7	312	<0.530	ND	31.8	1086	1489	1434
950348-HA37-2	3-4	<32.9	3670	<0.650	ND	ND	297	297	560
950348-HA38-1	1-2	70.4	1197	0.730	ND	3.51	47.6	47.6	0.640
950348-HA39-1	1-2	<26.2	137	<0.520	ND	ND	626	626	1015
950348-HA39-2	3-4	<29.5	1139	<0.580	ND	ND	750	750	2504
950348-HA40-1	1-2	<30.5	80.7	<0.610	ND	ND	ND	ND	ND
950348-HA40-2	3-4	<32.1	82.4	<0.640	ND	ND	41.8	41.8	471
96158-01	0-1	--	109	--	--	--	--	--	--
96158-03	0-1	--	567	--	--	--	--	--	--
96158-05	0-1	--	6530	--	--	--	--	--	--
96158-06	2-3	--	232	--	--	--	--	--	--
96158-07	0-1	--	2970	--	--	--	--	--	--
96158-08	2-3	--	90.1	--	--	--	--	--	--
96164-01	0-1	--	931	--	--	--	--	--	--
96164-02	0-1	--	5280	--	--	--	--	--	--
96164-03	0-1	--	4030	--	--	--	--	--	--
96164-04	0-1	--	721	--	--	--	--	--	--
dup of 96144-04	0-1	--	717	--	--	--	--	--	--
96164-06	0-1	--	2160	--	--	--	--	--	--
96207-03	0-1	--	443	27.8	38.0	ND	ND	ND	--
96213-11	0-0.1	--	366	8.36	10.6	--	--	--	--
96239-11	0-1	--	131	2.08	6.30	--	--	--	--
dup of 96239-11	0-1	--	101	2.01	6.50	--	--	--	--
96239-16	0-1	--	628	3.26	25.0	--	--	--	--
96239-17	4	--	13.9	<0.660	--	ND	ND	ND	238
96240-04	0-1	--	892	0.670	ND	--	--	--	--
96240-06	0-1	--	638	<0.520	ND	--	--	--	--
96240-08	0-1	--	236	0.740	ND	--	--	--	--
96242-06	2-5	--	180	<0.620	ND	ND	ND	ND	6.41
96248-01	0-1	--	18300	--	--	--	--	--	--
96248-02	2-3	--	818	--	--	ND	ND	ND	ND
96248-11	0-1	--	87.8	<0.540	ND	--	--	--	--
96248-13	0-1	--	144	3.34	ND	--	--	--	--
96263-06	0-0.1	--	63.7	--	--	--	--	--	--
96263-07	0-1	--	161	--	--	--	--	--	--
96263-08	2-3	--	13.7	--	--	ND	17.8	50.9	--
96263-09	0-1	--	84.1	--	--	--	--	--	--
96263-10	0-1	--	3650	--	--	--	--	--	--
96263-11	2-3	--	220	--	--	ND	ND	ND	--
96263-12	0-1	--	<11.6	--	--	--	--	--	--

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

TABLE 1 - Continued
North Removal Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Removed Characterization continued									
96263-13	0-1	--	28.4	--	--	--	--	--	--
96263-14	2-3	--	<16.9	--	--	--	--	--	--
96263-15	0-1	--	830	--	--	--	--	--	--
96269-01	0-0.1	--	3540	--	--	--	--	--	--
96269-02	0-1	--	31.3	--	--	--	--	--	--
96269-03	1-2	--	35.0	--	--	ND	ND	ND	--
96269-04	0-1	--	42.5	--	--	--	--	--	--
96269-05	1-2	--	12.6	--	--	--	--	--	--
96269-06	0-1	--	2230	--	--	--	--	--	--
96269-07	1-2	--	115	--	--	--	--	--	--
96269-08	1-2	--	385	--	--	--	--	--	--
96270-05	0-1	--	258	66.1	4400	--	--	--	--
96270-06	0-1	--	279	174	3.29	--	--	--	--
96270-08	0-1	--	816	56.9	4.00	--	--	--	--
96291-01	NA	--	27300	2.15	ND	--	--	--	--
96291-02	NA	--	12300	1.49	ND	--	--	--	--
96291-03	0-1	--	9670	0.750	ND	--	--	--	--
96291-04	1-2	--	61.8	<0.580	ND	--	--	--	--
96291-05	0-1	--	3950	41.3	ND	20.9	108	113	0.800
96291-06	1-1.25	--	777	27.5	ND	--	--	--	--
96291-07	0-1	--	17200	1.05	ND	--	--	--	--
96291-08	0-2	--	5570	<0.620	ND	--	--	--	--
96295-01	0-1	--	1800	0.750	ND	--	--	--	--
96295-02	1-1.25	--	11000	0.680	ND	14.7	14.7	14.7	2.73
dup of 96295-02	1-1.25	--	9600	0.990	ND	2.99	29.8	29.8	4.34
96295-04	0-1	--	3160	<0.670	ND	--	--	--	--
96295-05	1-2	--	377	<0.760	ND	ND	ND	ND	ND
96295-06	0-1	--	20800	2.13	ND	--	--	--	--
96295-07	0-1	--	15500	3.75	ND	--	--	--	--
96295-08	1-2	--	1720	<0.570	ND	--	--	--	--
96295-09	2-3	--	358	<0.600	ND	--	--	--	--
96295-10	2-3	--	1710	<0.680	ND	--	--	--	--
96295-11	0-1	--	34900	1.91	ND	11.7	29.2	29.2	3.31
96295-12	0-0.5	--	450	1.52	ND	--	--	--	--
96296-01	0-1	--	393	<0.610	ND	--	--	--	--
96296-02	1-2	--	36.5	<0.580	ND	ND	ND	0.430	28.2
96296-03	2-3	--	36.3	<0.580	ND	13.1	46.1	68.8	566
96296-04	0-1	--	5480	0.500	ND	--	--	--	--
96296-05	2-3	--	114	<0.620	ND	--	--	--	--
96296-06	0-1	--	36500	3.46	ND	--	--	--	--
96296-07	2-3	--	1592	<0.620	ND	--	--	--	--
96298-03	0-1	--	55.8	1.38	ND	--	--	--	--
96298-04	1-2	--	12.6	0.870	ND	--	--	--	--
96298-05	0-1	--	145	1.73	ND	--	--	--	--
96298-06	1-2	--	13500	1.35	ND	--	--	--	--
96298-07	0-1	--	237	<0.750	ND	ND	ND	ND	ND
96298-08	1-2	--	1760	<0.660	ND	ND	ND	ND	0.330
96298-09	0-1	--	1070	1.11	ND	ND	ND	ND	ND
96298-10	1-2	--	299	0.540	ND	ND	ND	ND	ND
96312-14	0-1	--	5130	<0.750	ND	ND	ND	ND	ND
96312-15	1-2	--	1420	<0.690	ND	1.07	2.02	2.02	0.680
96317-02	0-0.5	--	17100	--	--	--	--	--	--
AC-2-5	NA	43.0	46000	2.79	ND	ND	1184	3524	--
AC1-A	4-5	97.5 B	93200	6.90	42.2	68.0	2075	4875	524

NOTE: See Table 10 for list of parameters used to calculate Totals

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< Analyte was not detected in this sample at the listed detection limit.

B - Concentration detected below CRDL
ND - Analytes not detected in this sample

TABLE 1 - Continued
North Removal Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Removed Characterization continued									
AC1-B	8-9	10.3 B	3620	0.400	0.230	ND	34.0	126	106
AC1-C	10-11.5	17.0 B	2020	0.180	0.160	ND	23.4	77.4	22.9
dup of AC1-C	10-11.5	9.60 B	1740	0.180	0.0500	ND	20.0	67.0	31.4
AC2-A	6-6.5	79.0	92500	6.50	1.18	29.0	1044	2520	251
AC2-B	10-11	28.5 B	21300	1.70	0.520	ND	275	675	87.5
AC2-C	7-8	24.0 B	16500	1.29	0.200	ND	251	661	631
dup of AC2-B	10-11	31.0 B	23700	2.40	0.380	ND	322	822	248
AC3-A	4-5	44.1 B	2090	0.380	5.90	24.0	348	638	23.9
AC3-B	6-7	6.19 B	26.5	<0.0200	0.0200	0.310	1.91	2.64	3.40
dup of AC3-B	6-7	5.30 B	29.7	0.0200 B	0.0400	0.210	1.49	2.13	0.940
AC4-A	3-4	34.5 B	5850	2.09	31.2	125	1074	1624	614
AC4-B	5-6.5	24.1 B	50.8	0.0500	0.160	ND	8.96	18.5	15.7
dup of AC4-A	3-4	34.7 B	6180	2.00	18.4	165	1435	2194	354
AC5-4	0-2	91.4	187	6.59	32.1	0.910	3.15	7.57	1.08
LC-640-WAB	2-3	<32.0	5.00	<0.250	ND	--	--	ND	ND
LC-640-WAC	3	23.0	540	<0.0500	ND	--	--	--	--
LC-641-WAB	2-3	9.00	920	<0.0500	ND	--	--	--	--
LC-641-WAC	3	7.90	3100	0.270	ND	--	--	--	--
Final Confirmational									
96135-NRA-01	1-6	32.1	87.8	<0.570	ND	ND	95.5	95.5	36.7
96135-NRA-02	0-3	54.2	250	4.63	ND	ND	3.97	4.05	4.46
96141-NRA-06	0-1.5	101	40.1	<0.550	ND	ND	ND	ND	ND
96144-NRA-09	1-4	<31.2	61.0	<0.620	ND	ND	4.76	4.76	468
96150-NRA-13	0-2.5	<29.2	35.7	<0.570	ND	ND	45.2	45.2	25.1
96150-NRA-15	1-4.5	<31.3	195	<0.620	ND	ND	23.0	23.0	52.3
96151-NRA-18	0-2.5	<27.2	18.5	<0.540	ND	ND	ND	ND	4.57
96151-NRA-21	2.5-3	49.9	356	<0.580	ND	ND	3.27	3.27	68.4
96156-NRA-23	0-2.5	<25.8	187	<0.510	ND	ND	ND	ND	0.540
96158-NRA-26	0-3.5	70.7	119	3.69	ND	ND	ND	ND	2.05
96165-NRA-27	3	31.9	228	<0.600	ND	ND	40.8	40.8	262
96165-NRA-29	0-1.5	<29.2	<5.82	<0.570	ND	ND	ND	ND	2.32
96165-NRA-30	1.5-2	<27.4	234	<0.550	ND	ND	105	105	99.9
96165-NRA-32	0-1.5	<27.4	95.9	<0.550	ND	ND	ND	ND	0.940
96170-NRA-36	2-2.5	<126	538	<0.620	ND	ND	ND	ND	121
dup of 96170-NRA-36	2-2.5	<127	473	<0.630	ND	ND	ND	ND	55.1
96170-NRA-38	2-2.5	<109	111	<0.550	ND	ND	ND	ND	0.400
96176-NRA-38	5.5-7	<126	<12.6	<0.620	ND	ND	ND	ND	0.610
dup of 96176-NRA-38	5.5-7	<125	<12.5	<0.620	ND	ND	ND	ND	0.610
96179-NRA-40	9.5-10	<134 -J-%	<13.4	0.270	ND	ND	ND	ND	0.200
96179-NRA-41	6.5-7.5	<117 -J-%	<11.7	<0.580	ND	ND	ND	ND	0.340
96179-NRA-42	8.5-10.5	<129 -J-%	53.5	<0.630	ND	ND	0.410	0.410	0.410
96179-NRA-43	8.5-10.5	<130 -J-%	58.5	<0.640	ND	ND	ND	ND	0.350
dup of 96179-NRA-43	8.5-10.5	<111 -J-%	<11.1	<0.560	ND	ND	ND	ND	0.940
96192-NRA-45	10-11	<62.9	<12.6	<0.620	ND	ND	ND	ND	1.39
96192-NRA-46	10-11	<64.5	<12.9	<0.640	ND	ND	ND	ND	0.0900
96192-NRA-47	10-11	<61.5	<12.3	<0.620	ND	ND	ND	ND	ND
96197-NRA-48	3-4	<62.2	19.9	<0.620	ND	ND	2.00	14.4	11.3
96197-NRA-50	0-3	<55.4	427	<0.550	ND	5.67	12.2	41.0	5.62
96197-NRA-51	0-3.5	<64.6	121	<0.640	ND	ND	ND	4.05	4.76
96198-NRA-52	0-4	<54.2	22.2	<0.540	ND	ND	ND	7.55	22.6
96200-NRA-53	3.5-4	--	<12.2	--	--	ND	9.72	21.9	--
96200-NRA-54	1-2	--	297	--	--	ND	6.82	17.9	21.4
96200-NRA-55	0-1.5	--	119	--	--	ND	ND	ND	17.4
96200-NRA-56	0-1.5	--	102	--	--	ND	ND	ND	--

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B - Concentration detected below CRDL
ND - Analytes not detected in this sample

TABLE 1 - Continued
North Removal Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Final Confirmational continued									
96225-NRA-57	3-5	--	21.8	<0.660	ND	ND	6.48	18.1	--
96225-NRA-58	3-5	--	20.5	<0.680	ND	ND	ND	6.25	--
96226-NRA-59	0-4.5	--	140	<0.660	ND	ND	2.40	2.40	--
96226-NRA-60	4-6	--	182	0.230	ND	ND	1.68	4.66	--
96226-NRA-61	0-6	--	182	0.230	ND	ND	ND	4.57	--
96235-NRA-67	2.5-4.5	--	150	<0.580	ND	ND	26.1	119	--
96235-NRA-68	0-4	--	283	<0.520	ND	ND	8.45	51.0	--
96235-NRA-71	5-6	--	33.8	<0.610	ND	ND	ND	6.11	49.0
96239-NRA-74	2.5-3.5	--	36.6	<0.620	ND	ND	24.9	50.1	54.9
96239-NRA-80	0-3	--	411	<0.560	ND	ND	3.70	25.0	--
96240-NRA-82	3.5	--	<10.7	<0.520	ND	ND	ND	ND	41.7
96240-NRA-83	0-3.5	--	73.2	<0.560	ND	ND	ND	5.01	14.6
dup of 96240-NRA-83	0-3.5	--	38.3	<0.560	ND	ND	ND	2.50	29.8
96240-NRA-85	3-4	--	244	2.22	ND	ND	ND	ND	--
96240-NRA-86	0-3.5	--	205	<0.640	ND	ND	ND	6.71	--
96240-NRA-87	6-8	--	21.0	<0.690	ND	ND	ND	0.410	8.99
96240-NRA-89	4-4.5	--	13.8	<0.660	ND	ND	22.7	43.0	--
96241-NRA-90	0-5	--	769	<0.720	--	ND	4.99	6.91	40.3
96242-NRA-93	0-3.5	<61.2	385	<0.610	ND	ND	4.53	21.7	64.9
96242-NRA-94	5-6	<60.3	27.4	<0.600	ND	1.92	3.00	10.0	100
96242-NRA-95	5-6	<63.5	11.4	<0.630	ND	ND	3.05	9.07	90.6
dup of 96242-NRA-95	5-6	<65.4	140	<0.640	ND	ND	3.04	9.06	71.9
96247-NRA-100	1	--	<11.4	<0.560	ND	--	--	--	--
96247-NRA-101	0-1	--	284	<0.540	ND	--	--	--	--
96247-NRA-102	0-1	--	234	0.920	ND	--	--	--	--
96247-NRA-103	7	--	<12.8	<0.630	--	ND	ND	ND	0.0700
96247-NRA-98	0-4	--	205	--	--	ND	ND	4.11	13.3
96248-NRA-104	5-8	--	35.6	<0.680	--	ND	7.26	13.5	58.1
96248-NRA-105	0-8	--	140	<0.580	--	ND	2.70	2.70	41.5
96248-NRA-106	8	--	<16.2	<0.810	--	ND	ND	ND	10.4
96261-NRA-107	3	--	103	--	--	--	--	--	--
96261-NRA-108	3	--	148	--	--	1.72	61.9	66.5	--
96284-NRA-110	1-1.5	--	<11.7	<0.580	--	ND	ND	ND	0.100
96285-NRA-113	0.5-1	--	22.5	<0.560	--	ND	3.42	3.42	71.8
96289-NRA-116	1.5-3	--	29.4	<0.570	--	0.790	2.49	3.13	67.4
96289-NRA-117	1.5-2	--	<11.3	<0.560	--	ND	2.43	4.66	43.6
dup of 96289-NRA-117	1.5-2	--	<11.9	<0.580	--	ND	0.470	2.96	54.4
96290-NRA-119	0-1.3	--	65.9	--	--	1.37	2.21	2.21	38.3
96290-NRA-120	1.5-2	--	20.1	--	--	0.400	1.75	2.75	88.4
96290-NRA-121	1.5-2	--	<12.5	--	--	5.62	9.63	12.4	60.9
96302-NRA-127	3.5-4	--	<13.2	<0.660	ND	ND	ND	ND	0.170
96302-NRA-128	3.5-4	--	<12.9	<0.640	ND	ND	ND	ND	1.04
96302-NRA-129	3-4	--	21.0	<0.680	ND	ND	ND	ND	0.430
96302-NRA-130	3-4	--	31.6	<0.790	ND	ND	1.46	2.38	36.7
96331-NRA-131	1.5-2	--	285	<0.620	--	ND	ND	ND	ND
96331-NRA-132	2	--	91.1	<0.640	ND	ND	ND	ND	0.350
96337-NRA-133	2-2.5	--	26.6	<0.640	--	ND	1.49	2.99	27.6
96337-NRA-135	0-2	--	507	1.51	--	ND	ND	ND	ND
96338-NRA-136	1.5-3	--	117	<0.620	--	ND	0.680	1.55	41.1
96339-NRA-138	2.5-3	--	299	<0.660	--	ND	1.09	4.59	95.8
96339-NRA-139	2.5-3	--	26.7	<0.670	--	ND	ND	ND	2.46
96340-NRA-140	2-3	--	86.6	<0.620	--	ND	ND	ND	0.700
96344-NRA-141	2.5	--	176	<0.660	--	ND	0.400	0.870	12.1
96344-NRA-142	2.5-4	--	28.4	<0.660	--	ND	ND	ND	ND

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ND - Analytes not detected in this sample

TABLE 1 - Continued
North Removal Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Final Confirmational continued									
96344-NRA-143	2.5-3	--	<13.3	<0.670	--	ND	ND	ND	ND
96345-NRA-144	2.5-3	--	20.7	<0.660	--	ND	ND	ND	ND
96346-NRA-145	3-5.5	12.3 B	12.0	0.0800 B	ND	0.410	5.42	13.8	2.17
96346-NRA-146	2-3	--	15.7	<0.610	--	ND	2.18	2.18	ND
96346-NRA-147	2-4	--	219	<0.670	--	ND	ND	ND	0.320
96351-NRA-148	5.5-7	--	14.7	<0.670	--	ND	0.440	0.440	11.4
96351-NRA-149	2.5-4	--	<12.5	<0.620	--	ND	ND	ND	1.08
96352-NRA-150	2.5-3	--	44.9	<0.600	--	ND	1.52	1.52	1.27
96352-NRA-151	2-3.5	--	<13.9	<0.690	--	ND	ND	ND	1.56
96352-NRA-152	2-3	--	<12.3	<0.620	--	ND	ND	ND	1.09
96353-NRA-153	2-3	--	<13.5	<0.670	--	ND	ND	ND	2.17
96353-NRA-154	2-4	--	<12.7	<0.620	--	ND	ND	ND	0.150
96354-NRA-157	2-3	--	29.9	<0.680	--	ND	ND	ND	ND
97008-NRA-157	2-3	--	37.3	<0.560	--	ND	ND	ND	ND
97008-NRA-158	0-2.25	--	11.5	<0.550	--	ND	ND	ND	1.46
97008-NRA-159	0-2.25	--	38.1	<0.560	--	ND	ND	ND	0.980
97008-NRA-160	0-3	--	26.0	<0.550	--	--	--	--	--
97008-NRA-161	2.5-3	--	19.9	1.44	--	ND	ND	ND	2.16
97014-NRA-162	0-2.5	--	110	<0.570	--	--	--	--	--
97014-NRA-163	0-2.5	--	168	<0.620	--	--	--	--	--
97023-NRA-162	2-3	4.80 B	9.39	0.120	ND	ND	ND	0.0700	0.0900
Removed Confirmational									
96135-NRA-03	0-2.5	34.6	2190	<0.550	ND	ND	78.0	78.0	26.2
96135-NRA-04	0-2.5	30.9	4210	<0.550	ND	0.330	1.83	1.83	15.4
96141-NRA-05	0-2.5	84.1	1220	<0.520	ND	1.07	5.85	5.85	ND
96144-NRA-07	0-2	<27.7	1090	0.770	ND	ND	2.18	2.18	0.300
dup of 96144-NRA-07	0-2	<27.7	2060	1.01	ND	ND	2.53	2.53	0.170
96144-NRA-10	0.5-2.5	<28.0	63.7	<0.560	ND	ND	ND	ND	ND
96149-NRA-11	0-2	<28.2	1950	<0.560	ND	ND	ND	ND	ND
96150-NRA-12	2-2.5	<30.6	779	<0.610	ND	ND	22.8	22.8	38.0
96150-NRA-14	0-3	<30.1	3550	1.71	ND	ND	22.0	22.0	15.4
96150-NRA-16	0-3	<27.1	3120	0.820	3.98	ND	1.94	1.94	2.65
96151-NRA-17	5	<49.8	1190	<1.00	ND	ND	25.0	25.0	35.1
96151-NRA-19	0-2.5	38.3	983	<0.510	ND	ND	ND	ND	2.08
96151-NRA-20	0-3	41.6	2830	1.92	ND	ND	ND	ND	1.44
96156-NRA-22	0-2	<27.1	1540	<0.540	ND	ND	ND	ND	0.540
96156-NRA-24	0-2.5	50.9	2620	1.84	ND	ND	ND	ND	1.70
dup of 96156-NRA-24	0-2.5	44.9	2100	1.53	ND	ND	ND	ND	2.56
96165-NRA-28	0-3	41.7	339	<0.570	ND	ND	47.0	47.0	209
96169-NRA-33	1-1.5	<117	789	0.690	ND	ND	ND	ND	ND
96169-NRA-34	0-1	<118	<11.8	<0.580	ND	ND	ND	ND	ND
96169-NRA-35	0-1	<112	1000	3.20	ND	ND	ND	ND	ND
96197-NRA-49	2.5-3	<68.3	951	<0.680	ND	2.42	16.5	28.6	16.5
96235-NRA-69	0-4	--	330	<0.580	ND	ND	12.7	43.9	--
96235-NRA-70	0-3	--	726	<0.560	ND	ND	4.36	42.4	--
96236-NRA-72	0-4	--	2990	0.640	--	ND	51.9	112	--
96236-NRA-73	2-2.5	--	2470	<0.510	--	ND	ND	ND	--
96239-NRA-75	3	--	3290	<0.600	ND	ND	15.1	15.1	--
96239-NRA-76	0-2.5	--	6470	<0.500	ND	ND	ND	ND	--
96239-NRA-77	0-3	--	8280	0.560	ND	ND	13.7	56.2	138
96239-NRA-78	0-7.5	--	42.8	<0.620	ND	ND	ND	2.39	37.8
96239-NRA-79	3	--	592	<0.660	ND	ND	14.4	45.2	51.9
96239-NRA-81	0-3	--	640	<0.620	ND	ND	2.14	7.54	--
96240-NRA-88	0-7	--	986	<0.580	ND	ND	7.41	22.4	62.6

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B - Concentration detected below CRDL
ND - Analytes not detected in this sample

TABLE 1 - Continued
North Removal Area

LCP Chemicals Removal Action
22-Oct-97

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Removed Confirmational continued									
96241-NRA-91	0-3.5	--	91.3	<0.610	--	ND	ND	ND	--
96242-NRA-92	3.5-4	--	2870	--	--	ND	17.8	79.2	--
96247-NRA-97	4	--	946	--	--	ND	11.9	23.5	25.1
96247-NRA-99	0-4	--	24800	--	--	ND	6.48	6.48	1.62
96262-NRA-109	0.25-0.33	--	5380	0.620	ND	--	--	--	--
96285-NRA-111	0.5-1	--	349	<0.560	--	1.51	20.9	27.4	75.2
96285-NRA-112	0.5-1	--	12.5	<0.560	--	ND	10.6	37.3	287
96288-NRA-114	0.5-1	--	14.7	<0.580	--	6.85	13.9	20.5	260
96288-NRA-115	0.5-1	--	16.8	<0.570	--	3.69	9.46	18.4	352
96290-NRA-122	0.5-1.5	--	866	--	--	ND	ND	ND	ND
96290-NRA-123	1-1.5	--	1880	--	--	ND	ND	ND	0.950
96290-NRA-124	0-1.3	--	11500	--	--	ND	ND	ND	0.0700
96291-NRA-125	0.5-1	--	886	<0.620	--	--	--	ND	ND
96291-NRA-126	0.5-1	--	3050	<0.570	--	--	--	ND	0.840
96337-NRA-134	2-2.5	--	183	<0.600	--	0.370	5.32	8.82	124
96338-NRA-137	1.5-2	--	1180	<0.680	--	1.15	4.08	4.08	12.6
96354-NRA-155	0-2.5	--	6980	2.25	--	ND	ND	ND	0.0700
dup of 96354-NRA-155	0-2.5	--	9510	2.04	--	ND	ND	ND	ND
Stockpile									
96236-01	NA	--	23200	--	--	--	--	--	--
96236-02	NA	--	4320	--	--	--	--	--	--
96242-20	NA	--	1250	--	--	--	--	--	--
96323-04	NA	<56.2	<11.2	<0.560	ND	ND	ND	ND	ND
dup of 96323-04	NA	<54.0	<10.8	<0.540	ND	ND	ND	ND	ND
Borrow Fill									
96170-BF1	NA	<121	<12.1	<0.610	ND	ND	ND	ND	0.600
96291-BF-01	NA	<56.9	<11.4	<0.560	ND	--	--	--	--
Concrete									
96233-NPC	NA	--	532	--	--	--	--	--	--
96242-10	NA	--	<10.5	--	--	--	--	--	--
96325-01	NA	--	111	<0.560	ND	--	--	--	--
Sheet Pile Residue									
96310-SP1	NA	--	946	<0.620	ND	ND	6.09	21.0	83.1

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

TABLE 2 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
North Removal Expansion Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization									
950220-TT8-3	2.5	<30.2	<6.03	<0.600	ND	ND	71.9	71.9	33.9
950220-TT8-5	5	<38.8	<7.76	1.29	ND	ND	130	130	57.8
950220-TT8-6	6	<38.8	<7.76	2.48	ND	ND	39.0	39.0	25.4
950243-HA5-3	5-6	<38.8	<7.76	<0.770	ND	ND	17.5	17.5	40.0
950243-HA6-1	0-1	<30.2	37.2	<0.600	ND	2.20	2.94	2.94	40.3
950243-HA6-2	2-3	<30.2	8.52	<0.600	ND	2.81	37.1	37.1	16.5
950243-HA6-3	5-6	<38.8	10.9	<0.770	ND	6.66	64.6	64.6	58.2
950243-HA7-1	0-1	<30.2	9.22	<0.600	ND	ND	ND	ND	13.6
950243-HA7-2	2-3	<30.2	7.19	<0.600	ND	ND	5.74	5.74	56.1
950243-HA7-3	5-6	<38.8	8.27	<0.770	ND	ND	25.6	25.6	30.4
950243-HA8-2	2-3	<30.2	6.15	<0.600	ND	0.990	113	113	50.1
950243-HA8-3	5-6	<38.8	8.84	<0.770	ND	ND	56.3	56.3	100.0
950243-HA9-2	2-3	31.8	17.5	<0.600	ND	1.99	78.0	78.0	35.1
950243-HA9-3	5-6	<38.8	11.7	<0.770	ND	3.80	70.0	70.0	69.3
950250-HA10-1	0-1	<30.2	15.0	<0.600	ND	ND	ND	ND	21.7
950250-HA10-2	2-3	<30.2	22.8	<0.600	ND	ND	ND	ND	ND
950250-HA10-3	5-6	<38.8	19.7	<0.770	ND	ND	79.9	79.9	76.7
96219-07	1-2	--	404	0.340	ND	ND	ND	ND	--
96227-01	0-1	--	994	1.72	ND	--	--	--	--
96227-02	1-2	--	131	<0.520	--	--	--	--	--
96227-03	0-1	--	288	4.26	ND	--	--	--	--
dup of 96227-03	0-1	--	326	8.36	ND	--	--	--	--
96227-05	1-2	--	<11.4	0.310	--	--	--	--	--
96232-03	0-1	--	27.2	--	--	ND	ND	ND	--
96232-04	1-2	--	<11.0	--	--	ND	ND	13.1	--
96232-09	0-1	--	12.5	--	--	--	--	--	--
96232-10	1-2	--	<10.7	--	--	--	--	--	--
96233-08	2-3	--	27.3	<0.540	ND	--	--	--	--
96268-03	0-1	--	107	0.890	ND	--	--	--	--
96268-04	1-2	--	70.5	<0.600	ND	--	--	--	--
96268-05	0-1	--	157	3.83	ND	--	--	--	--
96268-06	1-1.5	--	33.2	<0.570	ND	--	--	--	--
96268-07	0-1	--	325	0.890	7.50	--	--	--	--
96268-08	1-2	--	22.7	<0.620	ND	--	--	--	--
96268-09	0-1	--	16.6	1.74	4.19	--	--	--	--
dup of 96268-09	0-1	--	18.1	1.25	3.70	--	--	--	--
96268-11	1-2	--	<11.8	<0.580	ND	--	--	--	--
97066-01	0-0.1	--	299	5.17	--	8.10	29.9	29.9	ND
97066-02	0-0.1	--	996	2.13	--	2.32	2.32	2.32	0.420
97066-03	0-0.1	--	3650	0.620	--	ND	0.510	0.510	4.53
LC-201-SLA	0-1	--	190	<0.0500	--	ND	35.5	99.5	15.2
LC-201-SLB	2-3	--	17.0	0.340	--	ND	ND	2.10	ND
dup of LC-201-SLB	2-3	--	30.5	<0.0600	--	ND	ND	ND	--
LC-202-SLB	2-3	--	16.0	3.20	--	ND	9.50	32.5	292
Removed Characterization									
950220-TT8-1	2.5	<30.2	396	163	ND	ND	ND	ND	0.730
950220-TT8-2	2.5	<30.2	51.8	4.69	ND	5.67	727	727	109
950220-TT8-4	5	<38.8	<7.76	6.80	ND	ND	74.7	74.7	27.3
950243-HA5-1	0-1	<30.2	46.5	<0.600	ND	7.52	11.2	11.2	ND
950243-HA5-2	2-3	<30.2	10.2	<0.600	ND	ND	61.5	61.5	54.3

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.

< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

LCP Chemicals Removal Action
22-Oct-97

TABLE 2 - Continued
North Removal Expansion Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Removed Characterization continued									
950243-HA8-1	0-1	<30.2	11.8	<0.600	ND	ND	366	366	63.3
950243-HA9-1	0-1	31.6	127	0.680	ND	ND	ND	ND	ND
96212-06	0-1	--	22800	--	--	--	--	--	--
96212-07	1-2	--	3590	--	--	ND	ND	ND	--
96212-08	0-1	--	1160	--	--	--	--	--	--
96212-09	0-1	--	4360	--	--	ND	ND	ND	--
96212-10	1-2	--	2200	--	--	ND	1.59	1.59	--
96212-11	0-1	--	1210	--	--	--	--	--	--
96212-12	0-1	--	59.0	--	--	--	--	--	--
96213-01	0-0.1	--	3820	--	--	--	--	--	--
96213-02	0-0.1	--	2490	--	--	--	--	--	--
96213-03	0-1	--	36.3	--	--	--	--	--	--
96213-04	0-1	--	1860	--	--	--	--	--	--
96213-05	0-1	--	670	--	--	--	--	--	--
96213-06	0-1	--	39.3	--	--	--	--	--	--
96219-01	0-1	--	1740	1.95	ND	ND	ND	ND	--
96219-02	1-2	--	60.8	<0.560	--	--	--	--	--
96219-03	0-1	--	286	3.02	--	--	--	--	--
dup of 96219-03	0-1	--	276	2.33	--	--	--	--	--
96219-05	2-3	--	<13.3	<0.670	ND	ND	ND	ND	--
96219-06	0-1	--	6060	2.77	--	--	--	--	--
96221-01	0-1	--	783	0.990	ND	--	--	--	--
96221-02	1-2	--	1030	0.760	--	--	--	--	--
96221-03	0-1	--	92800	320	2.59	--	--	--	--
96221-04	0-0.1	--	9960	10.5	ND	--	--	--	--
96221-05	0-0.1	--	20700	24.1	--	--	--	--	--
96221-06	0-0.1	--	4530	6.28	ND	--	--	--	--
96221-07	0-0.1	--	29200	13.7	--	--	--	--	--
96221-08	0-1	--	277	0.610	ND	--	--	--	--
96221-09	1-2	--	24.8	<0.540	--	--	--	--	--
dup of 96221-09	1-2	--	26.4	<0.540	--	--	--	--	--
96221-11	0-1	--	3810	1.07	ND	--	--	--	--
96221-12	1-2	--	255	<0.550	--	--	--	--	--
96221-13	0-1	--	83800	0.580	ND	ND	ND	ND	--
96221-14	1-2	--	749	<0.550	--	--	--	--	--
96221-15	0-1	--	14280	<0.560	--	--	--	--	--
96221-16	1-2	--	983	<0.560	--	--	--	--	--
96221-17	0-1	--	272	0.310	ND	--	--	--	--
96221-18	1-2	--	365	<0.560	--	--	--	--	--
96221-19	0-1	--	5570	0.370	ND	--	--	--	--
96221-20	1-2	--	940	<0.540	--	--	--	--	--
96221-21	0-1	--	731	0.460	4.50	--	--	--	--
96221-22	0-1	--	175	6.86	--	--	--	--	--
96221-23	0-1	--	1150	0.310	ND	ND	ND	ND	--
96221-24	1.5-2	--	15500	1.00	ND	67.2	199	286	2532
96226-01	0-1	--	8630	--	--	--	--	--	--
96226-02	1-2	--	184	--	--	--	--	--	--
96226-03	0-1	--	582	--	--	12.4	21.4	37.6	--
96226-04	0-1	--	581	--	--	--	--	--	--
96226-05	1-2	--	<10.6	--	--	4.32	6.50	25.7	--
96226-06	1-2	--	238	--	--	--	--	--	--
96226-07	1-2	--	<10.6	--	--	ND	ND	7.46	--
96226-08	1-2	--	178	--	--	--	--	--	--
96226-09	1-2	--	<11.9	--	--	--	--	--	--

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

TABLE 2 - Continued
North Removal Expansion Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Removed Characterization continued									
96226-10	0-1	--	608	--	--	--	--	--	--
96226-11	1-2	--	884	--	--	--	--	--	--
96227-06	0-1	--	345	1.20	ND	--	--	--	--
dup of 96227-06	0-1	--	335	1.92	ND	--	--	--	--
96227-08	1-2	--	86.5	1.44	--	--	--	--	--
96232-01	0-1	--	642	--	--	--	--	--	--
96232-02	1-2	--	90.6	--	--	--	--	--	--
96232-05	0-1	--	411	--	--	--	--	--	--
96232-06	1-2	--	131	--	--	--	--	--	--
96232-07	0-1	--	445	--	--	--	--	--	--
96232-08	1-2	--	78.0	--	--	--	--	--	--
96233-07	0-1	--	1060	3.53	ND	--	--	--	--
96233-09	0-1	--	800	1.80	ND	--	--	--	--
96233-10	1-2	--	143	<0.520	ND	--	--	--	--
96233-13	0-1	--	129	<0.540	ND	--	--	--	--
96233-14	1-2	--	110	<0.540	ND	--	--	--	--
96233-15	0-0.1	--	1600 J%R	4.51	ND	--	--	--	--
96234-01	0-0.1	--	130	10.7	6.69	--	--	--	--
dup of 96234-01	0-0.1	--	143	9.68	14.0	--	--	--	--
96234-03	0-1	--	944	--	--	--	--	--	--
96234-04	1-2	--	256	--	--	1.42	2.24	5.21	--
LC-202-SLA	0-1	--	35.0	1.79	--	ND	ND	ND	94.2
Final Confirmational									
96232-NRA-64	2.5-3	--	15.2	<0.660	ND	ND	ND	ND	--
96235-NREA-66	1	<56.4	433	0.760	ND	ND	ND	ND	0.130
96275-NREA-01	0.25-1	--	26.3	--	6.59	--	--	--	--
96285-NREA-02	0.75-1.5	--	77.1	<0.570	ND	--	--	--	--
96288-NREA-03	1-2	--	37.4	0.640	ND	--	--	--	--
96316-NREA-04	1-1.5	--	383	<0.570	ND	--	--	--	--
96317-NREA-06	3-4	--	125	<0.660	ND	0.430	2.06	2.06	117
96317-NREA-07	3-4	--	639	<0.670	ND	0.510	3.16	3.16	34.0
96317-NREA-09	1.5-1.75	--	53.7	<0.600	ND	--	--	--	--
96318-NREA-10	1.7	--	112	<0.600	ND	ND	ND	ND	1.06
96319-NREA-11	1.5	--	65.8	<0.570	ND	ND	ND	ND	ND
dup of 96319-NREA-11	1.5	--	54.9	<0.560	ND	ND	ND	ND	ND
96325-NREA-13	4	--	115	<0.670	ND	--	--	ND	ND
96330-NREA-14	5-7	<62.0	16.1	<0.620	ND	ND	15.4	25.3	481
97010-NREA-16	2-3.5	--	70.2	<0.610	--	ND	ND	ND	ND
97010-NREA-17	4	--	<13.1	<0.640	--	ND	0.790	0.790	418
97013-NREA-19	0-3	--	310	<0.660	ND	ND	ND	0.500	39.4
97014-NREA-21	5-6	--	118	<0.640	--	ND	1.75	2.93	294
97014-NREA-22	0-3	--	104	<0.570	--	ND	ND	ND	0.690
97015-NREA-24	5.5-7	--	468	<0.680	--	ND	2.55	4.51	143
97016-NREA-26	4	--	78.5	<0.660	--	ND	ND	2.37	66.6
97016-NREA-27	4	--	428	<0.610	--	ND	0.540	0.540	156
97020-NREA-28	1.5-2	--	38.9	<0.640	--	ND	0.610	0.610	1.12
97020-NREA-29	2	--	20.3	<0.640	--	ND	0.460	0.460	2.54
97020-NREA-30	0-2	--	98.7	<0.580	--	0.560	0.560	0.560	0.100
97020-NREA-33	2	--	134	<0.570	--	ND	ND	ND	0.490
dup of 97020-NREA-33	2	--	67.2	<0.610	--	ND	ND	ND	0.690
97021-NREA-35	0.5	--	418	<0.560	--	1.07	1.43	1.43	ND
97021-NREA-36	0.5	--	366	<0.570	--	0.840	0.840	0.840	0.300
97022-NREA-37	7-8.5	--	113	<0.660	--	ND	1.03	3.07	ND
97023-NREA-39	7-8.5	3.40 B	957	0.160	ND	ND	65.5	205	58.6

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.
B - Concentration detected below CRDL
ND - Analytes not detected in this sample
J%R - Estimated, MS % recovery out of range

TABLE 2 - Continued
North Removal Expansion Area

LCP Chemicals Removal Action
22-Oct-97

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Final Confirmational continued									
97023-NREA-40	7-8.5	--	69.3	<0.640	--	1.25	1.67	3.59	17.0
97027-NREA-41	1-2	--	<11.4	<0.560	--	ND	ND	ND	0.210
dup of 97027-NREA-41	1-2	--	<11.4	<0.560	--	ND	ND	ND	0.270
97030-NREA-47	4-5	--	<13.5	<0.670	--	ND	0.500	2.12	71.6
97034-NREA-48	1-2	--	19.2	<0.550	--	1.17	1.60	1.60	0.690
97036-NREA-50	5.5-6	--	15.4	<0.670	--	0.570	3.56	7.03	290
97041-NREA-51	4	--	20.5	<0.680	--	ND	5.72	5.72	137
97041-NREA-52	8.5-10.5	--	<13.0	<0.640	--	ND	ND	ND	ND
97043-NREA-53	6	--	158	<0.640	--	ND	3.24	9.03	78.1
97048-NREA-54	6	--	<11.9	<0.600	--	ND	24.5	64.6	213
97049-10	0.1	--	44.6	<0.560	ND	--	--	--	--
97058-08	0-0.1	--	14.5	<0.560	ND	--	--	--	--
97058-09	0-0.1	--	186	<0.560	ND	--	--	--	--
97080-TSA-01	1.5-3	--	<11.8	<0.580	ND	2.36	16.2	16.2	8.35
97080-TSA-02	1.5-3	--	<12.5	<0.620	ND	ND	3.77	3.77	26.7
Removed Confirmational									
96165-NRA-31	0-1.5	<27.9	2350	1.12	ND	ND	ND	ND	2.47
96228-NRA-62	1-2	--	6370	<0.600	ND	ND	ND	ND	--
96228-NRA-63	1-2	--	784	0.500	ND	ND	ND	0.470	--
96232-NRA-65	3	--	5260	<0.660	ND	ND	ND	ND	--
96316-NREA-05	1-1.5	--	611	7.15	ND	--	--	--	--
96317-NREA-08	0-4	--	776	<0.570	17.0	ND	0.630	0.630	53.9
96323-06	5	--	<12.5	<0.620	ND	ND	14.1	28.5	759
97010-NREA-15	2-3.5	--	1970	<0.630	--	ND	ND	ND	0.850
97013-NREA-18	3-4.5	--	1790	<0.680	ND	ND	ND	ND	5.15
97013-NREA-20	3-4.5	--	730	<0.680	--	ND	0.430	0.430	26.5
97014-NREA-23	3-4	--	831	<0.630	--	ND	ND	ND	2.79
97015-NREA-25	5.5-7	--	71.3	<0.680	--	ND	3.28	5.46	740
97020-NREA-31	4-6	--	1450	<0.660	--	ND	3.45	3.45	202
97020-NREA-32	1.5-2.5	--	5660	<0.540	--	ND	0.670	0.670	1.78
97022-NREA-38	4-5	--	714	<0.670	--	ND	6.18	10.1	232
97027-NREA-43	3.5-4.5	--	596	<0.610	--	ND	1.46	2.20	40.0
97028-NREA-44	1.5-2.5	--	34.5	<0.560	--	1.62	3.33	4.16	272
97028-NREA-45	1.5-2.5	--	158	<0.560	--	0.370	0.370	0.370	177
97029-NREA-46	6.5-7.5	--	16.9	<0.690	ND	ND	ND	4.50	774
97034-NREA-49	3.5-4.5	--	<13.3	<0.660	--	ND	1.13	3.27	366
Stockpile									
96229-01	NA	--	768	--	--	--	--	--	--
96233-16	NA	--	6790 J%R	--	--	--	--	--	--
96233-17	NA	--	13400	--	--	--	--	--	--
96233-18	NA	--	4360	--	--	--	--	--	--
96324-PMS-01	NA	--	1180	<0.610	ND	--	--	--	--
96326-PMS-01	NA	--	1130	0.580	ND	--	--	--	--
96330-PMS-01	NA	--	1100	0.740	ND	--	--	--	--
96331-PMS-01	NA	--	3850	0.630	ND	--	--	--	--
96331-PMS-02	NA	--	2380	0.680	ND	--	--	--	--
96332-PMS-01	NA	--	4020	0.700	ND	--	--	--	--
96332-PMS-02	NA	--	3610	1.13	ND	--	--	--	--
96332-PMS-03	NA	--	5470	0.730	ND	--	--	--	--
96332-PMS-04	NA	--	3020	0.620	ND	--	--	--	--
96332-PMS-05	NA	--	2810	0.700	ND	--	--	--	--
96337-PMS-02	NA	--	1880	0.790	ND	--	--	--	--
96337-PMS-05	NA	--	1930	1.10	ND	--	--	--	--
96338-PMS-02	NA	--	4900 J%R	--	--	--	--	--	--

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

J%R - Estimated, MS % recovery out of range
ND - Analytes not detected in this sample

LCP Chemicals Removal Action
22-Oct-97

TABLE 2 - Continued
North Removal Expansion Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Stockpile continued									
96338-PMS-04	NA	--	3900 J%R	--	--	--	--	--	--
96338-PMS-R01	NA	--	2830 J%R	--	--	--	--	--	--
96338-PMS-R02	NA	--	2820 J%R	--	--	--	--	--	--
96338-PMS-R03	NA	--	2320 J%R	--	--	--	--	--	--
96338-PMS-R04	NA	--	5420 J%R	--	--	--	--	--	--
96338-PMS-R05	NA	--	4080 J%R	--	--	--	--	--	--
96339-PMS-01	NA	--	1300	--	--	--	--	--	--
96339-PMS-03	NA	--	1740	--	--	--	--	--	--
96340-PMS-02	NA	--	1560	--	--	--	--	--	--
96344-PMS-02	NA	--	1220	1.04	ND	--	--	--	--
96345-PMS-01	NA	--	1960	--	--	--	--	--	--
96347-PMS-03	NA	--	2530	--	--	--	--	--	--
96351-PMS-02	NA	--	4370	<0.610	ND	--	--	--	--
96352-PMS-01	NA	--	837	<0.620	ND	--	--	--	--
96353-PMS-01	NA	--	2420	--	--	--	--	--	--
96353-PMS-R01	NA	--	7150	--	--	--	--	--	--
96353-PMS-R02	NA	--	4940	--	--	--	--	--	--
96353-PMS-R03	NA	--	5880	--	--	--	--	--	--
96353-PMS-R04	NA	--	9950	--	--	--	--	--	--
96353-PMS-R05	NA	--	9950	--	--	--	--	--	--
96354-PMQA-01	NA	--	2080	--	--	--	--	--	--
97049-11	NA	--	84.3	<0.560	ND	--	--	--	--
Borrow Fill									
97020-NREA-BF	NA	<57.5	<11.5	<0.560	ND	ND	ND	ND	ND
Concrete									
96242-04	NA	--	<10.5	--	--	--	--	--	--
96242-05	NA	--	15.7	--	--	--	--	--	--

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

J%R - Estimated, MS % recovery out of range
ND - Analytes not detected in this sample

22-Oct-97

TABLE 3 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
Northwest Field

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization									
950200-TT1-1	2.5	6.65	3.32	<0.270	ND	ND	ND	8.20	0.00799
950200-TT1-2	5	6.07	3.65	<0.300	ND	ND	ND	6.05	ND
950200-TT1-3	2.5	5.01	<3.75	<0.310	ND	ND	ND	2.10	ND
950200-TT1-4	5	5.01	<3.75	<0.0600	ND	ND	ND	14.8	ND
950200-TT1-5	2.5	1.10	<3.66	<0.0600	ND	ND	ND	1.95	ND
950200-TT1-6	5	1.21	<3.63	<0.0500	ND	ND	ND	6.32	ND
950201-TT2-1	2.5	4.07	11.2	<0.250	ND	ND	ND	1.59	ND
950201-TT2-2	5	6.38	3.83	<0.310	ND	ND	ND	3.98	ND
950201-TT2-3	2.5	34.4	263	0.340	ND	2.62	11.7	26.2	0.0700
950201-TT2-4	5	133	477	0.350	ND	ND	ND	11.6	0.0200
950201-TT2-5	2.5	25.1	182	1.20	ND	ND	ND	10.5	ND
950201-TT2-6	5	36.5	84.8	0.520	ND	ND	ND	13.5	0.00777
950201-TT3-1	2.5	34.5	323	4.13	ND	ND	2.56	20.2	ND
950201-TT3-2	5	28.4	239	2.45	ND	ND	ND	14.3	ND
950201-TT3-3	2.5	27.7	243	0.380	ND	ND	ND	46.1	0.0400
950201-TT3-4	5	30.8	197	2.79	ND	ND	ND	23.3	0.0100
950201-TT3-5	2.5	53.0	249	3.83	ND	ND	ND	11.9	ND
950201-TT3-6	5	23.4	401	2.16	ND	ND	ND	17.3	ND
950201-TT3-7	7	7.86	119	0.410	ND	ND	ND	19.6	ND
950202-PB31-1	5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB31-2	11	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB31-3	14	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB31-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB31-5	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB32-1	5	<38.8	10.7	3.25	ND	ND	ND	ND	ND
950202-PB32-2	10	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB32-3	14	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB32-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB32-5	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB33-1	5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB33-2	11	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB33-3	17	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB33-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB33-5	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB34-1	5	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB34-2	9	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB34-3	14	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB34-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950202-PB34-5	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950205-PB35-1	7	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950205-PB35-2	13	3.73	<3.73	<0.310	ND	ND	ND	8.36	0.190
950205-PB35-3	15	<38.8	76.7	<0.770	ND	ND	5.55	5.55	5.79
950205-PB35-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950205-PB35-5	21	<38.8	60.9	<0.770	ND	ND	5.24	5.24	ND
950205-PB36-1	8	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950205-PB36-2	14	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950205-PB36-3	17	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950205-PB36-4	18	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950205-PB36-5	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950205-PB37-1	8	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.

< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

TABLE 3 - Continued
Northwest Field

LCP Chemicals Removal Action
22-Oct-97

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization continued									
950205-PB37-2	13	<38.8	<7.76	<0.770	ND	ND	ND	ND	0.410
950205-PB37-3	17	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950205-PB37-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	0.0900
950205-PB37-5	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	0.650
950205-PB38-1	3	8.89	6.34	<0.310	ND	ND	ND	3.05	2.61
950205-PB38-2	12	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950205-PB38-3	16	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950205-PB38-4	20	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950205-PB38-5	23	<38.8	<7.76	<0.770	ND	ND	ND	ND	ND
950228-SA1	0-1	<46.0	334	0.840	1.10	19.4	28.4	28.4	0.0200
950228-SA1-1	0-1	<46.0	454	0.140	ND	3.67	6.27	7.00	ND
950228-SA2	2-3	<44.0	274	4.40	1.00	3.52	5.93	6.48	ND
950228-SA2-1	2-3	<46.0	259	1.08	1.20	1.15	1.15	1.15	ND
950241-SA3	0-1	<51.0	99.7	1.32	2.20	ND	ND	ND	--
950241-SA3-1	0-1	--	--	--	--	--	--	--	ND
950241-SA4	2-3	<55.0	4.40	<0.140	ND	ND	ND	ND	--
950241-SA4-1	2-3	--	--	--	--	--	--	--	ND
950242-SA10-1	2-3	--	--	--	--	--	--	--	ND
950242-SA5	0-1	<44.0	380	2.01	0.460	4.66	7.62	7.62	--
950242-SA5-1	0-1	--	--	--	--	--	--	--	ND
950242-SA6	0-1	<45.0	129	2.39	3.70	ND	ND	ND	--
950242-SA6-1	0-1	--	--	--	--	--	--	--	ND
950242-SA7	2-3	<56.0	3.79	0.260	0.110	ND	ND	ND	--
950242-SA7-1	2-3	--	--	--	--	--	--	--	ND
950242-SA8	0-1	<44.0	269	2.75	2.50	4.03	6.55	6.55	--
950242-SA8-1	0-1	--	--	--	--	--	--	--	ND
950242-SA9	0-1	<45.0	256	1.76	0.440	0.570	1.10	1.10	--
950242-SA9-1	0-1	--	--	--	--	--	--	--	ND
96228-02	2-3	<63.2	<12.6	<1.89	ND	ND	ND	4.78	4.93
96228-04	2-3	<63.9	<12.8	<0.630	ND	ND	ND	ND	--
96228-07	2-3	<59.7	<11.9	<0.600	ND	ND	ND	ND	1.10
96228-09	2-3	<60.0	<12.0	<0.600	ND	ND	ND	ND	75.4
96228-11	2-3	<63.5	<12.7	<0.630	ND	0.410	0.410	0.410	1.14
96232-13	0-0.1	--	75.3	3.57	ND	--	--	--	--
96233-02	2-3	--	26.9	0.440	ND	--	--	--	--
96233-03	0-1	--	27.6	<0.520	ND	--	--	--	--
96233-04	2-3	--	<12.4	<0.620	ND	--	--	--	--
96233-05	0-1	--	20.7	<0.550	ND	--	--	--	--
96233-06	2-3	--	<12.9	0.570	ND	--	--	--	--
96290-03	0-1	--	436	5.00	ND	--	--	--	--
96291-09	NA	--	628	4.57	4.80	--	--	--	--
AC7-0	0-2	25.0 B	25.1	0.100	0.0300	ND	0.0200	0.0200	0.120
AC7-10	10-12	5.40 B	3.79	0.0300 B	ND	ND	ND	ND	0.0700
AC7-4	4-8	12.2 B	4.50	0.0500 JP	0.0400	ND	0.0800	0.0800	0.0800
AC8-10	10-12	1.29 B	2.20	<0.0200	ND	ND	ND	ND	0.260
AC8-2	2-4	5.59 B	1.89	<0.0500	ND	ND	ND	ND	0.0300
AC8-6	6-8	2.29 B	2.29 B	<0.0200	0.00260	ND	ND	ND	0.0300
Removed Characterization									
96213-09	0-0.1	--	183	7.92	450	--	--	--	--
96213-10	0-0.1	--	329	9.42	28.0	--	--	--	--
96218-10	0-1	<54.3	288	8.86	ND	--	--	--	--
96218-11	0-1	<54.3	288	8.86	13.1	--	--	--	--
96218-12	0-1	<52.6	76.7	3.91	54.0	1.59	6.48	6.48	--
96218-13	0-0.5	64.8	218	15.3	340	--	--	--	--

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

B - Concentration detected below CRDL
ND - Analytes not detected in this sample

TABLE 3 - Continued
Northwest Field

LCP Chemicals Removal Action
22-Oct-97

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Removed Characterization continued									
96225-07	0-0.1	--	141	17.6	97.0	--	--	--	--
96225-08	0-0.1	--	156	18.8	120	--	--	--	--
96225-09	0-0.1	--	264	18.1	110	--	--	--	--
96225-10	0-0.1	--	354	21.0	110	--	--	--	--
96228-01	0-1	59.1	171	4.01	20.2	ND	ND	ND	--
96228-03	0-1	<54.2	36.3	0.570	2.20	ND	ND	ND	--
96228-05	0-0.1	<10.5	389	9.56	400	ND	ND	ND	--
96228-06	0-1	<54.0	84.2	2.65	ND	ND	ND	ND	--
96228-08	0-1	<55.7	98.7	2.60	20.1	0.340	0.340	0.340	--
96228-10	0-1	<54.2	142	1.80	11.0	1.90	3.63	3.63	--
96232-11	0-0.1	--	282	14.4	160	--	--	--	--
96232-12	0-0.1	--	103	2.89	39.0	--	--	--	--
96233-01	0-1	--	95.7	1.05	ND	--	--	--	--
96233-11	0-1	--	118	1.12	ND	--	--	--	--
96233-12	1-2	--	16.3	<0.510	ND	--	--	--	--
96262-NWF-14	0.5-0.75	--	--	--	4300	--	--	--	--
96285-01	0-0.5	--	279	21.3	400	--	--	--	--
96285-02	0-1	--	17.8	0.940	ND	--	--	--	--
dup of 96285-02	0-1	--	18.8	0.870	ND	--	--	--	--
96285-04	1-2	--	<11.9	<0.580	ND	--	--	--	--
96285-05	0-0.5	--	1760	468	110	--	--	--	--
96285-06	0-1	--	289	52.8	24.0	--	--	--	--
97133-02	0-0.1	--	13.0	<0.580	ND	--	--	--	--
Final Confirmational									
96220-WTB-01	1-1.5	--	36.5	<0.560	ND	--	--	--	--
96221-WTR-01	1-2.5	--	<10.3	<0.500	ND	--	--	--	--
96221-WTR-02	1-3	--	<10.5	<0.520	ND	--	--	--	--
96254-NWF-01	0.5-1.3	--	<11.5	<0.570	ND	ND	ND	ND	ND
96254-NWF-02	0.5-1	--	22.1	2.78	9.00	--	--	--	--
96255-NWF-03	0.5-0.75	--	25.2	<0.580	ND	--	--	--	--
96256-NWF-04	0.5-0.75	--	131	0.620	8.10	--	--	--	--
96256-NWF-05	0.5-0.75	--	<11.4	<0.560	ND	--	--	--	--
96260-NWF-06	0.5-0.75	--	104	0.500	ND	--	--	--	--
96260-NWF-07	0.5-0.75	--	171	<0.560	ND	--	--	--	--
96262-NWF-09	0.5-1	--	<11.2	<0.560	ND	--	--	--	--
96262-NWF-10	0-0.5	--	20.9	<0.540	ND	--	--	--	--
96262-NWF-11	0-1	--	1.92	2.08	ND	--	--	--	--
dup of 96262-NWF-11	0-1	--	104	2.19	ND	--	--	--	--
96262-NWF-13	0.5-0.75	--	45.0	<0.570	ND	--	--	--	--
96262-NWF-15	0.5-0.75	--	157	5.61	ND	--	--	--	--
96263-NWF-16	0.5-0.75	--	13.8	<0.570	ND	--	--	--	--
96263-NWF-18	0-0.5	--	57.4	<0.510	ND	--	--	--	--
96295-NWF-19	1-1.5	--	104	0.890	ND	--	--	--	--
96297-NWF-23	1-4	<59.3	90.2	2.66	ND	ND	ND	ND	ND
96297-NWF-24	3-4	<55.7	85.3	<0.560	ND	ND	ND	ND	ND
96297-NWF-25	1-1.3	--	62.6	5.07	ND	ND	ND	ND	ND
96303-NWF-29	0-1.25	--	15.4	4.03	ND	--	--	--	--
Removed Confirmational									
96263-NWF-17	0-0.75	--	84.6	4.13	ND	--	--	--	--
96295-NWF-20	1-2	--	828	7.96	ND	--	--	--	--
96295-NWF-22	0-1.5	--	937	28.7	ND	--	--	--	--
96297-NWF-26	0-1.25	--	93.4	87.0	54.0	ND	ND	ND	0.0900
dup of 96297-NWF-26	0-1.75	--	137	30.0	21.7	ND	ND	ND	0.120
Stockpile									

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

TABLE 3 - Continued
Northwest Field

LCP Chemicals Removal Action
22-Oct-97

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Stockpile continued									
96295-NWF-21	**NA**	--	**1200**	**242**	**31.0**	--	--	--	--
96297-NWF-28	**NA**	--	**304**	**13.7**	**11.0**	--	--	--	--
Borrow Fill									
96262-bf1	**NA**	<60.4	<12.1	<0.600	ND	ND	ND	ND	ND

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

22-Oct-97

TABLE 4 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
Waste Disposal Impoundment

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization									
WDI1-4	4-5	13.1 BE	28.3	10.0	0.550	0.0600	0.0600	0.0600	1.20
WDI2-4	4-5	9.80 BE	15.3	0.770	ND	0.0300	0.0300	0.120	0.00700
Removed Characterization									
94202-01	0-1	--	88.6	2.85	--	--	--	--	--
94202-02	0-1	--	68.1	2.58	--	ND	ND	2.29	--
94202-03	0-1	--	5.44	4.90	--	--	--	--	--
94202-04	0-1	--	27.2	20.4	--	--	--	--	--
94202-05	1-2	7.00	109	2.58	ND	ND	ND	ND	--
94202-06	1-2	--	81.7	0.540	--	ND	ND	5.95	--
94202-07	1-2	--	490	31.5	--	--	--	--	--
dup of 94202-07	1-2	--	191	27.0	--	--	--	--	--
94202-09	1-2	--	1630	14.7	--	--	--	--	--
96050-01	0-0.2	<25.0	899	0.930	ND	ND	25.2	25.2	ND
96050-02	0-0.2	<25.1	179	2.19	ND	202	537	537	ND
96050-03	0.5-0.8	<37.5	8790	90.9	ND	110	249	249	11.2
96051-03	0.4-0.6	<31.4	3690	1.71	ND	30.1	245	245	21.6
97114-01	1-1.5	--	<11.5	<0.560	ND	ND	ND	ND	ND
GPW-01-01	0-2	11.6 B	1380	14.9	0.100	0.730	2.08	2.11	0.0800
GPW-01-02	2-4	5.50 B	125	2.29	ND	0.0300	0.230	0.230	0.0200
GPW-02-1	0-2	25.8 B	940	6.50	4.98	ND	ND	ND	0.0500
GPW-02-2	2-4	15.2 B	75.5	0.400	1.15	ND	ND	ND	0.0400
GPW-03-1	0-2	28.4 B	647	8.00	0.360	0.660	0.960	1.07	0.270
WDI-A	NA	10.4 BE	21.6	0.930	ND	0.0200	0.0200	0.0200	0.00900
WDI-B	NA	10.3 BE	27.5	10.8	0.400	0.0600	0.0600	0.0600	1.40
WDI3-1	0-1	7.09 B	207	1.20	0.630	1.83	8.93	10.0	19.0
WDI3-3	3-4	4.90 B	21.2 S	0.510	ND	ND	4.50	18.5	14.2
WDI4-1	0-1	13.2 B	1610	2.00	0.310	0.430	1.03	1.19	0.0600
Final Confirmational									
96143-WDI-04	2-4	<28.3	217	1.12	ND	ND	49.2	49.2	89.1
97086-WDI-02	1.5-2	--	131	0.870	ND	ND	ND	ND	0.330
97086-WDI-03	1.5-2	--	146	<0.570	ND	ND	ND	ND	0.0500
97090-WDI-04	1-2	--	289	<0.560	ND	ND	ND	ND	ND
97090-WDI-05	1-2	--	454	<0.520	ND	4.97	7.53	7.53	ND
97090-WDI-06	1-2	--	339	<0.560	ND	ND	ND	ND	ND
97091-WDI-10	2-3	--	198	0.630	ND	ND	ND	ND	1.82
97091-WDI-11	2-3	--	51.3	1.37	ND	ND	ND	ND	ND
97092-WDI-14	5	--	227	<0.680	ND	ND	1.82	2.91	116
97092-WDI-15	3	--	173	3.59	ND	ND	ND	ND	10.2
97092-WDI-16	3	--	39.8	0.720	ND	ND	ND	ND	1.52
97093-WDI-18	3	--	97.5	2.32	ND	ND	1.34	1.78	4.70
97094-WDI-19	2.5-3.5	--	188	1.10	ND	ND	4.32	5.56	25.5
97097-WDI-21	0-4	--	305	<0.550	ND	0.860	3.03	3.03	35.4
97099-WDI-23	3.5	--	217	0.700	ND	ND	ND	ND	28.9
97100-WDI-24	7-9	--	--	<0.620	ND	ND	ND	ND	1.79
97101-WDI-25	3	--	101	3.72	ND	ND	ND	ND	3.03
97104-WDI-26	3.5	--	62.6	2.11	ND	1.10	5.37	11.2	85.5
97105-WDI-27	3-3.5	--	44.7	2.49	ND	ND	ND	2.27	30.2
97105-WDI-28	3-3.5	--	33.4	3.00	ND	ND	ND	ND	7.22
97106-WDI-29	2.5-3	--	217	1.39	ND	ND	0.810	0.810	0.750
dup of 97106-WDI-29	2.5-3	--	189	1.25	ND	ND	0.970	0.970	1.05

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

B - Concentration detected below CRDL
ND - Analytes not detected in this sample

LCP Chemicals Removal Action
22-Oct-97

TABLE 4 - Continued
Waste Disposal Impoundment

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Final Confirmational continued									
97106-WDI-31	2.5-3	--	73.5	1.74	ND	ND	1.00	1.00	7.20
97106-WDI-32	2.5-3	--	215	5.19	ND	ND	0.490	1.63	13.1
97111-WDI-33	3-3.5	--	<12.3	<0.620	ND	0.810	1.78	1.78	19.3
97111-WDI-34	3-3.5	--	40.2	2.32	ND	ND	0.820	1.53	7.99
97111-WDI-35	3-3.5	--	40.2	0.810	ND	0.560	2.34	2.34	4.45
97114-WDI-36	3.5-4	--	95.0	<0.630	ND	ND	ND	2.23	27.9
97119-WDI-42	2.5-3	--	32.7	<0.610	ND	ND	ND	ND	0.430
97120-WDI-41	1-1.5	--	<11.8	<0.580	ND	ND	ND	ND	ND
97120-WDI-45	3-3.5	--	167	<0.620	ND	ND	ND	ND	ND
97121-WDI-46	5	--	<13.4	<0.670	ND	ND	ND	ND	0.410
Removed Confirmational									
97090-WDI-07	0-1.5	--	831	<0.520	ND	ND	ND	ND	ND
97090-WDI-08	2-3	--	3410	0.880	ND	ND	ND	ND	2.84
97090-WDI-09	0-3	--	2710	4.42	ND	ND	ND	ND	0.430
97091-WDI-12	2-3	--	702	5.01	ND	ND	ND	0.600	12.5
97091-WDI-13	3-4	--	96.2	<0.630	ND	ND	2.16	6.84	411
97093-WDI-17	1-5	--	203	<0.580	ND	ND	2.41	3.80	213
97097-WDI-20	4	--	52.7	<0.610	ND	ND	2.86	2.86	378
97099-WDI-22	6-7	--	<13.2	<0.660	ND	ND	3.75	3.75	1221
97115-WDI-37	1-1.5	--	503	<0.550	ND	ND	ND	ND	ND
97115-WDI-38	0-1	--	1950	2.29	ND	ND	ND	ND	ND
97115-WDI-39	0.5	--	713	1.16	ND	ND	ND	ND	ND
97115-WDI-40	0.5	--	400	1.50	ND	ND	ND	ND	0.0700
97119-WDI-43	2-2.5	--	6440	1.83	ND	ND	1.06	1.06	ND
dup of 97119-WDI-43	2-2.5	--	10830	2.35	ND	ND	1.17	1.17	0.840
Stockpile									
96115-WDI-01	NA	<27.5	2710	0.790	ND	ND	124	124	27.3
96115-WDI-02	NA	31.3	3520	3.26	ND	ND	104	104	76.8
96115-WDI-03	NA	73.6	1820	4.65	ND	ND	68.3	68.3	23.7
97091-WDIS	NA	--	622	--	--	--	--	0.790	33.1
97120-WDIS	NA	--	157	--	--	--	--	--	--
97121-01	NA	--	--	--	--	ND	ND	ND	ND

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

22-Oct-97

TABLE 5 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
North Rail Yard

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization									
94208-05	0-1	--	326	17.4	8.46	--	--	--	--
94208-06	0-1	--	163	12.1	16.8	--	--	--	--
96249-18	2-3	--	<11.1	1.16	ND	--	--	--	--
96249-19	2-3	--	247	<0.640	ND	--	--	--	--
96249-20	2-3	--	285	<0.640	ND	ND	ND	3.29	--
GPT-00-1	0-2	36.1 B	119	3.20	5.05	1.22	2.47	3.12	0.0100
GPT-00-2	2-4	16.9 B	116	0.620	0.310	0.290	0.680	0.880	0.0600
GPT-01-1	0-2	47.5	128	9.19	8.63	3.70	5.96	6.33	0.0600
GPT-01-2	2-4	23.4 B	116	1.60	0.960	0.830	1.46	1.67	0.100
GPT-02-02	2-4	13.5 B	38.2	0.460	0.960	0.300	0.520	0.680	0.0400
GPT-02-1	0-2	19.6 B	65.0	1.20	2.70	1.04	2.03	2.19	0.0400
GPT-10-1	0-2	8.00 B	346	2.90	2.54	0.720	2.13	2.42	0.0800
GPT-10-2	2-4	1.79 B	50.0	0.750	0.230	0.0700	0.190	0.650	0.0300
GPT-11-1	0-2	41.3 B	63.9	<0.01000	0.160	0.170	0.750	1.26	0.100
GPT-11-2	2-4	6.19 B	6.59	0.0500 B	ND	ND	ND	0.0900	0.0100
GPT-12-1	0-2	37.1 B	122	3.29	3.90	7.79	14.2	15.5	0.0200
GPT-12-2	2-4	5.09 B	23.7	1.39	0.160	ND	0.0400	0.120	0.140
GPT-20-1	0-2	19.4 B	124	0.360	2.09	0.500	0.880	1.20	0.0400
GPT-20-2	2-4	4.09 B	8.89	0.0300 B	0.0600	0.0400	0.160	0.240	0.0300
GPT-21-1	0-2	17.5 B	93.4	0.680	0.710	0.690	1.19	1.40	0.00290
GPT-21-2	2-4	10.5 B	5.80	0.0700	0.0900	0.120	1.45	2.22	0.0600
GPT-22-1	0-2	21.2 B	185	0.410	1.01	0.130	0.260	0.340	0.0100
GPT-22-2	2-4	12.6 B	17.4	0.120	0.150	0.0300	0.0700	0.0700	0.130
GPT-31-1	0-2	61.0	821	0.490	2.47	2.78	5.05	5.35	0.160
GPT-31-2	2-4	31.6 B	103	0.140	0.170	0.460	1.10	1.42	1.03
GPT-32-1	0-2	58.6	931	3.90	1.25	0.510	1.98	4.08	0.0700
GPT-32-2	2-4	93.7	148	0.380	0.570	1.92	39.2	96.2	ND
GPT-41-1	0-2	18.2 B	63.8	0.180	0.340	0.110	0.240	0.270	0.00900
GPT-41-2	2-4	19.3 B	20.6	0.0700	0.110	0.0400	0.430	0.430	0.0800
GPT-42-1	0-2	11.2 B	393	1.20	0.150	1.23	4.61	4.66	0.0100
GPT-42-2	2-4	4.50 B	703	0.490	0.0400	0.540	2.16	2.23	0.110
GPT-50-2	2-4	6.59 B	92.9	0.0300 B	ND	ND	ND	0.0600	0.0700
GPT-51-2	2-4	23.9 B	98.0	0.0700	1.21	0.980	3.94	38.9	ND
GPT-52-2	2-4	6.00 B	63.6	0.100	0.350	ND	0.0700	0.170	ND
GPT-60-2	2-4	14.2 B	74.3	0.0700	10.1	ND	0.0500	0.900	0.0800
dup of GPT-60-2	2-4	23.2 B	100	0.0700	6.78	0.0300	0.0600	0.430	0.0800
GPT-61-2	2-4	38.4 B	67.3	0.0900	1.19	0.420	0.840	1.31	0.0200
GPT-62-2	2-4	13.4 B	60.5	0.0100 B	1.60	0.0400	11.1	34.1	1.63
Removed Characterization									
94208-03	0-1	--	45.9	2.90	31.4	ND	ND	6.32	--
94208-04	0-1	--	399	9.89	6.52	--	--	--	--
96260-17	0-1	--	1780	--	ND	--	--	--	--
96260-18	0-1	--	790	--	ND	--	--	--	--
96261-13	0-1	--	870	0.730	ND	--	--	--	--
96261-14	0-1	--	308	1.82	8.00	--	--	--	--
GPT-30-1	0-2	8.69 B	806	1.39	14.6	0.550	1.24	2.26	0.0200
GPT-30-2	2-4	5.19 B	144	2.09	1.27	ND	0.180	0.180	0.100
dup of GPT-30-2	2-4	5.30 B	110	1.39	1.35	2.12	5.47	5.52	0.0500
GPT-40-1	0-2	4.00 B	346	0.550	0.160	0.500	1.04	1.17	0.00500
GPT-40-2	2-4	1.20 B	53.3	0.550	0.00510	ND	0.0700	0.0700	0.0300

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

B - Concentration detected below CRDL
ND - Analytes not detected in this sample

TABLE 5 - Continued
North Rail Yard

LCP Chemicals Removal Action
22-Oct-97

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Removed Characterization continued									
GPT-50-1	0-2	7.69 B	337	0.280	0.0900	ND	ND	0.100	0.100
GPT-51-1	0-2	25.2 B	557	0.750	28.5	0.450	0.840	1.23	0.0100
GPT-52-1	0-2	35.0 B	883	0.950	2.81	0.740	1.45	2.31	0.0600
GPT-60-1	0-2	70.9	635	0.460	55.6	0.330	0.590	9.19	0.0100
GPT-61-1	0-2	69.2	589	0.520	8.98	1.51	3.49	7.07	0.00500
GPT-62-1	0-2	112	952	0.170	25.0	1.48	2.59	3.63	0.0600
dup of GPT-62-1	0-2	140	1040	0.230	37.5	0.160	0.280	2.68	0.0600
Final Confirmational									
96263-NRY-01	1-2	--	22.4	0.760	ND	--	--	--	--
96268-nry-02	1.25-2.25	--	92.1	<0.610	ND	--	--	--	--
96269-NRY-04	1-2	--	72.0	<0.560	ND	--	--	--	--
dup of 96269-NRY-04	1-2	--	55.4	<0.570	ND	--	--	--	--
96270-NRY-06	0-5	--	<13.6	<0.680	ND	ND	4.51	40.0	364
96274-nry-07	7	--	16.5	<0.700	ND	ND	16.6	37.0	751
96274-nry-08	3.5	--	78.7	<0.620	ND	--	--	--	--
Removed Confirmational									
96269-nry-03	1-3	--	643	<0.560	16.0	--	--	--	--
Stockpile									
96263-30	NA	--	416	1.83	ND	--	--	--	--
Borrow Fill									
96288-BF-01	NA	--	5.15	<0.560	ND	--	--	--	--

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

B - Concentration detected below CRDL
ND - Analytes not detected in this sample

TABLE 6 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
Bunker C Tank Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization									
96247-10	2-3	<66.2	<13.2	<0.660	ND	ND	ND	ND	ND
96247-11	0-1	<53.9	51.7	5.98	21.6	1.13	4.86	4.86	0.300
dup of 96247-11	0-1	<56.8	66.4	4.55	26.7	1.99	6.12	6.12	1.22
96247-13	2-3	<58.5	63.2	9.60	ND	ND	ND	ND	1.21
96247-14	0-1	<54.3	223	9.35	10.7	ND	ND	ND	ND
96247-15	2-3	<57.3	<11.5	<0.560	ND	ND	ND	ND	ND
96247-16	0-1	<53.8	<10.8	1.69	9.09	ND	ND	ND	ND
96247-17	2-3	<65.4	20.2	<0.640	ND	ND	ND	ND	ND
96256-05	0-1	--	44.1	<0.580	--	--	--	--	--
96256-06	2-3	--	33.5	<0.670	--	--	--	--	--
96256-07	0-1	--	83.0	0.830	--	--	--	--	--
96256-08	2-3	--	<12.9	1.10	--	ND	ND	ND	--
Removed Characterization									
94208-01	0-1	3.00	8.00	8.98	ND	98.3	203	260	1.62
94208-02	0-1	--	--	35.3	--	82.8	224	330	10.3
96247-01	0-1	<53.9	27.5	28.3	ND	ND	ND	ND	0.770
96247-02	2-3	<59.1	1130	0.610	ND	ND	6.62	24.1	63.6
96247-03	0-1	<59.1	93.4	2.56	13.0	0.500	1.32	1.32	11.4
96247-04	2-3	<64.9	<13.0	<0.640	ND	ND	ND	2.73	74.8
96247-05	0-1	<55.7	<11.1	<0.560	ND	ND	ND	ND	ND
96247-06	2-3	<56.2	14.6	<0.560	ND	0.790	2.69	2.69	1.47
96247-07	0-1	<52.0	19.7	<0.510	ND	ND	ND	ND	ND
96247-08	2-3	<67.0	18.1	<0.670	ND	ND	2.00	2.00	ND
96247-09	0-1	<51.8	<10.4	2.57	ND	ND	ND	ND	ND
96305-01	0-1	--	600	9.78	7.80	ND	13.1	21.7	24.3
96305-02	1-2	--	13.9	1.88	ND	ND	0.470	0.470	0.110
96305-03	1-2	--	431	15.9	ND	0.930	4.87	4.87	0.900
96305-04	2-3	--	54.7	1.79	ND	ND	ND	ND	7.11
96305-05	0-1	--	798	32.8	13.8	5.63	47.5	68.6	184
96305-06	1-2	--	764	7.67	3.59	1.09	21.9	32.0	361
96305-07	2-3	--	45.8	<0.670	ND	0.470	4.47	4.47	149
Final Confirmational									
96269-BCF-02	0-2.5	--	136	1.04	--	--	--	--	--
96269-BCF-03	0-2	--	321	2.03	--	--	--	--	--
96275-BCF-04	3-4	--	182	1.12	--	ND	0.570	1.10	0.260
97055-BCF-05	2-3	--	19.2	1.33	ND	ND	1.50	1.50	10.4
97057-BCF-06	0-3	--	74.7	14.1	2.29	ND	ND	ND	1.46
97057-BCF-07	0-3	--	76.2	0.950	ND	ND	ND	ND	ND
97057-BCF-08	2-3	--	92.3	<0.520	ND	6.41	56.0	80.6	164
97058-BCF-09	2-3	--	16.5	0.990	ND	1.74	35.4	39.7	4.04
97062-BCF-11	3-4	74.0	70.6	1.60 J%R	ND	ND	5.42	6.82	11.2
97062-BCF-12	2-3	<64.4	269	1.29 J%R	ND	ND	3.79	5.16	0.510
dup of 97062-BCF-12	2-3	<63.3	66.4	1.25 J%R	ND	1.23	19.1	24.5	0.320
97063-BCF-14	0-2.5	--	85.5	<0.580	ND	ND	ND	ND	0.140
dup of 97063-BCF-14	0-2.5	--	81.1	<0.580	ND	ND	ND	ND	ND
97063-BCF-16	0-3	--	226	<0.570	ND	ND	ND	ND	ND
97063-BCF-17	0-4	--	180	<0.600	16.3	ND	ND	ND	ND
97063-BCF-18	2.5-3.5	<65.5	<13.1	<0.660	ND	ND	7.05	14.5	46.1
97064-BCF-19	3	--	17.5	3.41	13.0	ND	2.91	5.07	48.8
97064-BCF-20	2.5-3	--	<13.0	0.500	ND	0.410	2.47	2.99	60.6

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

J%R - Estimated, MS % recovery out of range
ND - Analytes not detected in this sample

TABLE 6 - Continued
Bunker C Tank Area

LCP Chemicals Removal Action
22-Oct-97

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Final Confirmational continued									
97065-BCF-21	2-2.5	--	<12.8	9.02	ND	2.51	11.1	14.7	135
97066-BCF-22	2-3	--	35.9	5.42	ND	16.4	79.8	111	54.4
97066-BCF-23	1.5-2.5	--	68.5	2.73	ND	2.96	7.08	8.68	1.95
97078-BCF-25	3-5	--	21.7	<0.600	ND	0.400	14.6	29.4	12.6
Removed Confirmational									
96269-BCF-01	2-3	--	903	3.41	--	--	--	--	--
97058-BCF-10	1-2	--	28.9	2.52	ND	17.4	191	201	150
97069-BCF-24	0-5	<54.5	15.8	<0.550	6.69	1.97	43.7	89.7	9.52
Stockpile									
96337-01	NA	--	203	6.32	ND	--	--	--	--
Tank Samples									
950123-97-OIL	NA	<0.200	<3.00	2.85	ND	ND	1249	3249	1412
950124-107-Sludge	NA	770	81.5	3890	ND	ND	9.15	699	776
950124-108-Sludge	NA	7490	554	185	ND	ND	ND	ND	5.65
950124-92-Sludge	NA	471	1910	594	ND	ND	ND	1400	1.49
950124-93-Sludge	NA	255	315	1840	ND	ND	ND	41.4	2.63
950124-94-Sludge	NA	567	172	729	ND	ND	ND	2665	76.7
950124-97-Sludge	NA	<0.270	<4.09	7.28	ND	ND	1581	4031	1843
950125-95-OIL	NA	<0.200	<3.00	29.6	ND	ND	ND	1280	145
950125-96-OIL	NA	<0.200	<3.00	4.17	ND	ND	ND	1230	108
96247-BC95	NA	--	525	202	ND	--	--	--	--
96247-BC96	NA	--	<10.0	428	ND	--	--	--	--
96269-BC-92	NA	--	1770	219	ND	52.9	153	195	--
96269-BC-93	NA	--	2700	76.5	ND	ND	61.4	185	--
96269-BC-94	NA	--	924	83.0	ND	54.6	252	306	--
96269-BC-95	NA	--	1700	105	ND	46.7	278	562	--
96269-BC-96	NA	--	3650	1320	ND	45.9	270	499	--
Borrow Fill									
97070-BF-01	NA	<58.1	<11.6	<0.570	ND	ND	ND	ND	ND

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

22-Oct-97

TABLE 7 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
Secondary Bunker C Tank Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization									
96235-02	2-3	<50.0	<12.0	<0.600	ND	ND	ND	ND	ND
96235-04	2-3	<50.0	<11.6	<0.570	ND	ND	ND	ND	3.19
96235-06	2-3	<50.0	<11.7	1.12	ND	ND	ND	ND	ND
96235-07	0-1	<50.0	55.3	5.73	ND	ND	ND	ND	ND
96235-08	2-3	<50.0	<11.3	1.02	ND	ND	ND	ND	ND
96235-09	0-1	68.4	426	14.1	ND	ND	ND	ND	0.390
96235-10	2-3	<50.0	<11.3	0.610	ND	ND	ND	ND	ND
96235-11	0-1	<50.0	42.5	3.15	ND	3.20	3.82	3.82	0.330
96235-12	2-3	<50.0	<11.8	2.07	ND	ND	ND	ND	ND
Removed Characterization									
96235-01	0-1	58.8	71.2	1.79 J%R	30.0	ND	ND	ND	ND
96235-03	0-1	91.9	160	1.25	105	12.8	47.1	58.6	4.50
96235-05	0-1	71.5	178	19.3	2.90	0.340	0.340	0.340	1.81
96316-01	0-0.1	--	231	109	8.50	--	--	--	--
Final Confirmational									
96318-SBC-01	1-1.5	--	<12.0	2.73	ND	ND	ND	ND	ND
96318-SBC-02	1.5-2	--	29.7	0.770	ND	ND	ND	ND	ND
96318-SBC-03	0-2	--	26.3	1.88	12.0	1.66	5.53	5.53	2.03
Stockpile									
96319-01	NA	--	--	45.4	8.79	--	--	--	--
Tank Sample									
962408C-108	NA	--	530	--	--	--	--	--	--
96255-02	NA	109	64.8	<0.560	ND	0.830	7.53	13.5	ND
96323-01	NA	--	26.1	<0.500	ND	--	--	--	--
96326-01	NA	--	166	15.1	ND	--	--	--	--
Borrow Fill									
96319-BF-02	NA	--	<11.8	<0.580	ND	ND	ND	ND	ND
Concrete									
96256-09	NA	--	<10.4	0.630	ND	--	--	--	--

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.
J%R - Estimated, MS % recovery out of range
ND - Analytes not detected in this sample

22-Oct-97

TABLE 8 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
North Central Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization									
96213-14	0-0.1	--	374	3.20	ND	--	--	--	--
96213-15	0-0.1	--	124	10.3	ND	--	--	--	--
96213-16	0-0.1	--	198	2.77	ND	--	--	--	--
dup of 96213-16	0-0.1	--	195	2.34	ND	--	--	--	--
96260-04	2-3	<60.5	116	<0.610	ND	ND	ND	ND	ND
96260-05	0-1	<53.8	26.3	<0.540	ND	ND	ND	ND	ND
96260-06	2-3	<61.0	<12.2	<0.610	ND	ND	ND	ND	ND
96260-07	0-1	56.0	67.2	<0.560	ND	ND	ND	ND	ND
96260-08	2-3	<53.3	<10.7	<0.520	ND	ND	ND	ND	ND
96260-09	0-1	<52.2	33.9	<0.510	ND	ND	ND	ND	ND
96260-10	2-3	<53.8	<10.8	<0.540	ND	ND	ND	ND	ND
96260-11	0-1	55.6	513	0.750	ND	ND	ND	ND	ND
96260-12	2-3	<62.9	<12.6	<0.620	ND	ND	ND	ND	ND
96260-13	0-1	<56.9	18.7	<0.560	ND	ND	ND	ND	ND
96260-14	2-3	<67.4	14.8	<0.670	ND	ND	ND	ND	ND
96260-15	0-1	<55.3	49.2	<0.550	ND	ND	ND	ND	1.55
96260-16	2-3	<59.9	<12.0	<0.600	ND	ND	ND	ND	ND
96261-15	0-1	<52.9	218	<0.520	ND	0.330	0.330	0.330	ND
dup of 96261-15	0-1	<53.0	208	<0.520	ND	0.400	0.400	0.400	ND
96261-17	2-3	<59.0	<11.8	<0.580	ND	ND	ND	ND	ND
96261-18	0-1	<55.7	19.5	<0.560	ND	ND	ND	ND	ND
96261-19	2-3	105	<12.4	<0.620	ND	ND	ND	ND	ND
96261-20	0-1	<56.5	189	0.880	ND	ND	0.360	0.360	ND
96261-21	2-3	<60.5	16.9	<0.600	ND	ND	ND	ND	ND
96262-01	0-1	58.2	33.8	1.28	ND	ND	ND	ND	ND
96262-02	2-3	<65.0	<13.0	<0.640	ND	ND	ND	ND	ND
96262-04	2-3	<65.4	<13.1	<0.640	ND	ND	ND	ND	ND
dup of 96262-04	2-3	<66.3	<13.3	<0.660	ND	ND	ND	ND	ND
96262-07	2-3	<59.3	74.2	0.550	ND	ND	ND	ND	ND
96262-09	2-3	<60.5	<12.1	8.96	ND	ND	ND	ND	ND
96262-10	0-1	<53.6	78.5	1.58	ND	ND	ND	ND	ND
96262-12	0-1	<56.5	128	1.35	ND	0.380	0.830	0.830	ND
96262-13	2-3	<61.4	<12.3	<0.610	ND	ND	ND	ND	ND
96262-14	0-1	<56.8	1920	1.72	ND	2.11	13.9	15.5	ND
96263-01	0-0.5	691	3000	6.67	ND	ND	ND	ND	0.0700
96263-02	0-1	<57.5	205	20.8	ND	ND	ND	ND	ND
96263-03	2-2.5	67.6	220	0.720	ND	ND	ND	ND	ND
96263-04	0-1	81.6	234	0.630	ND	ND	ND	ND	ND
96263-05	2-3	<55.7	185	0.280	ND	ND	ND	ND	ND
96267-01	0-1	--	105	--	--	--	--	--	--
96277-06	0-1	--	62.6	3.97	ND	--	--	--	--
96277-07	1-2	--	57.5	0.560	ND	--	--	--	--
96277-09	0-1	--	53.7	18.1	ND	--	--	--	--
96277-10	1-2	--	<12.0	0.550	ND	--	--	--	--
96277-16	0-1	--	305	12.4	ND	--	--	--	--
96277-17	1-2	--	80.3	3.50	ND	--	--	--	--
96277-18	0-1	--	91.6	<0.550	ND	--	--	--	--
96277-19	2-3	--	<11.7	<0.570	ND	--	--	--	--
96277-20	0-1	--	42.9	0.770	ND	--	--	--	--
96277-21	2-3	--	<11.3	<0.560	ND	--	--	--	--

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.

< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

TABLE 8 - Continued
North Central Area

LCP Chemicals Removal Action
22-Oct-97

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization continued									
96277-24	0-1	--	69.0	<0.560	ND	--	--	--	--
96277-25	1-2	--	<11.2	<0.560	ND	--	--	--	--
96277-26	0-1	--	520	3.16	ND	--	--	--	--
96277-27	0-1	--	876	6.07	ND	--	--	--	--
96277-28	0-1	--	1100	13.0	ND	--	--	--	--
96277-29	0-1	--	80.9	0.910	ND	--	--	--	--
96284-08	0-1	--	86.2	10.0	ND	--	--	--	--
96284-09	0-1	--	232	10.0	ND	--	--	--	--
96290-04	0-1	--	33.6	1.01	--	--	--	--	--
96304-01	0-1	--	246	10.4	ND	--	--	--	--
96304-05	0-1	--	46.2	2.66 J%R	ND	--	--	--	--
96304-06	0-1	--	137	2.63	ND	--	--	--	--
96304-07	0-1	--	4430	2.36	ND	--	--	--	--
96312-07	0-1	--	160	20.8	ND	--	--	--	--
96327-01	0-1	--	169	2.16	--	--	--	--	--
96327-02	0-1	--	249	2.54	--	--	--	--	--
96327-03	0-1	--	265	2.14	--	--	--	--	--
96327-04	0-1	--	176	<0.560	--	--	--	--	--
dup of 96327-04	0-1	--	173	<0.560	--	--	--	--	--
96327-06	0-0.5	--	559	2.02	--	--	--	--	--
96327-07	0-1	--	95.6	0.670	--	--	--	--	--
96327-08	0-1	--	239	0.760	--	--	--	--	--
96327-09	0-1	--	74.7	<0.560	--	--	--	--	--
96327-10	0-1	--	122	<0.560	--	--	--	--	--
96327-11	0-1	--	218	1.17	--	--	--	--	--
97034-01	0-1	<58.8	145	3.81	3.20	ND	ND	ND	ND
97034-02	2-3	<65.5	<13.1	<0.660	ND	ND	ND	ND	ND
97034-03	0-1	60.0	116	10.4	ND	ND	ND	ND	ND
97034-04	2-3	<65.1	14.3	<0.640	ND	ND	ND	ND	ND
97034-05	0-1	<57.7	281	9.92	ND	ND	ND	ND	ND
dup of 97034-05	0-1	<58.3	299	7.67	ND	ND	ND	ND	ND
97034-07	0-1	<57.3	34.4	2.85	ND	ND	ND	ND	ND
97034-08	2-3	<62.2	26.1	<0.620	ND	ND	ND	ND	0.470
97036-01	0-1	<59.3	116	17.2	3.29	ND	ND	ND	ND
97036-02	2-3	<69.5	<13.9	<0.690	ND	ND	ND	ND	ND
97036-03	0-1	87.9	541	19.4	ND	ND	ND	ND	ND
97036-04	2-3	<62.8	<12.6	<0.620	ND	ND	ND	ND	ND
97071-02	0-0.1	--	111	9.10	7.39	--	--	--	--
97071-03	0-0.1	--	85.1	9.97	6.40	--	--	--	--
97071-04	0-0.1	--	167	15.4	ND	--	--	--	--
97105-01	6	--	--	<0.640	--	--	--	--	--
97105-02	6	--	--	<0.640	--	--	--	--	--
97128-01	0-0.1	--	54.6	4.32	ND	--	--	--	--
97128-02	0-0.1	--	51.0	1.75	ND	--	--	--	--
97128-03	0-0.1	--	104	0.950	ND	--	--	--	--
97128-04	0-0.1	--	124	0.800	ND	--	--	--	--
Removed Characterization									
96213-12	0-0.1	--	327	14.6	8.09	--	--	--	--
96213-13	0-0.1	--	315	9.77	2.59	--	--	--	--
96260-03	0-1	67.0	5830	1.28	ND	2.00	10.7	11.2	0.180
96262-03	0-1	<57.1	14.3	0.560	ND	ND	ND	ND	ND
96262-06	0-1	<56.3	25.3	37.5	ND	ND	ND	ND	ND
96262-08	0-1	<56.3	65.3	28.9	2.70	ND	ND	ND	ND
96262-11	0-1	<54.9	135	60.0	ND	ND	ND	ND	ND

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

J%R - Estimated, MS % recovery out of range
ND - Analytes not detected in this sample

LCP Chemicals Removal Action
22-Oct-97

TABLE 8 - Continued
North Central Area

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Removed Characterization continued									
96263-17	0-1	--	692	--	--	--	--	--	--
96263-18	0-1	--	825	--	--	--	--	--	--
96263-19	0-1	--	977	--	--	--	--	--	--
96267-02	0-1	--	842	--	--	--	--	--	--
96267-03	0-1	--	1240	--	--	--	--	--	--
96277-01	0-1	--	20.5	548	ND	--	--	--	--
dup of 96277-01	0-1	--	19.2	473	ND	--	--	--	--
96277-03	1-2	--	<13.0	0.800	ND	--	--	--	--
96277-04	0-1	--	80.1	187	ND	--	--	--	--
96277-05	1-2	--	94.0	37.4	ND	--	--	--	--
96277-08	0-0.1	--	199	17.3	12.2	--	--	--	--
96277-11	0-1	--	36.5	104	ND	--	--	--	--
96277-12	1-2	--	<12.0	16.5	ND	--	--	--	--
96277-13	0-1	--	33.3	1.36	ND	--	--	--	--
96277-14	0-1	--	151	43.9	ND	--	--	--	--
96277-15	1-2	--	95.6	9.43	ND	--	--	--	--
96277-22	0-1	--	382	0.940	ND	ND	0.400	0.400	--
96277-23	1-2	--	355	0.870	ND	--	--	--	--
96284-05	0-1	--	28.2	48.5	ND	--	--	--	--
96284-06	0-1	--	50.8	1.30	ND	--	--	--	--
dup of 96284-06	0-1	--	45.2	1.47	ND	--	--	--	--
96290-05	0-1	--	93.7	4.21	--	--	--	--	--
96290-06	0-1	--	11.8	30.0	--	--	--	--	--
96290-07	0-1	--	85.8	267	--	--	--	--	--
96290-08	0-1	--	54.8	61.6	--	--	--	--	--
96304-02	0-1	--	231	27.8	ND	--	--	--	--
dup of 96304-02	0-1	--	290	23.2	ND	--	--	--	--
96304-04	0-1	--	51.9	0.580	ND	--	--	--	--
96312-08	0-1	--	67.5	40.1	ND	--	--	--	--
96312-09	1-2	--	62.4	8.86	ND	--	--	--	--
96319-02	NA	--	504	0.930	ND	--	--	--	--
97071-05	0-0.17	--	203	24.5	2.29	--	--	--	--
Final Confirmational									
96319-NCA-01	1-1.5	--	32.8	<0.560	ND	ND	ND	ND	ND
96319-NCA-02	1-1.5	--	468	<0.600	ND	ND	ND	ND	ND
dup of 96319-NCA-02	1-1.5	--	381	<0.580	ND	ND	ND	ND	ND
96319-NCA-04	0-1.5	--	231	0.700	ND	--	--	--	--
96319-NCA-05	0-1.5	--	29.0	<0.550	ND	--	--	--	--
96319-NCA-06	0-1.25	--	132	<0.540	ND	--	--	--	--
97023-01	3.5-4	<64.9	<13.0	12.5	ND	ND	ND	ND	ND
97028-07	1-2	<61.7	66.0	0.750	ND	ND	ND	ND	0.890
97028-08	0-1.7	88.9	368	1.44	ND	ND	ND	ND	0.640
dup of 97028-08	0-1.7	84.6	244	1.54	ND	ND	ND	ND	0.310
97028-10	0-1.8	<59.5	48.2	0.560	ND	ND	ND	ND	0.290
97069-NCA-07	0-1.5	<54.5	99.1	1.53	ND	ND	ND	ND	0.0700
97069-NCA-08	1.5-2	54.2	90.1	8.63	ND	ND	ND	ND	0.230
97069-NCA-09	1.5-2	<56.6	23.2	3.29	ND	ND	ND	ND	ND
97069-NCA-10	1.5-2	<58.8	153	1.71	ND	ND	1.29	1.29	ND
dup of 97069-NCA-10	1.5-2	<59.5	248	1.75	ND	ND	0.950	0.950	ND
97070-NCA-13	1	<53.4	20.3	3.91	ND	ND	ND	ND	ND
97071-NCA-16	0-1.7	<53.4	66.2	3.80	ND	--	--	--	--
97071-NCA-17	1-1.5	<54.9	159	18.5	ND	ND	ND	ND	ND
97071-NCA-18	1-1.5	<52.4	51.6	7.19	ND	ND	ND	ND	ND
97071-NCA-19	0-1	<51.7	97.2	15.4	ND	--	--	--	--

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

TABLE 8 - Continued
North Central Area

LCP Chemicals Removal Action
22-Oct-97

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Final Confirmational continued									
97072-01	0-0.25	--	501	6.26	ND	--	--	--	--
97072-02	0-0.25	--	220	3.96	ND	--	--	--	--
97072-NCA-21	2-3	<58.9	28.9	2.77 J%R	ND	ND	ND	ND	0.0700
97072-NCA-22	0-1	<53.2	76.6	1.62	ND	--	--	--	--
97072-NCA-23	1.5-5	<59.9	<12.0	1.58	ND	8.41	48.1	72.6	64.2
97076-01	0.3-0.5	--	197	14.6	2.90	--	--	--	--
97076-NCA-25	0.5-1	--	105	6.90	ND	--	--	--	--
97076-NCA-26	0-1	--	52.4	2.14 J%R	2.59	--	--	--	--
97078-01	1-1.5	--	<11.5	<0.560	ND	ND	ND	ND	ND
97078-NCA-27	3.5-4	--	40.3	1.23	ND	ND	0.680	0.680	ND
97085-02	3-3.5	--	39.8	12.6 J%R	3.70	ND	ND	ND	1.17
97086-07	10-12	--	<14.0	578	ND	ND	ND	ND	ND
dup of 97086-07	10-12	--	<13.9	698	ND	ND	ND	ND	ND
97086-09	0-3.5	--	52.0	1.61	3.00	--	--	--	--
97086-10	3-3.5	--	<13.1	<0.640	8.80	--	--	--	--
97086-11	0-3.5	--	69.7	1.39	ND	--	--	--	--
Removed Confirmational									
97023-02	0-3.5	<62.5	288	22.9	ND	ND	ND	ND	ND
97023-03	0-4	81.8	145	23.6	ND	ND	ND	ND	ND
97023-04	5	58.3	401	105	ND	ND	ND	ND	ND
97028-11	0-2	<60.8	34.6	15.7	ND	ND	ND	ND	0.100
97070-NCA-12	0-2	<52.8	771	22.1	ND	ND	ND	ND	ND
97070-NCA-14	1	<55.6	46.7	46.0	ND	ND	ND	ND	ND
97070-NCA-15	1	<52.9	165	6.36	13.8	0.800	1.87	1.87	ND
97071-06	0-0.1	--	167	18.1	25.6	--	--	--	--
97071-NCA-20	0-1.25	<53.7	314	87.0	ND	--	--	--	--
97072-NCA-24	0-1.25	<54.6	121	48.8	ND	--	--	--	--
97076-02	0.3-0.5	--	166	28.9	ND	--	--	--	--
97085-01	1-1.5	--	120	14.7 J%R	160	ND	12.5	16.1	0.630
97085-03	0-1	--	114	8.89 J%R	90.0	ND	ND	ND	0.950
Stockpile									
96319-03	NA	--	517	<0.560	ND	--	--	--	--

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.
J%R - Estimated, MS % recovery out of range
ND - Analytes not detected in this sample

22-Oct-97

TABLE 9 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
Raw Brine Enclosures

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Characterization									
950066-17	2-3	<30.2	<6.03	<0.600	ND	--	--	--	--
950066-18	2-3	<30.2	<6.03	<0.600	ND	--	--	--	--
950066-19	2-3	<30.2	<6.03	<0.600	ND	--	--	--	--
950066-20	2-3	1.69	<3.89	<0.320	0.100	--	--	--	--
950066-21	2-3	70.0	<6.03	4.71	5.67	--	--	--	--
dup of 950066-21	2-3	215	<6.03	4.34	13.0	--	--	--	--
950066-23	1-2	1280	16.9	8.21	ND	--	--	--	--
950066-24	1-2	2360	13.3	21.6	ND	--	--	--	--
950066-25	2-3	<30.2	<6.03	1.57	ND	--	--	--	--
950066-26	1-2	<30.2	54.3	<0.600	ND	--	--	--	--
950066-27	1-2	<30.2	<6.03	2.53	ND	--	--	--	--
950066-28	1-2	<30.2	<6.03	<0.600	ND	--	--	--	--
950066-29	1-2	<30.2	<6.03	0.650	ND	--	--	--	--
dup of 950066-29	1-2	<30.2	<6.03	0.650	ND	--	--	--	--
96297-01	0-0.1	--	34.5	13.6	ND	--	--	--	--
96297-02	0-0.1	--	35.3	14.6	ND	--	--	--	--
96305-09	2-3	<56.2	18.5	<0.560	ND	ND	ND	ND	0.250
96305-11	2-3	<56.7	<11.3	13.3	ND	0.970	2.26	2.26	ND
96309-01	2-3	<61.3	69.9	<0.610	ND	ND	ND	ND	0.0700
96309-03	2-3	<59.5	16.1	1.48	ND	ND	ND	ND	0.100
96309-05	2-3	<60.8	0.610	<0.610	ND	ND	ND	ND	0.0900
LC-207-SLA	0-1	--	230	9.30	--	2.90	13.1	13.1	--
LC-207-SLB	2-3	--	6.40	0.150	--	ND	ND	ND	--
dup of LC-207-SLB	2-3	--	6.80	0.110	--	ND	ND	ND	--
LC-208-SLA	0-1	--	89.0	1.39	--	ND	ND	ND	ND
LC-208-SLB	2-3	--	14.0	0.200	--	ND	ND	ND	--
LC-209-SLA	0-1	--	26.0	38.0	--	ND	ND	ND	ND
LC-209-SLB	2-3	--	6.50	1.00	--	ND	ND	ND	--
LC-210-SLA	0-1	--	34.0	32.0	--	ND	ND	ND	ND
LC-210-SLB	2-3	--	5.80	1.39	--	ND	ND	ND	--
LC-211-SLA	0-1	3.20	73.0	2.20	--	ND	ND	ND	--
LC-211-SLB	2-3	4.00	38.0	0.730	--	ND	ND	ND	ND
LC-212-SLA	0-1	4.00	65.0	1.20	--	3.56	4.56	4.56	--
LC-212-SLB	2-3	3.20	15.0	1.00	--	ND	ND	ND	ND
LC-215-SLB	2-3	--	19.0	3.20	--	ND	1.30	1.30	--
LC-216-SLA	0-1	--	110	1.20	--	ND	ND	ND	--
LC-216-SLB	2-3	--	58.0	0.410	--	ND	ND	ND	--
Removed Characterization									
96305-08	0-1	<80.3	20.9	23.0	ND	--	--	--	--
96305-10	0-1	<85.3	43.5	28.3	ND	--	--	--	--
96305-12	0-1	83.1	43.2	32.5	ND	--	--	--	--
96309-02	0-1	<83.8	47.7	79.7	ND	--	--	--	--
96309-04	0-1	<85.6	17.1	61.7	ND	--	--	--	--
LC-215-SLA	0-1	--	47.0	43.0	--	ND	5.90	5.90	ND
Final Confirmational									
97043-RBT-01	0.7-2	--	178	1.97	ND	--	--	--	--
97045-RBT-02	1-2.5	--	<12.2	0.970	ND	--	--	--	--
97049-RBT-03	1-2.5	--	16.5	<0.550	ND	--	--	--	--
97049-RBT-04	1-2.5	--	22.5	1.88	ND	--	--	--	--
97050-RBT-05	1-2.5	<56.9	333	5.51	ND	ND	ND	ND	ND

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.

< Analyte was not detected in this sample at the listed detection limit.

ND - Analytes not detected in this sample

TABLE 9 - Continued
Raw Brine Enclosures

LCP Chemicals Removal Action
22-Oct-97

SAMPLE ID (LAB)	Depth (feet)	Barium (mg/Kg)	Lead (mg/Kg)	Mercury (mg/Kg)	Total PCBs (mg/Kg)	Total CPAHs (mg/Kg)	Total PAHs (mg/Kg)	Total SVOCs (mg/Kg)	Total VOCs (mg/Kg)
Final Confirmational continued									
97050-RBT-06	1-2.5	<56.8	135	4.01	ND	ND	ND	ND	ND
97050-RBT-07	1-2.5	<54.6	27.8	1.00	ND	ND	ND	ND	ND
97051-RBT-08	1-2.5	<54.2	63.4	1.66	ND	ND	ND	ND	--
dup of 97051-RBT-08	1-2.5	<54.1	40.0	1.40	ND	ND	ND	ND	--
97051-RBT-10	1-2.5	<54.8	516	12.8	ND	ND	ND	ND	--
97055-RBT-11	1-2.5	--	198	5.40 J%R	--	--	--	--	--
Tank Sample									
96297-03	NA	--	<5.00	13.4	ND	--	--	--	--
LC-218-WAB	NA	--	--	46.0	--	--	--	--	--
LC-219-WAB	NA	--	--	11.0	--	ND	ND	ND	--

NOTE: See Table 10 for list of parameters used to calculate Totals

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

J%R - Estimated, MS % recovery out of range
ND - Analytes not detected in this sample

TABLE 10

SVOC AND VOC PARAMETERS USED TO CALCULATE TOTALS
LCP CHEMICALS, BRUNSWICK, GA

Semi-volatile Organic Compounds (SVOCs)					
Acenaphthene	Chlorfenvinphos	Dimethoate	Hexachloroethane	2-Naphthylamine	Strychnine
Acenaphthylene[1]	5-Chloro-2-methylaniline	3,3'-Dimethoxybenzidine	Hexachlorophene	Nicotine	Terbufos
Acetophenone[1]	4-Chloro-3-methylphenol	Dimethylaminoazobenzene	Hexachloropropene	5-Nitro-o-anisidine	1,2,3,4-Tetrachlorobenzene
1-Acetyl-2-thiourea	4-Chloroaniline	Dimethylanthracene (unspecified)	Hexamethylphosphoramide	5-Nitro-o-toluidine	1,2,3,5-Tetrachlorobenzene
2-Acetylaminofluorene	bis(2-Chloroethoxy) methane	7,12-Dimethylbenz(a)anthracene	Indeno(1,2,3-cd)pyrene[1,2]	5-Nitroacenaphthene	1,2,4,5-Tetrachlorobenzene
Alachlor	bis(2-Chloroethyl) ether	3,3'-Dimethylbenzidine	Isodrin	2-Nitroaniline	Tetrachlorvinphos
2-Aminoanthraquinone	3-(Chloromethyl)pyridine hydrochloride	alpha,alpha-Dimethylphenethylamine	Isophorone[1,2]	3-Nitroaniline	Thionazin
Aminoazobenzene	1-Chloronaphthalene	2,4-Dimethylphenol	Isosafrole	4-Nitroaniline	Thiophenol
4-Aminobiphenyl	2-Chloronaphthalene	Dimethylphthalate	Kepone	Nitrobenzene	Toluene diisocyanate
Anilazine	2-Chlorophenol	4,6-Dinitro-2-methylphenol	Leptophos	4-Nitrobiphenyl	o-Toluidine
Aniline	4-Chlorophenyl-phenylether	1,2-Dinitrobenzene	Maleic anhydride	Nitrofen	1,2,3-Trichlorobenzene
o-Anisidine	Chrysene[1,2]	1,3-Dinitrobenzene	Mestranol	2-Nitrophenol	1,2,4-Trichlorobenzene
Anthracene[1]	Coumaphos	1,4-Dinitrobenzene	Methapyrilene	4-Nitrophenol	2,4,5-Trichlorophenol
Aramite	p-Cresidine	2,4-Dinitrophenol	3-Methylcholanthrene	Octamethyl pyrophosphoramide	2,4,6-Trichlorophenol
Barban	Cresol	2,4-Dinitrotoluene	4,4'-Methylenebis[2-chloroaniline]	2,2'-Oxybis(1-Chloropropane)	Trimethylphenanthrene
Benzidine	Crotoxyphos	2,6-Dinitrotoluene	2-Methylnaphthalene	Pentachlorobenzene	1,3,5-Trinitrobenzene
Benzo(a)anthracene[1,2]	2-Cyclohexyl-4,6-dinitro-phenol	Dinocap	2-Methylphenol	Pentachlorophenol	1,1-Biphenyl
Benzo(a)pyrene[1,2]	Demeton	Diphenylamine	3-Methylphenol	Phenacetin	
Benzo(b)fluoranthene[1,2]	Di-n-butylphthalate	5,5-Diphenylhydantoin	3/4-Methylphenol	Phenanthrene[1]	
Benzo(g,h,i)perylene[1]	Di-n-octylphthalate	1,2-Diphenylhydrazine	4-Methylphenol	Phenobarbital	
Benzo(k)fluoranthene[1,2]	2,4-Diaminotoluene	Disulfoton	Mexacarbate	Phenol	
Benzo(b/k)fluoranthene[1,2]	Dibenz(a,j)acridine	EPN	Monocrotophos	1,4-Phenylenediamine	
Benzofluoranthene (unspecified)[1,2]	Dibenzo(a,h)anthracene[1,2]	Ethion	N-Nitroso-di-n-propylamine	Phorate	
Benzoic acid	Dibenzofuran	Ethyl carbamate	N-Nitrosodibutylamine	Phosalone	
Benzonaphthothiophene (unspecified)	Dichlone	Ethyl methanesulfonate	N-Nitrosodiethylamine	Phosmet	
Benzopyranone (unspecified)	1,2-Dichlorobenzene	bis(2-Ethylhexyl) phthalate	N-Nitrosodimethylamine	Phosphamidon	
Benzopyrene (not A)	1,3-Dichlorobenzene	Famphur	N-Nitrosodiphenylamine/Diphenylamine	Phthalic anhydride	
Benzotriphenylene	1,4-Dichlorobenzene	Fenitrothion	N-Nitrosomethylethylamine	2-Picoline	
4-Bromophenyl-phenylether	3,3'-Dichlorobenzidine	Fensulfothion	N-Nitrosomorpholine	Piperonyl sulfoxide	
Bromoxynil	2,4-Dichlorophenol	Fenthion	N-Nitrosopiperidine	Pronamide	
Butylbenzylphthalate	2,6-Dichlorophenol	Fluchloralin	N-Nitrosopyrrolidine	Propylthiouracil	
Captafol	Dichlorvos (DVPP)	Fluoranthene[1]	Naled	Pyrene[1]	

TABLE 10 (continued)

Semi-volatile Organic Compounds (SVOCs)					
Carbaryl	Dicrotophos	Fluorene[1]	Naphthalene[1]	Pyridine	
Carbazole	Diethyl sulfate	Hexachlorobenzene	Naphthalene(Methylethyl) (unspecified)	Resorcinol	
Carbofuran	Diethylphthalate	Hexachlorobutadiene	1,4-Naphthoquinone	Safrole	
Carbophenothion	Diethylstilbestrol	Hexachlorocyclopentadiene	1-Naphthylamine	Simazine	

Notes: 1. This SVOC is also a Polynuclear Aromatic Hydrocarbon (PAH)
2. This SVOC is also a Carcinogenic Polynuclear Aromatic Hydrocarbon (CPAH)

Volatile Organic Compounds (VOC)					
Acetone	Carbon tetrachloride	1,3-Dichloro-2-propanol	Epichlorohydrin	Propargyl alcohol	Vinyl chloride
Acetonitrile	Chlorobenzene	Dichlorodifluoromethane	Ethanol	beta-Propiolactone	m-Xylene
Acrolein	Chloroethane	1,1-Dichloroethane	Ethyl benzene	Propionitrile	o-Xylene
Acrylonitrile	2-Chloroethanol	1,2-Dichloroethane	Ethyl methacrylate	n-Propylamine	p-Xylene
Allyl alcohol	2-Chloroethyl vinyl ether	1,1-Dichloroethene	Ethylene oxide	n-Propylbenzene	m&p-Xylene
Allyl chloride	Chloroform	cis-1,2-Dichloroethene	2-Hexanone	Styrene	Xylenes (unspecified)
Benzene	Chloromethane	trans-1,2-Dichloroethene	2-Hydroxypropionitrile	1,1,1,2-Tetrachloroethane	
Bromoacetone	b-Chloroprene	cis/trans1,2-Dichloroethene	Isobutyl alcohol	1,1,2,2-Tetrachloroethane	
Bromobenzene	3-Chloropropionitrile	Dichloromethane (Methylene chloride)	Isopropyl Alcohol	Tetrachloroethene	
Bromochloromethane	2-Chlorotoluene	1,2-Dichloropropane	Isopropylbenzene	Toluene	
Bromodichloromethane	4-Chlorotoluene	1,3-Dichloropropane	p-Isopropyltoluene	1,1,1-Trichloroethane	
Bromoform	1,2-Dibromo-3-chloropropane	2,2-Dichloropropane	Malononitrile	1,1,2-Trichloroethane	
Bromomethane	Dibromochloromethane	1,1-Dichloropropene	Methacrylonitrile	Trichloroethene	
2-Butanone (MEK)	1,2-Dibromoethane	cis-1,3-Dichloropropene	Methanol	Trichlorofluoromethane	
n-Butylbenzene	Dibromomethane	trans-1,3-Dichloropropene	Methyl iodide	1,2,3-Trichloropropane	
sec-Butylbenzene	cis-1,4-Dichloro-2-butene	cis/trans-1,2-Dichloropropene	Methyl methacrylate	1,2,4-Trimethylbenzene	
tert-Butylbenzene	trans-1,4-Dichloro-2-butene	1,2,3,4-Diepoxybutane	4-Methyl-2-pentanone	1,3,5-Trimethylbenzene	
Carbon disulfide	cis/trans-1,4-Dichloro-2-butene	1,4-Dioxane	Pentachloroethane	Vinyl acetate	

TABLE 11 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
North Removal Area
TCLP (mg/L)

		Stockpile	Characterization							
SAMPLE ID (Depth in ft.)	REG. LIMIT	96242-20 NA	950201-PB28-2 10	950216-PB61-2 5.5-6.5	950219-PB66-2 7.5-8.5	950221-PB72-1 6.5-7.5	950299-HA30 0-3	950299-HA31 0-4	96263-15 0-1	96317-02 0-.5
Arsenic	5	--	<0.03	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
Barium	100	--	3.00	0.5	0.7	0.5	0.6	0.4	--	--
Benzene	0.5	--	<0.01	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
gamma-BHC (Lindane)	0.4	--	<0.001	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	--	--
2-Butanone (MEK)	200	--	<0.02	<0.500	<0.500	<0.500	<0.100	<0.100	--	--
Cadmium	1	--	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	--	--
Carbon tetrachloride	0.5	--	<0.01	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
Chlordane	0.03	--	<0.001	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	--
Chlorobenzene	100	--	<0.01	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
Chloroform	6	--	<0.01	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
Chromium	5	--	0.010	<0.05	<0.05	<0.05	<0.05	<0.05	--	--
Cresol	200	--	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
2,4-D	10	--	<0.012	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	--	--
1,4-Dichlorobenzene	7.5	--	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
1,2-Dichloroethane	0.5	--	<0.01	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
1,1-Dichloroethene	0.7	--	<0.01	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
2,4-Dinitrotoluene	0.13	--	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
Endrin	0.02	--	<0.001	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	--	--
Heptachlor	0.008	--	<0.001	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	--	--
Heptachlor epoxide	0.008	--	<0.001	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	--	--
Hexachlorobenzene	0.13	--	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
Hexachlorobutadiene	0.5	--	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
Hexachloroethane	3	--	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
Lead	5	11	<0.015	0.1	<0.1	<0.1	<0.1	<0.1	6.4	35.0
Mercury	0.2	--	<0.0005	<0.020	<0.020	<0.020	<0.020	<0.020	--	--
Methoxychlor	10	--	<0.005	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	--	--
Nitrobenzene	2	--	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
Pentachlorophenol	100	--	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
Pyridine	5	--	<0.01	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
Selenium	1	--	<0.015	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
Silver	5	--	<0.002	<0.02	<0.02	<0.02	<0.02	<0.02	--	--
2,4,5-TC (Silvex)	1	--	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	--	--
Tetrachloroethene	0.7	--	<0.01	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
Toxaphene	0.5	--	<0.05	<0.015	<0.015	<0.015	<0.015	<0.015	--	--
Trichloroethene	0.5	--	<0.01	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
2,4,5-Trichlorophenol	400	--	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
2,4,6-Trichlorophenol	2	--	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	--	--
Vinyl chloride	0.2	--	<0.01	<0.100	<0.100	<0.100	<0.100	<0.100	--	--

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

TABLE 11 - Continued
North Removal Area
TCLP (mg/L)

		Characterization								
SAMPLE ID (Depth in ft.)	REG. LIMIT	AC1-A 4-5	AC1-B 8-9	AC1-C 10-11.5	AC2-A 6-6.5	AC2-B 10-11	AC2-C 7-8	AC3-A 4-5	AC3-B 6-7	AC3-C 10-11
Arsenic	5	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	0.0268 B
Barium	100	0.228	0.290	0.342	0.383	0.404	0.476	0.183 B	0.178 B	0.357
Benzene	0.5	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-BHC (Lindane)	0.4	--	--	--	--	--	--	--	--	--
2-Butanone (MEK)	200	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium	1	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Carbon tetrachloride	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlordane	0.03	--	--	--	--	--	--	--	--	--
Chlorobenzene	100	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform	6	0.6	<0.2	<0.2	0.5	<0.2	0.3	0.4	<0.2	<0.2
Chromium	5	<0.0030	0.0038 B	0.0061 B	<0.0030	0.0030 B	<0.0030	0.0090 B	0.0083 B	0.0094 B
Cresol	200	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
2,4-D	10	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	7.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethene	0.7	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,4-Dinitrotoluene	0.13	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	--	--	--
Endrin	0.02	--	--	--	--	--	--	--	--	--
Heptachlor	0.008	--	--	--	--	--	--	--	--	--
Heptachlor epoxide	0.008	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	0.13	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	--	--	--
Hexachlorobutadiene	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Hexachloroethane	3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Lead	5	0.0734 B	1.030	0.435	0.408	1.060	1.480	0.0168 B	0.0248 B	<0.0168
Mercury	0.2	<0.00010	<0.00010	<0.00010	<0.00010	<0.0001	<0.00010	0.00034	0.00012 B	<0.00010
Methoxychlor	10	--	--	--	--	--	--	--	--	--
Nitrobenzene	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Pentachlorophenol	100	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	--	--
Pyridine	5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	--	--	--
Selenium	1	0.0335 B	<0.0247	0.0248 B	<0.0247	<0.0247	<0.0247	0.0328 B	<0.0247	<0.0247
Silver	5	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019
2,4,5-TC (Silvex)	1	--	--	--	--	--	--	--	--	--
Tetrachloroethene	0.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene	0.5	--	--	--	--	--	--	--	--	--
Trichloroethene	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,4,5-Trichlorophenol	400	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
2,4,6-Trichlorophenol	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--
Vinyl chloride	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

TABLE 11 - Continued
North Removal Area
TCLP (mg/L)

SAMPLE ID (Depth in ft.)	REG. LIMIT	Characterization								
		AC4-A 3-4	AC4-B 5-6.5	AC4-C 8-9	AC5-12 12-14	AC5-4 0-2	AC5-8 8-10	AC6-10 10-12	AC6-2 2-4	AC6-6 6-8
Arsenic	5	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242
Barium	100	0.215	0.334	0.348	0.254	1.670	0.744	0.154 B	0.230	0.292
Benzene	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-BHC (Lindane)	0.4	--	--	--	--	--	--	--	--	--
2-Butanone (MEK)	200	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium	1	<0.0016	<0.0016	<0.0016	<0.0016	0.0052	<0.0016	<0.0016	<0.0016	<0.0016
Carbon tetrachloride	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlordane	0.03	--	--	--	--	--	--	--	--	--
Chlorobenzene	100	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform	6	6.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	5	<0.0030	<0.0030	<0.0030	<0.0030	0.0030 B	<0.0030	0.0038 B	<0.0030	<0.0030
Cresol	200	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-D	10	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	7.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethene	0.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,4-Dinitrotoluene	0.13	--	--	--	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endrin	0.02	--	--	--	--	--	--	--	--	--
Heptachlor	0.008	--	--	--	--	--	--	--	--	--
Heptachlor epoxide	0.008	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	0.13	--	--	--	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Hexachlorobutadiene	0.5	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachloroethane	3	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	5	0.0396 B	<0.0168	0.0246 B	0.0203 B	0.0610 B	0.484	<0.0168	<0.0168	<0.0168
Mercury	0.2	<0.00010	<0.00010	<0.00010	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Methoxychlor	10	--	--	--	--	--	--	--	--	--
Nitrobenzene	2	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pentachlorophenol	100	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Pyridine	5	--	--	--	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Selenium	1	<0.0247	<0.0247	0.0273 B	<0.0247	<0.0247	<0.0247	<0.0247	<0.0247	<0.0247
Silver	5	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019
2,4,5-TC (Silvex)	1	--	--	--	--	--	--	--	--	--
Tetrachloroethene	0.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene	0.5	--	--	--	--	--	--	--	--	--
Trichloroethene	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
2,4,5-Trichlorophenol	400	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,6-Trichlorophenol	2	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl chloride	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

TABLE 12 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
North Removal Expansion Area
TCLP (mg/L)

			Stockpile				Treated Stockpile				
	SAMPLE ID (Depth in ft.)	REG. LIMIT	96229-01 NA	96233-16 NA	96233-17 NA	96233-18 NA	96324-PMS-01 NA	96325-PMS-01 NA	96326-PMS-01 NA	96330-PMS-01 NA	96331-PMS-01 NA
Lead		5	4.7	400	68.0	97.0	<0.2	0.40 U*F6	0.38	<0.2	<0.2

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

LCP Chemicals Removal Action
14-Jul-97 10:00

TABLE 12 - Continued
North Removal Expansion Area
TCLP (mg/L)

			Treated Stockpile								
	SAMPLE ID (Depth in ft.)	REG. LIMIT	96331-PMS-02 NA	96332-PMS-01 NA	96332-PMS-02 NA	96332-PMS-03 NA	96337-PMS-02 NA	96337-PMS-05 NA	96338-PMS-02 NA	96338-PMS-04 NA	96338-PMS-R01 NA
Lead		5	72.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

TABLE 12 - Continued
North Removal Expansion Area
TCLP (mg/L)

			Treated Stockpile								
	SAMPLE ID (Depth in ft.)	REG. LIMIT	96338-PMS-R02 NA	96338-PMS-R03 NA	96338-PMS-R04 NA	96338-PMS-R05 NA	96339-PMS-01 NA	96339-PMS-03 NA	96340-PMS-02 NA	96344-PMS-01 NA	96344-PMS-02 NA
Lead		5	<0.2	0.97	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.2

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

TABLE 12 - Continued
North Removal Expansion Area
TCLP (mg/L)

			Treated Stockpile								
	SAMPLE ID (Depth in ft.)	REG. LIMIT	96344-PMS-03 NA	96344-PMS-04 NA	96344-PMS-05 NA	96345-PMS-01 NA	96345-PMS-02 NA	96345-PMS-03 NA	96345-PMS-04 NA	96345-PMS-05 NA	96347-PMS-03 NA
Lead		5	<0.20	<0.20	0.36	18.0	<0.20	<0.20	<0.20	<0.20	<0.2

– Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

TABLE 12 - Continued
North Removal Expansion Area
TCLP (mg/L)

			Treated Stockpile								
	SAMPLE ID (Depth in ft.)	REG. LIMIT	96348-PMS-R01 NA	96348-PMS-R02 NA	96348-PMS-R03 NA	96348-PMS-R04 NA	96348-PMS-R05 NA	96351-PMS-02 NA	96352-PMS-01 NA	96353-PMS-01 NA	96354-PMQA-01 NA
Lead		5	1.6	<0.2	1.4	5.4 *F4	35.0	1.5	<0.2	<0.2	<0.20

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

LCP Chemicals Removal Action
14-Jul-97 10:00

TABLE 12 - Continued
North Removal Expansion Area
TCLP (mg/L)

			Treated Stockpile								
	SAMPLE ID (Depth in ft.)	REG. LIMIT	96354-PMQA-02 NA	96354-PMS-01 NA	97008-PMS-03 NA	97010-PMQA-01 NA	97010-PMS-04 NA	97013-PMS-01A NA	97013-PMS-01B NA	97014-PMS-01 NA	97015-PMS-01 NA
Lead		5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

TABLE 12 - Continued
North Removal Expansion Area
TCLP (mg/L)

			Treated Stockpile								
	SAMPLE ID (Depth in ft.)	REG. LIMIT	97016-PMS-02 NA	97020-PMS-01 NA	97021-PMS-02 NA	97022-PMS-02 NA	97023-PMS-01 NA	97027-PMS-01 NA	97028-PMS-01 NA	97029-PMS-02 NA	97030-PMS-01 NA
Lead		5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

LCP Chemicals Removal Action
14-Jul-97 10:00

TABLE 12 - Continued
North Removal Expansion Area
TCLP (mg/L)

			Treated Stockpile							
	SAMPLE ID (Depth in ft.)	REG. LIMIT	97034-PMS-01 NA	97035-PMS-01 NA	97036-PMS-02 NA	97037-PMS-01 NA	97041-PMS-01 NA	97042-PMS-01 NA	97043-PMS-01 NA	97044-PMS-01 NA
Lead		5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

TABLE 13 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
Northwest Field
TCLP (mg/L)

		Characterization								
SAMPLE ID (Depth in ft.)	REG. LIMIT	950201-TT2-1 2.5	950201-TT2-2 5	950201-TT2-3 2.5	950201-TT2-4 5	950201-TT2-5 2.5	950201-TT2-6 5	950201-TT3-1 2.5	950201-TT3-2 5	950201-TT3-3 2.5
Arsenic	5	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Barium	100	2.10	0.470	0.330	0.520	0.440	0.400	0.330	0.440	0.520
Benzene	0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
gamma-BHC (Lindane)	0.4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2-Butanone (MEK)	200	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Cadmium	1	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	0.001
Carbon tetrachloride	0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chlordane	0.03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chlorobenzene	100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chloroform	6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	5	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Cresol	200	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2,4-D	10	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
1,4-Dichlorobenzene	7.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1-Dichloroethene	0.7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-Dinitrotoluene	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	0.02	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Heptachlor	0.008	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Heptachlor epoxide	0.008	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Hexachlorobenzene	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobutadiene	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachloroethane	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	5	<0.015	<0.015	0.030	0.410	0.030	<0.015	0.380	0.330	0.280
Mercury	0.2	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Methoxychlor	10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrobenzene	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pentachlorophenol	100	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Pyridine	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	1	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Silver	5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
2,4,5-TC (Silvex)	1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Tetrachloroethene	0.7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toxaphene	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethene	0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4,5-Trichlorophenol	400	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2,4,6-Trichlorophenol	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl chloride	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

TABLE 13 - Continued
Northwest Field
TCLP (mg/L)

		Characterization								
SAMPLE ID (Depth in ft.)	REG. LIMIT	950201-TT3-4 5	950201-TT3-5 2.5	950201-TT3-6 5	950201-TT3-7 7	950205-PB35-2 13	950205-PB38-1 3	950228-SA1 0-1	950228-SA1-1 0-1	950228-SA2 2-3
Arsenic	5	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.5	<0.5	<0.5
Barium	100	0.390	0.630	0.530	0.330	0.560	0.220	0.5	1.1	0.9
Benzene	0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.060	<0.050	<0.050
gamma-BHC (Lindane)	0.4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00025	<0.00025	<0.00025
2-Butanone (MEK)	200	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.500	<0.500	<0.500
Cadmium	1	<0.001	<0.001	0.002	0.002	<0.001	<0.001	<0.01	<0.01	<0.01
Carbon tetrachloride	0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050
Chlordane	0.03	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0050	<0.0050	<0.0050
Chlorobenzene	100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050
Chloroform	6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050
Chromium	5	<0.004	<0.004	<0.004	<0.004	0.020	<0.004	<0.05	<0.05	<0.05
Cresol	200	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050
2,4-D	10	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.0011	<0.0011	<0.0055
1,4-Dichlorobenzene	7.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050
1,2-Dichloroethane	0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050
1,1-Dichloroethene	0.7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050
2,4-Dinitrotoluene	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050
Endrin	0.02	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00050	<0.00050	<0.00050
Heptachlor	0.008	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00025	<0.00025	<0.00025
Heptachlor epoxide	0.008	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00025	<0.00025	<0.00025
Hexachlorobenzene	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050
Hexachlorobutadiene	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050
Hexachloroethane	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050
Lead	5	0.140	0.400	0.980	0.930	0.040	0.100	0.2	<0.1	0.1
Mercury	0.2	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.020	<0.020	<0.020
Methoxychlor	10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0025	<0.0025	<0.0025
Nitrobenzene	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050
Pentachlorophenol	100	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.050	<0.050	<0.050
Pyridine	5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050
Selenium	1	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.5	<0.5	<0.5
Silver	5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.02	<0.02	<0.02
2,4,5-TC (Silvex)	1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0001	<0.0001	<0.0005
Tetrachloroethene	0.7	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050
Toxaphene	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.015	<0.015	<0.015
Trichloroethene	0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050
2,4,5-Trichlorophenol	400	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050
2,4,6-Trichlorophenol	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050
Vinyl chloride	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.100	<0.100	<0.100

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

LCP Chemicals Removal Action
14-Jul-97 10:00

TABLE 13 - Continued
Northwest Field
TCLP (mg/L)

		Characterization								
SAMPLE ID (Depth in ft.)	REG. LIMIT	950228-SA2-1 2-3	950241-SA3 0-1	950241-SA4 2-3	950242-SA5 0-1	950242-SA6 0-1	950242-SA7 2-3	950242-SA8 0-1	950242-SA9 0-1	AC7-0 0-2
Arsenic	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0242
Barium	100	0.7	0.7	0.5	0.8	0.7	0.3	0.6	0.7	0.153 B
Benzene	0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.2
gamma-BHC (Lindane)	0.4	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	--
2-Butanone (MEK)	200	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<5
Cadmium	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0016
Carbon tetrachloride	0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.2
Chlordane	0.03	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
Chlorobenzene	100	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.2
Chloroform	6	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.2
Chromium	5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.0030
Cresol	200	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1
2,4-D	10	<0.0055	<0.011	<0.0061	<0.0073	<0.0079	<0.0069	<0.0069	<0.022	--
1,4-Dichlorobenzene	7.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.2
1,2-Dichloroethane	0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.2
1,1-Dichloroethene	0.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.2
2,4-Dinitrotoluene	0.13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.10
Endrin	0.02	<0.00050	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	--
Heptachlor	0.008	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	--
Heptachlor epoxide	0.008	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	--
Hexachlorobenzene	0.13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.10
Hexachlorobutadiene	0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1
Hexachloroethane	3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1
Lead	5	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.0168
Mercury	0.2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.00010
Methoxychlor	10	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	--
Nitrobenzene	2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1
Pentachlorophenol	100	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.25
Pyridine	5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.25
Selenium	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.0247
Silver	5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.0019
2,4,5-TC (Silvex)	1	<0.0005	<0.0010	<0.00061	<0.0007	<0.00071	<0.00063	<0.00063	<0.0020	--
Tetrachloroethene	0.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.2
Toxaphene	0.5	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	--
Trichloroethene	0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.2
2,4,5-Trichlorophenol	400	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1
2,4,6-Trichlorophenol	2	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.1
Vinyl chloride	0.2	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.1

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

LCP Chemicals Removal Action
14-Jul-97 10:00

TABLE 13 - Continued
Northwest Field
TCLP (mg/L)

		Characterization				
SAMPLE ID (Depth in ft.)	REG. LIMIT	AC7-10 10-12	AC7-4 4-8	AC8-10 10-12	AC8-2 2-4	AC8-6 6-8
Arsenic	5	<0.0242	<0.0242	<0.0242	<0.0242	<0.0242
Barium	100	0.151 B	0.368	0.190 B	0.115 B	0.182 B
Benzene	0.5	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-BHC (Lindane)	0.4	--	--	--	--	--
2-Butanone (MEK)	200	<5	<5	<5	<5	<5
Cadmium	1	0.0022 B	<0.0016	<0.0016	<0.0016	<0.0016
Carbon tetrachloride	0.5	<0.2	<0.2	<0.2	<0.2	<0.2
Chlordane	0.03	--	--	--	--	--
Chlorobenzene	100	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform	6	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	5	<0.0030	<0.0030	0.0045 B	0.0036 B	0.0059 B
Cresol	200	<0.1	<0.1	<0.1	<0.1	<0.1
2,4-D	10	--	--	--	--	--
1,4-Dichlorobenzene	7.5	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	0.5	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethene	0.7	<0.2	<0.2	<0.2	<0.2	<0.2
2,4-Dinitrotoluene	0.13	<0.10	<0.10	<0.10	<0.10	<0.10
Endrin	0.02	--	--	--	--	--
Heptachlor	0.008	--	--	--	--	--
Heptachlor epoxide	0.008	--	--	--	--	--
Hexachlorobenzene	0.13	<0.10	<0.10	<0.10	<0.10	<0.10
Hexachlorobutadiene	0.5	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachloroethane	3	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	5	<0.0168	<0.0168	<0.0168	<0.0168	0.0244 B
Mercury	0.2	0.00012 B	<0.00010	0.00012 B	0.00010 B	0.00017 B
Methoxychlor	10	--	--	--	--	--
Nitrobenzene	2	<0.1	<0.1	<0.1	<0.1	<0.1
Pentachlorophenol	100	<0.25	<0.25	<0.25	<0.25	<0.25
Pyridine	5	<0.25	<0.25	<0.25	<0.25	<0.25
Selenium	1	<0.0247	<0.0247	0.0251 B	<0.0247	0.0343 B
Silver	5	<0.0019	<0.0019	<0.0019	<0.0019	0.0022 B
2,4,5-TC (Silvex)	1	--	--	--	--	--
Tetrachloroethene	0.7	<0.2	<0.2	<0.2	<0.2	<0.2
Toxaphene	0.5	--	--	--	--	--
Trichloroethene	0.5	<0.2	<0.2	<0.2	<0.2	<0.2
2,4,5-Trichlorophenol	400	<0.1	<0.1	<0.1	<0.1	<0.1
2,4,6-Trichlorophenol	2	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl chloride	0.2	<0.1	<0.1	<0.1	<0.1	<0.1

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

TABLE 14 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
Waste Disposal Impoundment
TCLP (mg/L)

		Stockpile							Characterization	
SAMPLE ID (Depth in ft.)	REG. LIMIT	96115-WDI-01 NA	96115-WDI-02 NA	96115-WDI-03 NA	97091-WDIS NA	97120-WDIS NA	WDI-A NA	WDI-B NA	WDI1-4 4-5	GPW-01-01 0-2
Arsenic	5	<0.5	<0.5	<0.5	--	--	<0.0242	<0.0242	<0.0242	--
Barium	100	0.7	0.8	0.6	--	--	0.297	0.189 B	0.181 B	<1.0
Benzene	0.5	<0.050	<0.050	<0.050	--	--	<0.2	<0.2	<0.2	--
gamma-BHC (Lindane)	0.4	<0.00025	<0.00025	<0.00025	--	--	--	--	--	--
2-Butanone (MEK)	200	<0.100	<0.100	<0.100	--	--	<5	<5	<5	--
Cadmium	1	<0.01	<0.01	<0.01	--	--	<0.0016	<0.0016	<0.0016	--
Carbon tetrachloride	0.5	<0.050	<0.050	<0.050	--	--	<0.2	<0.2	<0.2	--
Chlordane	0.03	<0.0050	<0.0050	<0.0050	--	--	--	--	--	--
Chlorobenzene	100	<0.050	<0.050	<0.050	--	--	<0.2	<0.2	<0.2	--
Chloroform	6	<0.050	<0.050	<0.050	--	--	<0.2	<0.2	<0.2	--
Chromium	5	<0.05	<0.05	<0.05	--	--	<0.0030	<0.0030	<0.0030	--
Cresol	200	<0.100	<0.100	<0.100	--	--	<0.1	<0.1	<0.1	--
2,4-D	10	<0.0055	<0.0055	<0.0055	--	--	--	--	--	--
1,4-Dichlorobenzene	7.5	<0.050	<0.050	<0.050	--	--	<0.2	<0.2	<0.2	--
1,2-Dichloroethane	0.5	<0.050	<0.050	<0.050	--	--	<0.2	<0.2	<0.2	--
1,1-Dichloroethene	0.7	<0.050	<0.050	<0.050	--	--	<0.2	<0.2	<0.2	--
2,4-Dinitrotoluene	0.13	<0.100	<0.100	<0.100	--	--	<0.10	<0.10	<0.10	--
Endrin	0.02	<0.00050	<0.00050	<0.00050	--	--	--	--	--	--
Heptachlor	0.008	<0.00025	<0.00025	<0.00025	--	--	--	--	--	--
Heptachlor epoxide	0.008	<0.00025	<0.00025	<0.00025	--	--	--	--	--	--
Hexachlorobenzene	0.13	<0.100	<0.100	<0.100	--	--	<0.10	<0.10	<0.10	--
Hexachlorobutadiene	0.5	<0.100	<0.100	<0.100	--	--	<0.1	<0.1	<0.1	--
Hexachloroethane	3	<0.100	<0.100	<0.100	--	--	<0.1	<0.1	<0.1	--
Lead	5	33	<0.1	0.1	8.1	1.5	0.0699 B	0.0577 B	0.0727 B	2.6 *F69
Mercury	0.2	<0.020	<0.020	0.025	--	--	0.0070	0.0661	0.0484	<0.020
Methoxychlor	10	<0.0025	<0.0025	<0.0025	--	--	--	--	--	--
Nitrobenzene	2	<0.100	<0.100	<0.100	--	--	<0.1	<0.1	<0.1	--
Pentachlorophenol	100	<0.100	<0.100	<0.100	--	--	<0.25	<0.25	<0.25	--
Pyridine	5	<0.100	<0.100	<0.100	--	--	<0.25	<0.25	<0.25	--
Selenium	1	<0.5	<0.5	<0.5	--	--	<0.0247	<0.0247	0.0276 B	--
Silver	5	<0.02	<0.02	<0.02	--	--	<0.0019	<0.0019	<0.0019	--
2,4,5-TC (Silvex)	1	<0.00050	<0.00050	<0.00050	--	--	--	--	--	--
Tetrachloroethene	0.7	<0.050	<0.050	<0.050	--	--	<0.2	<0.2	<0.2	--
Toxaphene	0.5	<0.015	<0.015	<0.015	--	--	--	--	--	--
Trichloroethene	0.5	<0.050	<0.050	<0.050	--	--	<0.2	<0.2	<0.2	--
2,4,5-Trichlorophenol	400	<0.100	<0.100	<0.100	--	--	<0.1	<0.1	<0.1	--
2,4,6-Trichlorophenol	2	<0.100	<0.100	<0.100	--	--	<0.1	<0.1	<0.1	--
Vinyl chloride	0.2	<0.100	<0.100	<0.100	--	--	<0.1	<0.1	<0.1	--

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

LCP Chemicals Removal Action
14-Jul-97 10:00

TABLE 14 - Continued
Waste Disposal Impoundment
TCLP (mg/L)

		Characterization			
SAMPLE ID (Depth in ft.)	REG. LIMIT	WDI2-4 4-5	WDI3-1 0-1	WDI3-3 3-4	WDI4-1 0-1
Arsenic	5	<0.0242	<0.0242	<0.0242	<0.0242
Barium	100	0.295	0.242	0.165 B	0.395
Benzene	0.5	<0.2	<0.2	<0.2	<0.2
gamma-BHC (Lindane)	0.4	--	--	--	--
2-Butanone (MEK)	200	<5	<5	<5	<5
Cadmium	1	<0.0016	<0.0016	<0.0016	<0.0016
Carbon tetrachloride	0.5	<0.2	<0.2	<0.2	<0.2
Chlordane	0.03	--	--	--	--
Chlorobenzene	100	<0.2	<0.2	<0.2	<0.2
Chloroform	6	<0.2	<0.2	<0.2	<0.2
Chromium	5	<0.0030	<0.0030	0.0041 B	<0.0030
Cresol	200	<0.1	<0.1	<0.1	<0.1
2,4-D	10	--	--	--	--
1,4-Dichlorobenzene	7.5	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane	0.5	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethene	0.7	<0.2	<0.2	<0.2	<0.2
2,4-Dinitrotoluene	0.13	<0.10	<0.10	<0.10	<0.10
Endrin	0.02	--	--	--	--
Heptachlor	0.008	--	--	--	--
Heptachlor epoxide	0.008	--	--	--	--
Hexachlorobenzene	0.13	<0.10	<0.10	<0.10	<0.10
Hexachlorobutadiene	0.5	<0.1	<0.1	<0.1	<0.1
Hexachloroethane	3	<0.1	<0.1	<0.1	<0.1
Lead	5	0.0666 B	0.958	0.0696 B	35.300
Mercury	0.2	0.0072	<0.00010	<0.00010	<0.00010
Methoxychlor	10	--	--	--	--
Nitrobenzene	2	<0.1	<0.1	<0.1	<0.1
Pentachlorophenol	100	<0.25	<0.25	<0.25	<0.25
Pyridine	5	<0.25	<0.25	<0.25	<0.25
Selenium	1	0.0407 B	<0.0247	<0.0247	<0.0247
Silver	5	<0.0019	<0.0019	<0.0019	<0.0019
2,4,5-TC (Silvex)	1	--	--	--	--
Tetrachloroethene	0.7	<0.2	<0.2	<0.2	<0.2
Toxaphene	0.5	--	--	--	--
Trichloroethene	0.5	<0.2	<0.2	<0.2	<0.2
2,4,5-Trichlorophenol	400	<0.1	<0.1	<0.1	<0.1
2,4,6-Trichlorophenol	2	<0.1	<0.1	<0.1	<0.1
Vinyl chloride	0.2	<0.1	<0.1	<0.1	<0.1

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

TABLE 15 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
North Rail Yard
TCLP (mg/L)

			Characterization
	SAMPLE ID (Depth in ft.)	REG. LIMIT	GPT-30-1 0-2
Barium		100	<1.0
Lead		5	6.1 *F69
Mercury		0.2	<0.020

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

14-Jul-97 10:00

TABLE 16 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
Bunker C Tank Area
TCLP (mg/L)

		Tank Samples								
SAMPLE ID (Depth in ft.)	REG. LIMIT	950123-97-OIL NA	950124-107-Sludge NA	950124-108-Sludge NA	950124-92-Sludge NA	950124-93-Sludge NA	950124-94-Sludge NA	950124-97-Sludge NA	950125-95-OIL NA	950125-96-OIL NA
Arsenic	5	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Barium	100	10.0	4.00	7.00	3.60	5.20	5.00	4.40	7.10	10.0
Benzene	0.5	<0.01	<0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-Butanone (MEK)	200	<0.02	<0.40	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Cadmium	1	<0.001	0.002	0.003	0.005	<0.001	0.001	<0.001	<0.001	<0.001
Carbon tetrachloride	0.5	<0.01	<0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chlorobenzene	100	<0.01	<0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chloroform	6	0.02	0.25	0.02	<0.01	0.02	<0.01	0.02	0.02	0.01
Chromium	5	0.020	0.020	0.030	0.007	0.010	0.020	0.020	0.010	0.020
Cresol	200	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	7.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	0.5	<0.01	<0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1-Dichloroethene	0.7	<0.01	<0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-Dinitrotoluene	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobutadiene	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachloroethane	3	<0.05	0.70	<0.05	<0.05	<0.05	0.37	<0.05	<0.05	<0.05
Lead	5	0.020	0.050	<0.015	5.00	<0.015	<0.015	0.020	<0.015	<0.015
Mercury	0.2	<0.0005	1.32	0.005	0.285	0.073	5.28	0.0013	0.0019	0.0045
Nitrobenzene	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pentachlorophenol	100	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Pyridine	5	<0.01	<0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	1	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Silver	5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Tetrachloroethene	0.7	0.01	3.1	<0.01	0.03	0.01	<0.01	<0.01	<0.01	0.01
Trichloroethene	0.5	<0.01	0.71	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4,5-Trichlorophenol	400	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2,4,6-Trichlorophenol	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl chloride	0.2	<0.01	<0.20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

14-Jul-97 10:00

TABLE 17 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
North Central Area
TCLP (mg/L)

		Stockpile	Wood
SAMPLE ID (Depth in ft.)	REG. LIMIT	96319-03 NA	96095-CT NA
Arsenic	5	--	<1.0
Barium	100	--	0.9
Benzene	0.5	--	<0.050
gamma-BHC (Lindane)	0.4	--	<0.00010
2-Butanone (MEK)	200	--	<1.000
Cadmium	1	--	<0.1
Carbon tetrachloride	0.5	--	<0.050
Chlordane	0.03	--	<0.0010
Chlorobenzene	100	--	<0.050
Chloroform	6	--	<0.050
Chromium	5	--	<0.2
2,4-D	10	--	<0.020
1,4-Dichlorobenzene	7.5	--	<0.020
1,2-Dichloroethane	0.5	--	<0.050
1,1-Dichloroethene	0.7	--	<0.050
2,4-Dinitrotoluene	0.13	--	<0.020
Endrin	0.02	--	<0.00020
Heptachlor	0.008	--	<0.00010
Hexachlorobenzene	0.13	--	<0.020
Hexachlorobutadiene	0.5	--	<0.020
Hexachloroethane	3	--	<0.020
Lead	5	1.6	<1.0
Mercury	0.2	--	<0.05
Methoxychlor	10	--	<0.0010
Nitrobenzene	2	--	<0.020
Pentachlorophenol	100	--	<0.100
Pyridine	5	--	<0.020
Selenium	1	--	<1.0
Silver	5	--	<0.1
2,4,5-TC (Silvex)	1	--	<0.0040
Tetrachloroethene	0.7	--	<0.050
Toxaphene	0.5	--	<0.0020
Trichloroethene	0.5	--	<0.050
2,4,5-Trichlorophenol	400	--	<0.100
2,4,6-Trichlorophenol	2	--	<0.020
Vinyl chloride	0.2	--	<0.100

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

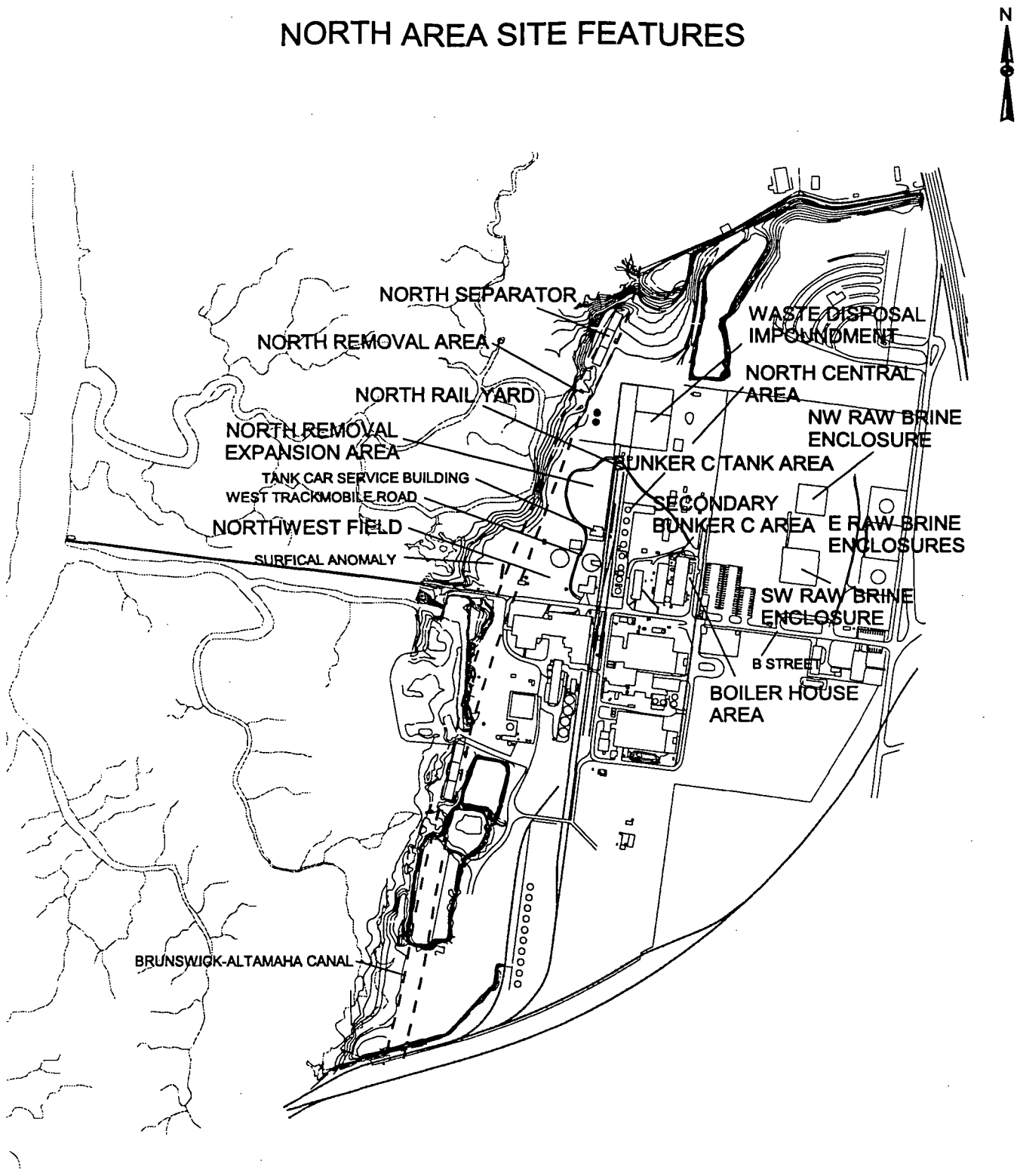
TABLE 18 - Analytical Results
LCP Chemicals Removal Action
Brunswick, Georgia
Raw Brine Enclosures
TCLP (mg/L)

		Characterization	Tank Samples	
	SAMPLE ID (Depth in ft.)	LC-207-SLA 0-1	96297-03 NA	LC-218-WAB NA
	REG. LIMIT			
Arsenic	5	<0.15	--	--
Barium	100	0.40	--	--
Cadmium	1	<0.025	--	--
Chromium	5	<0.050	--	--
Lead	5	<0.20	--	--
Mercury	0.2	0.00068	<0.02	<0.00023
Selenium	1	<0.20	--	--
Silver	5	<0.050	--	--

-- Sample was not analyzed for this parameter.
< Analyte was not detected in this sample at the listed detection limit.

FIGURES

NORTH AREA SITE FEATURES



LEGEND

- Brunswick-Altamaha Canal
- 1994 Upland Topography
- Tidal Creeks and Channels

300 0 300 600 Feet

GeoSyntec Consultants
ATLANTA, GEORGIA

FIGURE NO.	1
PROJECT NO.	GL0191-1451
DOCUMENT NO.	L9720017
FILE NO.	NRA.APR

N:\LCPGA\CLOSEOUT\NRA\NRA.APR

DRAWINGS

U.S. EPA REGION IV

SDMS

Unscannable Material Target Sheet

DocID: 10879193 Site ID: GADO99303182

Site Name: LCP Chemicals

Nature of Material:

Map:	☐	Computer Disks:	☐
Photos:	☐	CD-ROM:	☐
Blueprints:	☐	Oversized Report:	☐
Slides:	☐	Log Book:	☐

Other (describe): Removal Characterization/Confirmational Sampling Locations, North Area

Amount of material: _____

* Please contact the appropriate Records Center to view the material *

APPENDIX A

WASTE COMPATIBILITY TESTING

Prepared for

LCP Chemicals Steering Committee
Ross Road
Brunswick, Georgia 31520

FINAL REPORT
LABORATORY TEST RESULTS
WASTE COMPATIBILITY TESTING
LCP CHEMICALS - GEORGIA SITE
BRUNSWICK, GEORGIA

Prepared by

GeoSyntec Consultants
1100 Lake Hearn Drive
Suite 200
Atlanta, Georgia 30342

Project Number GE3834

October 1995

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Terms of Reference

This report was prepared by GeoSyntec Consultants (GeoSyntec), Atlanta, Georgia for LCP Chemicals Steering Committee, Brunswick, Georgia. The report presents the results of a laboratory waste compatibility testing program performed as part of the removal response activities for the LCP Chemicals - Georgia Site in Brunswick, Glynn County, Georgia. GeoSyntec understands that the purpose of the testing program is to evaluate the degree to which the site materials are strengthened and their workability (i.e., consistency) are improved through blending with different percentages of various admixtures. The testing program commenced on 18 August 1995 and was concluded on 5 September 1995.

This report was prepared by Mr. Brian D. Jacobson, E.I.T., of GeoSyntec, and it was reviewed by Dr. Nader S. Rad, P.E., also of GeoSyntec, in accordance with the internal review policy of the firm. The testing program was conducted under the direction of Mr. Jacobson and Dr. Rad at the request and authorization of Mr. Kirk J. Kessler, P.G., of Geosyntec, on behalf of LCP Chemicals Steering Committee. All testing was performed at the GeoSyntec Geomechanics and Environmental Laboratory in Atlanta, Georgia.

1.2 Organization

The remainder of this report is organized as follows:

- *Section 2, Scope of Work*, presents laboratory procedures and testing conditions used during the laboratory testing program;
- *Section 3, Test Results*, presents the results obtained during the laboratory testing program; and

- *Section 4, Closure*, presents GeoSyntec's policy regarding the limitations of and the use of the information obtained during the performance of the laboratory testing program.

2. SCOPE OF WORK

2.1 Overview

Samples of site wastes (herein referred to as site materials) were shipped from the LCP Chemicals site to GeoSyntec for the testing program. The site materials were obtained from the brine impoundments, north disposal area, south disposal area, raw brine tank enclosure, and waste disposal impoundment. Samples of the site materials, as well as specified mixtures of these materials, were treated with varying percentages of cement, lime, sand, and specified mixtures of these additives, and tested. The laboratory testing program included the following types of evaluations:

- consistency evaluation; and
- index strength (i.e., pocket penetrometer).

2.2 Sample Identification, Handling, Storage, and Disposal

2.2.1 Sample Identification

Site material and additive samples received at the laboratory are listed in Tables 1 and 2, respectively. The site material samples were identified by GeoSyntec field personnel, and the additive samples were identified by representatives of the additive manufacturers/distributors. Additional information, provided by the manufacturer/distributor, for the additives is presented in Appendix A.

At the outset of the testing program, each sample was assigned a laboratory sample number to facilitate tracking and documentation. Moreover, as presented in Tables 1 and 2, a site material/additive designation was assigned to each site material or additive

sample. The site material/additive designations are used repeatedly throughout this report.

2.2.2 Sample Handling, Storage, and Disposal

2.2.2.1 Site Materials

As small-volume treatability study samples, the site materials were exempt, under the Resource Conservation and Recovery Act (RCRA) Part 261.4(e), from hazardous waste manifesting requirements. A packing list quantifying and describing the site materials, as well as pertinent shipping information, accompanied each container. Written records of sample possession and transference were maintained via Chain-of-Custody documents.

An existing Project-Specific Health and Safety Plan (PSHASP), which had been prepared for a previous testing program performed on similar materials, was utilized during the performance of the testing program. The PSHASP had been prepared based on (i) the historical chemical analyses for the site material samples provided to GeoSyntec by Allied-Signal, and (ii) written recommendations of an independent industrial hygiene consultant who had reviewed the chemical analyses.

The following guidelines were specified in the PSHASP:

- the general requirements set forth by the United States Occupational Safety and Health Administration (OSHA) for level D personal protection should be used during handling and testing of the site materials;

- the site material samples should be stored in a storage area designated for materials requiring special handling procedures; and

- the unused portions of the site material samples, as well as all materials contaminated with these substances during the testing program, should be returned to the LCP Chemicals - Georgia site after 30 days following the completion of the testing program.

2.2.2.2 Additives

The additives used in the testing program are neither contaminated nor considered to be hazardous waste. Accordingly, no special protective measures were required while handling the additives. Furthermore, the additive samples were stored in one of the general storage areas of the laboratory. GeoSyntec will continue storing the additive samples for 30 days following the completion of the testing program. Thereafter, the samples will be discarded unless long-term storage arrangements are specifically made with the laboratory.

2.3 Sample Preparation

The procedures used to prepare the site material and additive samples were as follows:

- site material samples - at the outset of the testing program, the contents of each site material sample were thoroughly blended to provide homogeneous bulk samples of the site materials; the bulk samples were passed through a standard No. 4 sieve (4.75 mm) and the portion retained on the sieve was discarded; additionally, equal portions, based on total weight, of each brine mud impoundment sample were combined and mixed to form a composite brine mud impoundment sample; and

- additive samples - at the outset of the testing program, the contents of each additive sample were thoroughly blended; the sand sample was also washed over a standard No. 200 (0.075 mm) sieve and then passed through a standard No. 4 sieve (4.75 mm); all materials retained on the sieve were discarded.

2.4 Test Material Preparation

The following materials were used in the testing program:

- site materials - as presented in Table 3, the site material samples were tested both individually and in various combinations; these samples are herein collectively referred to as "test materials"; and

- additives - the additive samples were used both individually and in various combinations; these samples are herein collectively referred to as "test additives".

Moreover, as presented in Table 3, a test material designation was assigned to each test material. The test material designations were assigned based on the conventions described in Section 2.6 of this report. These designations are used repeatedly throughout this report.

2.5 Test Mix Preparation

Utilizing the test material and test additive samples, different mixes (herein referred to as test mixes) were prepared using the following procedure:

- a portion of the appropriate test material was weighed;

- the required amount of the appropriate test additive (based on the total weight of the test material and the required dosage of the test additive) was weighed;

- the test additive was added to and thoroughly blended with the test material in a small stainless steel container utilizing a rubber spatula.

2.6 Test Mix Designation

A mixture designation was assigned to each test mix to facilitate tracking and documentation. Each mixture designation was constructed according to the following conventions:

- parentheses [( )] - parentheses are used to group items in a manner similar to that used in mathematical expressions;
- slash [/] - a slash is used to separate the lists of test materials and additives from their respective ratios in the test mix; and
- colon [:] - a colon is used to separate both the designations of the materials used in the test mix, and the ratios at which they are mixed.

Since mixture designations are extensively used throughout this report, the following example is provided for further clarification.

Example - (NDA:BMI/1:1):C/1:0.05

This designation contains the following information:

NDA:BMI - a mixture of North Disposal Area sludge and Brine Mud Impoundment waste was used as the test material;

1:1 - the ratio of North Disposal Area sludge to Brine Mud Impoundment waste in the mix (based on the total weight of each test material) was 1 to 1;

C - cement was used as the test additive; and

1:0.05 - the ratio of the test material to the test additive in the mix (based on the total weight of the test material) was 1 to 0.05 (i.e., 5 percent).

2.7 Testing Procedures and Conditions

2.7.1 Testing Standards

No generally accepted test standards exist for the consistency evaluation and index strength testing of treated materials. Thus, generally accepted test procedures for evaluating the engineering properties of soils were used. The testing program included the following test standards and procedures:

- moisture content - American Society for Testing and Materials (ASTM) D 2216, "*Standard Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixture*";
- consistency evaluation as described in Section 2.7.2; and
- index strength using the pocket penetrometer as described in Section 2.7.3.

The testing procedures which required project specific conditions are identified in the following subsections.

2.7.2 Consistency Evaluation

2.7.2.1 Specimen Preparation

The following procedure was used to prepare the specimens:

- the required mix was prepared; and
- a representative test specimen was selected from the bulk sample of the mix for testing.

2.7.2.2 Testing Procedure

A consistency value was assigned to each test mix based on visual observations of its behavior. As presented in Table 4, the following subjective scale of 1 to 10 (very low to high consistency) was used:

- consistency of 1 or 2 (very low consistency) - the material tested behaves similar to a thin bentonite slurry or a very wet mud; the material will fail the paint filter liquids test;

- consistency of 3 or 4 (low consistency) - the material tested behaves similar to a remolded clay at a moisture content equal to, or several percentage points above, its liquid limit, the material may pass or fail the paint filter liquids test;

- consistency of 5 to 7 (medium consistency) - the material tested behaves similar to a remolded clay at a moisture content equal to, or a few percentage points above, its plastic limit; the material will pass the paint filter liquids test; and

- consistency of 8 to 10 (high consistency) - the material tested behaves similar to a remolded moist to very slightly moist clay.

2.7.3 Index Strength Testing

2.7.3.1 Specimen Preparation

Each test specimen was approximately 3.4 in. (85 mm) in diameter and had a height of approximately 1.0 in. (25 mm). After forming each test mix, a consistency evaluation was performed as described in Section 2.7.2.2. Depending on the consistency of each mix, the following procedures were used to form the test specimens:

- very low consistency (i.e., consistency values of 1 or 2) - the test mix was carefully poured/placed in the mold in one continuous layer in order to provide a homogeneous specimen and prevent entrapment of air bubbles; when appropriate, the top of the mold was leveled with a spatula to remove excess material;

- low consistency (i.e., consistency values of 3 or 4) - the test mix was carefully poured/placed in the mold in one continuous layer in order to provide a homogeneous specimen and prevent entrapment of air bubbles; when appropriate, the top of the mold was leveled with a spatula to remove excess material;

- medium consistency (i.e., consistency values of 5 to 7) - the test mix was placed in the mold in two approximately 0.5-in. (13-mm) thick layers; each layer was carefully kneaded by hand to form a homogeneous specimen and remove entrapped air bubbles; and

- high consistency (i.e., consistency values of 8 to 10) - the test mix was placed in the mold in two approximately 0.5-in. (13-mm) thick layers; each layer was tamped 25 times using a 0.75-in. (19-mm) diameter rod to form a homogeneous specimen.

Following preparation, each specimen was assigned a specimen number, in addition to the mixture designation to facilitate tracking and documentation throughout the testing program. When appropriate, each specimen was sealed and stored in a designated area, at a temperature of approximately 70° F (20° C), to cure for predetermined periods of time prior to testing.

2.7.3.2 Testing Procedure

Index strength testing was performed on designated test specimens utilizing a pocket penetrometer. Pocket penetrometers are calibrated by manufacturers to provide an estimate of the unconfined compressive strength of the material tested. However, it should be recognized that such calibrations are based on general correlations and are

material dependent. Thus, pocket penetrometer results may not be true indications of the unconfined compressive strength of the tested materials. Nonetheless, the ease of use and cost effectiveness of this testing equipment make it well suited for preliminary strength screening of different materials.

A pocket penetrometer with a 12 lb/in. (2.1 N/mm) compression spring and either a 0.25-in. (6.4-mm) or 1.0-in. (25-mm) diameter footing was used. The testing procedure was as follows:

- the test specimen was removed from the storage area after the required curing period;
- depending upon the expected material strength, one of the footings was selected for testing;
- the test specimen was placed on a level platform; a small section free of voids or other potential defects was selected for testing;
- the pocket penetrometer footing was placed on the selected section of the surface of the specimen and then pushed into the specimen to a depth of approximately 0.25 in. (6.4 mm); and
- the spring deflection reading required for the insertion of the pocket penetrometer footing to the specified depth was recorded.

3. TEST RESULTS

The test results are provided in Table 5. A blank shown on the table indicates that the test was not performed, the parameter is not applicable, or the test resulted in insufficient data to report the designated parameter.

4. CLOSURE

This report applies only to the materials tested and does not necessarily indicate the quality or condition of apparently identical or similar materials. The testing was performed in accordance with the general engineering standards and conditions reported. The test results are related to the testing conditions used during the testing program. As a mutual protection to LCP Chemicals Steering Committee, the public, and GeoSyntec, this report is submitted and accepted for the exclusive use of LCP Chemicals Steering Committee, and upon the condition that this report is not used, in whole or in part, in any advertising, promotional, or publicity matter without prior written authorization from GeoSyntec.

TABLES

TABLE 1

SAMPLES RECEIVED AND SAMPLE DELIVERY SCHEDULE
SITE MATERIALS

LCP CHEMICALS - GEORGIA SITE

Client Sample ID	Lab Sample No.	Location	Site Material Designation	As-Received		Date Received
				Moisture Content (%)	Solids Content (%)	
North Disposal Area Sludge	E95H20	North Disposal Area	NDA	84.8	54.1	18 August 1995
South Disposal Area Tar	E95H17	South Disposal Area	SDA	N/A	N/A	17 August 1995
950221-BI-A	E95H13	Brine Mud Impoundment	BMI[1]	106.7	48.4	16 August 1995
950222-BI-A	E95H14			78.0	56.2	
950223-BI-A	E95H15			73.3	57.7	
950226-BI-A	E95H16			112.8	47.0	
				82.9[1]	54.7[1]	
Raw Brine Tank Enclosure Mud	E95H18	Raw Brine Tank Enclosure	RBM	63.4	61.2	17 August 1995
Waste Impoundment Lime Mud	E95H19	Waste Disposal Impoundment	LM	136.1	42.4	17 August 1995

Note:

1. Sample was formed by combining and mixing equal portions, based on total weight, of each material.

TABLE 2

SAMPLES RECEIVED AND SAMPLE DELIVERY SCHEDULE
ADDITIVES

LCP CHEMICALS - GEORGIA SITE

Manufacturer/ Distributor Sample ID	Lab Sample No.	Manufacturer/ Distributor	Additive Designation	As-Received		Date Received
				Moisture Content (%)	Solids Content (%)	
Type I/II Portland Cement	94L91	Blue Circle Cement Savannah, Georgia	C	0.3	-	20 December 1994
Hydrated Lime	95D27	Wimpey Minerals Annville, Pennsylvania	L[1]	0.0	-	4 April 1995
Poorly Graded Sand	95I43	GeoSyntec Consultants Atlanta, Georgia	S[1]	0.0	-	5 August 1995

Note:

1. See Appendix A for additional information.

TABLE 3

TEST MATERIAL COMPOSITION

LCP CHEMICALS - GEORGIA SITE

Test Material Designation	Site Material Samples (parts)[1]					Moisture Content (%)	Solids Content (%)	Consistency[2] (-)
	NDA	SDA	BMI	RBM	LM			
NDA:BMI/1:1	1	0	1	0	0	86.1	53.7	4
NDA:BMI/1:2	1	0	2	0	0	95.7	51.1	4
NDA:RBM/1:1	1	0	0	1	0	91.3	52.3	6
NDA:LM/1:1	1	0	0	0	0	106.5	48.4	6
NDA	1	0	0	0	0	84.8	54.1	5
SDA	0	1	0	0	0	N/A	N/A	4
BMI	0	0	1	0	0	82.9	54.7	4
RBM	0	0	0	1	0	63.4	61.2	9
LM	0	0	0	0	1	136.1	42.4	8

Notes:

1. Based on total weight.
2. Refer to Table 4 for definition of consistency values.

N/A = Not applicable for tar-like materials.

TABLE 4

PHYSICAL INTERPRETATION OF CONSISTENCY VALUES

LCP CHEMICALS - GEORGIA SITE

Consistency		Physical Interpretation
Value (-)	Description	
1 or 2	Very Low	The material tested behaves similar to a thin bentonite slurry or very wet mud. The material will fail the paint filter liquids test.
3 or 4	Low	The material tested behaves similar to a remolded clay at a moisture content equal to, or several percentage points above, its liquid limit. The material may pass or fail the paint filter liquids test.
5 to 7	Medium	The material tested behaves similar to a remolded clay at a moisture content equal to, or a few percentage points above, its plastic limit. The material will pass the paint filter liquids test.
8 to 10	High	The material tested behaves similar to a remolded moist to very slightly moist clay.

TABLE 5

INDEX STRENGTH TEST RESULTS AND CONSISTENCY VALUES

LCP CHEMICALS - GEORGIA SITE

Specimen ID		Index Strength[1] (psi)				Consistency[2] (-)	
Mixture Designation	No.	Curing Time 0 Days	Curing Time 1 Day	Curing Time 2 Days	Curing Time 3 Days	Curing Time 0 Days	Curing Time 3 Days
(NDA:BMI/1:1):C/1:0.2	1	0.0	-	-	>70	5	10
(NDA:BMI/1:2):C/1:0.1	2	0.0	-	-	>70	5	9
(NDA:BMI/1:1):C/1:.05	3	0.0	-	-	52.0	5	9
(NDA:BMI/1:1):C/1:0.05	10	0.0	11.1	24.3	23.6	5	8
(NDA:RBM/1:1):C/1:0.2	4	0.5	-	-	>70	8	10
(NDA:RBM/1:1):C/1:0.05	5	0.5	-	17.4	20.8	7	8
(NDA:LM/1:1):C/1:0.05	6	0.4	3.5	9.7	11.1	7	7
NDA:C/1:0.05	7	0.0	3.5	6.9	6.9	4	6
SDA:L/1:0.1	9	0.0	0.0	-	-	6	6
SDA:L/1:0.05	8	0.0	0.0	-	-	5	5
SDA:S:C/1:2:0.05	17	7.0	34.7	-	20.8		8
SDA:S/1:2	16	1.0	27.8	-	20.8		8
BMI:C/1:0.05	12	0.7	>70	>70	>70	5	10
RBM:C/1:0.05	14	3.5	41.6	-	>70		10
RBM	13	29.2	31.2	31.2	24.6	9	9
LM:C/1:0.05	15	0.5	10.4	-	13.9	7	8
LM	11	7.0	8.3	7.0	7.0	7	7

Notes:

1. Based on pocket penetrometer (maximum instrument capacity 70 psi).
2. Refer to Table 4 for definition of consistency values.

APPENDIX A

Available Information for the Additives

WIMPEY MINERALS
P.O Box 160
Annville, PA 17003
(717) 867-4441

MILLARD LIME & STONE COMPANY

Annville, Pennsylvania 17003

HYDRATED LIME*

TYPICAL ANALYSIS

CHEMICAL	PERCENT
Available CaO	70.50 ± 0.70
$Ca(OH)_2$	93.20 ± 0.39
CaO	72.50 ± 0.10
$CaCO_3$	1.90 ± 0.40
MgO	1.25 ± 0.10
SiO_2	1.15 ± 0.09
Al_2O_3	0.53 ± 0.07
Fe_2O_3	0.28 ± 0.01
Sulfur	0.018 ± 0.004

Hydrated Lime nominal size is 20 mesh x 0 with 95.0% minimum passing 325 mesh.

*This material meets the current AWWA Standard for Hydrated Lime.

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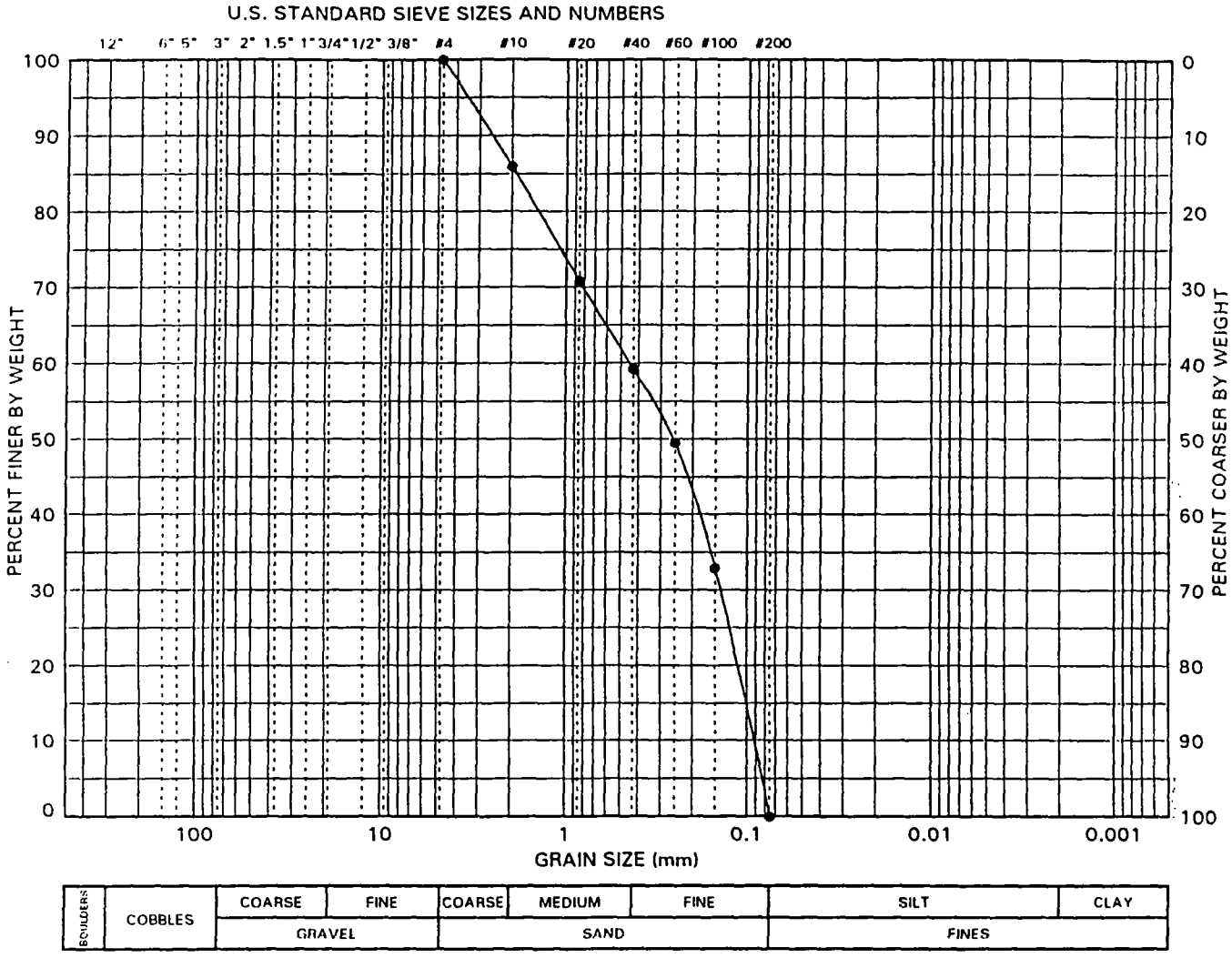
Geomechanics and Environmental Laboratory
Atlanta, Georgia

FIGURE 1
PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95253

GS FORM: 4PS2 10/11/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID SAND (S)	LIQUID LIMIT (%)	SOIL FRACTIONS	GRAVEL (%) 0.0
LAB. SAMPLE NO. 95143	PLASTIC LIMIT (%)		SAND (%) 100.0
SAMPLE DEPTH (ft)	PLASTICITY INDEX		FINES (%) 0.0
SOIL CLASSIFICATION: SP - Poorly Graded Sand			SILT (%)
			CLAY(%)
			COEFF. UNIFORMITY (Cu) 4.8
			COEFF. CURVATURE (Cc) 0.48

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS														PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)				
3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200					
PERCENT PASSING SIEVE SIZES (mm)																		
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075	0.050	0.020	0.005	0.002	0.001
100	100	100	100	100	100	100	100	86	71	59	49	33	0					

NOTES:

APPENDIX B

NORTH DISPOSAL AREA GEOTECHNICAL TESTING

GEOSYNTEC CONSULTANTS

Geomechanics & Environmental Laboratory
5775 Peachtree Dunwoody Road, Suite 10D
Atlanta, Georgia 30342 • USA
Tel. (404) 705-9500 • Fax (404) 705-9300

16 October 1995

Mr. Kirk J. Kessler, P.G.
GeoSyntec Consultants
1100 Lake Hearn Drive, Suite 200
Atlanta, Georgia 30342

Subject: Final Report - Laboratory Test Results
North Disposal Area Geotechnical Testing
LCP Chemicals - Georgia Site
Brunswick, Georgia

Dear Mr. Kessler:

GeoSyntec Consultants (GeoSyntec) Geomechanics and Environmental Laboratory in Atlanta, Georgia, is pleased to present the attached final test results (Table 1 and Figures 1 through 16) for the above referenced project. A blank shown on the table or any of the figures indicates that the test was not performed, the parameter is not applicable, or that the test resulted in insufficient data to report the designated parameter. Attachment A presents the general information pertinent to the testing program, and the policy of GeoSyntec regarding the limitations and use of the test results.

The Geomechanics and Environmental Laboratory appreciates the opportunity to provide testing services for this project. Should you have any questions regarding the attached test results or if you require additional information, please do not hesitate to contact either of the undersigned.

Sincerely,

Brian D. Jacobson, E.I.T.
Assistant Program Manager
Environmental Testing

Nader S. Rad, Ph.D., P.E.
Laboratory Director

Attachment

GE3834/GEL95296

TABLE 1

SUMMARY OF LABORATORY TEST RESULTS
NORTH DISPOSAL AREA

LCP CHEMICALS - GEORGIA SITE

Client Sample ID	Lab Sample No.	Depth (ft)	As-Received Moisture Content ASTM D 2216 (%)	Grain Size			Atterberg Limits ASTM D 4318			Soil Classification ASTM D 2487	Specific Gravity ASTM D 854 (-)	Loss On Ignition ASTM D 2974 (%)	Carbonate Content ASTM D 3042			Compaction ASTM D 698			Compaction ASTM D 1557			Hydraulic Conductivity ASTM D 5084		
				Percent Passing #200 Sieve ASTM D 1140 (%)	ASTM D 422								Soluble Carbonate (%)	Before Acid Bath	After Acid Bath	Max. Dry Unit Weight (pcf)	Optimum Moisture Content	Figure No.	Max. Dry Unit Weight (pcf)	Optimum Moisture Content	Figure No.	Test Specimen Initial Conditions		Hydraulic Conductivity (cm/s)
					Sieve Figure No.	Hydrom. Figure No.	LL (%)	PL (%)	PI (-)					Figure No.	Figure No.							Dry Unit Weight (pcf)	Moisture Content (%)	
950269-NDB1-A	E95J02	41.5	36.6	31.6	1	1	28	25	3	SM - Silty Sand														
950272-NDB1-B	E95J03	7-19		5.2	2																			
950272-NDB1-C	E95J04	30-35		10.6	3																			
950272-NDB2-A	E95J05	39-40	21.9	10.3	4	4	NP	NP	NP	SP-SM - Poorly Graded Sand with Silt														
950272-NDB2-B	E95J06	6-12	109.9	74.8	5	5	82	33	49	CH - Fat Clay with Sand														
950272-NDB2-C	E95J07	13-30		3.5	6					SP - Poorly Graded Sand														
950272-NDB2-D	E95J08	36-38		4.6	7					SP - Poorly Graded Sand														
950271-NDB3-A	E95J09	40.5	60.1	63.5	8	8	58	19	39	CH - Sandy Fat Clay														
950272-NDB3-B	E95J10	8-18		3.2	9					SP - Poorly Graded Sand														
950272-NDB3-C	E95J11	18-30		3.3	10					SP - Poorly Graded Sand														
950272-NDB3-D	E95J12	30		5.2	11																			
950276-NDB4-A	E95J13	45.5	24.9	11.5	12	12	NP	NP	NP	SP-SM - Poorly Graded Sand with Silt														
950276-NDB4-B	E95J14	8-18		6.5	13																			
950276-NDB4-C	E95J15	20-25		3.9	14					SP - Poorly Graded Sand														
950276-NDB4-D	E95J16	26-30		4.8	15					SP - Poorly Graded Sand														
950276-NDB4-E	E95J17	33-38		2.5	16					SP - Poorly Graded Sand														

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Geomechanics and Environmental Laboratory
Atlanta, Georgia

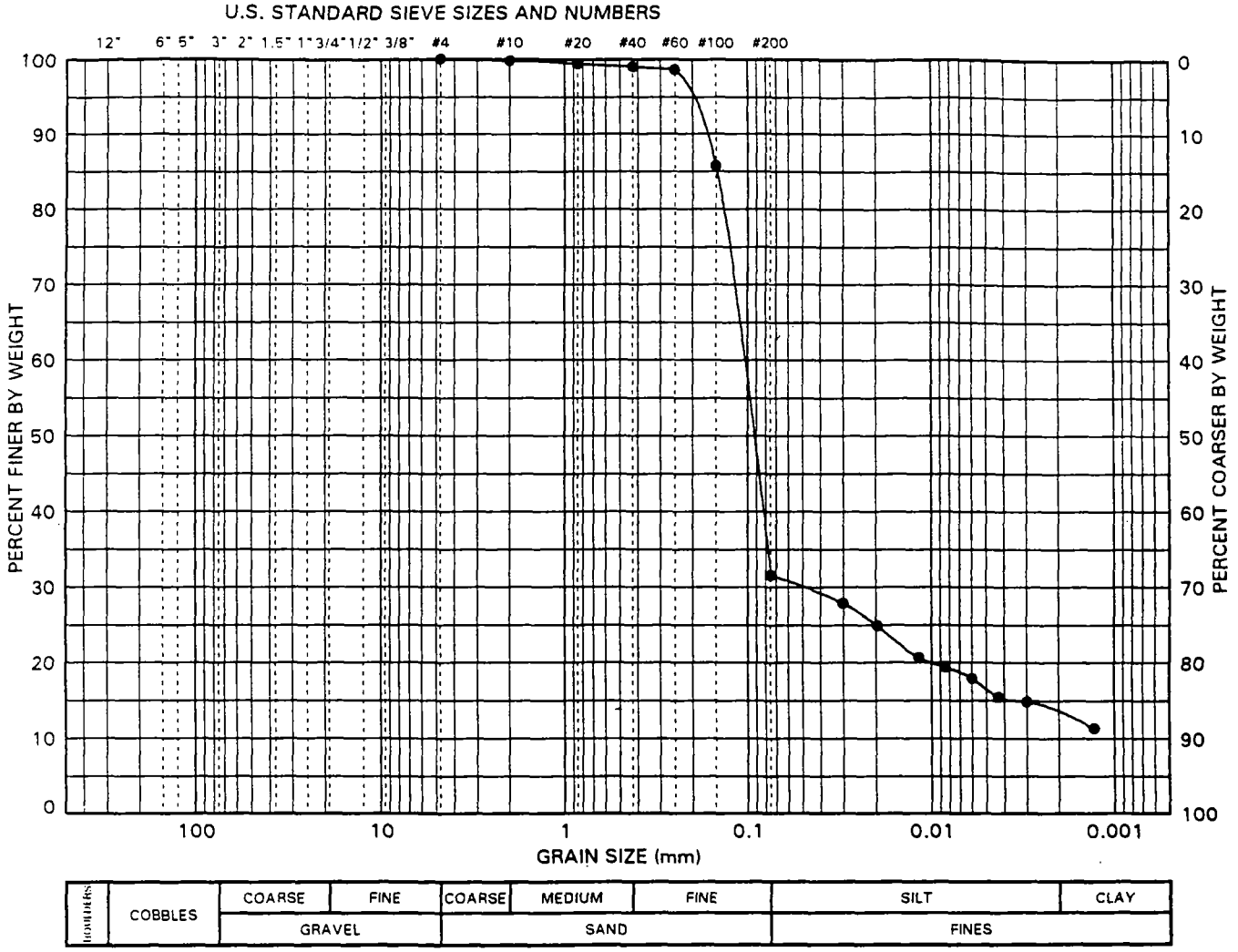
FIGURE 1

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/16/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*	LIQUID LIMIT (%)	28
LAB. SAMPLE NO.	E95J02	PLASTIC LIMIT (%)	25
SAMPLE DEPTH (ft)		PLASTICITY INDEX	3

SOIL CLASSIFICATION:
SM - Silty Sand

SOIL FRACTIONS	
GRAVEL (%)	0.0
SAND (%)	68.4
FINES (%)	31.6
SILT (%)	18.4
CLAY(%)	13.2
COEFF. UNIFORMITY (Cu)	
COEFF. CURVATURE (Cc)	

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS

3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200
PERCENT PASSING SIEVE SIZES (mm)													
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075
100	100	100	100	100	100	100	100	100	99	99	99	86	32

PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)

0.050	0.020	0.005	0.002	0.001
30	25	17	13	

NOTES: * 950269-NDB1-A

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Atlanta, Georgia

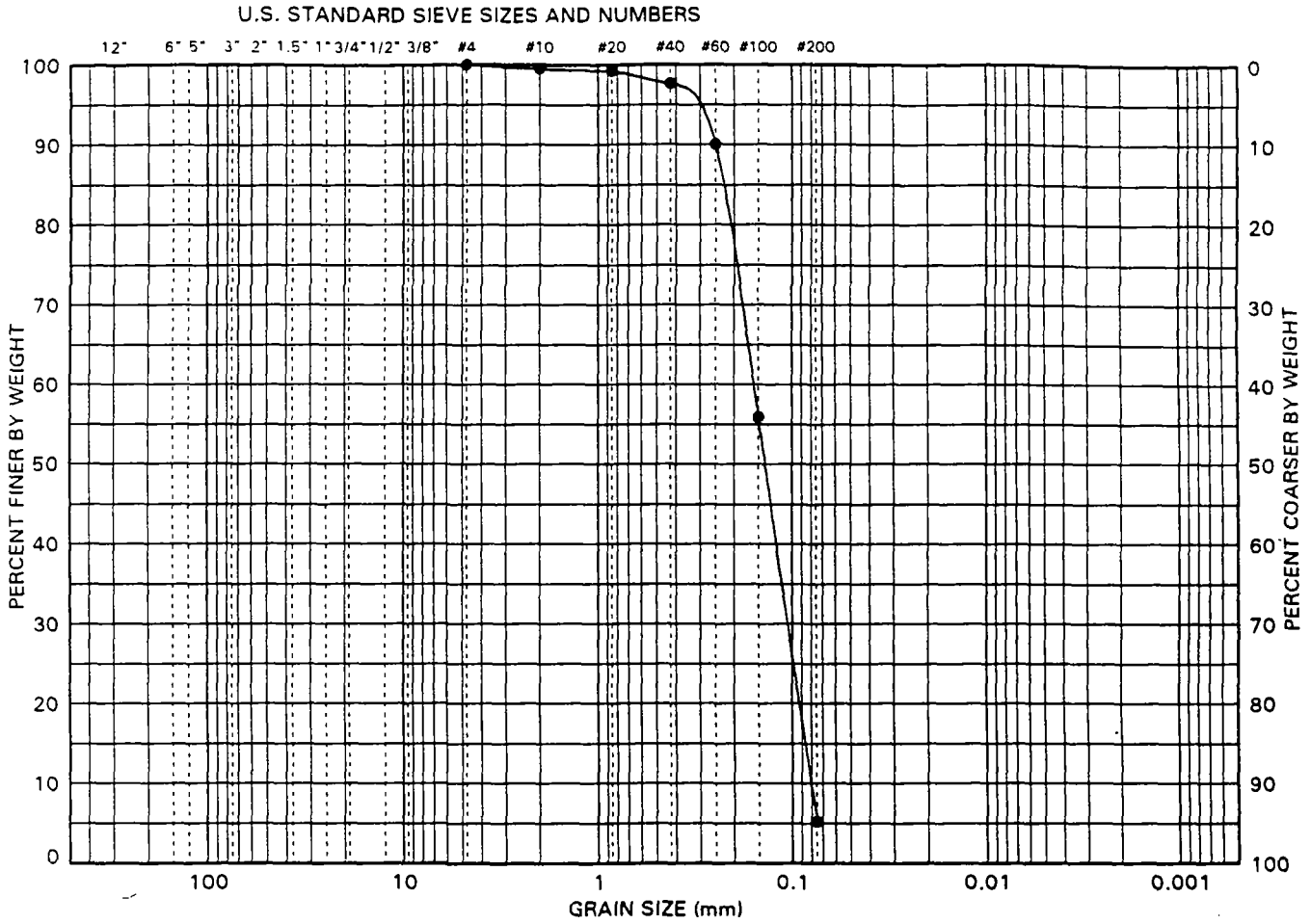
FIGURE 2

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/12/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*	LIQUID LIMIT (%)	
LAB. SAMPLE NO.	E95J03	PLASTIC LIMIT (%)	
SAMPLE DEPTH (ft)	7-19	PLASTICITY INDEX	
SOIL CLASSIFICATION:			

SOIL FRACTIONS	
GRAVEL (%)	0.0
SAND (%)	94.8
FINES (%)	5.2
SILT (%)	
CLAY(%)	
COEFF. UNIFORMITY (Cu)	2.0
COEFF. CURVATURE (Cc)	0.87

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS														PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)				
3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200					
PERCENT PASSING SIEVE SIZES (mm)																		
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075	0.050	0.020	0.005	0.002	0.001
100	100	100	100	100	100	100	100	100	99	98	90	56	5					

NOTES: * 950272-NDB1-B

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Atlanta, Georgia

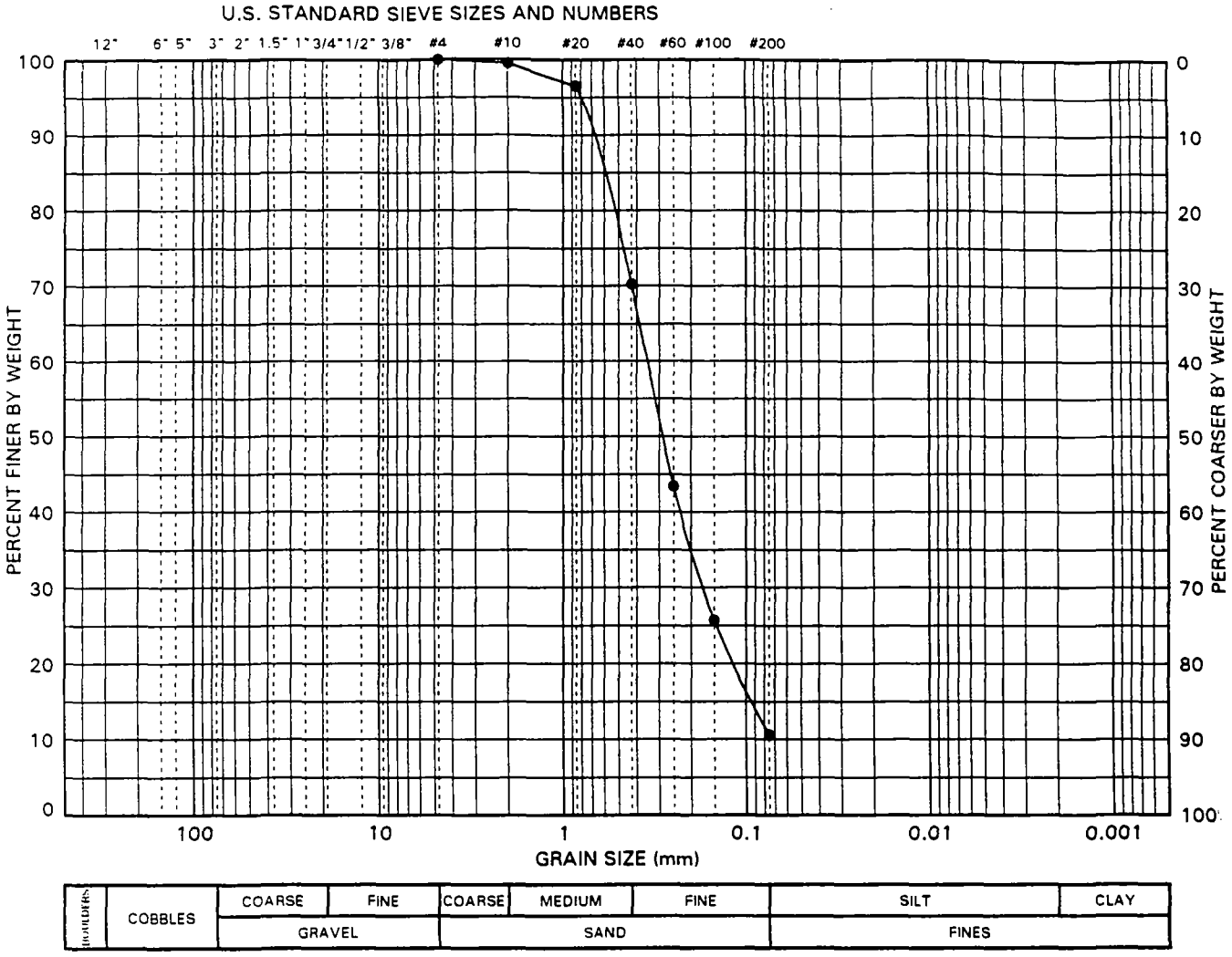
FIGURE 3

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/12/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*	LIQUID LIMIT (%)	
LAB. SAMPLE NO.	E95J04	PLASTIC LIMIT (%)	
SAMPLE DEPTH (ft)	30-35	PLASTICITY INDEX	

SOIL CLASSIFICATION:

-

SOIL FRACTIONS	
GRAVEL (%)	0.0
SAND (%)	89.4
FINES (%)	10.6
SILT (%)	
CLAY(%)	
COEFF. UNIFORMITY (Cu)	5.0
COEFF. CURVATURE (Cc)	1.19

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS														PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)				
3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200					
PERCENT PASSING SIEVE SIZES (mm)																		
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075	0.050	0.020	0.005	0.002	0.001
100	100	100	100	100	100	100	100	100	97	70	43	26	11					

NOTES: * 950272-NDB1-C

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Atlanta, Georgia

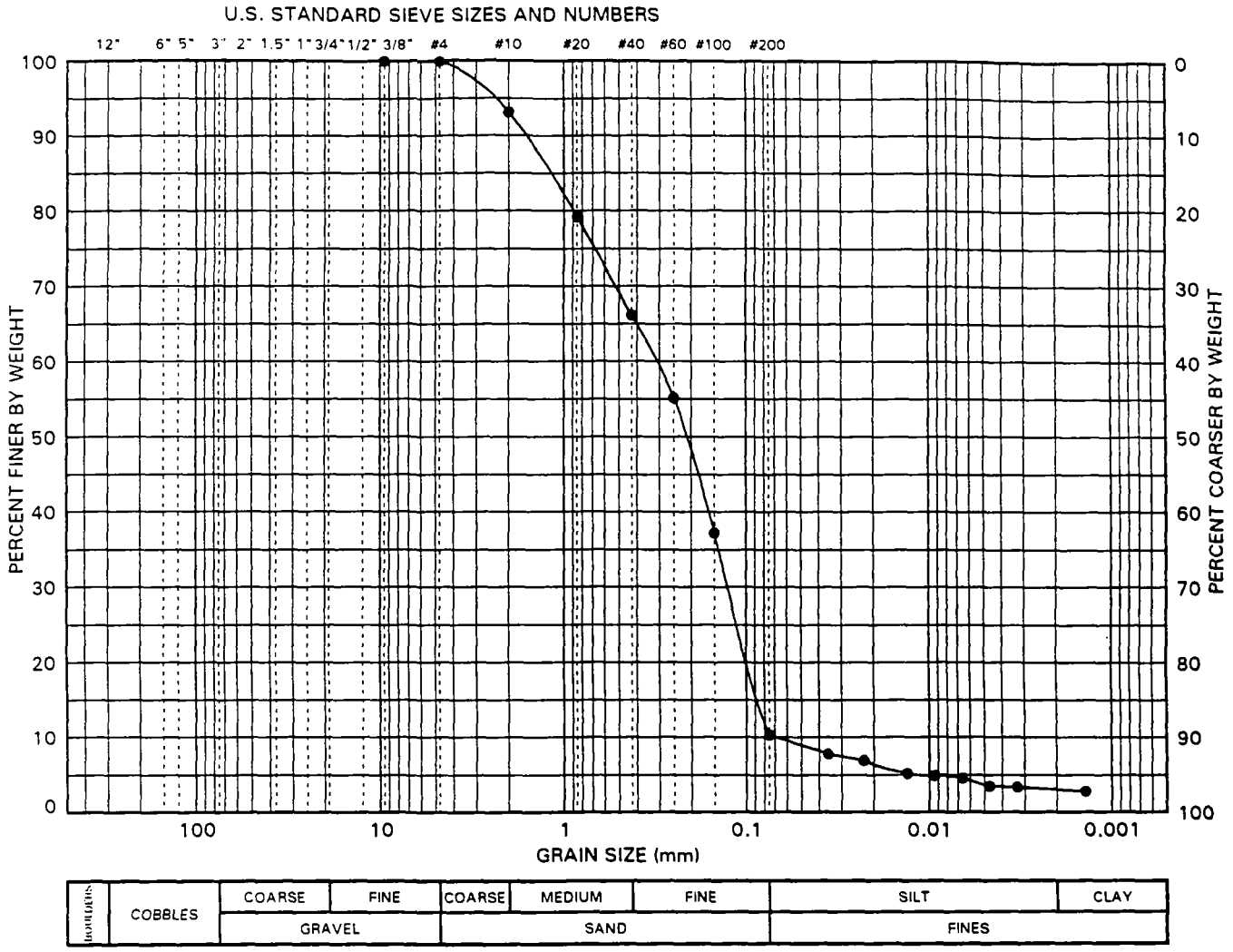
FIGURE 4

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/16/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*	LIQUID LIMIT (%)	NP
LAB. SAMPLE NO.	E95J05	PLASTIC LIMIT (%)	NP
SAMPLE DEPTH (ft)		PLASTICITY INDEX	NP

SOIL CLASSIFICATION:

SP-SM - Poorly Graded Sand with Silt

SOIL FRACTIONS	
GRAVEL (%)	0.1
SAND (%)	89.6
FINES (%)	10.3
SILT (%)	7.3
CLAY(%)	3.0
COEFF. UNIFORMITY (Cu)	4.5
COEFF. CURVATURE (Cc)	0.70

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS

3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200
PERCENT PASSING SIEVE SIZES (mm)													
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075
100	100	100	100	100	100	100	100	93	79	66	55	37	10

PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)

0.050	0.020	0.005	0.002	0.001
9	7	4	3	

NOTES: * 950272-NDB2-A

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Atlanta, Georgia

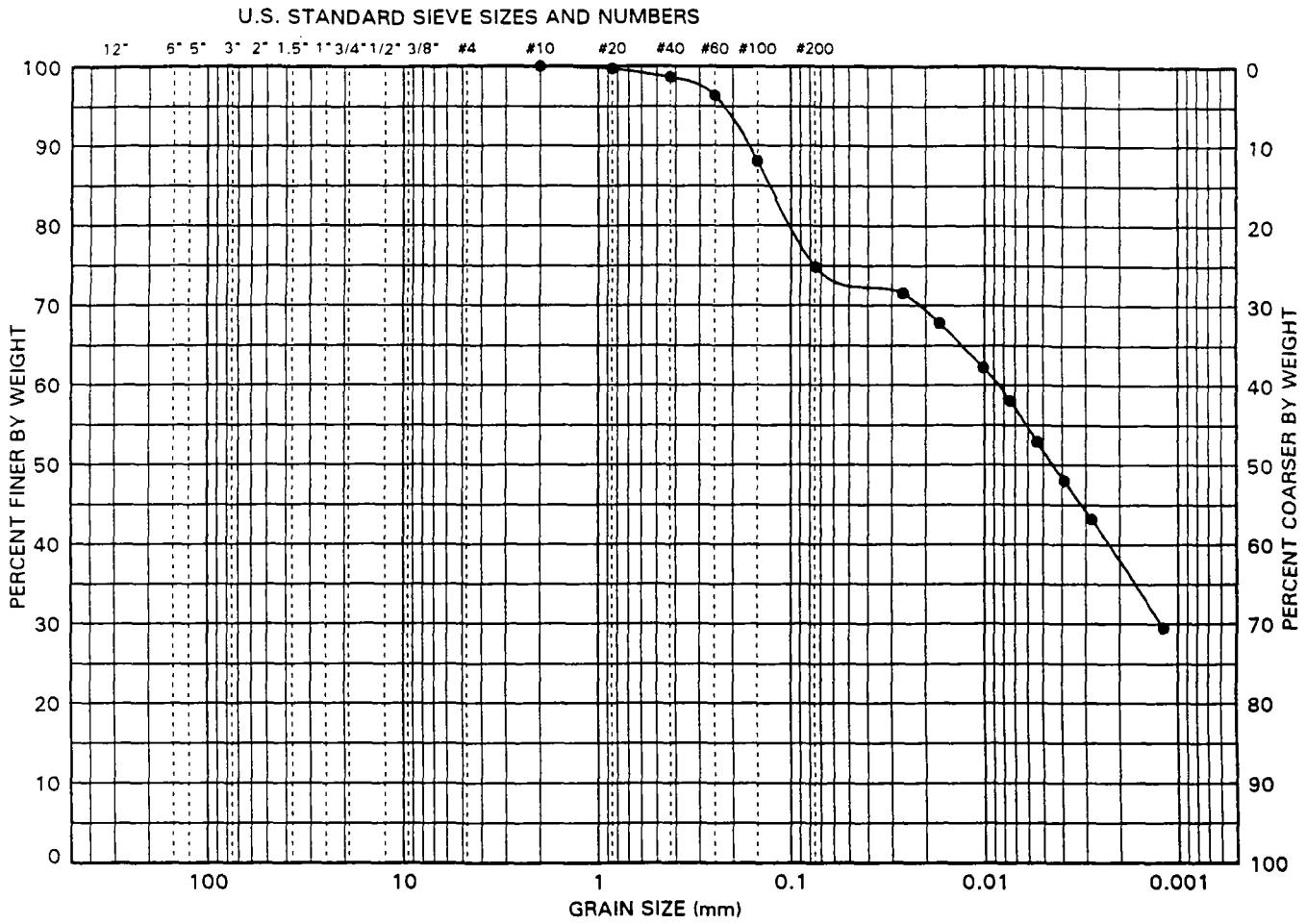
FIGURE 5

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/16/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*	LIQUID LIMIT (%)	82
LAB. SAMPLE NO.	E95J06	PLASTIC LIMIT (%)	33
SAMPLE DEPTH (ft)		PLASTICITY INDEX	49

SOIL CLASSIFICATION:
CH - Fat Clay with Sand

SOIL FRACTIONS	
GRAVEL (%)	0.0
SAND (%)	25.2
FINES (%)	74.8
SILT (%)	37.0
CLAY(%)	37.8
COEFF. UNIFORMITY (Cu)	
COEFF. CURVATURE (Cc)	

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS

3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200
PERCENT PASSING SIEVE SIZES (mm)													
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075
100	100	100	100	100	100	100	100	100	100	99	96	88	75

PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)

0.050	0.020	0.005	0.002	0.001
74	69	52	38	

NOTES: * 950272-NDB2-B

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Geomechanics and Environmental Laboratory
Atlanta, Georgia

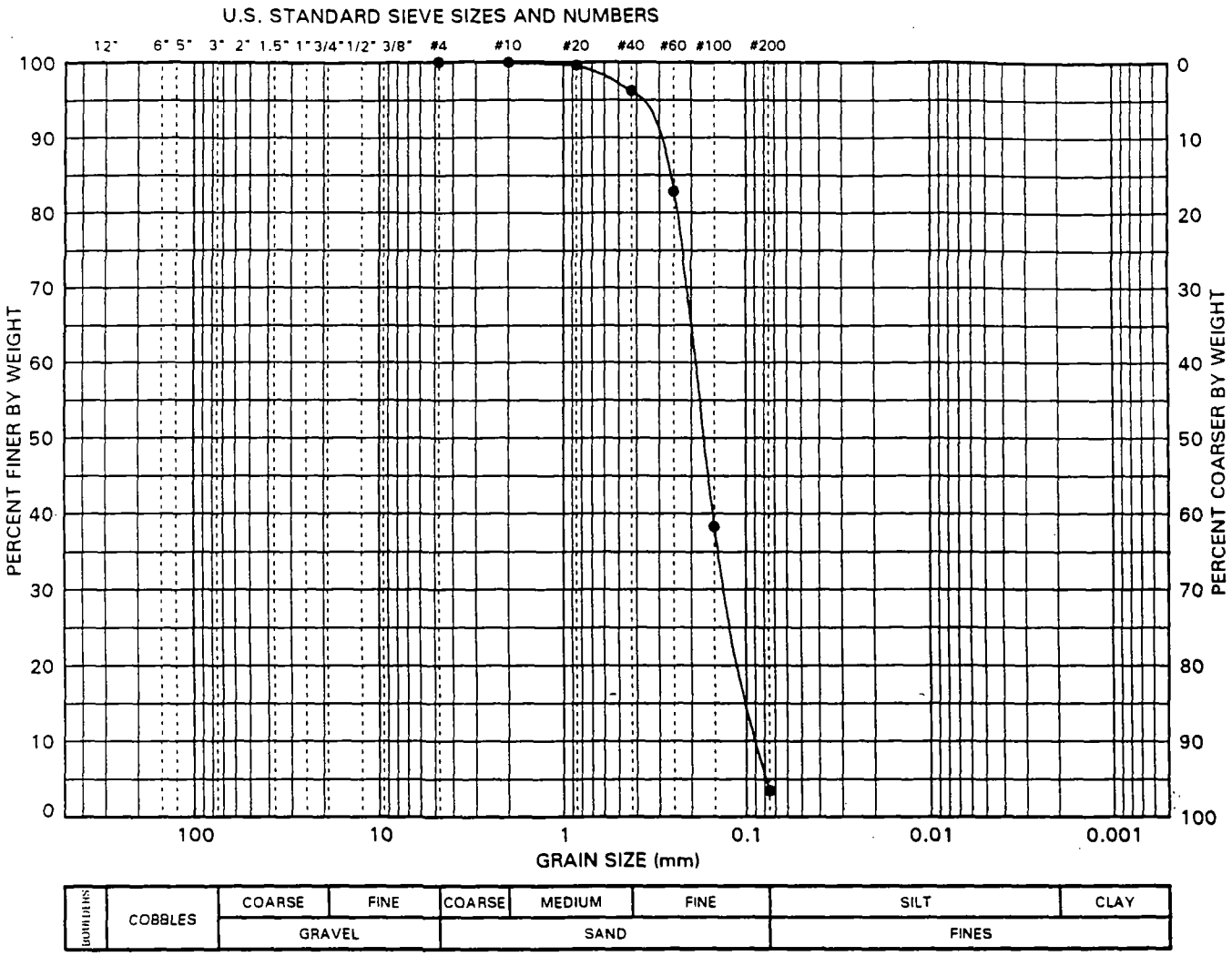
FIGURE 6

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/12/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*	LIQUID LIMIT (%)	
LAB. SAMPLE NO.	E95J07	PLASTIC LIMIT (%)	
SAMPLE DEPTH (ft)	13-30	PLASTICITY INDEX	

SOIL CLASSIFICATION:
SP - Poorly Graded Sand

SOIL FRACTIONS	
GRAVEL (%)	0.0
SAND (%)	96.5
FINES (%)	3.5
SILT (%)	
CLAY(%)	
COEFF. UNIFORMITY (Cu)	2.3
COEFF. CURVATURE (Cc)	0.98

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS

3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200
PERCENT PASSING SIEVE SIZES (mm)													
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075
100	100	100	100	100	100	100	100	100	100	96	83	38	4

PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)

0.050	0.020	0.005	0.002	0.001

NOTES: * 950272-NDB2-C

GEO SYNTEC CONSULTANTS

Geomechanics and Environmental Laboratory
Atlanta, Georgia

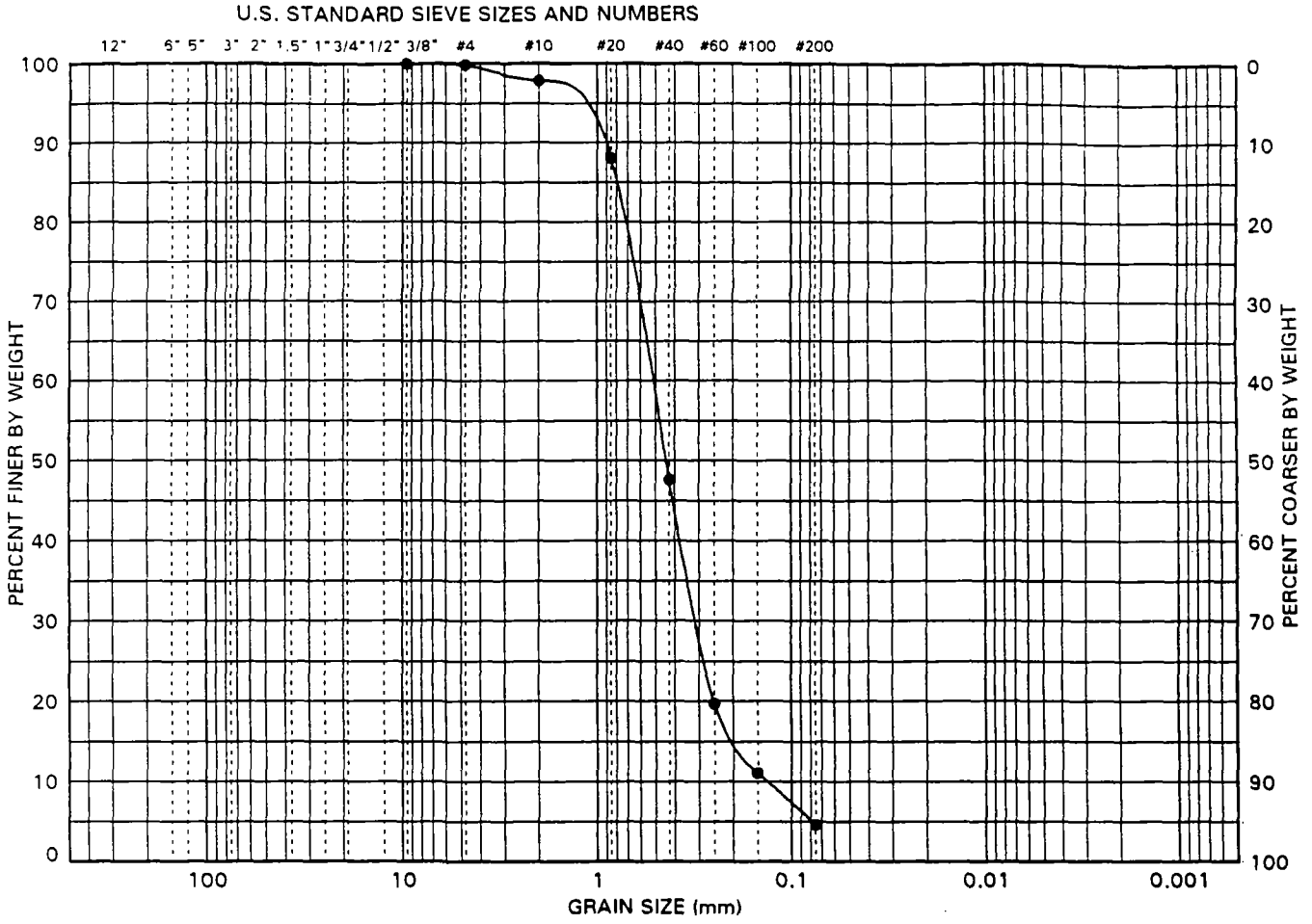
FIGURE 7

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2-1 10/12/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID *	LIQUID LIMIT (%)	SOIL FRACTIONS	GRAVEL (%) 0.2
LAB. SAMPLE NO. E95J08	PLASTIC LIMIT (%)		SAND (%) 95.2
SAMPLE DEPTH (ft) 36-38	PLASTICITY INDEX		FINES (%) 4.6
SOIL CLASSIFICATION: SP - Poorly Graded Sand			SILT (%)
			CLAY(%)
			COEFF. UNIFORMITY (Cu) 3.9
			COEFF. CURVATURE (Cc) 1.32

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS														PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)				
3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200					
PERCENT PASSING SIEVE SIZES (mm)																		
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075	0.050	0.020	0.005	0.002	0.001
100	100	100	100	100	100	100	100	98	88	48	20	11	5					

NOTES: * 950272-NDB2-D

GEO SYNTEC CONSULTANTS

Geomechanics and Environmental Laboratory
Atlanta, Georgia

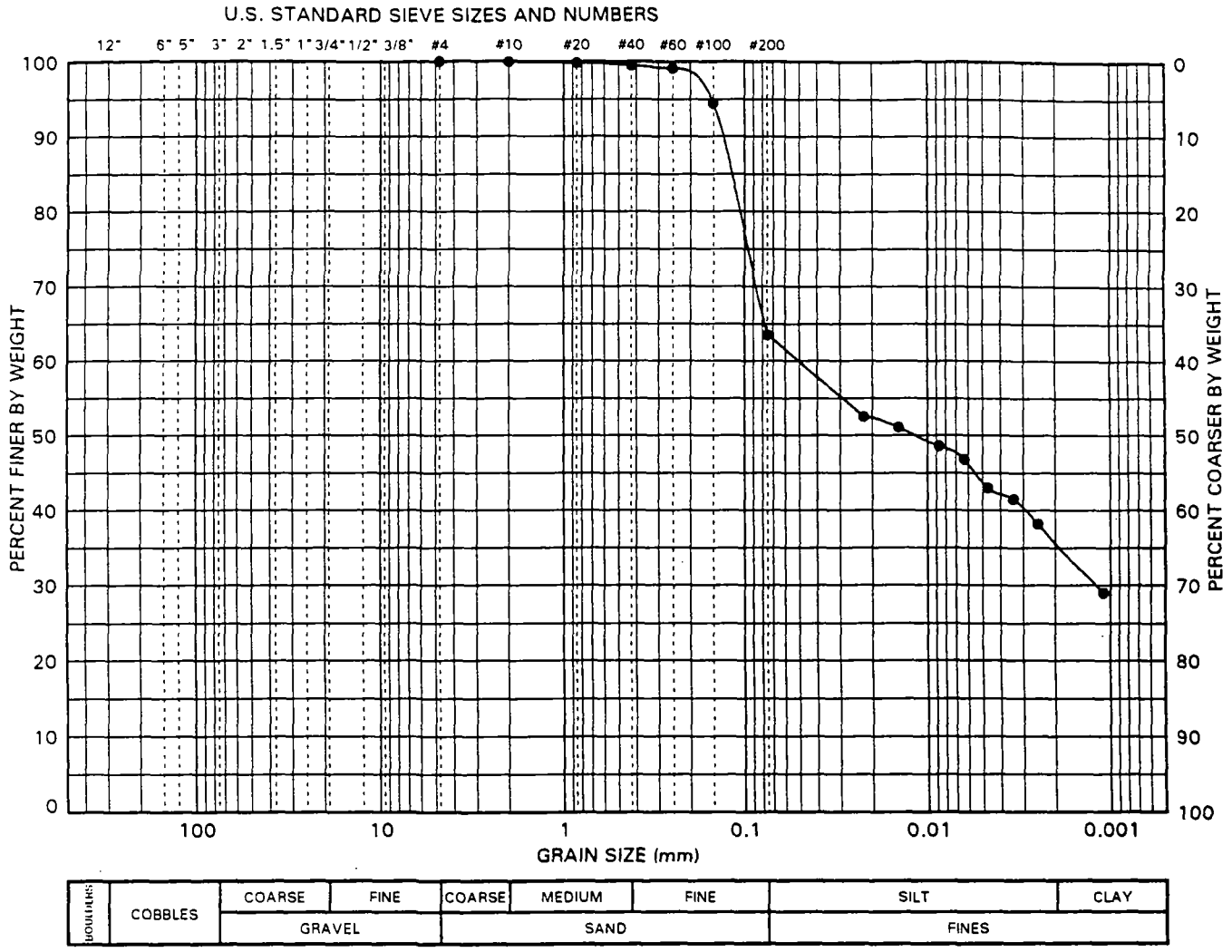
FIGURE 8

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/16/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*	LIQUID LIMIT (%)	58
LAB. SAMPLE NO.	E95J09	PLASTIC LIMIT (%)	19
SAMPLE DEPTH (ft)		PLASTICITY INDEX	39

SOIL CLASSIFICATION:
CH - Sandy Fat Clay

SOIL FRACTIONS	
GRAVEL (%)	0.0
SAND (%)	36.5
FINES (%)	63.5
SILT (%)	27.8
CLAY(%)	35.7
COEFF. UNIFORMITY (Cu)	
COEFF. CURVATURE (Cc)	

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS														PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)				
3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200					
PERCENT PASSING SIEVE SIZES (mm)																		
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075	0.050	0.020	0.005	0.002	0.001
100	100	100	100	100	100	100	100	100	100	100	99	94	64	60	52	44	38	

NOTES: * 950271-NDB3-A

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Atlanta, Georgia

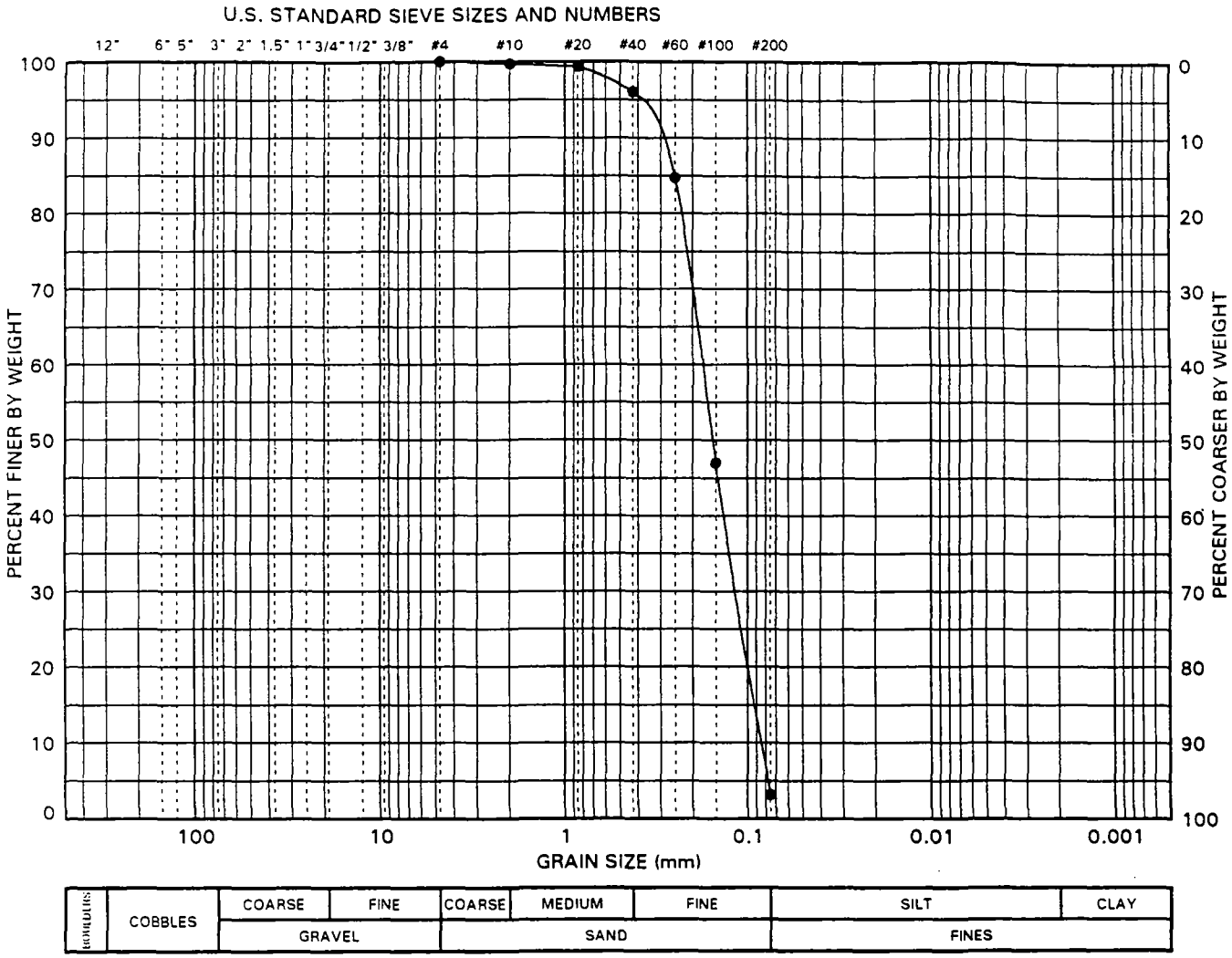
FIGURE 9

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/12/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*
LAB. SAMPLE NO.	E95J10
SAMPLE DEPTH (ft)	8-18
LIQUID LIMIT (%)	
PLASTIC LIMIT (%)	
PLASTICITY INDEX	

SOIL CLASSIFICATION:
SP - Poorly Graded Sand

SOIL FRACTIONS	
GRAVEL (%)	0.0
SAND (%)	96.8
FINES (%)	3.2
SILT (%)	
CLAY(%)	
COEFF. UNIFORMITY (Cu)	2.1
COEFF. CURVATURE (Cc)	0.88

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS

3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200
100	100	100	100	100	100	100	100	100	99	96	85	47	3

PERCENT PASSING SIEVE SIZES (mm)

75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075

PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)

0.050	0.020	0.005	0.002	0.001

NOTES: * 950272-NDB3-B

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Atlanta, Georgia

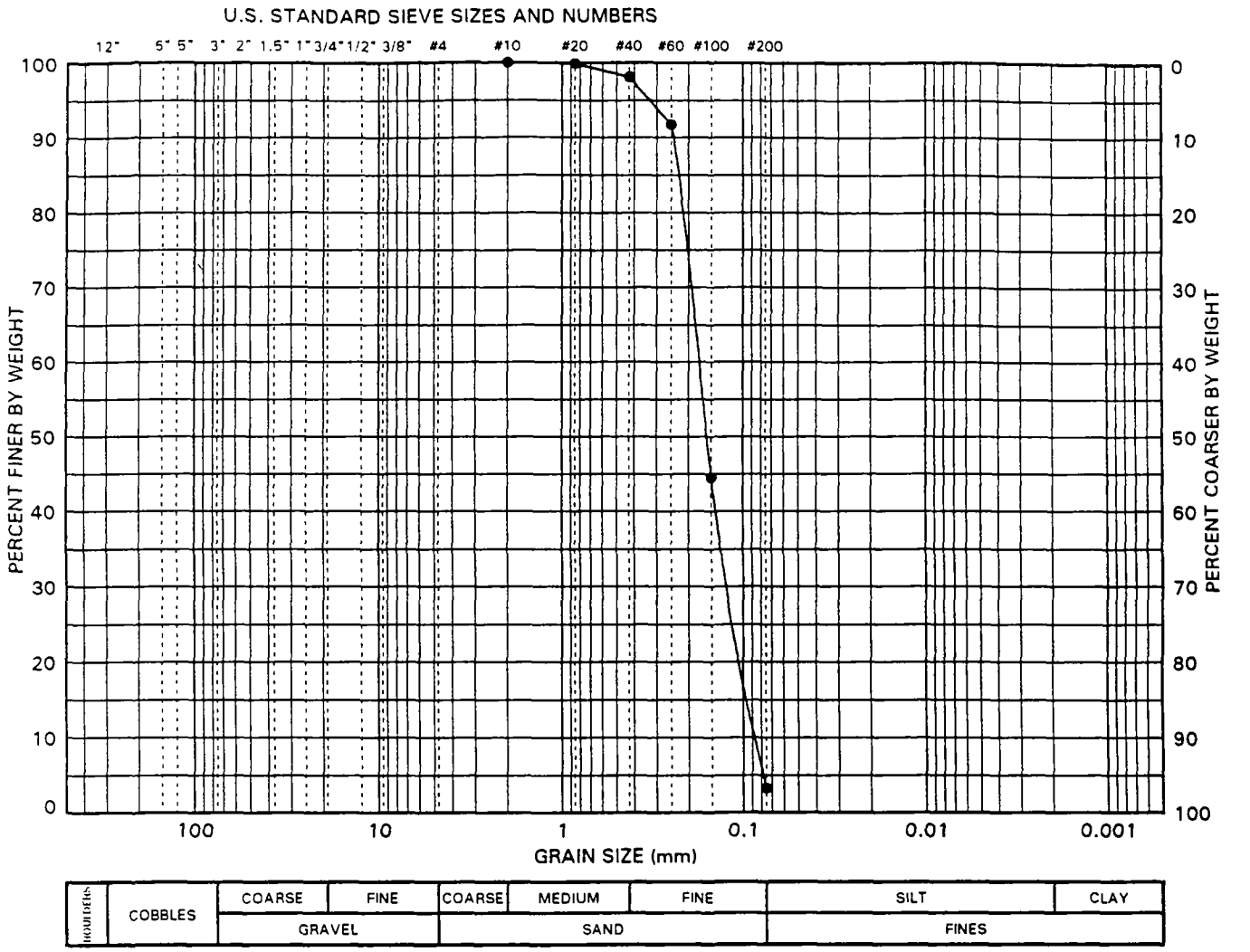
FIGURE 10

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/12/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*	LIQUID LIMIT (%)	
LAB. SAMPLE NO.	E95J11	PLASTIC LIMIT (%)	
SAMPLE DEPTH (ft)	18-30	PLASTICITY INDEX	

SOIL CLASSIFICATION:
SP - Poorly Graded Sand

SOIL FRACTIONS	
GRAVEL (%)	0.0
SAND (%)	96.7
FINES (%)	3.3
SILT (%)	
CLAY(%)	
COEFF. UNIFORMITY (Cu)	2.1
COEFF. CURVATURE (Cc)	0.93

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS

3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200

PERCENT PASSING SIEVE SIZES (mm)

75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075
100	100	100	100	100	100	100	100	100	100	98	92	45	3

PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)

0.050	0.020	0.005	0.002	0.001

NOTES: * 950272-NDB3-C

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Atlanta, Georgia

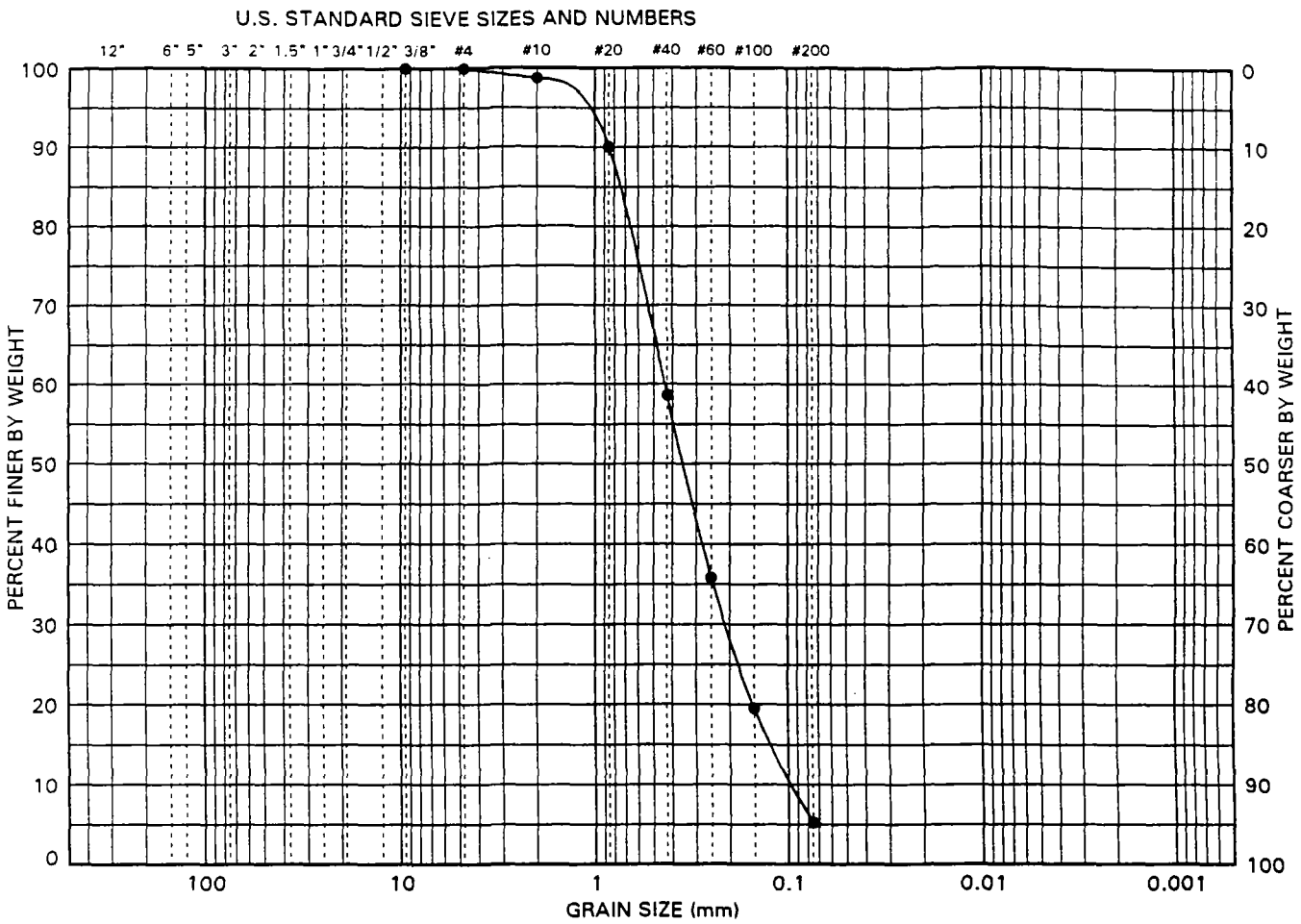
FIGURE 11

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/12/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*
LAB. SAMPLE NO.	E95J12
SAMPLE DEPTH (ft)	30-40.5
SOIL CLASSIFICATION:	-
LIQUID LIMIT (%)	
PLASTIC LIMIT (%)	
PLASTICITY INDEX	

SOIL FRACTIONS	
GRAVEL (%)	0.1
SAND (%)	94.7
FINES (%)	5.2
SILT (%)	
CLAY(%)	
COEFF. UNIFORMITY (Cu)	4.6
COEFF. CURVATURE (Cc)	1.05

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS														PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)				
3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200					
PERCENT PASSING SIEVE SIZES (mm)																		
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075	0.050	0.020	0.005	0.002	0.001
100	100	100	100	100	100.	100	100	99	90	59	36	20	5					

NOTES: * 950272-NDB3-D

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Atlanta, Georgia

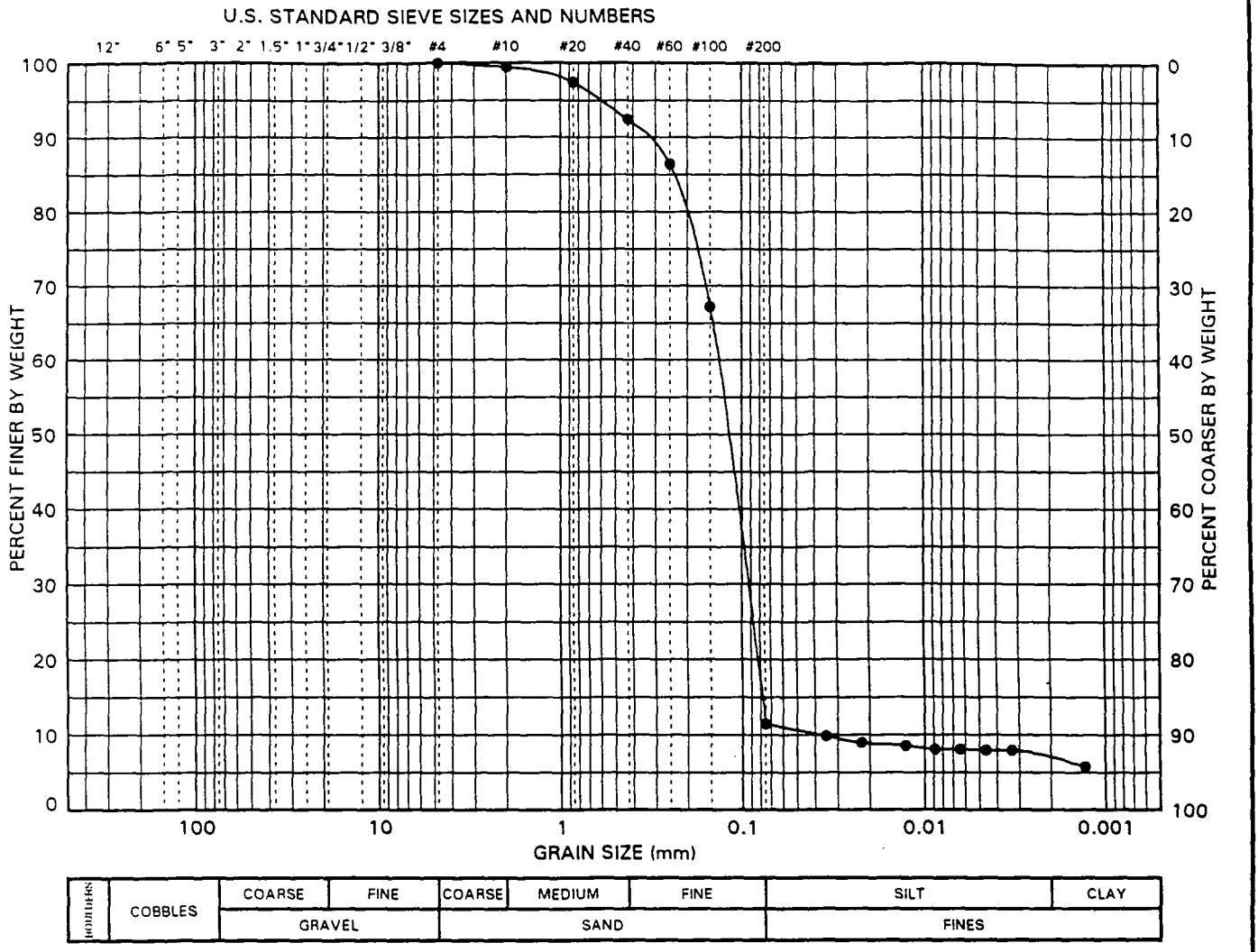
FIGURE 12

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/16/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*	LIQUID LIMIT (%)	NP
LAB. SAMPLE NO.	E95J13	PLASTIC LIMIT (%)	NP
SAMPLE DEPTH (ft)		PLASTICITY INDEX	NP

SOIL CLASSIFICATION:
SP-SM - Poorly Graded Sand with Silt

SOIL FRACTIONS	
GRAVEL (%)	0.0
SAND (%)	88.5
FINES (%)	11.5
SILT (%)	4.7
CLAY(%)	6.8
COEFF. UNIFORMITY (Cu)	2.0
COEFF. CURVATURE (Cc)	0.93

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS														PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)				
3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200					
PERCENT PASSING SIEVE SIZES (mm)																		
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075	0.050	0.020	0.005	0.002	0.001
100	100	100	100	100	100	100	100	99	97	92	86	67	12	11	9	8	7	

NOTES: * 950276-NDB4-A

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Atlanta, Georgia

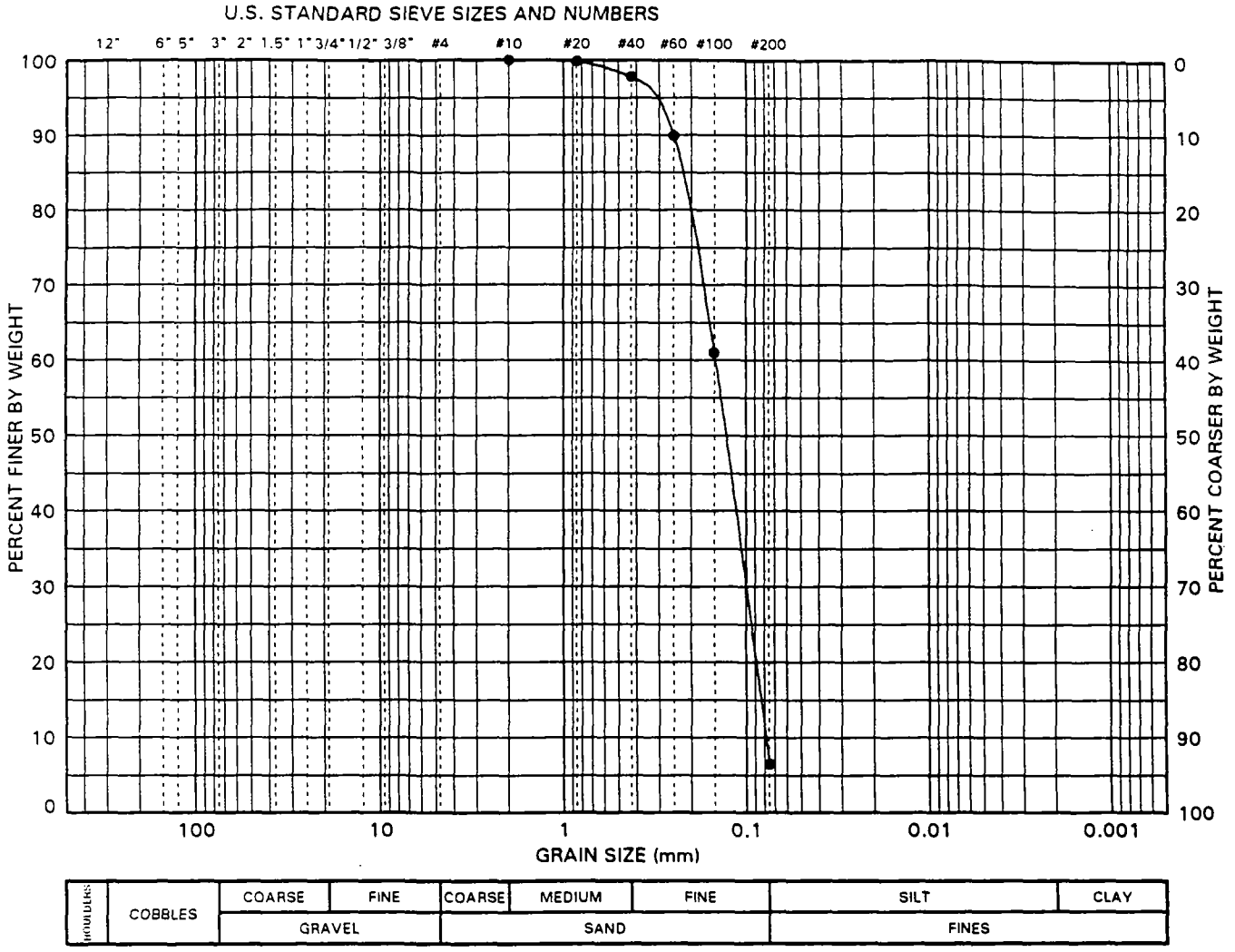
FIGURE 13

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/12/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*
LAB. SAMPLE NO.	E95J14
SAMPLE DEPTH (ft)	8-18
SOIL CLASSIFICATION:	-
LIQUID LIMIT (%)	
PLASTIC LIMIT (%)	
PLASTICITY INDEX	

SOIL FRACTIONS	
GRAVEL (%)	0.0
SAND (%)	93.5
FINES (%)	6.5
SILT (%)	
CLAY(%)	
COEFF. UNIFORMITY (Cu)	1.9
COEFF. CURVATURE (Cc)	0.88

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS

3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200
100	100	100	100	100	100	100	100	100	100	98	90	61	7

PERCENT PASSING SIEVE SIZES (mm)

75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075
100	100	100	100	100	100	100	100	100	100	98	90	61	7

PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)

0.050	0.020	0.005	0.002	0.001

NOTES: * 950276-NDB4-B

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Atlanta, Georgia

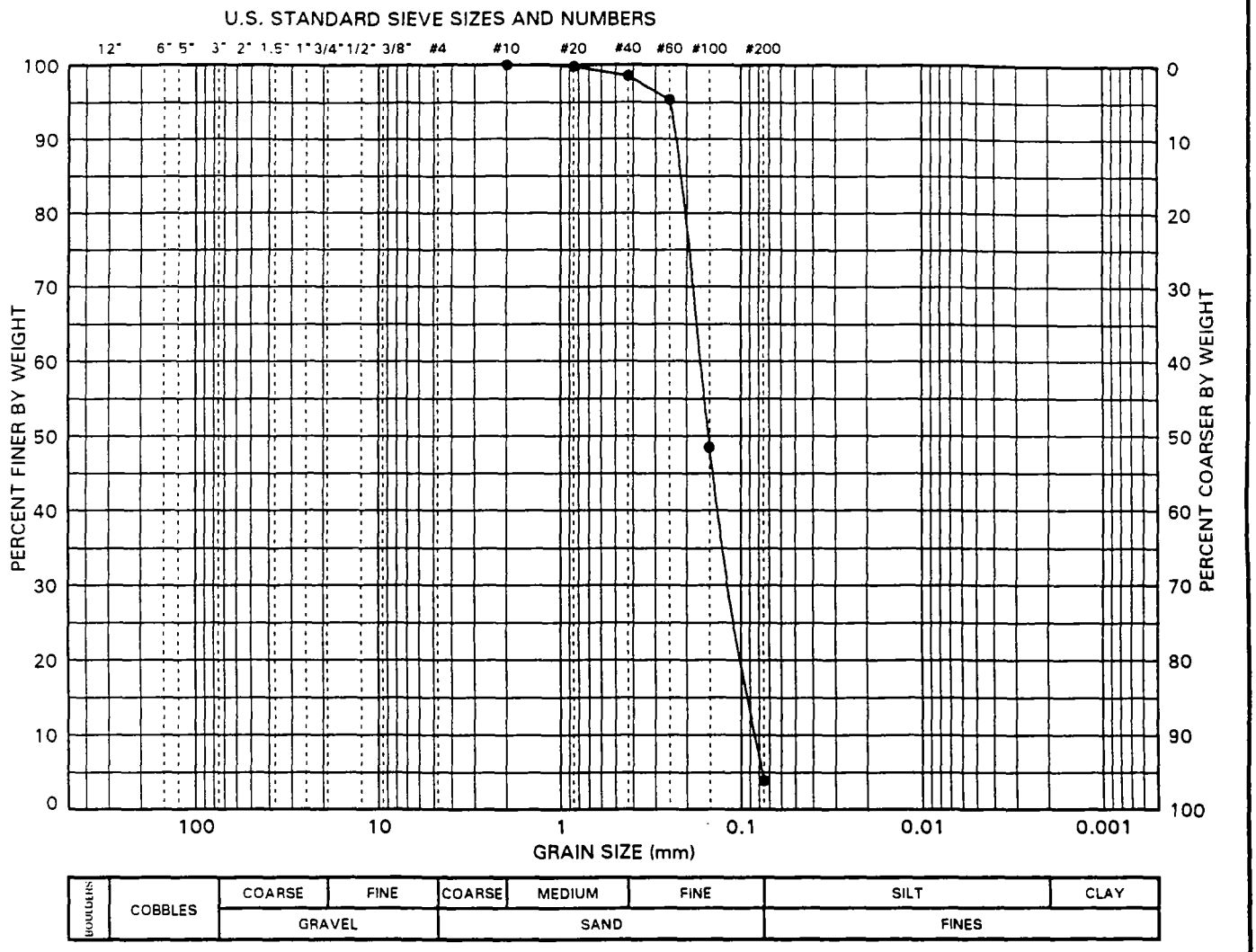
FIGURE 14

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/12/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*	LIQUID LIMIT (%)	
LAB. SAMPLE NO.	E95J15	PLASTIC LIMIT (%)	
SAMPLE DEPTH (ft)	20-25	PLASTICITY INDEX	

SOIL CLASSIFICATION:
SP - Poorly Graded Sand

SOIL FRACTIONS	
GRAVEL (%)	0.0
SAND (%)	96.1
FINES (%)	3.9
SILT (%)	
CLAY(%)	
COEFF. UNIFORMITY (Cu)	2.1
COEFF. CURVATURE (Cc)	0.90

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS

3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200
PERCENT PASSING SIEVE SIZES (mm)													
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075
100	100	100	100	100	100	100	100	100	100	99	95	49	4

PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)

0.050	0.020	0.005	0.002	0.001

NOTES: * 950276-NDB4-C

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Geomechanics and Environmental Laboratory
Atlanta, Georgia

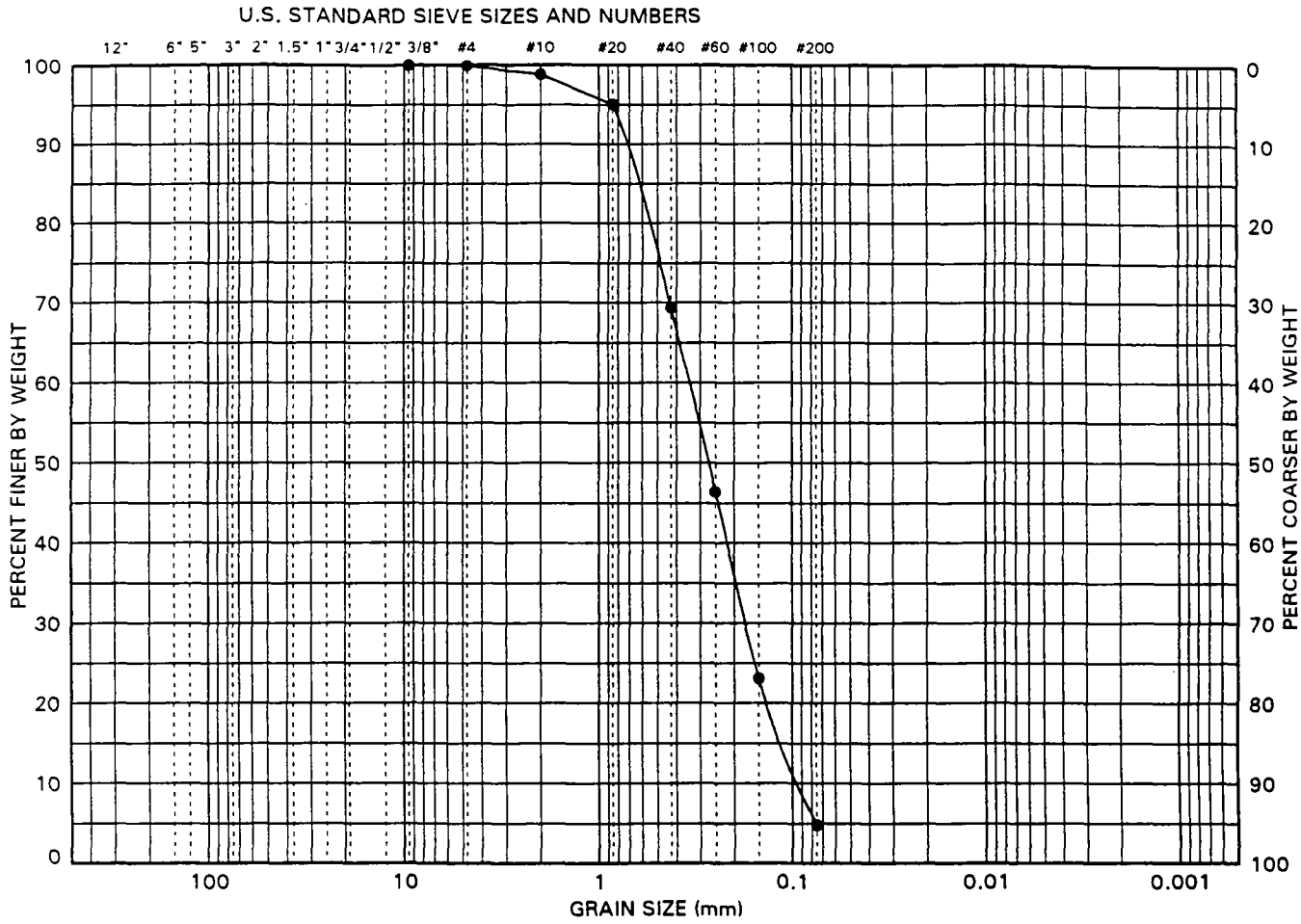
FIGURE 15

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2-1 10/12/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID	*	LIQUID LIMIT (%)	
LAB. SAMPLE NO.	E95J16	PLASTIC LIMIT (%)	
SAMPLE DEPTH (ft)	26-30	PLASTICITY INDEX	

SOIL CLASSIFICATION:
SP - Poorly Graded Sand

SOIL FRACTIONS	
GRAVEL (%)	0.1
SAND (%)	95.1
FINES (%)	4.8
SILT (%)	
CLAY(%)	
COEFF. UNIFORMITY (Cu)	3.8
COEFF. CURVATURE (Cc)	0.97

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS

3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200
PERCENT PASSING SIEVE SIZES (mm)													
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075
100	100	100	100	100	100	100	100	99	95	69	46	23	5

PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)

0.050	0.020	0.005	0.002	0.001

NOTES: * 950276-NDB4-D

GEO SYNTEC CONSULTANTS
Geomechanics and Environmental Laboratory
Atlanta, Georgia

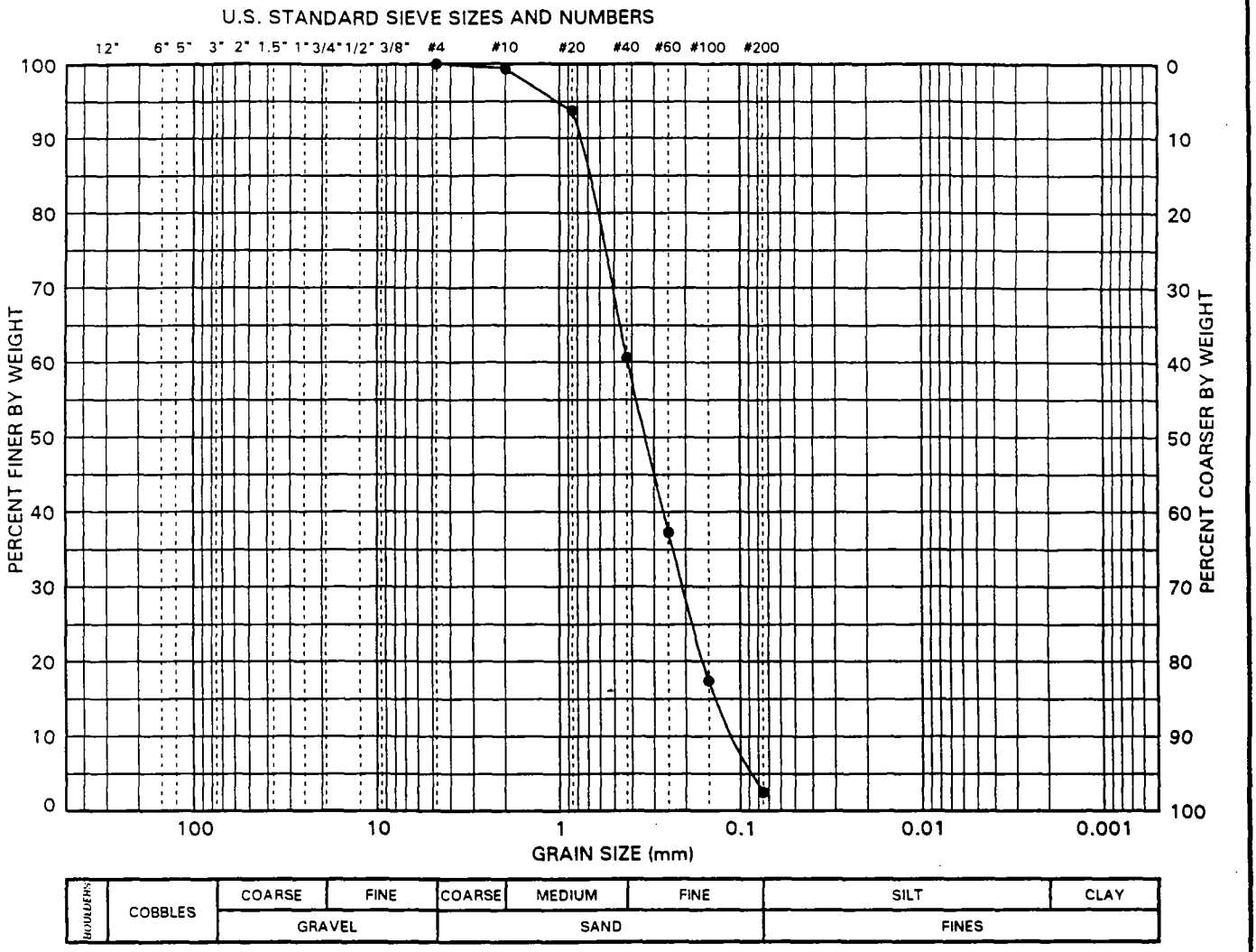
FIGURE 16

PROJECT: LCP CHEMICALS - GEORGIA SITE
PROJECT NO.: GE3834
DOCUMENT NO.: GEL95296

GS FORM: 4PS2 10/16/95

PARTICLE SIZE DISTRIBUTION AND PHYSICAL PROPERTIES

ASTM C 136, D 422, D 2487 D 3042 AND D 4318



SITE SAMPLE ID *	LIQUID LIMIT (%)	SOIL FRACTIONS	GRAVEL (%) 0.0
LAB. SAMPLE NO. E95J17	PLASTIC LIMIT (%)		SAND (%) 97.5
SAMPLE DEPTH (ft) 33-38	PLASTICITY INDEX		FINES (%) 2.5
SOIL CLASSIFICATION: SP - Poorly Graded Sand			SILT (%)
			CLAY(%)
			COEFF. UNIFORMITY (Cu) 3.9
			COEFF. CURVATURE (Cc) 0.96

PERCENT PASSING U.S. STANDARD SIEVE SIZES AND NUMBERS														PERCENT FINER THAN HYDROMETER PARTICLE DIAMETER (mm)				
3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#200					
PERCENT PASSING SIEVE SIZES (mm)																		
75	50	37.5	25	19	12.5	9.5	4.75	2.00	0.850	0.425	0.250	0.150	0.075	0.050	0.020	0.005	0.002	0.001
100	100	100	100	100	100	100	100	99	94	61	37	17	3					

NOTES: * 950276-NDB4-E

ATTACHMENT A

Sample Identification, Handling, Storage and Disposal

Laboratory Test Standards

Application of Test Results

SAMPLE IDENTIFICATION, HANDLING, STORAGE AND DISPOSAL

Test materials were sent to GeoSyntec Consultants (GeoSyntec) Geomechanics and Environmental Laboratory in Atlanta, Georgia by the client or its representative(s). Samples delivered to the laboratory were identified by client sample identification (ID) numbers which had been assigned by representative(s) of the client. Upon being received at the laboratory, each sample was assigned a laboratory sample number to facilitate tracking and documentation.

Based on the information provided to GeoSyntec by the client or its representative(s) and, when applicable, procedural guidelines recommended by an industrial hygiene consultant, the following Occupational Safety and Health Administration (OSHA) level of personal protection was adopted for handling and testing of the test materials:

[ ] test materials were not contaminated, no special protection measures were taken;
[X] level D
[ ] level C
[ ] level B

In accordance with the health and safety guidelines of GeoSyntec, contaminated materials are stored in a designated containment area in the laboratory. Non-contaminated materials are stored in a general storage area in the laboratory.

GeoSyntec Geomechanics and Environmental Laboratory will continue storing the test materials for a period of 30 days from the date of this report or a year from the time that the samples were received, which ever is shorter. Thereafter: (i) contaminated materials will be returned to the client or its designated representative(s); and (ii) the materials which are not contaminated will be discarded unless long-term storage arrangements are specifically made with GeoSyntec Geomechanics and Environmental Laboratory.

LABORATORY TEST STANDARDS

At the request of the client, the laboratory testing program was performed utilizing the guidelines provided in the following test standards:

[X] **moisture content** - American Society for Testing and Materials (ASTM) D 2216 "*Standard Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures*";

[ ] **moisture content** - ASTM D 4643 "*Standard Test Method for Determination of Water (Moisture) Content of Soil by the Microwave Method*";

[X] **particle-size analysis** - ASTM 422, "*Standard Method for Particle-Size Analysis of Soils*";

[X] **percent passing No. 200 sieve** - ASTM D 1140, "*Standard Test Method for Amount of Material in Soil Finer Than No. 200 (75 microns) sieve*";

[X] **Atterberg limits** - ASTM D 4318, "*Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils*";

[X] **soil classification** - ASTM D 2487, "*Standard Test Method for Classification of Soils for Engineering Purposes*";

[ ] **soil pH** - ASTM D 4972, "*Standard Test Method for pH of Soils*";

[ ] **soil pH** - United States Environmental Protection Agency (USEPA) SW-846 Method 9045, Revision 1, 1987, Standard Test Method for Measurement of "*Soil pH*";

[ ] **specific gravity** - ASTM D 854, "*Standard Test Method for Specific Gravity of Soils*";

[ ] **carbonate content** - ASTM D 3042, "*Standard Method for Insoluble Residue in Carbonate Aggregates*";

[ ] **soundness** - ASTM C 88, "*Standard Test Method for Soundness of Aggregates by use of Sodium Sulfate or Magnesium Sulfate*";

[ ] **loss-on-ignition (LOI)** - ASTM D 2974, "*Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils*";

[ ] **standard Proctor compaction** - ASTM D 698, "*Standard Test Method for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5-lb (2.49-kg) Rammer and 12-in. (305-mm) Drop*";

[ ] **modified Proctor compaction** - ASTM D 1557, "*Standard Test Method for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-in. (457-mm) Drop*";

[ ] **maximum relative density** - ASTM D 4253, "*Standard Test Method for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table*";

[ ] **minimum relative density** - ASTM D 4254, "*Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density*";

[ ] **mass per unit area** - ASTM D 3776, "*Standard Test Method for Mass Per Unit Area (weight) of Woven Fabric*";

[ ] **thickness measurement** - ASTM D 1777, "*Standard Test Method for Measuring Thickness of Textile Materials*";

[ ] **free swell** - United States Pharmacopeia National Formulary (USP-NF) XVII, "*Swell Index of Clay*";

[ ] **fluid loss** - American Petroleum Institute (API)-13B, "*Section 4, Bentonite*";

[ ] **marsh funnel** - API-13B, "*Section 4, Field Testing of Oil Mud Viscosity and Gel Strength*";

[ ] **pinhole dispersion** - ASTM D 4647, "*Standard Test Method for Identification and Classification of Dispersive Clay Soils by the Pinhole Test*";

[ ] **gradient ratio** - ASTM D 5101, "*Standard Test Method for Measuring the Soil-Geotextile System Clogging Potential by the Gradient Ratio*";

[ ] **hydraulic conductivity ratio** - Draft ASTM D 35.03.91.01, "*Standard Test Method for Hydraulic Conductivity Ratio (HCR) Testing*";

[ ] **hydraulic transmissivity** - ASTM D 4716, "*Standard Test Method for Constant Head Hydraulic Transmissivity (In-plane flow) of Geotextiles and Geotextile Related Products*";

[ ] **one-dimensional consolidation** - ASTM D 2435, "*Standard Test Method for One-Dimensional Consolidation Properties of Soil*";

[ ] **one-dimensional swell/collapse** - ASTM D 4546, "*Standard Test Method for One-Dimensional Swell or Settlement Potential of Cohesive Soils*";

[ ] **unconfined compressive strength (UCS)** - ASTM D 2166, " *Standard Test Method for Unconfined Compressive Strength of Cohesive Soil*";

[ ] **triaxial compressive strength ($\overline{\text{ICU}}$)** - ASTM D 4767, "*Standard Test Method for Triaxial Compression Test on Cohesive Soils*";

[ ] **triaxial compressive strength (UU)** - ASTM D 2850, "*Standard Test Method for Unconsolidated, Undrained Compressive Strength of Cohesive Soils in Triaxial Compression*";

[ ] **rigid wall constant head hydraulic conductivity** - ASTM D 2434, "*Standard Test Method for Permeability of Granular Soils (Constant Head)*";

[ ] **flexible wall falling head hydraulic conductivity** - ASTM D 5084, "*Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter*";

[ ] **flexible wall falling head hydraulic conductivity** - U. S. Army Corp of Engineers; EM-1110-2-1906, "*Standard Test Method for Permeability Tests, Appendix VII*";

[ ] **index flux of GCL** - proposed ASTM method rough draft # 1, 6/18/94, "*Standard Test Method for Measurement of Index Flux Through Saturated Geosynthetic Clay Liner Specimens Using a Flexible Wall Permeameter*";

[ ] **flexible wall falling head hydraulic conductivity** - Geosynthetic Research Institute (GRI) GCL-2, "*Standard Test Method for Permeability of Geosynthetic Clay Liners (GCLs)*";

[ ] **permeability/compatibility** - USEPA Method 9100, SW-846, Revision 1, 1987, Standard Test Method for Measurement of "*Saturated Hydraulic Conductivity, Saturated Leachate Conductivity and Intrinsic Permeability*";

[ ] **capillary-moisture** - ASTM D 2325, "*Standard Test Method for Capillary-Moisture Relationships for Coarse- and Medium-Textured Soils by Porous-Plate Apparatus*";

[ ] **capillary-moisture** - ASTM D 3152, "*Standard Test Method for Capillary-Moisture Relationships for Fine-Textured Soils by Pressure-Membrane Apparatus*" and

[ ] **paint filter liquids** - USEPA Method 9095, SW-846, Revision 1, 1987, "*Paint Filter Liquids Test*".

APPLICATION OF TEST RESULTS

The reported test results apply to the field materials inasmuch as the samples sent to the laboratory for testing are representative of these materials. This report applies only to the materials tested and does not necessarily indicate the quality or condition of apparently identical or similar materials. The testing was performed in accordance with the general engineering standards and conditions reported. The test results are related to the testing conditions used during the testing program. As a mutual protection to the client, the public, and GeoSyntec, this report is submitted and accepted for the exclusive use of the client and upon the condition that this report is not used, in whole or in part, in any advertising, promotional or publicity matter without prior written authorization from GeoSyntec.

APPENDIX C

NORTH DISPOSAL AREA
BLEACH MUD FILTER PRESS EVALUATION

Prepared for

LCP Chemicals Steering Committee
Ross Road
Brunswick, Georgia 31520

FINAL REPORT
LABORATORY TEST RESULTS
NORTH DISPOSAL AREA BLEACH MUDS
FILTER PRESS EVALUATION
LCP CHEMICALS - GEORGIA SITE
BRUNSWICK, GEORGIA

Prepared by

GeoSyntec Consultants
1100 Lake Hearn Drive
Suite 200
Atlanta, Georgia 30342

Project Number GE3834

November 1995

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Terms of Reference

This report was prepared by GeoSyntec Consultants (GeoSyntec), Atlanta, Georgia for LCP Chemicals Steering Committee, Brunswick, Georgia. The report presents the results of the North Disposal Area Bleach Mud Filter Press Evaluation performed as part of the removal response activities for the LCP Chemicals - Georgia Site in Brunswick, Glynn County, Georgia. GeoSyntec understands that the purpose of the testing program was to evaluate the degree to which the site materials can be dewatered by filter pressing. The testing program commenced on 30 October 1995 and was concluded on 8 November 1995.

This report was prepared by Mr. Brian D. Jacobson, E.I.T., of GeoSyntec, and was reviewed by Dr. Nader S. Rad, P.E., also of GeoSyntec, in accordance with the internal review policy of the firm. The testing program was conducted under the direction of Mr. Jacobson and Dr. Rad at the request and authorization of Mr. Kirk J. Kessler, P.G., of GeoSyntec, on behalf of LCP Chemicals Steering Committee. All testing was performed at the GeoSyntec Geomechanics and Environmental Laboratory in Atlanta, Georgia.

1.2 Organization

The remainder of this report is organized as follows:

- *Section 2, Scope of Work*, presents laboratory procedures and testing conditions used during the laboratory testing program;
- *Section 3, Test Results*, presents the results obtained during the laboratory testing program; and
- *Section 4, Closure*, presents GeoSyntec's policy regarding the limitations of and the use of the information obtained during the performance of the laboratory testing program.

2. SCOPE OF WORK

2.1 Overview

Samples of the site wastes (herein referred to as the site materials) were shipped from the LCP Chemicals site to GeoSyntec for the testing program. The site materials were obtained at different depths from two locations in the North Disposal Area. Specified mixtures of the site material samples were tested. The laboratory testing program included:

- moisture content determination; and
- mechanical dewatering potential evaluation including:
  - porous-plate dewatering; and
  - filter press dewatering.

2.2 Sample Identification, Handling, Storage, and Disposal

2.2.1 Sample Identification

Site material samples received at the laboratory are listed in Table 1. Each site material sample was identified by GeoSyntec field personnel utilizing a site sample ID. Additionally, at the outset of the testing program, each sample was assigned a laboratory sample number to further facilitate documentation and tracking of the samples.

2.2.2 Sample Handling, Storage, and Disposal

As small-volume treatability study samples, the site materials were exempt, under the Resource Conservation and Recovery Act (RCRA) Part 261.4(e), from hazardous waste manifesting requirements. A packing list quantifying and describing the site materials, as well as pertinent shipping information, accompanied each container.

Written records of sample possession and transference were maintained via Chain-of-Custody documents.

An existing Project-Specific Health and Safety Plan (PSHASP), which had been prepared for a previous testing program performed on similar materials, was utilized during the performance of the testing program. The PSHASP had been prepared based on (i) the historical chemical analyses for the site material samples provided to GeoSyntec by Allied-Signal, and (ii) written recommendations of an independent industrial hygiene consultant who had reviewed the chemical analyses.

The PSHASP required that:

- the general requirements set forth by the United States Occupational Safety and Health Administration (OSHA) for level D personal protection be used during handling and testing of the site materials;

- the site material samples be stored in a storage area designated for materials requiring special handling procedures; and

- the unused portions of the site material samples, as well as all materials contaminated with these substances during the testing program, be returned to the LCP Chemicals - Georgia site after 30 days following the completion of the testing program.

2.3 Sample Preparation

The procedures used to prepare the site material samples were as follows:

- at the outset of the testing program, the contents of each site material sample were thoroughly blended to provide homogeneous bulk samples of the site materials; and

- each bulk sample was then passed through a standard No. 4 sieve (4.75 mm); only the portion that had passed the sieve was used in the testing program.

2.4 Test Material Preparation

As presented in Table 2, the site material samples were used to form two composite samples, the composite materials are herein referred to as "test materials"; Table 2 also presents the test material designations; these designations are repeatedly used throughout this report.

2.5 Testing Procedures and Conditions

2.5.1 Testing Standards

The testing program included the following test standards and procedures:

- moisture content - American Society for Testing and Materials (ASTM) D 2216, "*Standard Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixture*";
- porous-plate dewatering evaluation - ASTM D 2325, "*Standard Test Method for Capillary-Moisture Relationships for Coarse- and Medium-Textured Soils by Porous-Plate Apparatus*"; and
- filter press dewatering evaluation as described in Section 2.5.3.

The testing procedures which required project specific conditions are identified in the following subsections.

2.5.2 Porous-Plate Dewatering Testing

The tests were performed using the test standard ASTM D 2325. However, since the standard is designed for soils, project-specific modifications had to be made for this testing program.

The test specimens were prepared using the following procedure:

- a representative portion of the test material was placed in a container and weighed;
- a mold approximately 2.38 in. (60 mm) in diameter and approximately 1.19 in. (30 mm) in height was used to form each specimen;
- the mold was placed on a 15 bar ceramic porous-plate with a membrane backing;
- the test mix was carefully poured/placed in the mold in one continuous layer in order to provide a homogeneous specimen and prevent entrapment of air bubbles;
- the top of the specimen was leveled with a spatula; and
- the container with the remaining test material was re-weighed, and the difference between the initial weight and the final weight was used as the specimen weight; each test specimen weighed between 0.22 to 0.25 lb (100 to 115 g).

Each test was performed utilizing the following project-specific testing procedures:

- the porous-plate, with the test specimen, was placed inside a pressure vessel;
- the configuration for each test was as follows (from top to bottom):test specimen/porous-plate/porous-plate backing/porous-plate stands;
- saturation of the test specimens, as specified in ASTM D 2325, was not attempted;

- the pressure inside the pressure vessel was increased to 40 psi (276 kPa) in approximately 1 minute; the pressure increase resulted in water leaving the test specimen; the test specimen was allowed to drain until no fluid was observed leaving the test device for a period of at least 15 minutes;

- the pressure was reduced; the specimen was removed from the test device, weighed, and re-placed in the pressure vessel;

- the pressure inside the pressure vessel was increased to 80 psi (552 kPa) in approximately 1 minute; once again, the test specimen was allowed to drain until no water was observed leaving the test device for a period of at least 15 minutes;

- the pressure was reduced; the specimen was removed from the pressure vessel and weighed; and

- the specimen was placed in an oven at a constant temperature of 221°F (105°C) to determine the final moisture content.

2.5.3 Filter Press Dewatering Evaluation

No generally accepted test standards exist for the filter press dewatering evaluation of waste. Thus, the test procedures commonly used by GeoSyntec for soils were used:

The test specimens were formed using the following procedure:

- a representative portion of the test materials, weighing approximately 0.43 lb (195 g), was selected for testing;

- a dewatering test chamber approximately 2.0 in. (51 mm) in diameter and approximately 3.5 in. (89 mm) in height was used;

- the bottom of the test chamber was covered with a layer of geotextile (Nicolon 160NS);

- the inside perimeter of the test chamber was also covered with the above geotextile to a height of approximately 1.5 in. (38 mm);
- the test material was carefully poured/placed in the test chamber in one continuous layer, approximately 3.25 in. (83 mm) in height, in order to provide a homogeneous specimen and prevent entrapment of air bubbles;
- the top of the specimen was leveled with a spatula; and
- a rubber diaphragm was placed over the specimen inside the test chamber such that air could not come in contact with the specimen.

Each test was performed utilizing the following procedures:

- a drainage valve at the bottom of the test chamber was opened;
- air was introduced above the rubber diaphragm until a pressure of 80 psi (552 kPa) was attained inside the test chamber;
- the specimen was allowed to drain until no fluid was observed leaving the specimen for a period of at least 2 minutes;
- the pressure above the rubber diaphragm was reduced; and
- the specimen was removed from the test device and placed in an oven at a constant temperature of 221°F (105°C) to determine the final moisture content of the specimen.

3. TEST RESULTS

The test results for the porous-plate and filter press dewatering are provided in Tables 3 and 4, respectively.

4. CLOSURE

This report applies only to the materials tested and does not necessarily indicate the quality or condition of apparently identical or similar materials. The testing was performed in accordance with the general engineering standards and conditions reported. The test results are related to the testing conditions used during the testing program. As a mutual protection to LCP Chemicals Steering Committee, the public, and GeoSyntec, this report is submitted and accepted for the exclusive use of LCP Chemicals Steering Committee, and upon the condition that this report is not used, in whole or in part, in any advertising, promotional, or publicity matter without prior written authorization from GeoSyntec.

TABLES

TABLE 1

SAMPLES RECEIVED AND SAMPLE DELIVERY SCHEDULE

LCP CHEMICALS - GEORGIA SITE
NORTH DISPOSAL AREA BLEACH MUDS FILTER PRESS EVALUATION

Site Sample ID	Lab Sample No.	Depth (ft)	Moisture Content (%)	Solids Content (%)	Date Received
HA-30 0-1	E95J20	0 - 1	171.2	36.9	27 October 1995
HA-30 1-2	E95J21	1 - 2	111.7	47.2	27 October 1995
HA-30 2-3	E95J22	2 - 3	245.9	28.9	27 October 1995
HA-31 0-1	E95J23	0 - 1	249.0	28.6	27 October 1995
HA-31 1-2	E95J24	1 - 2	342.0	22.6	27 October 1995
HA-31 2-3	E95J25	2 - 3	426.2	19.0	27 October 1995
HA-31 3-4	E95J26	3 - 4	451.3	18.1	27 October 1995

TABLE 2

TEST MATERIAL COMPOSITION

LCP CHEMICALS - GEORGIA SITE
NORTH DISPOSAL AREA BLEACH MUDS FILTER PRESS EVALUATION

Test Material Designation	Site Material Samples (parts)[1]							Moisture Content (%)	Solids Content (%)
	HA-30 0-1	HA-30 1-2	HA-30 2-3	HA-31 0-1	HA-31 1-2	HA-31 2-3	HA-31 3-4		
NDBM1	1	1	1	0	0	0	0	147.9	40.3
NDBM2	0	0	0	1	1	1	1	351.7	22.1

Note:

1. Based on total weight.

TABLE 3

BENCH SCALE DEWATERING TEST RESULTS
POROUS-PLATE DEWATERING

LCP CHEMICAL - GEORGIA SITE
NORTH DISPOSAL AREA BLEACH MUDS FILTER PRESS EVALUATION

Specimen ID		Porous Plate Dewatering								
Mixture Designation	No.	Test Specimen Initial Conditions			Test Specimen Final Conditions					
					Applied Pressure[1] 40 psi			Applied Pressure[1] 80 psi		
		Moisture Content (%)	Solids Content (%)	Dry Unit Weight (pcf)	Moisture Content (%)	Solids Content (%)	Weight Loss (%)	Moisture Content (%)	Solids Content (%)	Weight Loss (%)
NDBM1	1	153.1	39.5	30.5	84.1	54.3	27.3	80.4	55.4	28.7
	2	142.7	41.2	32.6	79.5	55.7	26.0	75.2	57.1	27.8
NDBM2	3	357.1	21.9	15.7	197.0	33.7	35.0	179.7	35.8	38.8
	4	346.2	22.4	15.9	182.2	35.4	36.8	157.5	38.8	42.3

Note:

1. The pressure was sustained until no water was observed leaving the test device for a period of at least 15 minutes.

TABLE 4

BENCH SCALE DEWATERING TEST RESULTS
FILTER PRESS DEWATERING

LCP CHEMICAL - GEORGIA SITE
NORTH DISPOSAL AREA BLEACH MUDS FILTER PRESS EVALUATION

Specimen ID		Filter Press Dewatering				
Mixture Designation	No.	Test Specimen Initial Conditions		Test Specimen Final Conditions[1]		
		Moisture Content (%)	Solids Content (%)	Moisture Content (%)	Solids Content (%)	Weight Loss (%)
NDBM1	1	151.3	39.8	98.5	50.4	21.0
NDBM2	1	356.7	21.9	156.4	39.0	43.9

Note:

1. A pressure of 80 psi (552 kPa) was sustained until no water was observed leaving the test device for a period of at least 2 minutes.

APPENDIX D

NORTH REMOVAL EXPANSION AREA TREATABILITY TESTING

GEOSYNTEC CONSULTANTS

Geomechanics & Environmental Laboratory
2658 Holcomb Bridge Road • Suite 110
Alpharetta, Georgia 30201 • USA
Tel. (770) 645-6575 • Fax (770) 645-6570

17 October 1996

Dr. J. F. Beech, P.E.
GeoSyntec Consultants
1100 Lake Hearn Drive N.E., Suite 200
Atlanta, Georgia 30342

Subject: Final Report - Laboratory Test Results
LCP Chemicals - Georgia Site
TCLP Lead Concentrations

Dear Dr. Beech:

GeoSyntec Consultants (GeoSyntec) Geomechanics and Environmental Laboratory in Alpharetta, Georgia, is pleased to present the attached final test results (Table 1) for the above referenced project. A blank shown on the table indicates that the test was not performed, the parameter is not applicable, or that the test resulted in insufficient data to report the designated parameter. Attachment A presents the results of the chemical analyses performed by Bionomics Laboratory, Inc., Atlanta, Georgia and Savannah Laboratories and Environmental Services, Inc., Savannah, Georgia. Attachment B presents the general information pertinent to the testing program, and the policy of GeoSyntec regarding the limitations and the use of the test results.

The Geomechanics and Environmental Laboratory appreciates the opportunity to provide testing services for this project. Should you have any questions regarding the attached test results or if you require additional information, please do not hesitate to contact either of the undersigned.

Sincerely,

Cuneyt Gokmen, E.I.T.
Assistant Program Manager
Environmental Testing

Nader S. Rad, Ph.D., P.E.
Laboratory Director

Attachment

GL0076/GEL96165

TABLE 1

SUMMARY OF CHEMICAL ANALYSES

LCP CHEMICAL - GEORGIA SITE
TCLP LEAD CONCENTRATIONS

Site Sample ID	Lab Sample No.	Moisture Content ASTM D 2216 (%)		Specimen Designation	Mixture Composition		Total Lead Concentration (mg/kg)	TCLP Lead Concentration (mg/l)	
		As-Received	At the Time of Mixing		Cement [1] (%)	Phosphoric Acid [1], [2] (%)		1-Day Curing	3-Day Curing
96236-01	E96H72	13.0	13.0	72 (13) INITIAL			13,500	313	
			13.0	72 (13) 5	5			245	
			13.0	72 (13) 10	10			165	
			13.0	72 (13) 15	15			125	0.21
			20.0	72 (20) 5	5			57.0	
			20.0	72 (20) 10	10			148	
			20.0	72 (20) 15	15			22.4	34.5
			20.0	72 (20) 25	25			<0.05 [3]	2.6
			20.0	72 (20) 30	30			<0.05 [3]	
			45.5	72 (45.5) 15	15				1.78
			29.4 [4]	72 (29.4) 5 - 2	5	2			0.95
96236-02	E96H73	7.1	7.1	73 (7.1) INITIAL				89.7	
			7.1	73 (7.1) 5	5			98.3	
			7.1	73 (7.1) 10	10			33.9	
			7.1	73 (7.1) 15	15			0.14	
			7.1	73 (7.1) 20	20			<0.05 [3]	
			7.1	73 (7.1) 25	25			<0.05 [3]	
			15.0	73 (15) 5	5			98.7	
			15.0	73 (15) 10	10			64.5	
			15.0	73 (15) 15	15			18.2	17.6

Notes:

1. Based on dry weight of the soil.
2. A phosphoric acid solution at 86.1% concentration was used.
3. Below the detection limit of 0.05 mg/l.
4. Including the phosphoric acid solution added to the mix.

ATTACHMENT A

Results of Chemical Analysis

Bionomics Laboratory, Inc.

ATLANTA • COLUMBIA • ORLANDO • RICHMOND

2264 Northwest Parkway, Suite F • Marietta, GA 30067
(770) 984-8070 • Fax (770) 988-0491
FL DEP CQAP #890201 • FL DHRS SDW #87368 • FL DHRS ENV #E87194
SC. DHEC #98006 • NC DEM ENV #513

GEOSYNTEC CONSULTANTS
5775 P'TREE DUNWOODY ROAD
SUITE 200F
ATLANTA, GA 30342
Attn: MADAR RAD

Order #: A6-08-173
Date: 08/27/96 15:33
Work ID: LQ CHEMICALS
Date Received: 08/26/96
Date Completed: 08/27/96

Purchase Order: REQUIRED
Invoice Number: not set

Client Code: GEO_SYNTEC

SAMPLE IDENTIFICATION

Sample Number	Sample Description
01	72 INI
02	72 (13) 5
03	72 (13) 10
04	72 (13) 15
05	72 (20) 5
06	72 (20) 10
07	72 (20) 15
08	73 INI
09	73 (15) 5
10	73 (15) 10
11	73 (15) 15
12	73 (7.1) 5
13	73 (7.1) 10
14	73 (7.1) 15

Certified By
MARK KROMIS, CHEMIST

TEST RESULTS BY SAMPLE

Sample Description: 72 INI
Test Description: TCLP LEAD
Collected: 08/26/96

Lab No: 01A
Method: 1311/6010 Test Code: PB_TC

PARAMETER	RESULT	LIMIT
TCLP Lead	313	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

Sample Description: 72 (13) 5
Test Description: TCLP LEAD
Collected: 08/26/96

Lab No: 02A
Method: 1311/6010 Test Code: PB_TC

PARAMETER	RESULT	LIMIT
TCLP Lead	245	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

Sample Description: 72 (13) 10
Test Description: TCLP LEAD
Collected: 08/26/96

Lab No: 03A
Method: 1311/6010 Test Code: PB_TC

PARAMETER	RESULT	LIMIT
TCLP Lead	165	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

TEST RESULTS BY SAMPLE

Sample Description: 72 (13) 10 Lab No: 03A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

Sample Description: 72 (13) 15 Lab No: 04A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

PARAMETER	RESULT	LIMIT
TCLP Lead	125	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

Sample Description: 72 (20) 5 Lab No: 05A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

PARAMETER	RESULT	LIMIT
TCLP Lead	57.0	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

Sample Description: 72 (20) 10 Lab No: 06A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

PARAMETER	RESULT	LIMIT
TCLP Lead	148	0.06

TEST RESULTS BY SAMPLE

Sample Description: 72 (20) 10 Lab No: 06A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

Sample Description: 72 (20) 15 Lab No: 07A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

PARAMETER	RESULT	LIMIT
TCLP Lead	22.4	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

Sample Description: 73 INI Lab No: 08A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

PARAMETER	RESULT	LIMIT
TCLP Lead	89.7	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

TEST RESULTS BY SAMPLE

Sample Description: 73 (15) 5 Lab No: 09A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

PARAMETER	RESULT	LIMIT
TCLP Lead	98.7	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

Sample Description: 73 (15) 10 Lab No: 10A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

PARAMETER	RESULT	LIMIT
TCLP Lead	64.5	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

Sample Description: 73 (15) 15 Lab No: 11A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

PARAMETER	RESULT	LIMIT
TCLP Lead	18.2	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

TEST RESULTS BY SAMPLE

Sample Description: 73 (7.1) 5 Lab No: 12A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

PARAMETER	RESULT	LIMIT
TCLP Lead	98.3	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

Sample Description: 73 (7.1) 10 Lab No: 13A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

PARAMETER	RESULT	LIMIT
TCLP Lead	33.9	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

Sample Description: 73 (7.1) 15 Lab No: 14A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/26/96

PARAMETER	RESULT	LIMIT
TCLP Lead	0.14	0.06

Notes and Definitions for this Report:

DATE RUN 08/27/96
ANALYST BB
UNITS mg/L

Bionomics Laboratory, Inc.

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FL DEP CQAP #890201 • FL DHRS SDW #87368 • FL DHRS ENV #E87194
SC. DHEC #98006 • NC DEM ENV #513

GEOSYNTEC CONSULTANTS
2658 HOLCOMB BRIDGE ROAD
SUITE 110
ALPHARETTA, GA 30201
Attn: MADAR RAD

Order #: A6-08-188
Date: 08/30/96 11:47
Work ID: LCP-GA
Date Received: 08/28/96
Date Completed: 08/30/96

Purchase Order: REQUIRED
Invoice Number: not set

Client Code: GEO_SYNTEC

SAMPLE IDENTIFICATION

Sample Number	Sample Description
01	72 (13) 15
02	72 (20) 15
03	73 (15) 15

Certified By
MARK KROMIS, CHEMIST

TEST RESULTS BY SAMPLE

Sample Description: 72 (13) 15 Lab No: 01A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/28/96 14:00

PARAMETER	RESULT	LIMIT
TCLP Lead	0.21	0.06

Notes and Definitions for this Report:

DATE RUN 08/29/96
ANALYST BB
UNITS mg/L

Sample Description: 72 (20) 15 Lab No: 02A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/28/96 14:00

PARAMETER	RESULT	LIMIT
TCLP Lead	34.5	0.06

Notes and Definitions for this Report:

DATE RUN 08/29/96
ANALYST BB
UNITS mg/L

Sample Description: 73 (15) 15 Lab No: 03A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/28/96 14:00

PARAMETER	RESULT	LIMIT
TCLP Lead	17.6	0.06

Notes and Definitions for this Report:

DATE RUN 08/29/96
ANALYST BB
UNITS mg/L

TEST RESULTS BY SAMPLE

Sample Description: 73 (15) 15 Lab No: 03A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 08/28/96 14:00

Bionomics Laboratory, Inc.

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SC. DHEC #98006 • NC DEM ENV #513

GEOSYNTEC CONSULTANTS
2658 HOLCOMB BRIDGE ROAD
SUITE 110
ALPHARETTA, GA 30201
Attn: MADAR RAD

Order #: A6-09-026
Date: 09/06/96 14:39
Work ID: LCP GA
Date Received: 09/05/96
Date Completed: 09/06/96

Purchase Order: REQUIRED
Invoice Number: not set

Client Code: GEO_SYNTEC

SAMPLE IDENTIFICATION

Sample Number	Sample Description
01	72(20) 25
02	72(20) 30
03	73(7,1) 20
04	73(7,1) 25

Certified By
MARK KROMIS, CHEMIST

TEST RESULTS BY SAMPLE

Sample Description: 72(20) 25 Lab No: 01A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 09/05/96 13:00

PARAMETER	RESULT	LIMIT
TCLP Lead	BDL	0.05

Notes and Definitions for this Report:

DATE RUN 09/06/96
ANALYST BB
UNITS mg/L

Sample Description: 72(20) 30 Lab No: 02A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 09/05/96 13:00

PARAMETER	RESULT	LIMIT
TCLP Lead	BDL	0.05

Notes and Definitions for this Report:

DATE RUN 09/06/96
ANALYST BB
UNITS mg/L

Sample Description: 73(7,1) 20 Lab No: 03A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 09/05/96 13:00

PARAMETER	RESULT	LIMIT
TCLP Lead	BDL	0.05

Notes and Definitions for this Report:

DATE RUN 09/06/96
ANALYST BB
UNITS mg/L

TEST RESULTS BY SAMPLE

Sample Description: 73(7,1) 20 Lab No: 03A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 09/05/96 13:00

Sample Description: 73(7,1) 25 Lab No: 04A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 09/05/96 13:00

PARAMETER	RESULT	LIMIT
TCLP Lead	BDL	0.05

Notes and Definitions for this Report:

DATE RUN 09/06/96
ANALYST BB
UNITS mg/L

Bionomics Laboratory, Inc.

ATLANTA • COLUMBIA • ORLANDO • RICHMOND

2264 Northwest Parkway, Suite F • Marietta, GA 30067
(770) 984-8070 • Fax (770) 988-0491
FL DEP CQAP #890201 • FL DHRS SDW #87368 • FL DHRS ENV #E87194
SC. DHEC #98006 • NC DEM ENV #513

GEOSYNTEC CONSULTANTS
2658 HOLCOMB BRIDGE ROAD
SUITE 110
ALPHARETTA, GA 30201
Attn: MADAR RAD

Order #: A6-09-081
Date: 09/17/96 13:25
Work ID: LCP-GA GL0076
Date Received: 09/16/96
Date Completed: 09/17/96

Purchase Order: REQUIRED
Invoice Number: not set

Client Code: GEO_SYNTEC

SAMPLE IDENTIFICATION

Sample Number	Sample Description
01	72(W) S-2
02	72(W) 15

Certified By
MARK KROMIS, CHEMIST

Order # A6-09-081
09/17/96 13:25

TEST RESULTS BY SAMPLE

Sample Description: 72(W) S-2 Lab No: 01A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 09/16/96 09:30

PARAMETER	RESULT	LIMIT
TCLP Lead	0.95	0.05

Notes and Definitions for this Report:

DATE RUN 09/17/96
ANALYST BB
UNITS mg/L

Sample Description: 72(W) 15 Lab No: 02A
Test Description: TCLP LEAD Method: 1311/6010 Test Code: PB_TC
Collected: 09/16/96 09:30

PARAMETER	RESULT	LIMIT
TCLP Lead	1.78	0.05

Notes and Definitions for this Report:

DATE RUN 09/17/96
ANALYST BB
UNITS mg/L

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S6-85360
Received: 11 SEP 96
Reported: 13 SEP 96

Mr. Jack Callahan
GeoSyntec Consultants
1100 Lake Hearn Drive, NE, Suite 200
Atlanta, GA 30342

CC: Mr. Jack Raymer-Geosyntec (Fax)

Project: LCP Chemical/GL0076
Sampled By: Client
Code: 104560913

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID
85360-2	TCLP Extract Fluid Method Blank

PARAMETER	85360-2
Lead (TCLP) (6010)	
Lead (TCLP-6010), mg/l	<0.20
Preparation Date	09.12.96
Date Analyzed	09.13.96
Dilution factor	1.0
Batch ID	09120

Methods: EPA SW-846

Michael J. Salum, Project Manager

Final Page Of Report

TOTAL P.03

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CC: Mr. Jack Raymer-Geosyntec (Fax)

Project: LCP Chemical/GL0076
Sampled By: Client
Code: 104560913

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED
85360-1	72(20)25 Soil w/Cement	09-09-96/1730

PARAMETER	85360-1
Lead (TCLP) (6010)	
Lead (TCLP-6010), mg/l	2.6
Preparation Date	09.12.96
Date Analyzed	09.13.96
Dilution factor	1.0
Batch ID	09120

Bionomics Laboratory, Inc.

ATLANTA • COLUMBIA • ORLANDO • RICHMOND

2264 Northwest Parkway, Suite F • Marietta, GA 30067
(770) 984-8070 • Fax (770) 988-0491
FL DEP CQAP #890201 • FL DHRS SDW #87368 • FL DHRS ENV #E87194
SC. DHEC #98006 • NC DEM ENV #513

GEOSYNTEC CONSULTANTS
2658 HOLCOMB BRIDGE ROAD
SUITE 110
ALPHARETTA, GA 30201
Attn: MADAR RAD

Order #: A6-09-107
Date: 09/23/96 07:39
Work ID: GL0076 LCP-GA
Date Received: 09/19/96
Date Completed: 09/23/96

Purchase Order: REQUIRED
Invoice Number: not set

Client Code: GEO_SYNTEC

SAMPLE IDENTIFICATION

Sample Number	Sample Description
01	72

Sample Number	Sample Description

Certified By
MARK KROMIS, CHEMIST

Order # A6-09-107
09/23/96 07:39

TEST RESULTS BY SAMPLE

Sample: 01A 72 Collected: 09/19/96

Test Description		Result	Limit	Units	Analyzed	By
LEAD -	EPA 6010	13,500	5.0	mg/Kg	09/20/96	BB

ATTACHMENT B

Sample Identification, Handling, Storage and Disposal

Laboratory Test Standards

Application of Test Results

SAMPLE IDENTIFICATION, HANDLING, STORAGE AND DISPOSAL

Test materials were sent to GeoSyntec Consultants (GeoSyntec) Geomechanics and Environmental Laboratory in Atlanta, Georgia by the client or its representative(s). Samples delivered to the laboratory were identified by client sample identification (ID) numbers which had been assigned by representative(s) of the client. Upon being received at the laboratory, each sample was assigned a laboratory sample number to facilitate tracking and documentation.

Based on the information provided to GeoSyntec by the client or its representative(s) and, when applicable, procedural guidelines recommended by an industrial hygiene consultant, the following Occupational Safety and Health Administration (OSHA) level of personal protection was adopted for handling and testing of the test materials:

[ ] test materials were not contaminated, no special protection measures were taken;
[X] level D
[ ] level C
[ ] level B

In accordance with the health and safety guidelines of GeoSyntec, contaminated materials are stored in a designated containment area in the laboratory. Non-contaminated materials are stored in a general storage area in the laboratory.

GeoSyntec Geomechanics and Environmental Laboratory will continue storing the test materials for a period of 30 days from the date of this report or a year from the time that the samples were received, which ever is shorter. Thereafter: (i) contaminated materials will be returned to the client or its designated representative(s); and (ii) the materials which are not contaminated will be discarded unless long-term storage arrangements are specifically made with GeoSyntec Geomechanics and Environmental Laboratory.

LABORATORY TEST STANDARDS

At the request of the client, the laboratory testing program was performed utilizing the guidelines provided in the following test standards:

[X] **moisture content** - American Society for Testing and Materials (ASTM) D 2216 "*Standard Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures*";

[ ] **moisture content** - ASTM D 4643 "*Standard Test Method for Determination of Water (Moisture) Content of Soil by the Microwave Method*";

[ ] **particle-size analysis** - ASTM C 136, "*Standard Method for Sieve Analysis of Fine and Coarse Aggregates*";

[ ] **particle-size analysis** - ASTM D 422, "*Standard Method for Particle-Size Analysis of Soils*";

[ ] **percent passing No. 200 sieve** - ASTM D 1140, "*Standard Test Method for Amount of Material in Soil Finer Than No. 200 (75 microns) sieve*";

[ ] **Atterberg limits** - ASTM D 4318, "*Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils*";

[ ] **soil classification** - ASTM D 2487, "*Standard Test Method for Classification of Soils for Engineering Purposes*";

[ ] **soil pH** - ASTM D 4972, "*Standard Test Method for pH of Soils*";

[ ] **soil pH** - United States Environmental Protection Agency (USEPA) SW-846 Method 9045, Revision 1, 1987, Standard Test Method for Measurement of "*Soil pH*";

[ ] **specific gravity** - ASTM D 854, "*Standard Test Method for Specific Gravity of Soils*";

[ ] **carbonate content** - ASTM D 3042, "*Standard Test Method for Insoluble Residue in Carbonate Aggregates*";

[ ] **carbonate content** - ASTM D 4373, "*Standard Test Method for Calcium Carbonate Content of Soils*";

[ ] **acid reactivity** - ASTM D 2488, "*Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*";

[ ] **soundness** - ASTM C 88, "*Standard Test Method for Soundness of Aggregates by use of Sodium Sulfate or Magnesium Sulfate*";

[ ] **loss-on-ignition (LOI)** - ASTM D 2974, "*Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils*";

[ ] **standard Proctor compaction** - ASTM D 698, "*Standard Test Method for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5-lb (2.49-kg) Rammer and 12-in. (305-mm) Drop*";

[ ] **modified Proctor compaction** - ASTM D 1557, "*Standard Test Method for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-in. (457-mm) Drop*";

[ ] **maximum relative density** - ASTM D 4253, "*Standard Test Method for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table*";

[ ] **minimum relative density** - ASTM D 4254, "*Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density*";

[ ] **unit weight** - ASTM D 2937, "*Standard Test Method for Density of Soil In Place by the Drive-Cylinder Method*";

[ ] **unit weight, void ratio, porosity, and degree of saturation** - U. S. Army Corp of Engineers (USCOE); EM-1110-2-1906, "*Unit Weight, Void Ratio, Porosity, and Degree of Saturation, Appendix II*";

[ ] **mass per unit area** - ASTM D 3776, "*Standard Test Method for Mass Per Unit Area (weight) of Woven Fabric*";

[ ] **thickness measurement** - ASTM D 1777, "*Standard Test Method for Measuring Thickness of Textile Materials*";

[ ] **free swell** - United States Pharmacopeia National Formulary (USP-NF) XVII, "*Swell Index of Clay*";

[ ] **swell of clay in GCL's** - Geosynthetic Research Institute (GRI) GCL-1, "*Standard Test Method for Swell Measurement of the Clay Component of GCL's*";

[ ] **fluid loss** - American Petroleum Institute (API) RP 13B, "*Section 4, Bentonite*";

[ ] **marsh funnel** - API RP 13B, "*Section 4, Field Testing of Oil Mud Viscosity and Gel Strength*";

[ ] **pinhole dispersion** - ASTM D 4647, "*Standard Test Method for Identification and Classification of Dispersive Clay Soils by the Pinhole Test*";

[ ] **gradient ratio** - ASTM D 5101, "*Standard Test Method for Measuring the Soil-Geotextile System Clogging Potential by the Gradient Ratio*";

[ ] **hydraulic conductivity ratio (HCR)** - ASTM D 5567, "*Standard Test Method for Hydraulic Conductivity Ratio (HCR) Testing of Soil/Geotextile Systems*";

[ ] **hydraulic transmissivity** - ASTM D 4716, "*Standard Test Method for Constant Head Hydraulic Transmissivity (In-plane flow) of Geotextiles and Geotextile Related Products*";

[ ] **one-dimensional consolidation** - ASTM D 2435, "*Standard Test Method for One-Dimensional Consolidation Properties of Soil*";

[ ] **one-dimensional swell/collapse** - ASTM D 4546, "*Standard Test Method for One-Dimensional Swell or Settlement*

Potential of Cohesive Soils";

[ ] **unconfined compressive strength (UCS)** - ASTM D 2166, " *Standard Test Method for Unconfined Compressive Strength of Cohesive Soil*";

[ ] **triaxial compressive strength ($\overline{ICU}$)** - ASTM D 4767, "*Standard Test Method for Triaxial Compression Test on Cohesive Soils*";

[ ] **triaxial compressive strength (UU)** - ASTM D 2850, "*Standard Test Method for Unconsolidated, Undrained Compressive Strength of Cohesive Soils in Triaxial Compression*";

[ ] **rigid wall constant head hydraulic conductivity** - ASTM D 2434, "*Standard Test Method for Permeability of Granular Soils (Constant Head)*";

[ ] **rigid wall constant head hydraulic conductivity** - USCOE; EM-1110-2-1906, "*Standard Test Method for Permeability Tests, Appendix VII*";

[ ] **flexible wall falling head hydraulic conductivity** - ASTM D 5084, "*Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter*";

[ ] **flexible wall falling head hydraulic conductivity** - USCOE; EM-1110-2-1906, "*Standard Test Method for Permeability Tests, Appendix VII*";

[ ] **index flux of GCL** - proposed ASTM method rough draft # 1, 6/18/94, "*Standard Test Method for Measurement of Index Flux Through Saturated Geosynthetic Clay Liner Specimens Using a Flexible Wall Permeameter*";

[ ] **flexible wall falling head hydraulic conductivity** - GRI GCL-2, "*Standard Test Method for Permeability of Geosynthetic Clay Liners (GCLs)*";

[ ] **permeability/compatibility** - USEPA Method 9100 SW-846, Revision 1, 1987, Standard Test Method for Measurement of "*Saturated Hydraulic Conductivity, Saturated Leachate Conductivity and Intrinsic Permeability*";

[ ] **permeability** - API RP 27, "*Recommended Practice for Determining Permeability of Porous Media*";

[ ] **capillary-moisture** - ASTM D 2325, "*Standard Test Method for Capillary-Moisture Relationships for Coarse- and Medium-Textured Soils by Porous-Plate Apparatus*";

[ ] **capillary-moisture** - ASTM D 3152, "*Standard Test Method for Capillary-Moisture Relationships for Fine-Textured Soils by Pressure-Membrane Apparatus*";

[ ] **paint filter liquids** - USEPA Method 9095, SW-846, Revision 1, 1987, "*Paint Filter Liquids Test*"; and

[ ] **bulk unit weight** - ASTM C 138, "*Standard Test Method for Weight per Cubic Foot, Yield, and Air Content (Gravimetric) of Concrete*".

APPLICATION OF TEST RESULTS

The reported test results apply to the field materials inasmuch as the samples sent to the laboratory for testing are representative of these materials. This report applies only to the materials tested and does not necessarily indicate the quality or condition of apparently identical or similar materials. The testing was performed in accordance with the general engineering standards and conditions reported. The test results are related to the testing conditions used during the testing program. As a mutual protection to the client, the public, and GeoSyntec, this report is submitted and accepted for the exclusive use of the client and upon the condition that this report is not used, in whole or in part, in any advertising, promotional or publicity matter without prior written authorization from GeoSyntec.