

Appendix B. Remedial Design Field Investigation Data Summary Report

Appendix B
Pre-Design Field Investigation Report
Operable Unit 1, Meyers Landfill Site
El Dorado County, California

January 2009

Project No. 28-072

Prepared for:

Lake Tahoe Basin Management Unit
United States Department of Agriculture
Forest Service Region 5

Prepared by:



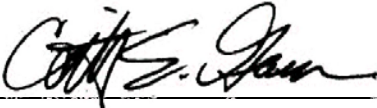
ERRG

Engineering/Remediation Resources Group, Inc.
115 Sansome Street, Suite 200
San Francisco, California 94104
(415) 395-9974

Appendix B
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Operable Unit 1, Meyers Landfill Site
El Dorado County, California

Submitted by:

Engineering/Remediation Resources Group, Inc.



Signature

01-26-09

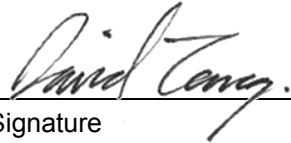
Date

Caitlin Gorman, PG

Name

Project Manager

Title



Signature

01-26-09

Date

David Tang, PE, GE

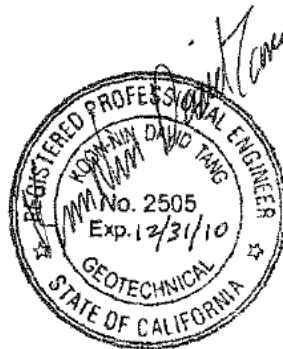
Name

Project Engineer

Title

CERTIFICATION

This document was prepared under the direction and supervision of a qualified Professional Engineer



David Tang, P.E.

California Professional Engineer #2505

Table of Contents

SECTION 1. INTRODUCTION	1-1
1.1. Site Description	1-1
1.2. Nature and Extent of Waste.....	1-1
1.3. Report Organization	1-2
SECTION 2. INVESTIGATION ACTIVITIES	2-1
2.1. Basis for Sampling Locations and Analysis	2-1
2.2. Test Pit Excavation.....	2-2
2.2.1. Subsurface Conditions	2-2
2.2.2. Percolation Tests.....	2-3
2.3. Geotechnical Borings	2-4
2.3.1. Subsurface Conditions	2-4
2.4. Grab Samples.....	2-4
2.5. Laboratory Testing Performed.....	2-5
2.5.1. Geotechnical Testing	2-5
2.5.2. Analytical Testing.....	2-5
SECTION 3. SOIL TESTING RESULTS.....	3-1
3.1. Geotechnical Testing Results	3-1
3.2. Analytical Testing Results.....	3-1
SECTION 4. CONCLUSIONS AND RECOMMENDATIONS.....	4-1
SECTION 5. REFERENCES.....	5-1

List of Figures

Figure B-1. Sampling Locations

List of Tables

- Table B-1. Percolation Test Results
- Table B-2. Cap Soil Data from Previous Investigations
- Table B-3. Moisture and Density of Soils (ASTM D 2216 and ASTM D 2937)
- Table B-4. Atterberg Limits (ASTM D 4318)
- Table B-5. Particle Size (ASTM D 422)
- Table B-6. Compaction Test Results (ASTM D1557) Uncorrected for Oversized Particles
- Table B-7. Compaction Test Results (ASTM D1557) Corrected for Oversized Particles
- Table B-8. Permeability (ASTM D 5084)
- Table B-9. Direct Shear (ASTM D 3080)
- Table B-10. Consolidation Test (ASTM D2435)
- Table B-11. Laboratory Analytical Detections

List of Attachments

- Attachment A. Photographic Log
- Attachment B. Test Pit Logs
- Attachment C. Boring Logs
- Attachment D. Geotechnical Laboratory Results
- Attachment E. Analytical Laboratory Results

Acronyms and Abbreviations

bgs	below ground surface
CAL	Modified California Sampler
cm/sec	centimeters per second
EPA	(U.S). Environmental Protection Agency
ERRG	Engineering/Remediation Resources Group, Inc.
Forest Service	U.S. Department of Agriculture Forest Service
in/min	inches per minute
mg/kg	milligrams per kilogram
min/in	minutes per inch
ML	sandy silt or clayey silt
NA	not analyzed
PAHs	polycyclic aromatic hydrocarbons
pcf	pounds per cubic foot
PID	photoionization device
PRG	preliminary remediation goal
psf	pounds per square foot
OU	Operable Unit
RD	remedial design
RDWP	remedial design work plan
ROD	Record of Decision
SM	silty sand
SP	poorly graded sand
SP-SM	poorly graded sand with silt
SPT	Standard Penetration Test, Split-Spoon Sampler
SW-SM	well-graded sand with silt

Acronyms and Abbreviations *(continued)*

TPH	total petroleum hydrocarbons
USCS	Unified Soil Classification System
Vector	Vector Engineering, Inc.
VOCs	volatile organic compounds
Weston	Weston Solutions, Inc.
µg/kg	microgram per kilogram

Section 1. Introduction

This report presents the results of the pre-design geotechnical subsurface investigation conducted by Engineering/Remediation Resources Group, Inc. (ERRG) in support of the Remedial Design (RD) for Operable Unit (OU)-1 at the Meyers Landfill Site in El Dorado County, California. The RD is being conducted under the U.S. Department of Agriculture Forest Service (Forest Service) Regional Environmental Response Action Contract (AG-91S8-C-06-0056) Activity V, Task 2.

The purpose of the RD is to prepare a plan that implements the remedy selected in the Record of Decision (ROD) for OU-1 issued in November 2007 (Forest Service, 2007). The proposed RD for OU-1 includes the design of (1) a new cap system for the landfill that minimizes infiltration through the waste, controls surface water runoff, and controls potential erosion from the cap; (2) a new French drain; and (3) a passive landfill gas emissions control system. The purpose of this study was to evaluate subsurface conditions within OU-1 and to provide geologic and geotechnical information to help prepare the RD. This report summarizes the data collected and presents findings and conclusions.

1.1. SITE DESCRIPTION

The Meyers Landfill Site is a closed municipal landfill located on the Forest Service Lake Tahoe Basin Management Unit outside of South Lake Tahoe, 1.9 miles northeast of Meyers, California. The site covers approximately 17 acres off of Garbage Dump Road in the northeast ¼ of Section 21, Township 12 North, Range 18, East Mount Diablo Baseline and Meridian at Latitude 38°52' 26.43" North, Longitude 119°59' 17.47" West, as shown on Figure B-1. The site is a closed waste disposal facility that operated for approximately 25 years. It received solid waste from residential and commercial sources from within the Lake Tahoe Basin area. Following closure in 1971, a sandy soil interim cover was placed over the waste.

1.2. NATURE AND EXTENT OF WASTE

On average, the bottom of the landfill waste is approximately 25 feet below ground surface (bgs) and is as deep as 50 feet bgs in the thickest areas (Weston Solutions, Inc. [Weston], 2007). Approximately 300,000 cubic yards of waste is contained at the landfill (Weston, 2007). The landfill waste was deposited within a valley between two paleo ridges of native material on its eastern and western edges.

Previous investigations concluded elevated concentrations of volatile organic compounds (VOCs) are present in landfill gas and groundwater beneath the site and in groundwater downgradient from the site. The VOCs most prevalent for OU-1 are vinyl chloride, methane, and hydrogen sulfide; vinyl chloride has been identified as the primary contaminant of concern at the site ([Weston, 2007](#)).

1.3. REPORT ORGANIZATION

[Section 1](#) of this report provides this introduction and discusses the project site background. [Section 2](#) describes the investigation activities. [Section 3](#) presents the geotechnical and analytical testing results. [Section 4](#) presents the conclusions drawn from the investigation and provides recommendations. [Section 5](#) lists references used to prepare this report. The following documents are also provided as attachments to this report:

- [Attachment A](#) Photographic log
- [Attachment B](#) Test Pit Logs
- [Attachment C](#) Boring Logs
- [Attachment D](#) Geotechnical Laboratory Results
- [Attachment E](#) Analytical Laboratory Results

Section 2. Investigation Activities

ERRG conducted a pre-design investigation on July 24 and 25, 2008, to evaluate site and subsurface conditions in support of the RD for OU-1. This work was completed in accordance with the Remedial Design Work Plan (ERRG, 2008). ERRG completed a total of two test pits (ML-TP-01 and ML-TP-02), four shallow infiltration test pits (ML-TP-01 PERC-1, ML-TP-01 PERC-2, ML-TP-02 PERC-1, and ML-TP-03 PERC-1), and two borings (ML-SB-01 and ML-SB-02). Soil samples were collected from both the test pits and borings to evaluate the physical characteristics of the site subsurface. ERRG also collected grab samples from two locations (ML-GS-01 and ML-GS-02) on the existing cap to evaluate the physical and analytical properties of the cap material. The locations of the test pits, borings, and grab samples are shown on [Figure B-1](#). A photographic log of sampling activities is included in [Attachment A](#).

2.1. BASIS FOR SAMPLING LOCATIONS AND ANALYSIS

Soil samples were collected for both geotechnical and chemical analysis purposes using three different approaches (1) test pits, (2) geotechnical borings, and (3) grab samples. Each sampling approach was used to evaluate different properties of on-site soils for design purposes.

Test pits were excavated along the ridge of native material to the east of the landfill mass and at the base of the toe in the vicinity of the proposed extent of the infiltration area ([Figure B-1](#)) to evaluate design options for the surface water control system for stormwater runoff from the landfill cap. Because the ridge is a potential borrow source, the test pits along the top of the ridge also were used to evaluate the rippability of the ridge for cost analysis and for better evaluation of the shallow subsurface soils.

Samples were collected from the geotechnical borings to evaluate the overall subsurface conditions in the potential cut-slope area ([Figure B-1](#)). Data collected from the geotechnical borings were used as parameters for the slope stability analysis, as well as other engineering analyses.

Grab samples ([Figure B-1](#)) were collected from the landfill cap to evaluate the cap material's geotechnical and chemical properties to determine its suitability for use in the proposed multilayer cap.

2.2. TEST PIT EXCAVATION

Two test pits (ML-TP-01 and ML-TP-02) were excavated along the native eastern ridge adjacent to the landfill (Figure B-1). These test pits were excavated to a depth of approximately 10 feet bgs to evaluate subsurface conditions. Test pit excavation areas were approximately 10 feet by 5 feet and each area was completed using the backhoe. Soil was temporarily stockpiled adjacent to each excavation, at least 2 feet from the excavation's edge, in accordance with Title 29 Code of Federal Regulations Part 1926, Subpart P, "Safety and Health Regulations for Construction." No personnel entered into the test pit excavations.

Shallow test pits (ML-TP-01 PERC-1, ML-TP-01 PERC-2, ML-TP-02 PERC-1, and ML-TP-03 PERC-1) were excavated to a total depth of 4 feet bgs to evaluate the in-situ percolation rates for native soils. ML-TP-01 PERC-1 and ML-TP-01 PERC-2 were located to the south of ML-TP-01. ML-TP-02 PERC-1 was located to the southwest of ML-TP-02, and ML-TP-03 PERC-1 was located at the toe of the ridge. The shallow excavations were checked with the photoionization detector (PID) prior to entry. No contaminants were detected in any of the percolation test pits.

A lithologic log was completed of each test pit based on visual inspection of the test pit walls and the excavation spoils (Attachment B). During test pit excavation, the site engineer selected representative bulk soil samples for geotechnical testing from the soil stockpile. Soils were selected for sampling based on professional judgment and were chosen to accurately represent subsurface materials. Bulk soil samples ML-TP-01B and ML-TP-02C were collected from the test pits and transported to Vector Engineering, Inc.'s (Vector) laboratory in Grass Valley, California, for geotechnical laboratory testing. All soil samples and spoils were monitored for VOCs with a PID and Four-Gas meter. Each excavation was backfilled with excavated material following completion of field logs and collection of all samples for geotechnical analysis. Backfill material was placed back into the excavation using the backhoe and was compacted with the backhoe bucket. Following backfilling, the ground surface was roughly graded to ensure no areas of ponding or preferential overland flow develop.

2.2.1. Subsurface Conditions

In general, soils encountered in test pits ML-TP-01 and ML-TP-02 were classified using the Unified Soil Classification System (USCS) classification nomenclature (per ASTM D2487 version of classification system [ASTM International, 2006]), as follows: a combination of well-graded sand with silt (SW-SM), poorly graded sand (SP), and silty sand (SM). No groundwater was encountered in any of the test pits.

In ML-TP-01, SM was observed in the top 4 feet of the test pit. Below 4 feet bgs, SW-SM was encountered, and SM lenses were observed in the SW-SM at approximately 8 feet bgs until the maximum depth of exploration (10 feet bgs). In ML-TP-01 PERC-1, excavated directly to the south of ML-TP-01, a thin asphalt layer was uncovered along the entire bottom of the test pit at approximately 4 feet bgs. A

second infiltration pit (ML-TP-01 PERC-2) was dug between ML-TP-01 PERC-1 and the ML-TP-01, and asphalt was found to extend into ML-TP-01 PERC-2 approximately 6 inches from the south wall.

In ML-TP-02, dark brown SM (possibly old compost material) was encountered from 0.5 feet bgs to about 5.5 feet bgs. On the east and south walls, below the SM, a moist 6-inch thick clay lens was observed to directly overlie approximately 2 to 3 inches of asphalt. SP was encountered at about 6 feet bgs to the final excavation depth of 10 feet bgs. In the infiltration pit, ML-TP-02 PERC-1, located approximately 10 feet to the south of ML-TP-02, SP was observed from 0.5 feet bgs to the excavation depth of 4 feet bgs.

In ML-TP-03 PERC-1, located at the toe of the ridge, SM was encountered throughout the entire depth of the test pit. Fine- to coarse-grained gravels were observed in the top 1.5 feet.

2.2.2. Percolation Tests

Percolation tests were conducted on the east side and at the southeast toe of the existing plateau ([Figure B-1](#)) using the methodology presented in El Dorado County Resolution No. 259-99, “Design Standards for the Site Evaluation and Design of Sewage Disposal Systems” ([County, 1999](#)). These tests were conducted on July 24 and 25, 2008, by ERRG’s field engineer.

Percolation tests were performed using the no presoak method ([County, 1999](#)) at the following shallow test pit locations: ML-TP-01 PERC-2, ML-TP-02 PERC-1, and ML-TP-03 PERC-1. Test holes were located at the bottom of each 4-foot test pit. Each percolation test hole was hand dug to keep the sides as close to vertical as possible. Test holes were approximately 6 inches in diameter and 18 inches deep. The sides of each hole were brushed off to detach any loose material, and the bottom 2 inches of each hole were filled with pea gravel. Prior to testing, each hole was filled with water and was allowed to thoroughly drain. This process was repeated twice to create saturated conditions near the bottom of the hole and shorten the time required to develop a stable infiltration rate. To test the infiltration rate, each hole was filled with approximately 6 inches of water, and the depth to water was measured after a fixed amount of time. Due to the differing infiltration rates, each hole was measured using different time intervals (see [Table B-1](#)). After measuring the drop in water level, water was then added to bring it back up to the initial level. This procedure was repeated until a stable rate of infiltration was reached. The percolation rate was considered stabilized when three successive rate readings did not vary to any significant extent ([County, 1999](#)). The last of the three stabilized readings was then recorded in minutes per inch. [Table B-1](#) summarizes the percolation test results.

2.3. GEOTECHNICAL BORINGS

Geotechnical borings were completed using a truck-mounted, hollow-stem auger drill rig. Two borings were drilled to a depth of approximately 76.5 feet bgs along the eastern ridge, adjacent to the landfill. The lithologic logs for the soil borings are included in [Attachment C](#). Subsurface materials at the site were classified using the USCS classification nomenclature (per ASTM D2487 version of classification system [[ASTM International, 2006](#)]). Relatively undisturbed drive samples, disturbed drive samples, and disturbed bulk samples were cataloged by the field engineer and transported to Vector for laboratory testing. All soil samples and soil cuttings were monitored for VOCs with a PID and Four-Gas meter. Contaminants were not detected throughout all boring operations except for a consistent reading of 0.2 parts per million in the dark brown SM encountered from 3.5 to 13 feet bgs in ML-SB-02. After completion, both borings were backfilled with grout and the auger cuttings were spread to blend in with the native surface. The locations of the two soil borings are shown on [Figure B-1](#).

2.3.1. Subsurface Conditions

Borings ML-SB-01 and ML-SB-02 were drilled along the ridge to the east of the landfill. In general, SW-SM, SP, and SM, were encountered throughout the boreholes.

In ML-SB-01, a medium dense SM was encountered in the top 2 feet of the boring. Below the SM, interbedded granitic SP and SW-SM was encountered. At approximately 35.5 feet bgs, the soil matrix became siltier and very dense SM layers were observed between thinner layers of very dense SP. Groundwater was encountered at approximately 60 feet bgs. At 75.5 bgs, a hard silt (ML) with sand was observed.

In ML-SB-02, the top 3.5 feet were observed to be a medium dense SM. From approximately 3.5 to 13 feet bgs, a dark brown, medium dense SM was encountered. At 15 feet bgs, very dense SW-SM was encountered, followed by several alternating layers of very dense SP and SM. Groundwater was encountered at approximately 60.5 feet bgs. A 4.5-foot-thick layer of hard ML with some clay was encountered at 71 feet bgs. SM was observed in the bottom foot of the boring.

Detailed soil descriptions are presented in the boring logs in [Attachment C](#). The subsurface descriptions provided are interpreted from conditions exposed during the field investigation.

2.4. GRAB SAMPLES

Prior to the field investigation, ERRG reviewed the documents presented in [Table B-2](#) to establish existing geotechnical and analytical data from previous site investigations:

Based on the document review, data gaps were identified to establish the necessary analytical and geotechnical conditions required for the RD. Samples of the existing cap material were collected and were tested to assess its suitability for use in the proposed multilayer cap. Samples for analytical testing were collected from two different locations near the middle of the cap (see [Figure B-1](#)). Samples ML-GS-01A, ML-GS-01B, ML-GS-02A, and ML-GS-02B were collected in 8-ounce jars and sent to TestAmerica, Inc. in Pleasanton, California, for analytical laboratory testing. Bulk samples ML-GS-01C and ML-GS-02C were collected and transported to Vector for geotechnical laboratory testing. Samples from ML-GS-01 were observed to be SW-SM while samples collected from ML-GS-02 were SM.

2.5. LABORATORY TESTING PERFORMED

2.5.1. Geotechnical Testing

Laboratory tests were performed on selected representative samples, as determined by the Geotechnical Engineer and field engineer, to evaluate the engineering properties of the foundation soils. Tests were performed in accordance with applicable ASTM International standards. Geotechnical laboratory test results are included in [Attachment D](#).

The following tests were performed by Vector:

- Moisture Content, by ASTM D 2216 ([ASTM International, 2005a](#))
- Moisture Content and Dry Density, by ASTM D 2937 ([ASTM International, 2004a](#))
- Particle Size Analysis, by ASTM D 422 ([ASTM International, 1963](#))
- Atterberg Limits, by ASTM D 4318 ([ASTM International, 2005b](#))
- Direct Shear Test, by ASTM D 3080 ([ASTM International, 2004b](#))
- Compaction Test, by ASTM D 1557 ([ASTM International, 2007](#))
- Permeability Test, by ASTM D 5084 ([ASTM International, 2003](#))
- Consolidation Test, by ASTM D 2435 ([ASTM International, 2004c](#))

2.5.2. Analytical Testing

Analytical laboratory tests were performed on grab samples from the existing landfill cap to evaluate the suitability of reusing existing cap soil in the proposed landfill cover system. Tests were performed in accordance with applicable U.S. Environmental Protection Agency (EPA) methods ([EPA, 2008b](#)). Analytical laboratory test results are included in [Attachment E](#).

The following tests were performed by TestAmerica, Inc.:

- CAM 17 metals, by EPA Method 6010B/7471A
- VOCs, by EPA Method 8260B
- Polycyclic aromatic hydrocarbons (PAHs), by EPA Method 8270C
- Organochlorine pesticides, by EPA Method 8081A
- Total petroleum hydrocarbons (TPH) quantified as gasoline, by EPA Method 8260B
- Extractable TPH quantified as diesel, by EPA Method 8015

Section 3. Soil Testing Results

3.1. GEOTECHNICAL TESTING RESULTS

Tables B-3 through B-10 summarize the geotechnical data collected at OU-1. The detailed geotechnical data are provided in [Attachment D](#).

3.2. ANALYTICAL TESTING RESULTS

Table B-11 summarizes the analytical data for samples collected at OU-1. Typically, chemicals detected above reporting limits in soil samples were CAM 17 metals and TPH quantified as diesel. Only one sample had a detectable concentration of naphthalene, a PAH. None of the samples had detectable levels of VOCs, pesticides, and TPH quantified as gasoline. The holding time for VOCs, PAHs, pesticides, and TPH is 14 days. Samples for these analyses were submitted to the analytical laboratory on the 14th day; but, since it was a Friday, they could not be extracted for analysis within the holding time. These data are still considered usable for the purpose of showing that cap materials do not contain elevated concentrations of any COCs. The detailed analytical laboratory results are presented in [Attachment E](#).

Section 4. Conclusions and Recommendations

Based on the subsurface material observed during the pre-design fieldwork and data from previous investigations, the site is underlain with predominantly poorly graded sand (SP), silty sand (SM), and well-graded sand with silt (SW-SM). During the test pit excavations, the native soil east of the landfill, in the potential borrow area, was observed to be easily rippable. The infiltration rates for the native material along the planned drainage swale were found to be high enough to reduce the amount of runoff from the 100-year storm event by 46 percent through surface water infiltration (see Surface Water Calculation in [Appendix C](#)).

Laboratory geotechnical testing was performed on the native material in order to evaluate the suitability of the material. The following properties of the native soil were established through these tests (see [Attachment D](#)):

- Nonplastic; minimizes probability of cracking in the final cover
- Not expansive; minimizes probability of cracking in the final cover
- Low fines content; helps prevent erosion problems
- Good drainage; water will flow freely through the cover system to the drainage layer
- Good frictional resistance; increases slope stability

The native sands encountered on the eastern side of the landfill were determined to be suitable for use in construction of the multilayer cap, as part of the foundation material and cover layers.

Prior to use in the vegetative layer, native soils would require further testing to determine the required nutrient additives to support vegetation. For the most part, subsurface soils were found to be granular and of poor quality for a vegetative cover layer without supplementation, except for dark brown SM observed in ML-TP-02 and ML-SB-02. This material may have originally been an on-site compost pile and may be acceptable for vegetative material without the addition of nutrients; however, the available volume of this material is unknown.

Asphalt was also observed in ML-TP-02, ML-TP-01 PERC-1, and ML-TP-01 PERC-2 at approximately 4 feet bgs. The extent of the asphalt is unknown, but may represent a former access road. Since the

eastern edge of the plateau is proposed for use as a borrow area, asphalt will be avoided during excavation of this area to ensure clean borrow material.

Samples of the cover material were analyzed for CAM 17 metals, VOCs, PAHs, organochlorine pesticides, TPH-g, TPH-d. As discussed in [Section 3.2](#), the holding times for VOCs, PAHs, pesticides, and TPH were exceeded; however the data are still considered usable for the purpose of showing that cap materials do not contain elevated concentrations of any COCs.

All chemicals analyzed, except for arsenic, were either detected at very low levels, or were not detected. Arsenic was the only chemical that was detected at a concentration exceeding its preliminary remediation goal for industrial soil ([EPA, 2008a](#)); however, the maximum concentration detected (1.7 mg/kg) corresponds to the low end of the range of background arsenic concentrations in California and the region ([Bradford et al., 1996](#); [U.S. Geological Survey, 1984](#)). These findings confirm that the cap soil does not contain any COCs and is chemically suitable for use as cap construction material.

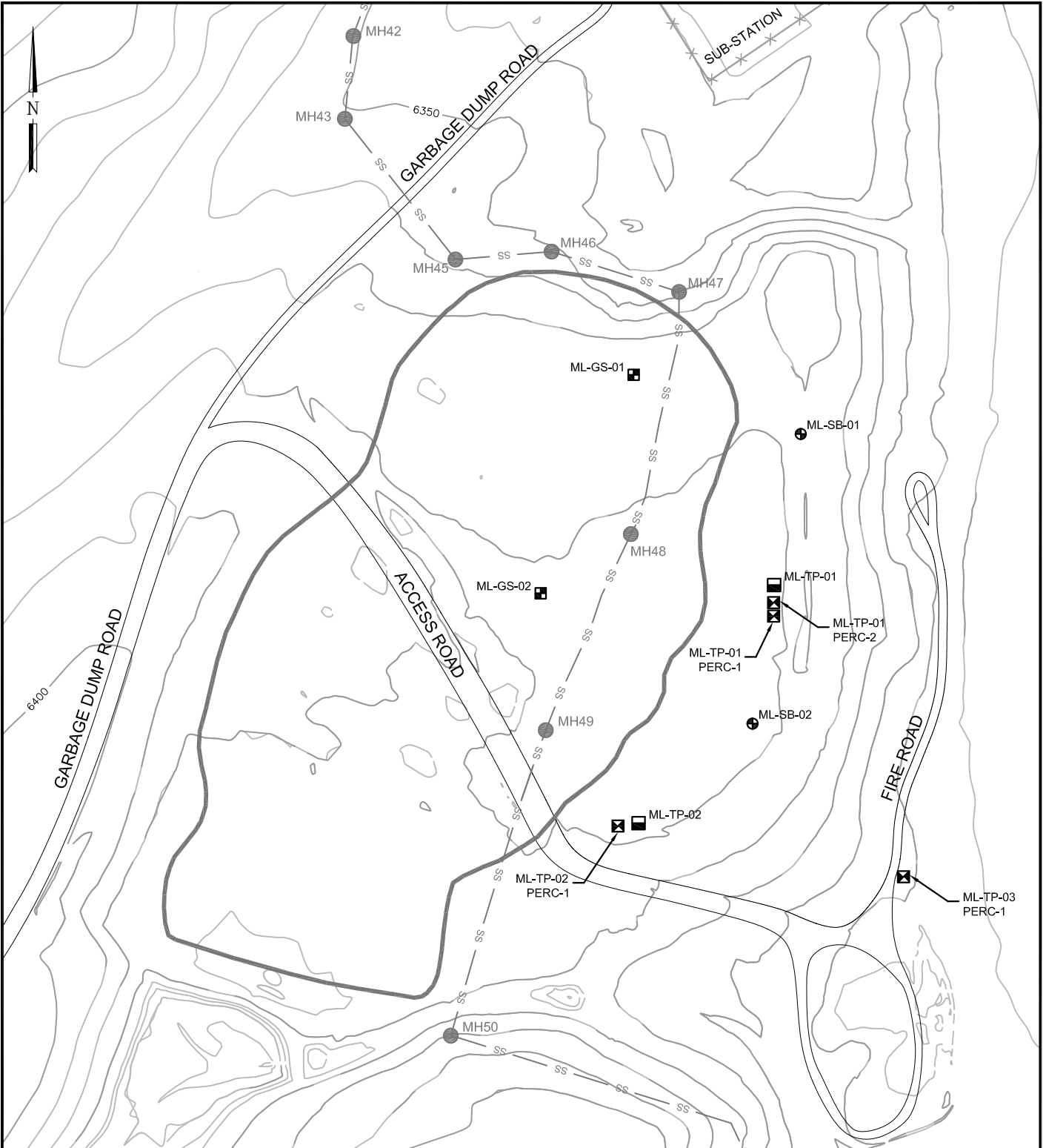
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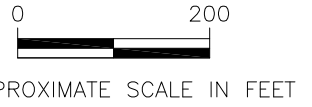
Figures

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LEGEND:

- ML-SB-01 BORING LOCATION
- ML-GS-01 EXISTING COVER GRAB SAMPLE LOCATION
- ML-TP-01 TEST PIT LOCATION
- ML-TP-01 PERC-1 PERCOLATION TEST PIT LOCATION
- ML-TP-02 PERC-1 PERCOLATION TEST PIT LOCATION
- ML-TP-03 PERC-1 PERCOLATION TEST PIT LOCATION
- ML-TP-01 PERC-2 PERCOLATION TEST PIT LOCATION
- EXTENT OF WASTE
- SS SEWER LINE
- MH42 MANHOLE LOCATION



Engineering/Remediation Resources Group, Inc.
 115 Sansome Street, Suite 200
 San Francisco, CA 94104
 (415) 395-9974

<i>CLIENT:</i>	FOREST SERVICE
<i>LOCATION:</i>	MEYERS LANDFILL EL DORADO COUNTY, CA

<i>DESIGNED BY:</i>	VZC 12/1/08
<i>CHECKED BY:</i>	EB 12/1/08
<i>P.E.P.G.:</i>	CG 12/1/08

FIELD INVESTIGATION SAMPLING LOCATIONS				
<i>ERRG PROJECT NO.</i>	<i>REV. NO.</i>	<i>SHEET</i>	<i>OF</i>	<i>FIG NO.</i>
28-072	0	1	1	B-1

Tables

Table B-1. Percolation Test Results

Location	Time Interval between Readings (minutes)	Infiltration Rate (min/in)	Infiltration Rate (cm/sec)	USCS
ML-TP-01 PERC-2	1	0.2	0.21	SW-SM
ML-TP-02 PERC-1	10	30	1.4 x 10 ⁻³	SP
ML-TP-03 PERC-1	15	7.3	5.8 x 10 ⁻³	SM

Notes:

cm/sec = centimeters per second

min/in = minutes per inches

SM = silty sand

SP = poorly graded sand

SW-SM = well-graded sand with silt

USCS = Unified Soil Classification System

Table B-2. Cap Soil Data from Previous Investigations

Test	Cap Soil		Waste Material ¹
	Draft Landfill Cover System Evaluation and Landfill Gas Extraction Test (GeoSyntec Consultants, Inc., 2004) ²	Investigation Data Report (Ecology and Environment, Inc., 1995)	Final Supplemental Remedial Investigation/Feasibility Study (Weston, 2007)
CAM 17 Metals	--	partial ³	X
VOCs	X	--	X
PAHs	--	--	X
Organochlorine Pesticides	--	--	X
TPH-g	--	--	X
TPH-d	--	--	X
Sieve Analysis	X	--	--
Hydraulic Conductivity	X	--	--

Notes:

1. Included as reference

2. Two separate sampling events: (1) 10/03: seven samples from 1st cover lift; two from 2nd lift; one from native material; and (2) 11/03: method SW8360B, off-cap sampling.

3. Analysis of: metals (only includes 5 of the CAM 17 metals)

X = document contained data in this class

-- = document did not contain data in this class

CAM = California Assessment Manual

PAHs = polycyclic aromatic hydrocarbons

TPH-d = total petroleum hydrocarbons as diesel

TPH-g = total petroleum hydrocarbons as gasoline

VOCs = volatile organic compounds



Table B-3. Moisture and Density of Soils (ASTM D 2216 and ASTM D 2937)

Sample	Moisture Content (%)	Dry Density (pcf)	Soil Classification
ML-GS-02C	9.4	NA	SM
ML-SB-01B	6.2	107.5	Sand
ML-SB-01C	3.6	NA	SP-SM
ML-SB-01G	4.7	99.9	Sand
ML-SB-01J	4.5	99.2	Sand
ML-SB-01N	5.2	NA	Sand
ML-SB-01P	3.1	98.2	Sand
ML-SB-01S	21.5	91.5	Sand
ML-SB-02F	3.4	NA	SW-SM
ML-SB-02J	3.9	100.4	Sand
ML-SB-02M	2.1	101.7	Sand
ML-SB-02P	3.4	NA	Sand
ML-SB-02Q	21.6	92.7	Sand
ML-SB-02T	27.4	88.1	Sand
ML-TP-01B/02C	3.8	NA	SW-SM

Notes:

NA = not analyzed

pcf = pounds per cubic foot

SP-SM = poorly graded sand with silt

SW-SM = well-graded sand with silt

Table B-4. Atterberg Limits (ASTM D 4318)

Sample	Liquid Limit	Plastic Limit	Plasticity Index	USCS
ML-GS-02C	Nonplastic	Nonplastic	Nonplastic	SM
ML-SB-01N	Nonplastic	Nonplastic	Nonplastic	SW
ML-TP-01B/02C	Nonplastic	Nonplastic	Nonplastic	SW-SM

Notes:

SM = silt

SW-SM = well-graded sand with silt

USCS = Unified Soil Classification Systems

Table B-5. Particle Size (ASTM D 422)

Sample	Percent Gravel (%)	Percent Sand (%)	Percent Fines (%)	USCS
ML-GS-02C	9.5	76.3	14.2	SM
ML-SB-01C	0	95.0	5.0	SP-SM
ML-SB-02F	2.0	92.2	5.8	SW-SM
ML-TP-01B/02C	4.7	90.1	5.2	SW-SM

Notes:

SM = silt

SP-SM = poorly graded sand with silt

SW-SM = well-graded sand with silt

USCS = Unified Soil Classification Systems

Table B-6. Compaction Test Results (ASTM D1557) Uncorrected for Oversized Particles

Sample	Maximum Dry Density (pcf)	Optimum Moisture Content (%)	USCS
ML-GS-02C	126.7	9.8	SM
ML-TP-01B/02C	116.4	12.2	SW-SM

Notes:

pcf = pounds per cubic foot

SM = silt

SW-SM = well-graded sand with silt

USCS = Unified Soil Classification Systems

Table B-7. Compaction Test Results (ASTM D1557) Corrected for Oversized Particles

Sample	Maximum Dry Density (pcf)	Optimum Moisture Content (%)	USCS
ML-GS-02C	129.8	8.9	SM
ML-TP-01B/02C	118.1	11.6	SW-SM

Notes:

SM = silt

SW-SM = well-graded sand with silt

USCS = Unified Soil Classification Systems

Table B-8. Permeability (ASTM D 5084)

Sample	Permeability (cm/sec)	Soil Description
ML-SB-01M	7.9×10^{-4}	Sand
ML-SB-02G	8.8×10^{-4}	Sand

Notes:

cm/sec = centimeters per second

USCS = Unified Soil Classification System

Table B-9. Direct Shear (ASTM D 3080)‡

Sample	Parameter				Soil Description
ML-GS-02C ¹	Normal Stress (psf)	500	1000	2000	SM
	Peak Shear Strength (psf)	820	1353	2217	
	Shear Strength @ End of Test (psf)	583	1115	2057	
	Horizontal Displacement Rate (in/min)	0.017	0.017	0.017	
ML-SB-01V	Normal Stress (psf)	1,000	5,000	9,000	Sand
	Peak Shear Strength (psf)	1,208	4,767	8,539	
	Shear Strength at End of Test (psf)	782	3,568	6,063	
	Horizontal Displacement Rate (in/min)	0.02	0.02	0.02	
ML-SB-02D	Normal Stress (psf)	1,000	5,000	9,000	Sand with Silt and Gravel
	Peak Shear Strength (psf)	885	4,100	6,439	
	Shear Strength @ End of Test (psf)	885	4,100	6,439	
	Horizontal Displacement Rate (in/min)	0.02	0.02	0.02	
ML-TP-01B/02C ¹	Normal Stress (psf)	500	1000	2000	SW-SM
	Peak Shear Strength (psf)	557	1048	2025	
	Shear Strength @ End of Test (psf)	393	729	1780	
	Horizontal Displacement Rate (in/min)	0.017	0.017	0.017	

Notes:

1. Specimens prepared at 90 percent of the maximum dry density and at 2 percent above optimum moisture content.

‡ = The tests were performed under a drained condition. Therefore, the strength parameters obtained from direct shear tests represent the long-term effective stress.

psf = pounds per square foot

in/min = inches per minute

Table B-10. Consolidation Test (ASTM D2435)

Sample	Pre-Consolidation Pressure (psf)	Compression Index, Cc	Recompression Index, Ce	Soil Description
ML-SB-01D	4,000	0.08	0.0075	Sand

Notes:

psf = pounds per square foot

Table B-11. Laboratory Analytical Detections

Chemical	EPA Method	Unit	PRG ¹	ML-GS-01A		ML-GS-01B		ML-GS-02A		ML-GS-02B	
				Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit	Result	Reporting Limit
Arsenic	6010B	mg/kg	1.6	1.0	0.98	NA	0.97	1.7	0.96	1.6	1.0
Barium	6010B	mg/kg	190,000	66	0.98	65	0.97	85	0.96	81	1.0
Chromium	6010B	mg/kg	1,400	1.7	0.98	1.8	0.97	6.1	0.96	6.2	1.0
Cobalt ²	6010B	mg/kg	1,900	2.8	0.98	2.8	0.97	5.2	0.96	4.6	1.0
Copper	6010B	mg/kg	41,000	7.0	0.98	6.9	0.97	9.2	0.96	9.9	1.0
Lead ³	6010B	mg/kg	400	1.7	0.98	1.8	0.97	2.1	0.96	2.5	1.0
Molybdenum	6010B	mg/kg	5,100	NA	0.98	NA	0.97	NA	0.96	1.5	1.0
Nickel	6010B	mg/kg	20,000	1.4	0.98	1.4	0.97	4.1	0.96	3.4	1.0
Vanadium	6010B	mg/kg	5,200	15	0.98	15	0.97	33	0.96	33	1.0
Zinc	6010B	mg/kg	310,000	16	0.98	15	0.97	24	0.96	20	1.0
Naphthalene ⁴	8270C	mg/kg	670	NA	5.0	NA	5.0	NA	5.0	65	5.0
Diesel Range Organics [C10-C28] ⁴	8015B	mg/kg	NA	2.3	1.0	1.2	1.0	4.6	1.0	4.7	1.0

Notes:

1. PRGs are screening levels for industrial soils ([EPA, 2008a](#))
2. PRG not available for 2008; PRG from 2004 used instead.
3. Industrial soil standard not available; PRG for residential soil used instead
4. Holding time exceeded. The holding time for volatile organic compounds, polycyclic aromatic hydrocarbons, pesticides, and total petroleum hydrocarbons is 14 days. Samples were submitted to the analytical laboratory on the 14th day; but, since this was a Friday, they could not be extracted for analysis within the holding time. Low levels were detected in the sample, suggesting that the missed holding time did not significantly affect the results. These data are still considered useable for the purpose of showing that cap materials do not contain elevated concentrations of any chemicals of concern, and that this material is suitable for foundation layer material.

EPA = U.S. Environmental Protection Agency

mg/kg = milligrams per kilogram

NA = not applicable

PRG = preliminary remediation goal

Attachment A. Photographic Log



Photograph A-1: USFS – Meyers Landfill – Checking spoils from ML-TP-02 PERC-1 with the PID.
Photographed: July 24, 2008



Photograph A-2. USFS – Meyers Landfill – Checking ML-TP-02 PERC-1 with the PID.
Photographed: July 24, 2006



Photograph A-3. USFS – Meyers Landfill – Excavating ML-TP-02 PERC-1.
Photographed: July 24, 2008



Photograph A-4. USFS – Meyers Landfill – ML-TP-01 PERC-1 at completion depth.
Photographed: July 24, 2008



Photograph A-5. USFS – Meyers Landfill – Stockpiled spoils from ML-TP-01.
Photographed: July 24, 2008



Photograph A-6. USFS – Meyers Landfill – North wall of ML-TP-01.
Photographed: July 24, 2008



Photograph A-7. USFS – Meyers Landfill – North wall of ML-TP-01 with silty lenses visible.
Photographed: July 24, 2008



Photograph A-8. USFS – Meyers Landfill – South wall of ML-TP-01.
Photographed: July 24, 2008



Photograph A-9. USFS – Meyers Landfill – North wall of ML-TP-01.
Photographed: July 24, 2008



Photograph A-10. USFS – Meyers Landfill – South wall of ML-TP-02.
Photographed: July 24, 2008



**Photograph A-11. USFS – Meyers Landfill – South wall of ML-TP-02.
Photographed: July 24, 2008**



**Photograph A-12. USFS – Meyers Landfill – Infiltration test pit
ML-TP-02 PERC-1.
Photographed: July 25, 2008**



Photograph A-13. USFS – Meyers Landfill – Test hole at the bottom of ML-TP-02 PERC-1.

Photographed: July 25, 2008



Photograph A-14. USFS – Meyers Landfill – Drilling geotechnical boring ML-SB-01.

Photographed: July 25, 2008



Photograph A-15. USFS – Meyers Landfill – ML-TP-02 and ML-TP-02 PERC-1 backfilled and restored.
Photographed: July 25, 2008



Photograph A-16. USFS – Meyers Landfill: – ML-TP-03 PERC-1 backfilled and restored.
Photographed: July 25, 2008

Attachment B. Test Pit Logs

TEST PIT LOG

<u>Start Date:</u> 7/24/2008	<u>Time:</u> 14:25	<u>Test Pit No.:</u> ML-TP-01
<u>Finish Date:</u> 7/24/2008	<u>Time:</u> 15:30	<u>Job Number:</u> 28-072
<u>Client:</u> US Forest Service		<u>Site:</u> Meyers Landfill
<u>Equipment:</u> Backhoe PID, Four-Gas Meter		<u>Logged By:</u> E. Binning
<u>Surface Elevation:</u> 6380 msl	<u>Location:</u> Top of slope to the East of landfill mass.	<u>Water Level Elevation:</u> No water observed

Depth (Feet)	Soil Classification	Description	Comments/Samples
0	SM	Silty SAND; fine to coarse sand; trace fine gravel; trace organics; 20-30% fines	PID = 0 ppm
1		Orange and grey mottled; 10-20% fines; moist; non-plastic	
2		Pockets of grey silty SAND embedded in orange silty SAND. Orange sand: fine to coarse sand; mostly coarse sand; 10-15% fines. Grey sand: fine to coarse sand; 5-10% fines. Moist.	
3		As above; some weak cementation	
4	SW-SM	Well graded SAND with silt; grey	Collected ML-TP-01B (bucket) from 4' – 6' bgs
5		As above	
6		As above	
7		As above	
8		Mostly fine to medium sand; some coarse sand; more fines; some silt; 10% fines. Silty SAND lenses/banding visible on North wall.	
9			
10			

TEST PIT LOG

<u>Start Date:</u> 7/24/2008		<u>Time:</u> 13:20	<u>Test Pit No.:</u> ML-TP-01 PERC-1	
<u>Finish Date:</u> 7/24/2008		<u>Time:</u> 13:35	<u>Job Number:</u> 28-072	
<u>Client:</u> US Forest Service		<u>Site:</u> Meyers Landfill		
<u>Equipment:</u> Backhoe PID, Four-Gas Meter		<u>Logged By:</u> E. Binning		
<u>Surface Elevation:</u> 6380 msl		<u>Location:</u> Top of slope to the East of landfill mass. South of ML-TP-01.	<u>Water Level Elevation:</u> No water observed	
Depth (Feet)	Soil Classification	Description	Comments/Samples	
0	SM	Silty SAND; orange grey mottled with light grey and brown; fine to coarse sand; trace fine gravel; 20% fines; some weak cementation; dry	PID = 0 ppm	
1				
2				Trace clay; moist
3				As above

4

Asphalt layer along bottom of test pit
Asphalt is approximately 2" inches thick and extends out into undisturbed soil past each wall of test pit.

TEST PIT LOG

<u>Start Date:</u> 7/24/2008		<u>Time:</u> 15:40	<u>Test Pit No.:</u> ML-TP-01 PERC-2	
<u>Finish Date:</u> 7/24/2008		<u>Time:</u> 16:00	<u>Job Number:</u> 28-072	
<u>Client:</u> US Forest Service		<u>Site:</u> Meyers Landfill		
<u>Equipment:</u> Backhoe PID, Four-Gas Meter		<u>Logged By:</u> E. Binning		
<u>Surface Elevation:</u> 6380 msl		<u>Location:</u> Top of slope to the East of landfill mass. Between ML-TP-01 and ML-TP-01 PERC-1.	<u>Water Level Elevation:</u> No water observed	
Depth (Feet)	Soil Classification	Description	Comments/Samples	
0	SM	Silty SAND; orange and grey mottled; fine to coarse sand; trace fine gravel; 20% fines; some weak cementation; dry	PID = 0 ppm	
1				
2				Moist
3				As above

4 Asphalt pieces terminate approximately 6 inches into test pit from south wall. Percolation test performed away from asphalt ledge.

TEST PIT LOG

<u>Start Date:</u> 7/24/2008	<u>Time:</u> 16:30	<u>Test Pit No.:</u> ML-TP-02
<u>Finish Date:</u> 7/24/2008	<u>Time:</u> 17:15	<u>Job Number:</u> 28-072
<u>Client:</u> US Forest Service		<u>Site:</u> Meyers Landfill
<u>Equipment:</u> Backhoe PID, Four-Gas Meter		<u>Logged By:</u> E. Binning
<u>Surface Elevation:</u> 6380 msl	<u>Location:</u> Top of slope to the East of landfill mass. North of access road.	<u>Water Level Elevation:</u> No water observed

Depth (Feet)	Soil Classification	Description	Comments/Samples	
0	SM	Silty SAND; topsoil.	PID = 0 ppm	
1		Silty SAND; brown to dark brown; 30% fines; possibly compost material		
2		As above		
3		As above		
4		As above		Collected ML-TP-02B (bag)
5		As above		
6	SP	South wall: Clay lense from 5.5'-6' bgs; dark grey; very stiff; moist. South wall: Thin asphalt layer below clay; 2"-3" thick	PID = 0.2 ppm	
7		Poorly graded SAND; orange; fine to coarse sand; 5-10% fines; moist	PID = 0 ppm	
8		Grey; fine to medium sand; mostly fine sand; some coarse sand; trace fines; non- plastic; moist	Collected ML-TP-02D (bag)	
9		As above		
10		Bottom of test pit		

TEST PIT LOG

<u>Start Date:</u> 7/24/2008		<u>Time:</u> 12:45	<u>Test Pit No.:</u> ML-TP-02 PERC-1
<u>Finish Date:</u> 7/24/2008		<u>Time:</u> 13:10	<u>Job Number:</u> 28-072
<u>Client:</u> US Forest Service		<u>Site:</u> Meyers Landfill	
<u>Equipment:</u> Backhoe PID, Four-Gas Meter		<u>Logged By:</u> E. Binning	
<u>Surface Elevation:</u> 6380 msl		<u>Location:</u> Top of slope to the East of landfill mass. Southwest of ML-TP-02	<u>Water Level Elevation:</u> No water observed
Depth (Feet)	Soil Classification	Description	Comments/Samples
0	SM	Silty SAND; dry; sparse vegetation	PID = 0 ppm
1	SP	Poorly graded SAND; orange brown fine to coarse sand; trace gravel; trace fines; moist	Collected ML-TP-02A (bag) 7/25/08 – Collected ML-TP-02C (bucket) from 1' – 4' bgs
2		As above; sloughing on the side walls	
3		As above	
4		Bottom of test pit	

TEST PIT LOG

<u>Start Date:</u> 7/24/2008		<u>Time:</u> 10:00	<u>Test Pit No.:</u> ML-TP-03 PERC-1	
<u>Finish Date:</u> 7/24/2008		<u>Time:</u> 10:30	<u>Job Number:</u> 28-072	
<u>Client:</u> US Forest Service			<u>Site:</u> Meyers Landfill	
<u>Equipment:</u> Backhoe PID, Four-Gas Meter			<u>Logged By:</u> E. Binning	
<u>Surface Elevation:</u> 6340 msl		<u>Location:</u> Toe of slope to the East of landfill mass. North of the Fire Road.	<u>Water Level Elevation:</u> No water observed	
Depth (Feet)	Soil Classification	Description	Comments/Samples	
0	SM	Silty SAND; grey; some organics; dry	PID = 0 ppm	
1		Grey brown; fine to coarse sand; fine to coarse gravel; 10-20% fines; non-plastic		
2		More fines; moist		
3		As above	Collected ML-TP-03A (bag)	
4		Bottom of test pit		

Attachment C. Boring Logs



Date (s) Drilled 7/25/2008	Logged By E. Binning	Checked By D. Tang
Drilling Method HSA	Drill Bit Size / Type 8"	Total Depth Drilled (feet) 76.5
Drill Rig Type CME 75	Drilled By Test America	Hammer Weight / Drop (lb/in) 140 / 30
Groundwater Depth (feet) 60.0	Date Measured 7/25/2008	Approx. Surface Elevation (feet) 6375.0
Location Northeast Top of Slope in Native Soil Adjacent to Landfill		Borehole Backfill Grout

Depth, feet	Sample Name	Sample Type	Sample	Corrected Blows/Foot	Lithology	Soil Classification	MATERIAL DESCRIPTION	Water Content %	Dry Unit Weight, pcf	Lab Tests / Remarks
2	SB-01 A	SPT		18		SM	Silty SAND; orangish grey; fine to medium sand; some coarse sand; 20-30% fines			PID=0
4	SB-01 B	MC		22		SP	Poorly graded SAND; light grey; fine to medium sand; some coarse sand; 10-15% fines; dry to moist; medium dense	6.2	107.5	
6	SB-01 C	SPT		27			light grey; fine to medium sand; 10% fines; medium dense	3.6		0% gravel, 95% sand, 5% fines
10	SB-01 D	MC		33			light grey; fine to coarse sand; 5% fines; dry to moist; dense	3.6	94.1	Pre-consolidation pressure = 4000 psf, Cc = 0.08, Ce = 0.0075
12	SB-01 E						light grey; fine to medium sand; 5% fines; dry to moist; dense			
16	SB-01 F	SPT		49		SM	Silty SAND; light grey; fine to medium sand; some coarse sand; dry to moist; dense			
18	SB-01 Z	AUGER					Collected Bulk Sample from 15'-20' (SB-01Z)			
20	SB-01 G	MC		27		SP	Poorly graded SAND; fine to medium sand; medium dense	4.7	99.9	
22	SB-01 H						fine to coarse sand; 5-10% fines; medium dense			
26	SB-01 I	SPT		50			fine to medium sand; 10% fines; dense			
30	SB-01 J	MC		10-30/6"			fine to coarse sand; trace very coarse sand; 5% fines; very dense	4.5	99.2	
32	SB-01 K						10% fines			

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Depth, feet	Sample Name	Sample Type	Sample	Corrected Blows/Foot	Lithology	Soil Classification	MATERIAL DESCRIPTION	Water Content %	Dry Unit Weight, pcf	Lab Tests / Remarks
36	SB-01 L	SPT		68		SM	Silty SAND; light grey banded with dark grey and orange; very fine to fine sand; 30% fines; moist; very dense			
38										
40	SB-01 M	MC		16-30/6"			orange; fine to medium sand; trace coarse sand; 20% fines; dry to moist			hydraulic conductivity = 7.9×10^{-4} cm/sec LL = NP, PL = NP, PI = NP
42	SB-01 N						light grey; very fine to fine sand; 30% fines	5.2		
44										
46	SB-01 O	SPT		26-50/6"			orangish grey; fine to coarse sand; mostly fine sand; some clay; bedded			
48										
50	SB-01 P	MC		14-30/6"		SP	Poorly graded SAND; light grey; fine to coarse sand; 10% fines; dry to moist; very dense	3.1	98.2	
52	SB-01 Q									
54										
56	SB-01 R	SPT		66		SM	Silty SAND bedded with clay; light grey silty sand bedded with thin brown bands of clay; very fine to fine sand; clay bands are less than 1 mm thick; silty sand is dry to moist; clay is moist; low plasticity; very dense			
58										
60	SB-01 S	MC		14-30/6"		SP	Poorly graded SAND; grey; fine to coarse sand; some fine gravel; 10-15% fines; wet; very dense	21.5	91.5	
62	SB-01 T					SM	Silty SAND; grey; very fine to fine sand; some medium sand; 20-30% fines; wet			
64										
66	SB-01 U	SPT		50/5"			Silty SAND bedded with clay; grey with orange and dark grey banding; very fine to fine sand; bands of clay are less than 1 mm thick; 30% fines; wet; very dense			
68										
70	SB-01 V	MC		62			Silty SAND; fine to coarse sand; 20-30% fines; very dense	18.5	110.3	C = 170 psf, $\phi = 33.4^\circ$
72	SB-01 W						Silty SAND bedded with clay; grey with orange and dark grey banding; very fine to fine sand; bands of clay are less than 1 mm thick; 30% fines; wet			
74										
76	SB-01 X	SPT		8-50/5"		ML	Sandy SILT; grey; very fine sand; wet; very dense			

Bottom of boring at 76.5 feet

Project: Pre-Design Field Investigation
 Project Location: Meyers Landfill, El Dorado County, CA
 Project Number: 28-072

Log of Boring ML-SB-02

Sheet 1 of 2



Date (s) Drilled 7/25/2008	Logged By E. Binning	Checked By D. Tang
Drilling Method HSA	Drill Bit Size / Type 8"	Total Depth Drilled (feet) 76.5
Drill Rig Type CME 75	Drilled By Test America	Hammer Weight / Drop (lb/in) 140 / 30
Groundwater Depth (feet) 60.5	Date Measured 7/25/2008	Approx. Surface Elevation (feet) 6380.0
Location Eastern Top of Slope in Native Soil Adjacent to Landfill		Borehole Backfill Grout

Depth, feet	Sample Name	Sample Type	Sample	Corrected Blows/Foot	Lithology	Soil Classification	MATERIAL DESCRIPTION	Water Content %	Dry Unit Weight, pcf	Lab Tests / Remarks
2	SB-02 A	SPT		13		SM	Silty SAND; 20-30% fines; dry orange; fine to coarse sand; 10-20% fines; moist; no plasticity			PID=0
4	SB-02 B	SPT		14		Silty SAND; dark brown to black; fine coarse sand; 30% fines; possibly old compost pile; moist; medium dense			PID=0.2	
6	SB-02 C	SPT		13						
10	SB-02 D	MC		12		pocket penetrometer reading = 1.25 TSF		10.7	97.6	C = 340 psf, $\phi = 34.8^\circ$
14						Silty SAND; orange; fine to coarse sand;				PID=0
16	SB-02 E	SPT		57		SW-SM	Well graded SAND with silt; light grey; fine to coarse sand; trace fine gravel; 0-5% fines; rounded particles; granitic; dry to moist; very dense			
20	SB-02 F	SPT		91		moist		3.4		2% gravel, 92.2% sand, 5.8% fines
22	SB-02 Z	AUGER				Collected Bulk Sample from 22'-25' (SB-02Z)				
26	SB-02 G	MC		60		more fines; very fine to medium sand; trace fine gravel; 5-10% fines		5.3	103.0	hydraulic conductivity = 8.8×10^{-4} cm/sec
26	SB-02 H					thin layer of orange silty sand; fine to coarse sand; trace clay; 10% fines				
30	SB-02 I	SPT		87			SP	Poorly graded SAND; grey; very fine to medium sand; some coarse sand; 10-15% fines; very dense		
32										
34										

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Depth, feet	Sample Name	Sample Type	Sample	Corrected Blows/Foot	Lithology	Soil Classification	MATERIAL DESCRIPTION	Water Content %	Dry Unit Weight, pcf	Lab Tests / Remarks
36	SB-02 J	MC		23-64/6"			grey; very fine to fine sand; 10-15% fines fine medium sand; some coarse sand; very dense	3.9	100.4	
38	SB-02 K									
40	SB-02 L	SPT		70			grey, white, and orange			
44	SB-02 M	MC		25-30/3"				2.1	101.7	
46	SB-02 N					SM	Silty SAND; orange grey; fine to coarse sand; well graded; some clay; wet; no plasticity; very dense			
48	SB-02 O	SPT		72		SP	Poorly graded SAND; grey with light orange; very fine to medium sand; some coarse sand; 10% fines; moist; very dense			
52	SB-02 P	MC		16-30/6"				3.4		
56	SB-02 Q	SPT		8-30/6"		SM	Silty SAND; grey; very fine to fine sand; 10-20% fines; moist; very dense	21.6	92.7	
60	SB-02 R						grey; very fine to fine sand; 30% fines; wet layer of orange silty SAND; fine to coarse sand; 10-20% fines grey; fine to coarse sand; 20% fines			
64	SB-02 S	MC		85						
66	SB-02 T	SPT		23-30/2"		SP	Silty SAND bedded with clay; very fine to fine sand; 20-30% fine; very dense Poorly graded SAND; very fine to fine sand; 5-10% fines; wet; very dense			
70	SB-02 U					SM	Silty SAND bedded with silty clay; very fine to fine sand; low plasticity; pocket penetrometer reading = 0.25 TSF	27.4	88.1	
72	SB-02 V	MC		27-50/2"	ML	Clayey SILT; very fine sand; some fine sand; 60-70% fines; wet; low plasticity; very dense				
76					SM	Silty SAND; darker grey with white and orange; very fine to medium sand; saturated; very dense				

Bottom of boring at 76.5 feet

C1. Logs Of Exploratory Borings

Bulk and relatively undisturbed drive samples were obtained in the field during the subsurface evaluation. The samples were logged in the field and transported to the laboratory for examination and testing. Bulk samples were collected from auger cutting and the respective depth(s) were recorded. The drive samples were obtained at 1 foot, 3 feet, 5 feet, and every 5 feet thereafter in all borings using a California (CAL)-modified split-spoon sampler or Standard Penetration Test (SPT) split-spoon sampler as described below.

C1.1. CALIFORNIA-MODIFIED SPLIT-SPOON SAMPLER

The split-barrel drive sampler is driven with a 140-pound hammer allowed to drop freely 30 inches in accordance with ASTM D 1587¹. The number of hammer blows per 6 inches is recorded during sampling on the boring logs. Hammer blows were corrected to standard penetration resistance, SPT values. The sampler has internal and external diameters of approximately 2.4 and 3.0 inches, respectively, and the inside of the sampler is lined with three 6-inch-long sleeves. The relatively undisturbed soil sample within the sleeve is removed, sealed, and transported to the laboratory for observation and testing.

C1.2. STANDARD PENETRATION TEST SPLIT-SPOON SAMPLER

The split-barrel sampler is driven with a 140-pound hammer allowed to drop freely 30 inches in accordance with ASTM D1586². The number of blows per 6 inches is recorded during sampling on the boring logs. The sampler has internal and external diameters of 1.5 and 2.0 inches, respectively. The soil sample obtained in the interior of the barrel is measured, removed, sealed, and transported to the laboratory for observation and testing.

¹ ASTM International, 2000. ASTM D 1587, "Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes." August 10.

² ASTM International, 2008. ASTM D 1586, "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils." February 1.




C2. General Notes

The Unified Soil Classification System is used to identify the soil unless otherwise noted.

C2.1. SOIL PROPERTY SYMBOLS

ML: silt
SM: silty sand
SP: poorly graded sand
SW-SM: well-graded sand with silt

C2.2. DRILLING AND SAMPLING SYMBOLS

-  BULK: Bulk sample
-  CAL: Modified California Sampler - 2 5/8-inch inside diameter (I.D.), 3.0-inch outside diameter (O.D.)
-  SPT: Standard Penetration Test, 1.5-inch I.D., 2.0-inch O.D.

C2.3. RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

Noncohesive Soils	Standard Penetration Resistance (SPT)
Very Loose	0 to 4
Loose	4 to 10
Medium Dense	11 to 30
Dense	31 to 50
Very Dense	Over 50

Cohesive Soils	Standard Penetration Resistance (SPT)
Very Soft	0 to 2
Soft	2 to 4
Medium Stiff	4 to 8
Stiff	8 to 16
Very Stiff	16 to 32
Hard	Over 32

Particle	Size
Boulders	Greater than 12 in.
Cobbles	12 in -3.in
Gravel	3 in -5 millimeter (mm)
Coarse Sand	5 mm - 0.6 mm
Medium Sand	0.6 mm - 0.2 mm
Fine Sand	0.2 mm - 0.074 mm
Silt	0.074 mm - 0.005 mm
Clay	Less than 0.005 mm

Attachment D. Geotechnical Laboratory Results

DATE: September 16, 2008

TO: David Tang
ERRG
185 Mason Circle, Suite A
Concord, CA, CA 94520

JOB NO: 071713.01
LAB LOG: 2589.0

e-mail: david.tang@errg.com

RE: Lab Report: Meyers Landfill, # 28-072

Enclosed are results for: Samples Received - July 25, 2008

Code	Item	Quantity
19544	Water Content, ASTM D-2216	6
19540	Water Content-Dry Density, ASTM D-2937	9
19526	Sieve Analysis, ASTM D-422 w/ Hydrometer	4
19534	Atterberg Limits, ASTM D-4318	3
18572	Hydraulic Conductivity-Flex-wall, ASTM D-5084	2
23539	Direct Shear (CD)/pt, ASTM D-3080, 2.5 - 4"	12
12577	Specimen Preparation - Small Remold, per pt.	6
12579	Basic Consol. Test 8-10 loads and 3-4 unloads w/ JAC	1
11504	Modified Compaction-4" ASTM D-1557	2

Thank you for consulting Vector Engineering for your material testing requirements. We look forward to working with you again. If you have any questions or require any additional information, please call us at 1-530-272-2448.

Sincerely,



Prepared By: Erik Olhoffer
Laboratory Manager



Reviewed By: Kenneth R. Criley
Technical Director

This testing is based up on accepted industry practice as well as the test method listed. These results apply only to the samples supplied and tested for the above referenced job. The data and information are proprietary and can not be released without authorization of Vector Engineering Inc. By accepting the data and results represented on this page, client agrees to limit the liability of Vector Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Vector from and against all liability in excess of the aforementioned limit.

Vector Engineering Inc.

143E Spring Hill Drive, Grass Valley, CA 95945 (530) 272-2448

LABORATORY SERVICES

WATER CONTENT and DRY DENSITY

Client : EERG

Project No: 071713.01

Lab Log: **2589**

Project Name: Meyers Landfill, #28-072

Report Date: August 27, 2008

LSN	Sample ID	Soil Classification **	As Received Water Content %				
2589A	ML-TP-01B/02C (Rec'd 7/25)	Well Graded Sand w/ Silt (SW-SM)	3.8				
2589F	ML-GS-02C (Rec'd 7/25)	Brown Silty Sand (SM)	9.4				
2589AT	ML-SB-02P (Rec'd 7/25)	Brown Sand	3.4				
2589O	ML-SB-01N (Rec'd 7/25)	Gray Sand	5.2				
2589AH	ML-SB-01C (Rec'd 7/25)	Gray Poorly Graded Sand w/ Silt (SP-SM)	3.6				
2589AQ	ML-SB-02F (Rec'd 7/25)	Gray Well Graded Sand w/ Silt (SW-SM)	3.4				

Notes: ** Classifications are based on ASTM D-2487 when appropriate test results are available and per ASTM D-2488 when visual

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Vector Engineering Inc. By accepting the data and results represented on this page, Client agrees to limit the liability of Vector Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Vector from and against all liability in excess of the aforementioned limit.

Entered By: AD

Rev. By:

Lab Log **2589**

Vector Engineering Inc.

143E Spring Hill Drive, Grass Valley, CA 95945 (530) 272-2448

LABORATORY SERVICES

WATER CONTENT and DRY DENSITY

Client :

ERRG

Project No:

071713.01

Lab Log:

2589

Project Name:

Meyers Landfill #28-072

Report Date:

August 27, 2008

LSN	Sample ID	Soil Classification **	Water Content %	Dry Density pcf	Void Ratio	Saturation %	Porosity %
2589G	ML-SB-01B (Rec'd 7/25)	Brown Sand	6.2	107.5	0.6	29.5	36.2
2589J	ML-SB-01G (Rec'd 7/25)	Brown Sand	4.7	99.9	0.7	18.3	40.7
2589L	ML-SB-01J (Rec'd 7/25)	Brown Sand	4.5	99.2	0.7	17.2	41.1
2589P	ML-SB-01P (Rec'd 7/25)	Brown Sand	3.1	98.2	0.7	11.8	41.8
2589R	ML-SB-01S (Rec'd 7/25)	Brown Sand	21.5	91.5	0.8	68.9	45.7
2589Y	ML-SB-02J (Rec'd 7/25)	Brown Sand	3.9	100.4	0.7	15.4	40.5
2589AA	ML-SB-02M (Rec'd 7/25)	Brown Sand	2.1	101.7	0.7	8.5	39.7
2589AC	ML-SB-02Q (Rec'd 7/25)	Brown Sand	21.6	92.7	0.8	71.4	45.0
2589AE	ML-SB02T (Rec'd 7/25)	Brown Sand	27.4	88.1	0.9	81.0	47.7

Notes: ** Classifications are based on ASTM D-2487 when appropriate test results are available and per ASTM D-2488 when visual

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Vector Engineering Inc. By accepting the data and results represented on this page, Client agrees to limit the liability of Vector Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Vector from and against all liability in excess of the aforementioned limit.

Entered By:

AD

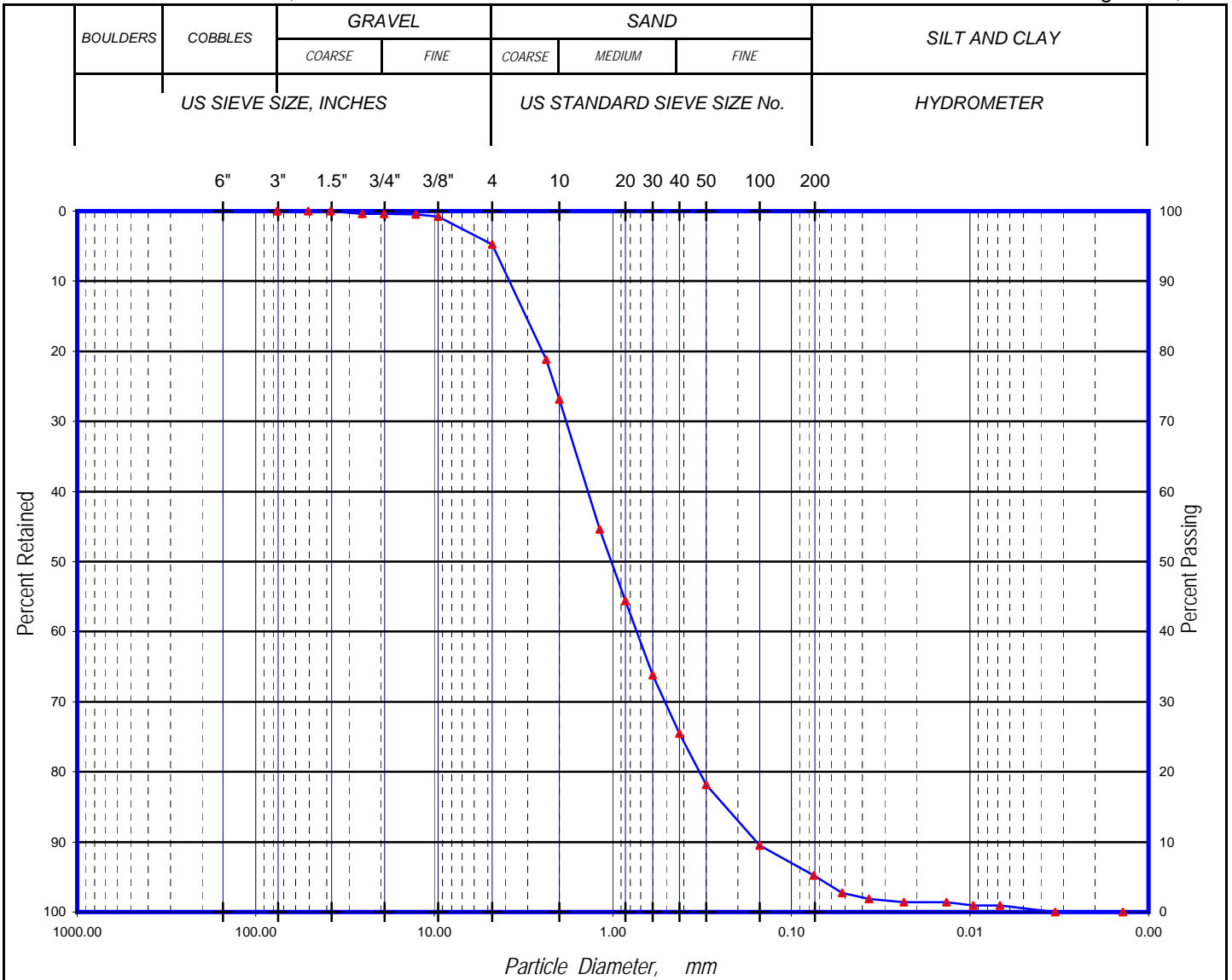
Rev. By:

Lab Log

2589

Client: **ERRG** Project No: **071713.01** Lab Sample No: **2589A**

Project Name: **MEYERS LANDFILL, #28-072** Report Date: **August 27, 2008**



Symbol	Sample ID	Description	% Gravel *	% Sand *	% Silt - Clay *
▲	ML-TP-01B/02C (Rec'd 7/25)	Well Graded Sand w/ Silt (SW-SM)	4.7	90.1	5.2

Size Passing, mm $D_{60} = 1.42$ $D_{30} = 0.52$ $D_{10} = 0.16$ 5 micron (%) = 0
 Coefficient of Curvature, C_c : 1.20 Coefficient of Uniformity, C_u : 8.95 Fineness Modulus = 3.11

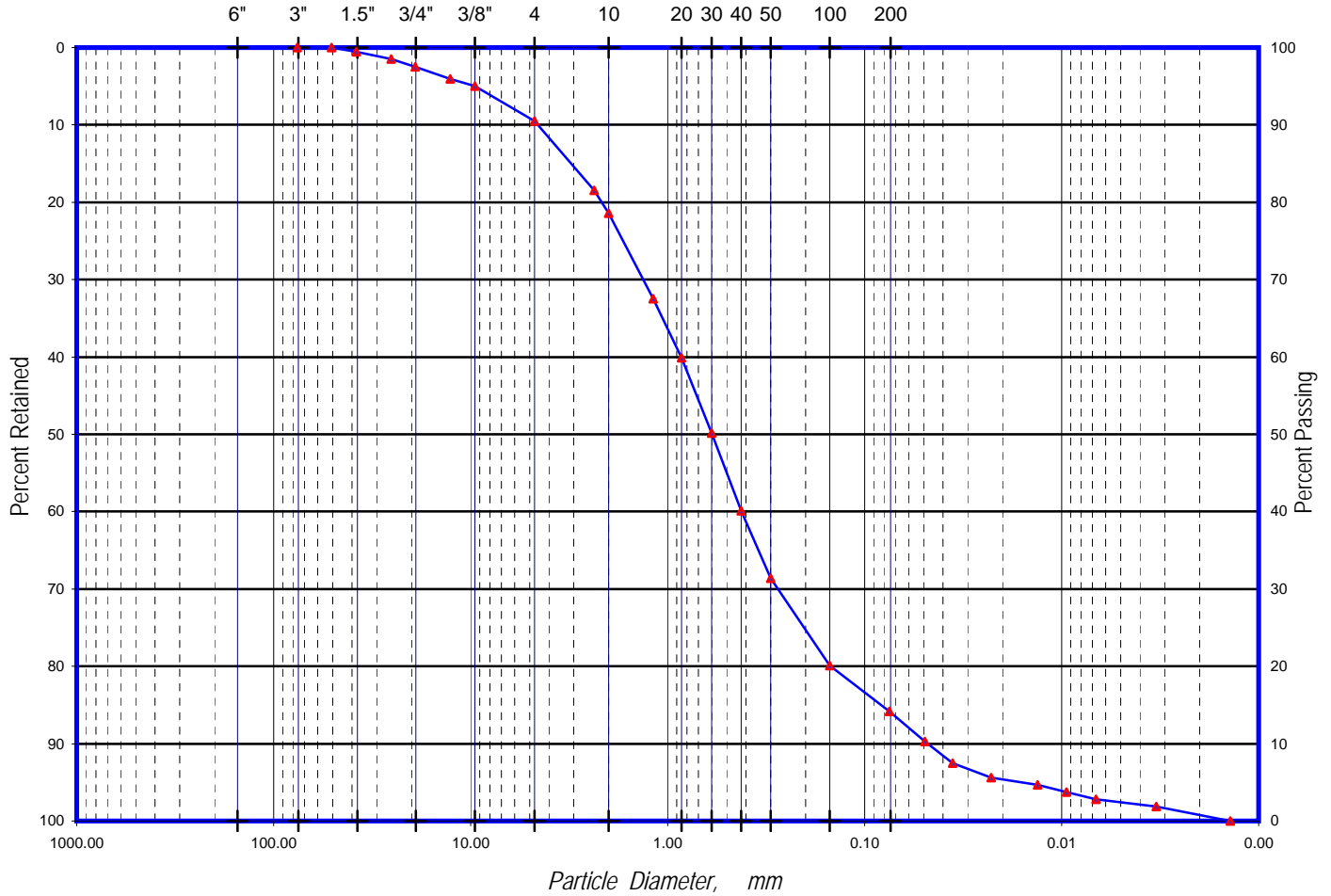
Note: * Percentages are +/- 0.1% based on computer rounding as allowed by ASTM D-6026-01 Section 5.2.3.

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Vector Engineering Inc. By accepting the data and results represented on this page, client agrees to limit the liability of Vector Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Vector from and against all liability in excess of the aforementioned limit.

Client: **ERRG** Project No: **071713.01** Lab Sample No: **2589F**

Project Name: **MEYERS LANDFILL, #28-072** Report Date: **August 27, 2008**

BOULDERS	COBBLES	GRAVEL		SAND			SILT AND CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE	
US SIEVE SIZE, INCHES			US STANDARD SIEVE SIZE No.			HYDROMETER	



Symbol	Sample ID	Description	% Gravel *	% Sand *	% Silt - Clay *
▲	ML-GS-02C (Rec'd 7/25)	Brown Silty Sand (SM)	9.5	76.3	14.2

Size Passing, mm $D_{60} = 0.86$ $D_{30} = 0.28$ $D_{10} = 0.05$ 5 micron (%) = 2
 Coefficient of Curvature, $C_c = 1.91$ Coefficient of Uniformity, $C_u = 17.74$ Fineness Modulus = 2.67

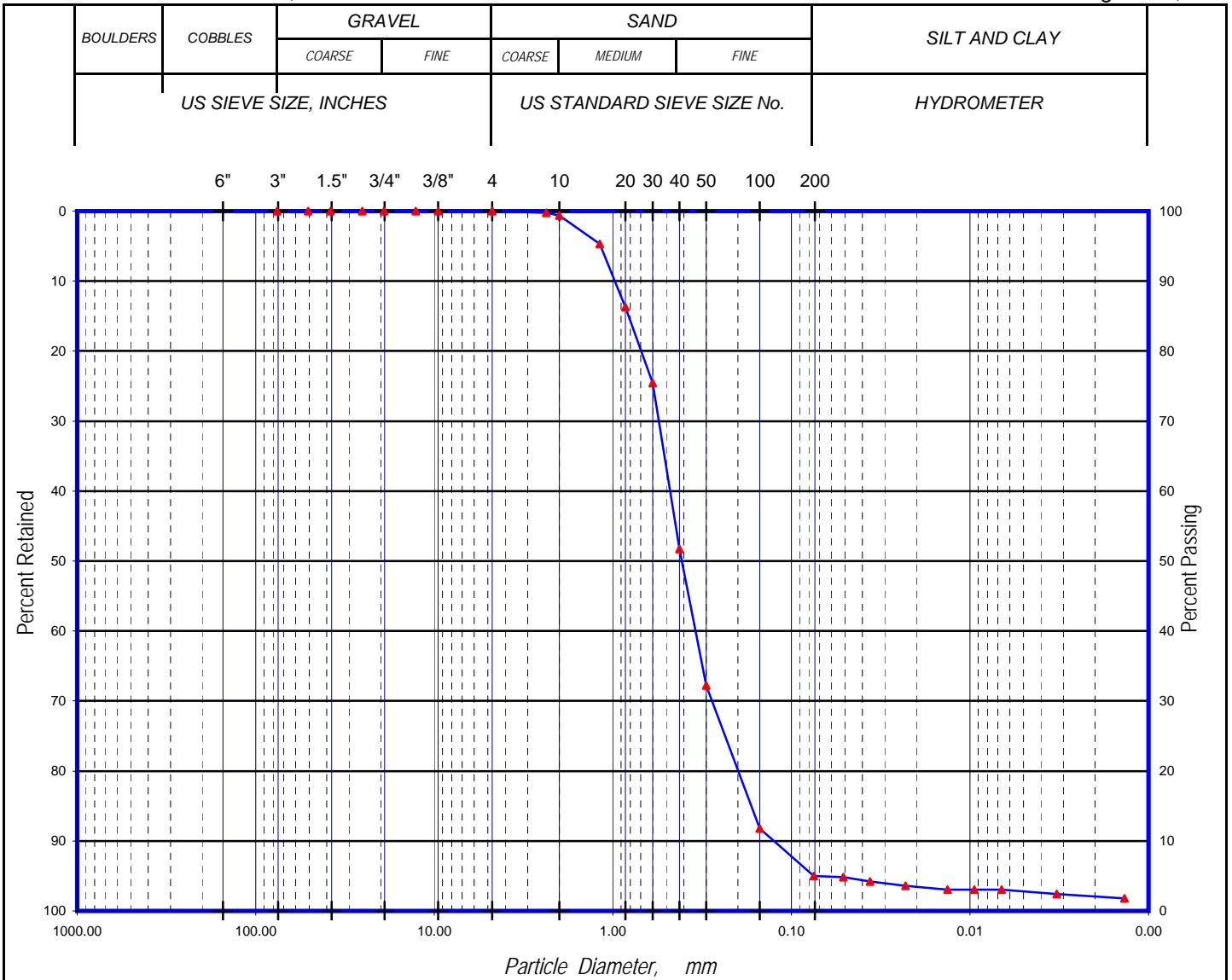
Note: * Percentages are +/- 0.1% based on computer rounding as allowed by ASTM D-6026-01 Section 5.2.3.

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Vector Engineering Inc.

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Client: **ERRG** Project No: **071713.01** Lab Sample No: **2589AH**

Project Name: **MEYERS LANDFILL, #28-072** Report Date: **August 29, 2008**



Symbol	Sample ID	Description	% Gravel	% Sand	% Silt - Clay
▲	ML-SB-01C (Rec'd 7/25)	Gray Poorly Graded Sand w/ Silt (SP-SM)	0.0	95.0	5.0

Size Passing, mm $D_{60} = 0.49$ $D_{30} = 0.28$ $D_{10} = 0.13$ 5 micron (%) = 3
 Coefficient of Curvature, C_c : 1.27 Coefficient of Uniformity, C_u : 3.73 Fineness Modulus = 1.86

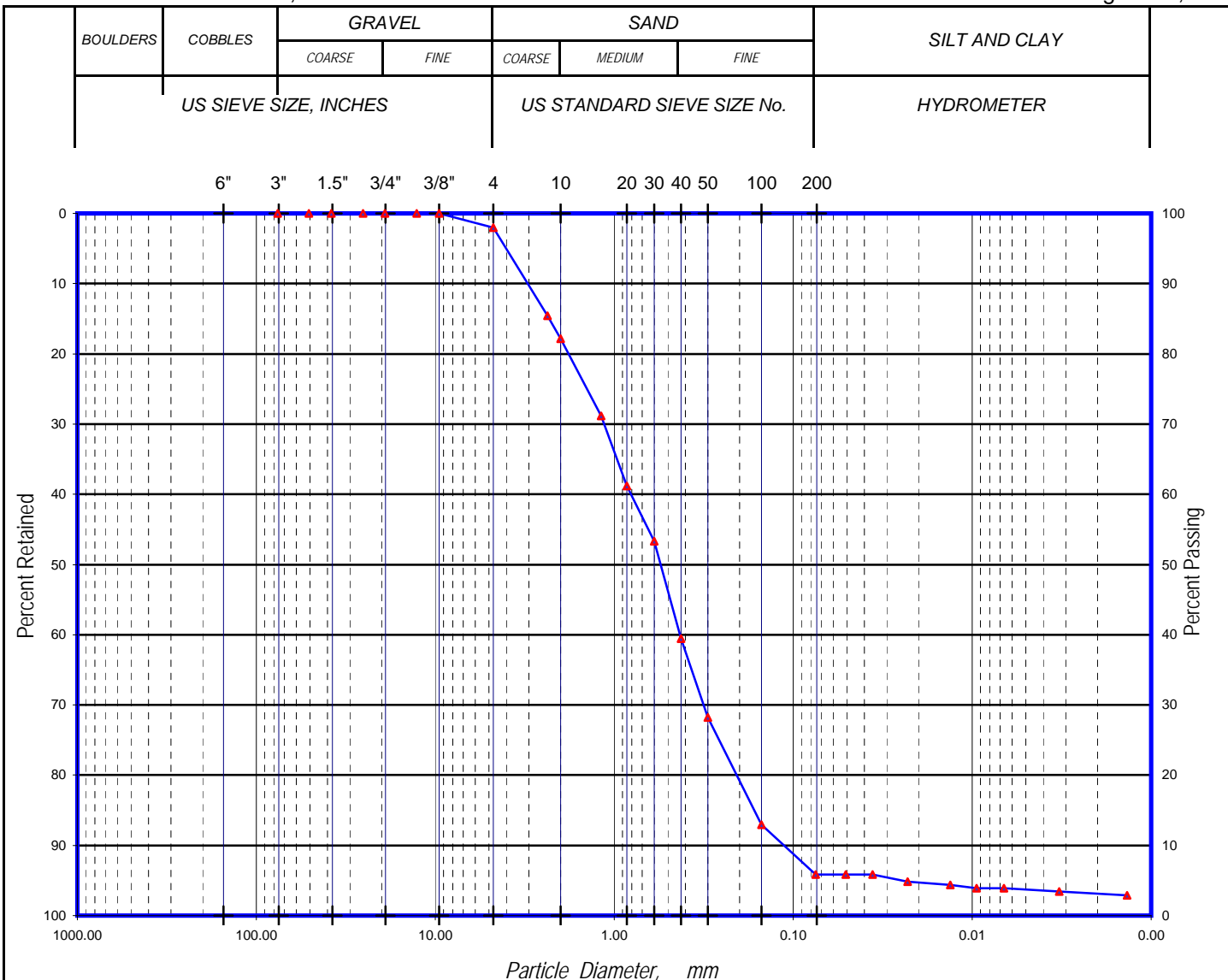
Note: * Percentages are +/- 0.1% based on computer rounding as allowed by ASTM D-6026-01 Section 5.2.3.

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Vector Engineering Inc.

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Client: **ERRG** Project No: **071713.01** Lab Sample No: **2589AQ**

Project Name: **MEYERS LANDFILL, # 28-072** Report Date: **August 29, 2008**



Symbol	Sample ID	Description	% Gravel	% Sand	% Silt - Clay
▲	ML-SB-02F (Rec'd 7/25)	Gray Well Graded Sand w/ Silt (SW-SM)	2.0	92.2	5.8

Size Passing, mm D_{60} = 0.81 D_{30} = 0.32 D_{10} = 0.12 5 micron (%) = 4
 Coefficient of Curvature, C_c : 1.06 Coefficient of Uniformity, C_u : 6.82 Fineness Modulus = 2.51

Note: * Percentages are +/- 0.1% based on computer rounding as allowed by ASTM D-6026-01 Section 5.2.3.

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Vector Engineering Inc. By accepting the data and results represented on this page, client agrees to limit the liability of Vector Engineering, Inc. from Client and all other parties claims arising out of the use of this data to the cost for the respective test(s) represented here, and Client agrees to indemnify and hold harmless Vector from and against all liability in excess of the aforementioned limit.

Client :

ERRG

Project No:

071713.01

Lab Log No.:

2589

Project Name:

Meyers Landfill, # 28-072

Report Date:

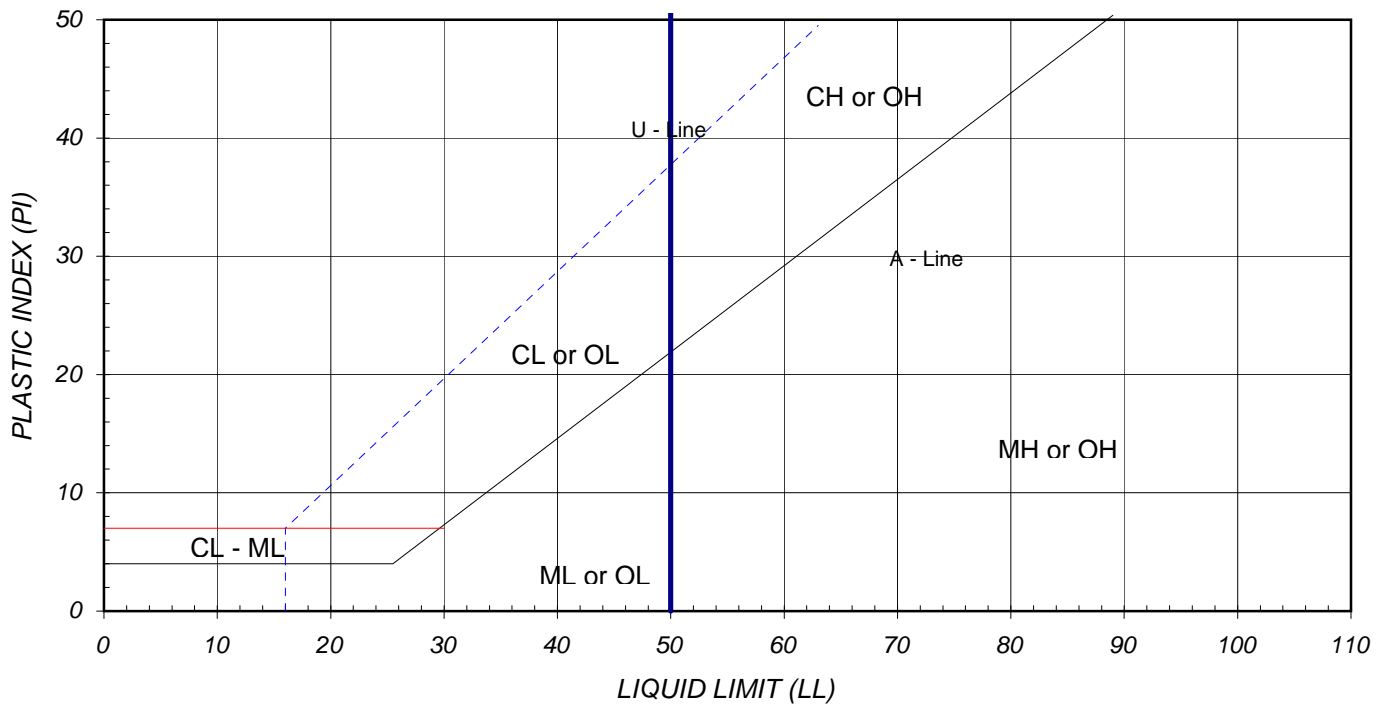
August 29, 2008

LSN	SYMBOL	SAMPLE IDENTIFICATION	SAMPLE DESCRIPTION	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX
2589A	☐	ML-TP-01B/02C (Rec'd 7/25)	Well Graded Sand w/ Silt (SW-SM)	NP	NP	NP
2589F	○	ML-GS-02C (Rec'd 7/25)	Brown Silty Sand (SM)	NP	NP	NP
2589O	+	ML-SB-01N (Rec'd 7/25)	Gray Sand (SW)	NP	NP	NP

Note: NP = Nonplastic (ASTM D-4318, 19.1.4)

* Visual Classification based on ASTM D-2488

PLASTICITY CHART



These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Vector Engineering Inc.

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Client:

EERG

Project No.:

071713.01

Lab Log No.:

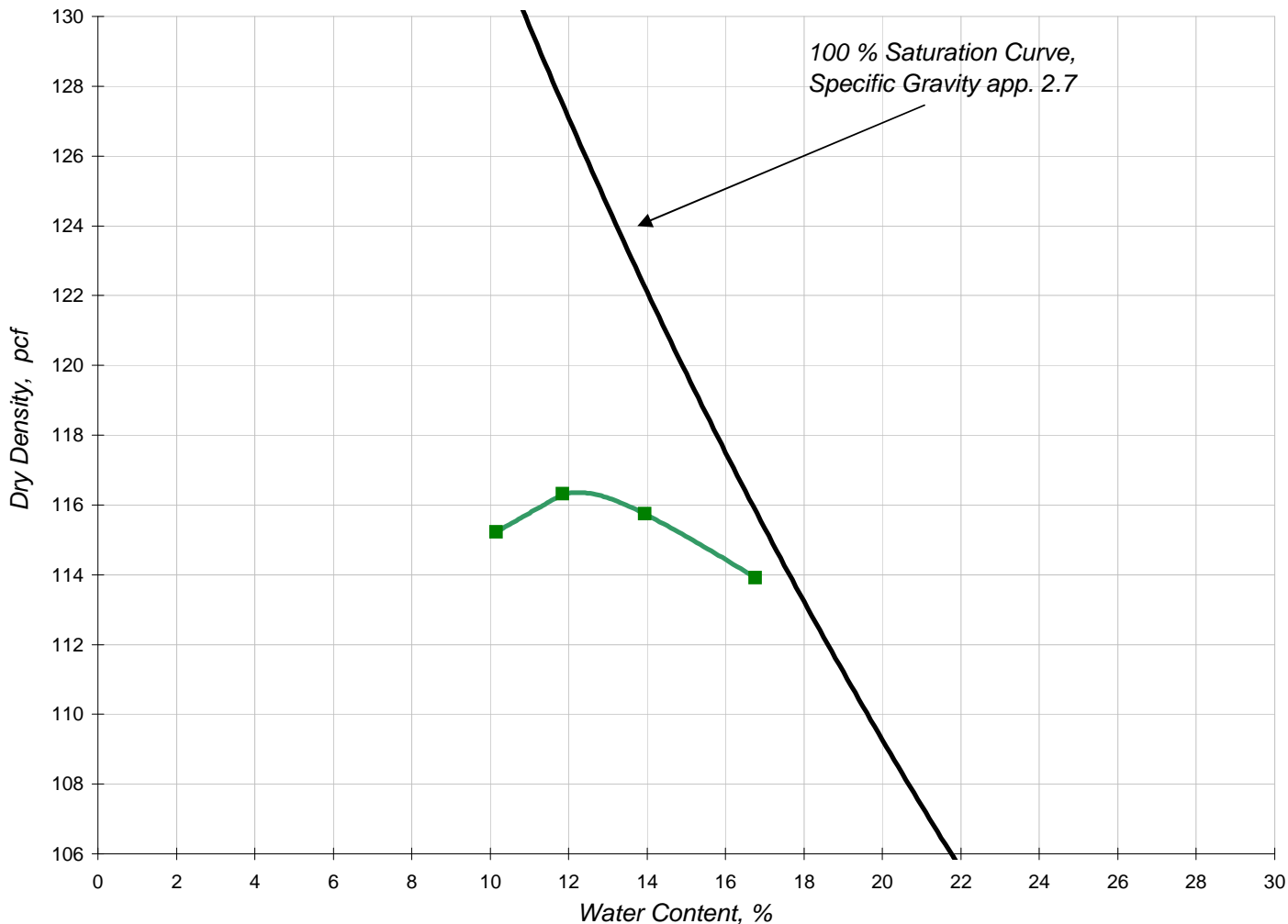
2589A

Project Name:

Meyers Landfill, #28-072

Report Date:

August 28, 2008



Symbol	Lab No.	Sample Identification	Description	Maximum Dry Density		Optimum Water Content %
				pcf	kg / m ³	
■	2589A	ML-TP-01B & ML-TP-02C Mix (Rec'd 7/25)	Well Graded Sand w/ Silt (SW-SM)	116.4	1864	12.2

Corrected Values For Oversized Particles, per ASTM D-4718

■ 2589A with 4.7 Percent #4 Gravel, the maximum Dry Density = 118.1 11.6

Note: The test was conducted as method A with 0 percent retained on the no. 4 sieve (minus #4)

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Vector Engineering Inc.

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Client:

EERG

Project No.:

071713.01

Lab Log No.:

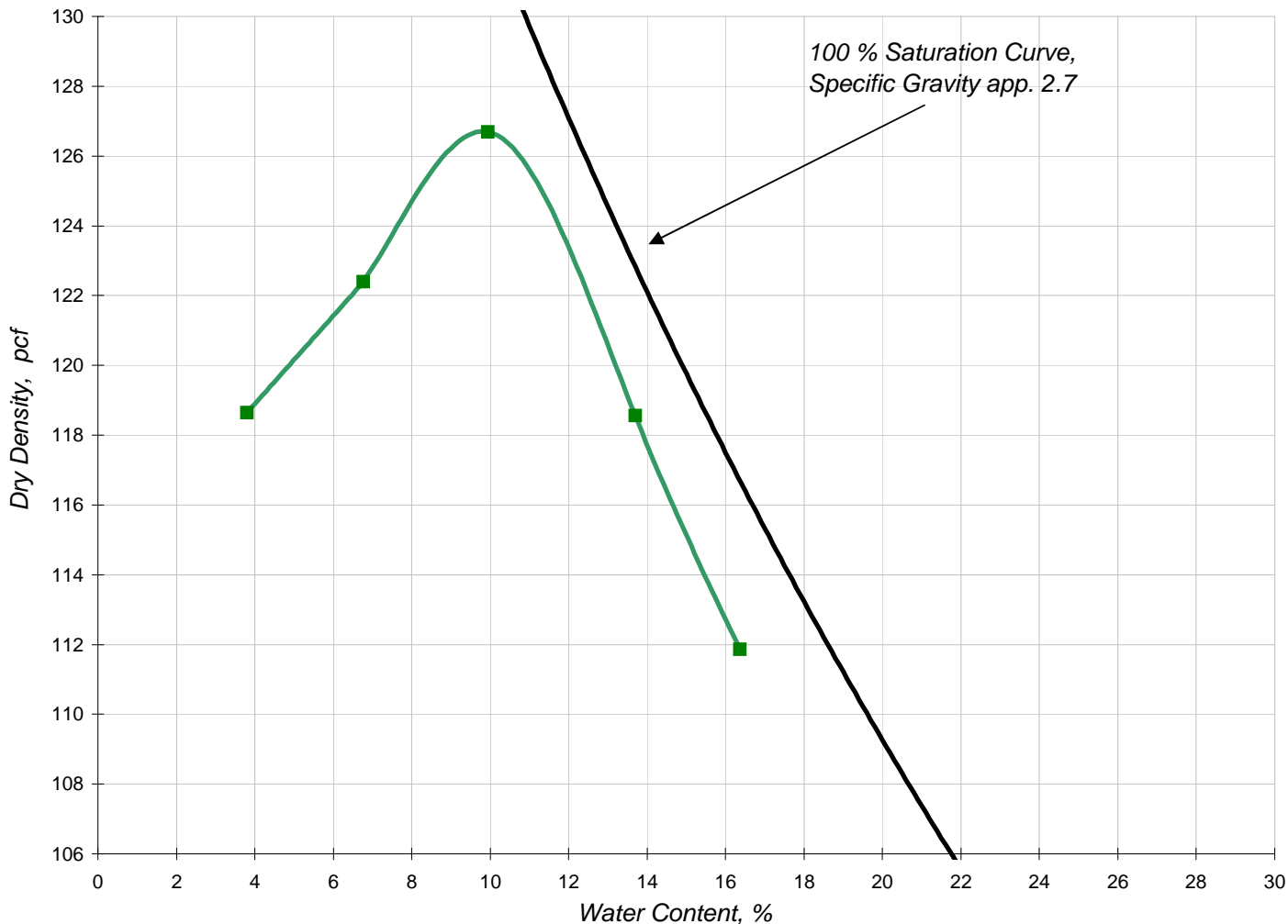
2589F

Project Name:

Meyers Landfill, #28-072

Report Date:

August 28, 2008



Symbol	Lab No.	Sample Identification	Description	Maximum Dry Density		Optimum Water Content %
				pcf	kg / m ³	
■	2589F	ML-GS-02C (Rec'd 7/25)	Brown Silty Sand (SM)	126.7	2030	9.8

Corrected Values For Oversized Particles, per ASTM D-4718

■ 2589F with 9.5 Percent #4 Gravel, the maximum Dry Density = 129.8 8.9

Note: The test was conducted as method A with 0 percent retained on the no. 4 sieve (minus #4)

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Client / Project Name:

ERRG / Meyers LF, # 28-072

Project No:

071713.01

Lab Sample Number:

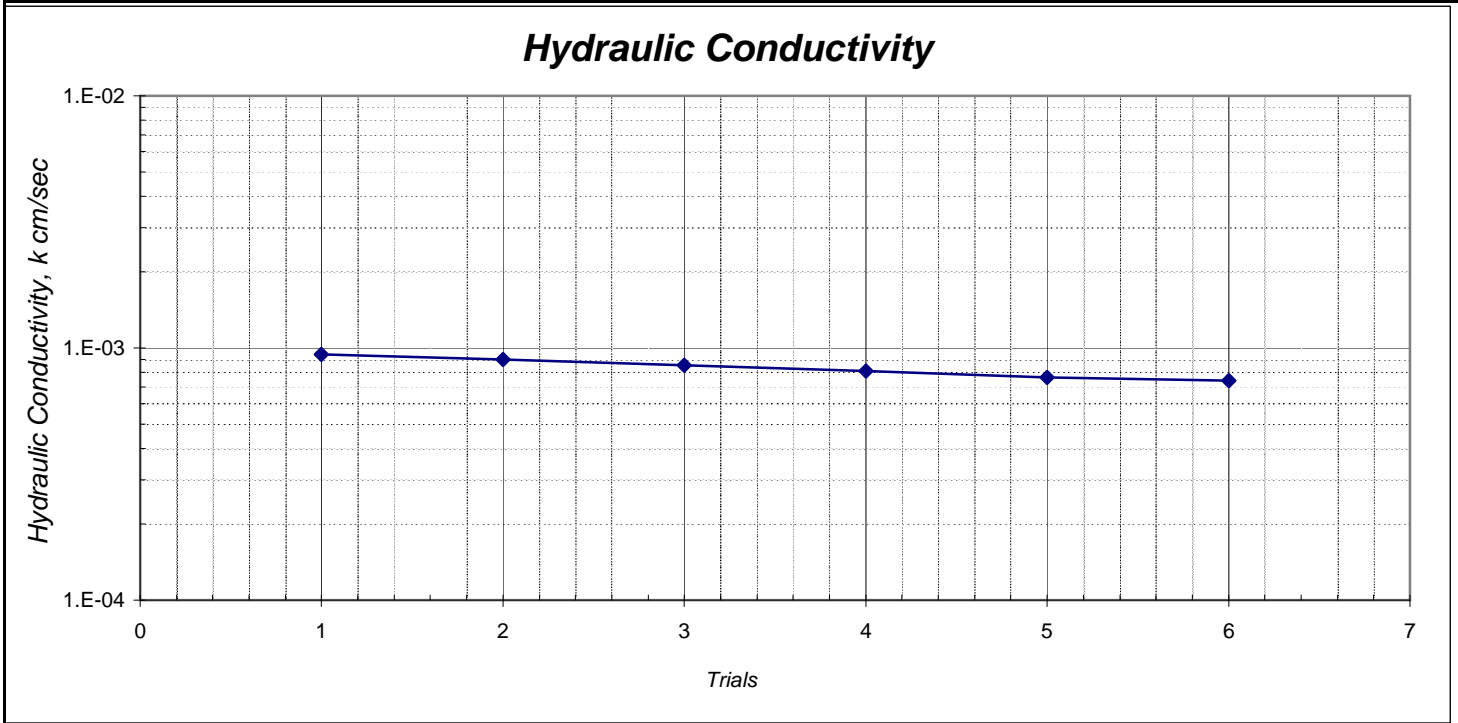
2589N

Sample ID:

ML-SB01M (Rec'd 7/25)

Report Date:

September 4, 2008



SPECIMEN DATA

SAMPLE ID:	ML-SB01M (Rec'd 7/25)	
DESCRIPTION:	Gray and Brown Sand	
	<u>INITIAL</u>	<u>FINAL</u>
HEIGHT, in.	4.3	4.1
DIAMETER, in.	2.4	2.5
WATER CONTENT, %	4.5	18.3
DRY DENSITY, pcf	107	111
SATURATION, %	22	95
<i>(Specific Gravity assumed as 2.7)</i>		
MAXIMUM DRY DENSITY, pcf		
OPTIMUM WATER CONTENT, %		
SPECIFIED COMPACTION, %		
ACHIEVED COMPACTION, %		

TEST DATA

<u>ASTM D-5084, Method C</u>		
EFFECTIVE STRESS:	35 psi	
GRADIENT RANGE:	5 - 10	
IN / OUT RATIO:	0.97	
"B" PARAMETER:	0.86	
	<u>HYDRAULIC</u>	
<u>TRIAL</u>	<u>TIME</u>	<u>CONDUCTIVITY</u>
<u>nos.</u>	<u>hrs.</u>	<u>cm / sec</u>
1	144.0	9.4E-04
2	144.0	9.0E-04
3	144.0	8.6E-04
4	144.0	8.1E-04
5	144.1	7.7E-04
6	144.1	7.4E-04
AVERAGE LAST 4 :		7.9E-04

COMMENTS:

Tap water used as permeant.

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Client / Project Name:

ERRG / Meyers LF, # 28-072

Project No:

071713.01

Lab Sample Number:

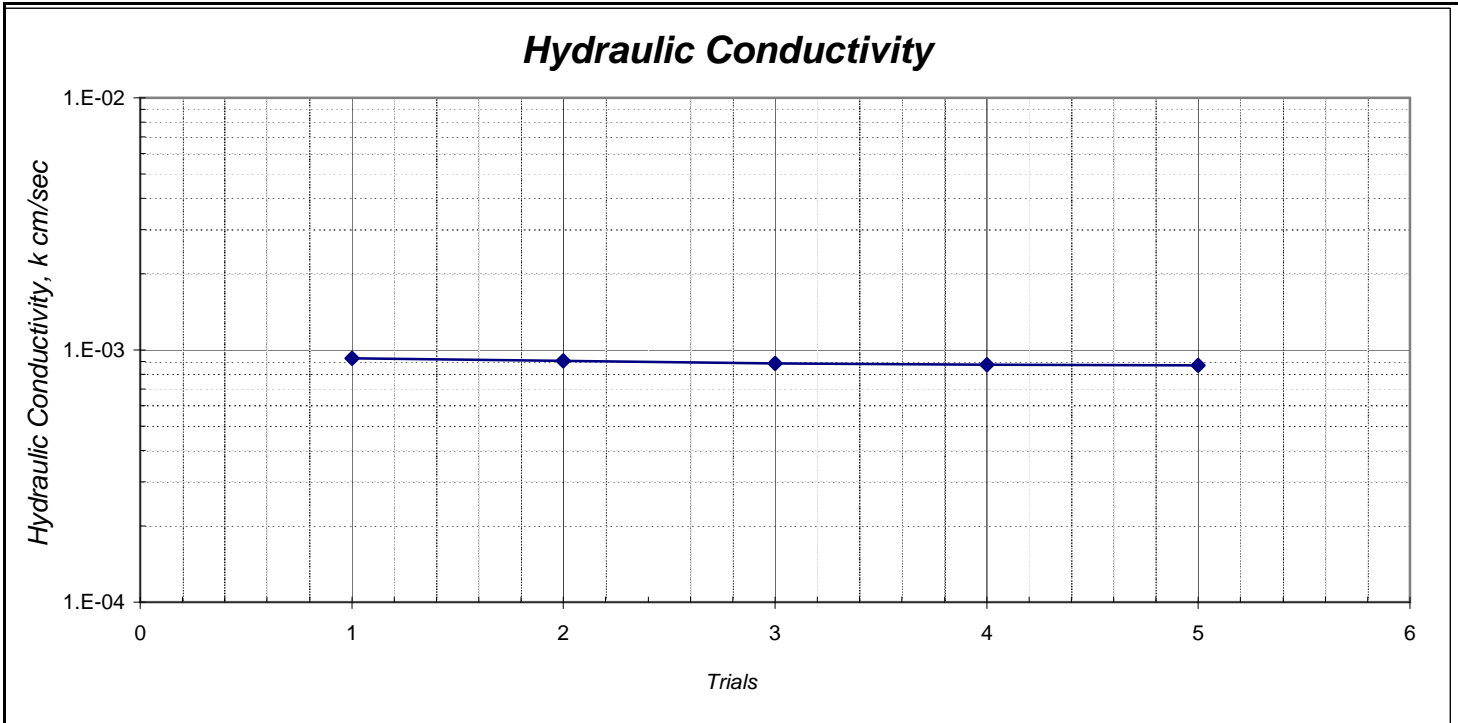
2589W

Sample ID:

ML-SB02G (Rec'd 7/25)

Report Date:

August 28, 2008



SPECIMEN DATA

SAMPLE ID:	ML-SB02G (Rec'd 7/25)	
DESCRIPTION:	Gray and Brown Sand	
	<u>INITIAL</u>	<u>FINAL</u>
HEIGHT, in.	4.0	4.0
DIAMETER, in.	2.4	2.5
WATER CONTENT, %	5.3	23.3
DRY DENSITY, pcf	103	101
SATURATION, %	23	95
<i>(Specific Gravity assumed as 2.7)</i>		
MAXIMUM DRY DENSITY, pcf		
OPTIMUM WATER CONTENT, %		
SPECIFIED COMPACTION, %		
ACHIEVED COMPACTION, %		

COMMENTS:

Tap water used as permeant.

TEST DATA

<u>ASTM D-5084, Method C</u>		
EFFECTIVE STRESS:	23 psi	
GRADIENT RANGE:	5 - 11	
IN / OUT RATIO:	0.99	
"B" PARAMETER:	0.99	
		<u>HYDRAULIC</u>
<u>TRIAL</u>	<u>TIME</u>	<u>CONDUCTIVITY</u>
<u>nos.</u>	<u>hrs.</u>	<u>cm / sec</u>
1	144.0	9.3E-04
2	144.0	9.0E-04
3	144.0	8.8E-04
4	144.0	8.8E-04
5	144.0	8.7E-04
AVERAGE LAST 4 :		8.8E-04

These results apply only to the above listed samples. The data and information are proprietary and can not be released without authorization of Vector Engineering Inc.

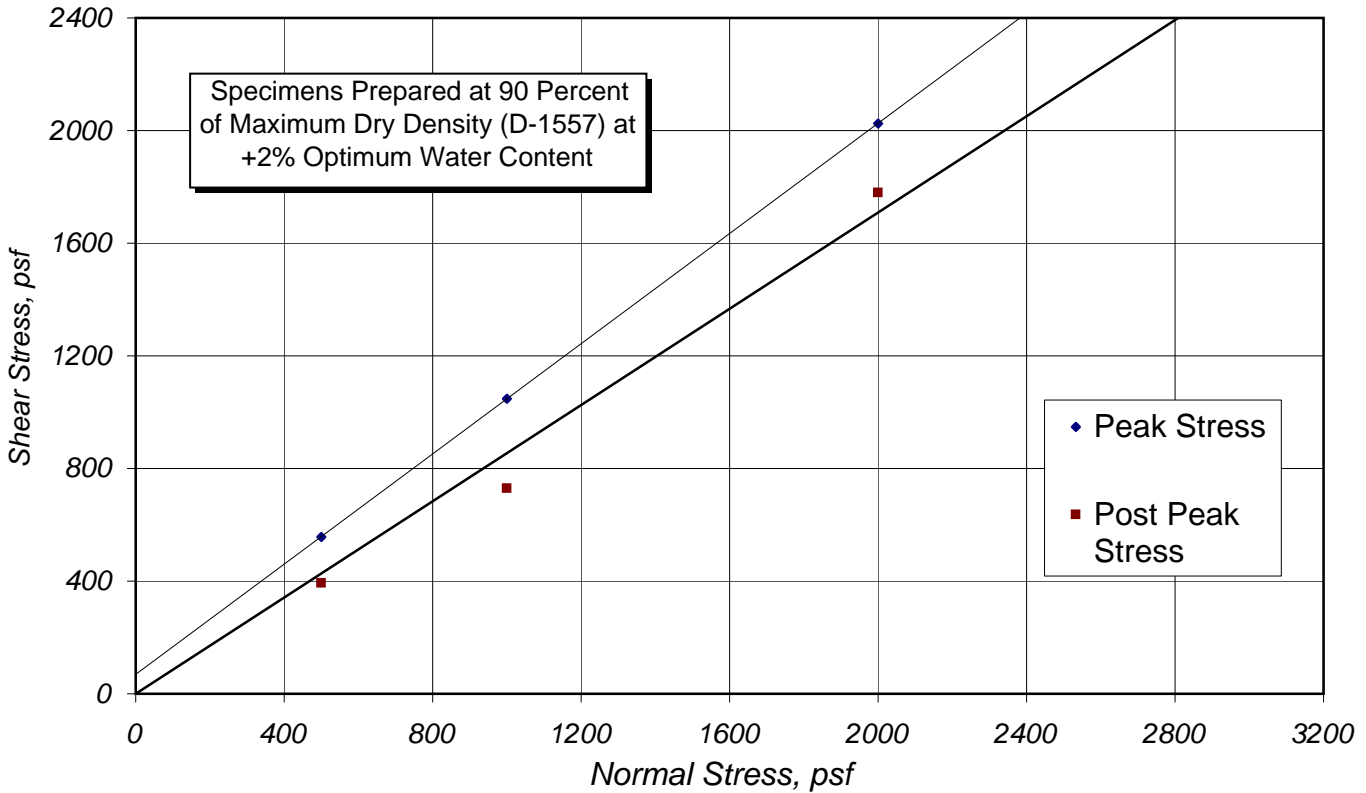
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Client / Project Name:
ERRG / Meyers Landfill, # 28-072

Project No. : 071713.01
Lab Log: 2589AR

Sample : ML-TP-01B / 02C Combined (Rec'd 7/25) Soil Description: Well Graded Sand w/ Silt (SW-SM) Report Date: September 12, 2008

STRENGTH ENVELOPE



	Peak	Post Peak
Coefficient of Friction	0.978	0.842
Friction Angle	44.4	40.1
Cohesion, psf:	70	0

Note: Intercept changed to "0" for post peak

Point No.	Normal Stress psf	Shear Stress		Initial		Final	
		Peak psf	Post-Peak	Water Content %	Dry Density pcf	Water Content %	Dry Density pcf
1	500	557	393	13.6	105.1	18.0	105.7
2	1000	1048	729	13.3	105.3	18.6	106.7
3	2000	2025	1780	13.9	104.5	17.8	106.6

Horizontal Displacement Rate, in. / min. : 0.017 Sample Diameter, in.: 2.50

The test results given here are based on a mathematically determined best fit line. Further interpretation should be conducted by a qualified professional experienced in Geotechnical Engineering.

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Client / Project Name
ERRG / Meyers Landfill, # 28-072

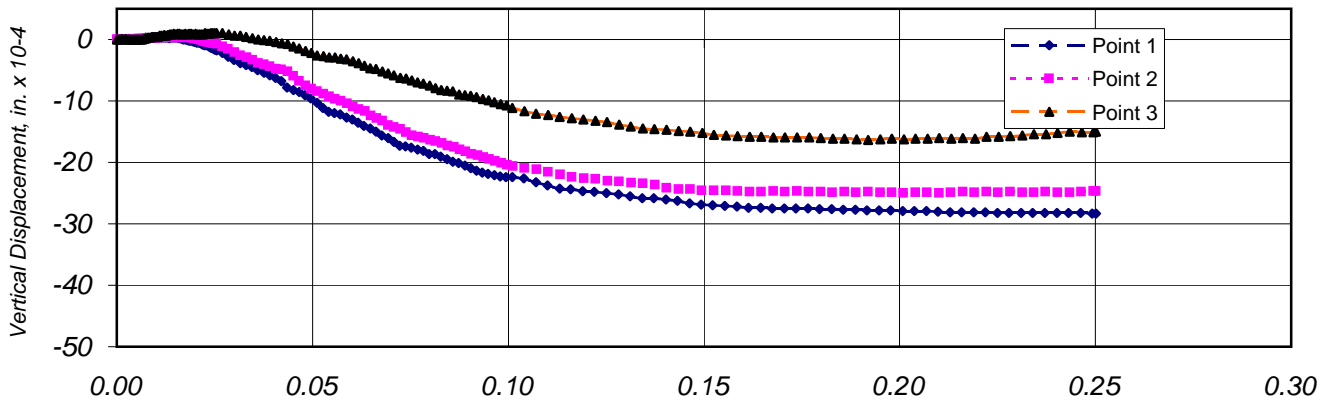
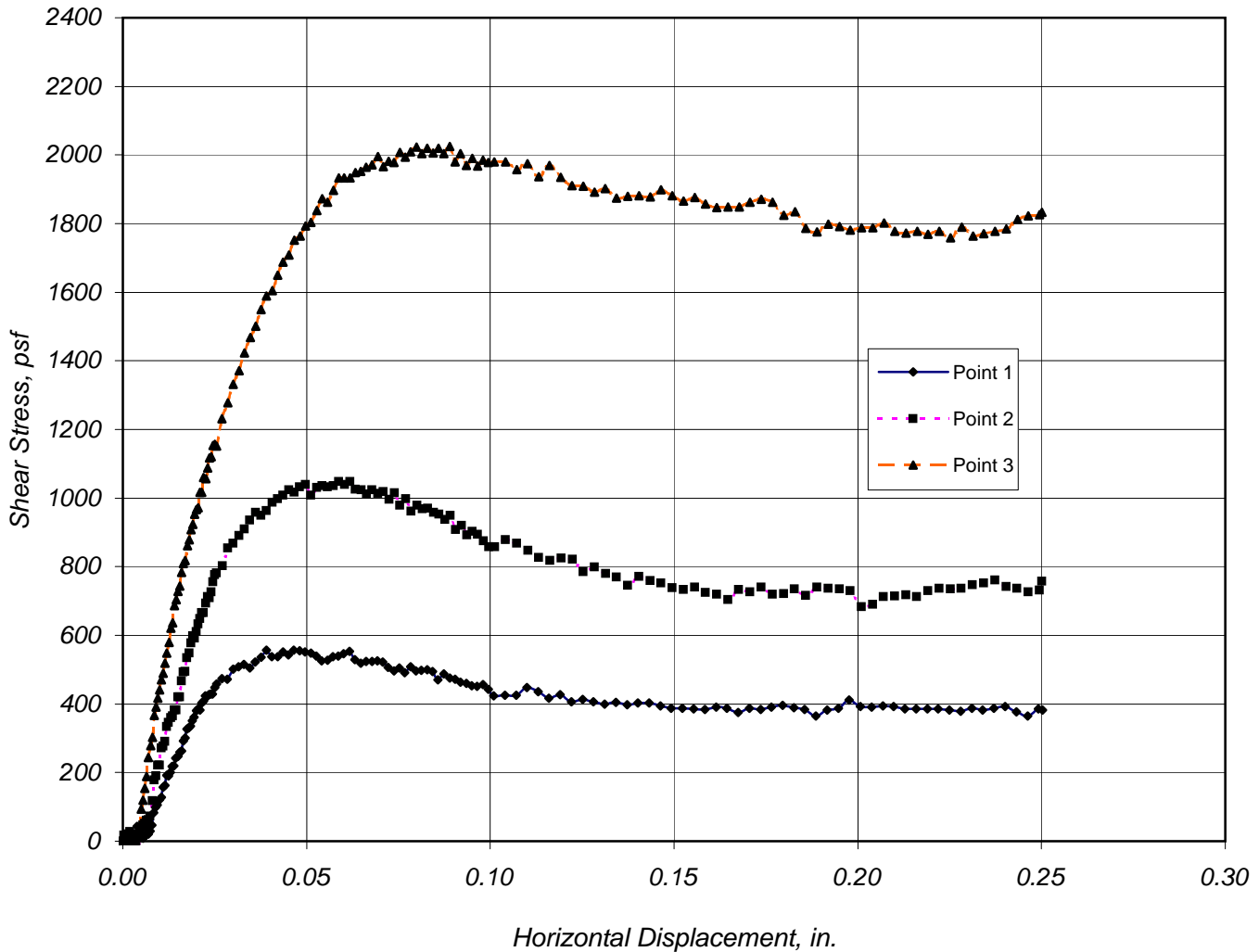
Project No. :
071713.01

Lab Log:
2589AR

Sample :
ML-TP-01B / 02C Combined (Rec'd 7/25)

Soil Description
Well Graded Sand w/ Silt (SW-SM)

Report Date:
September 12, 2008



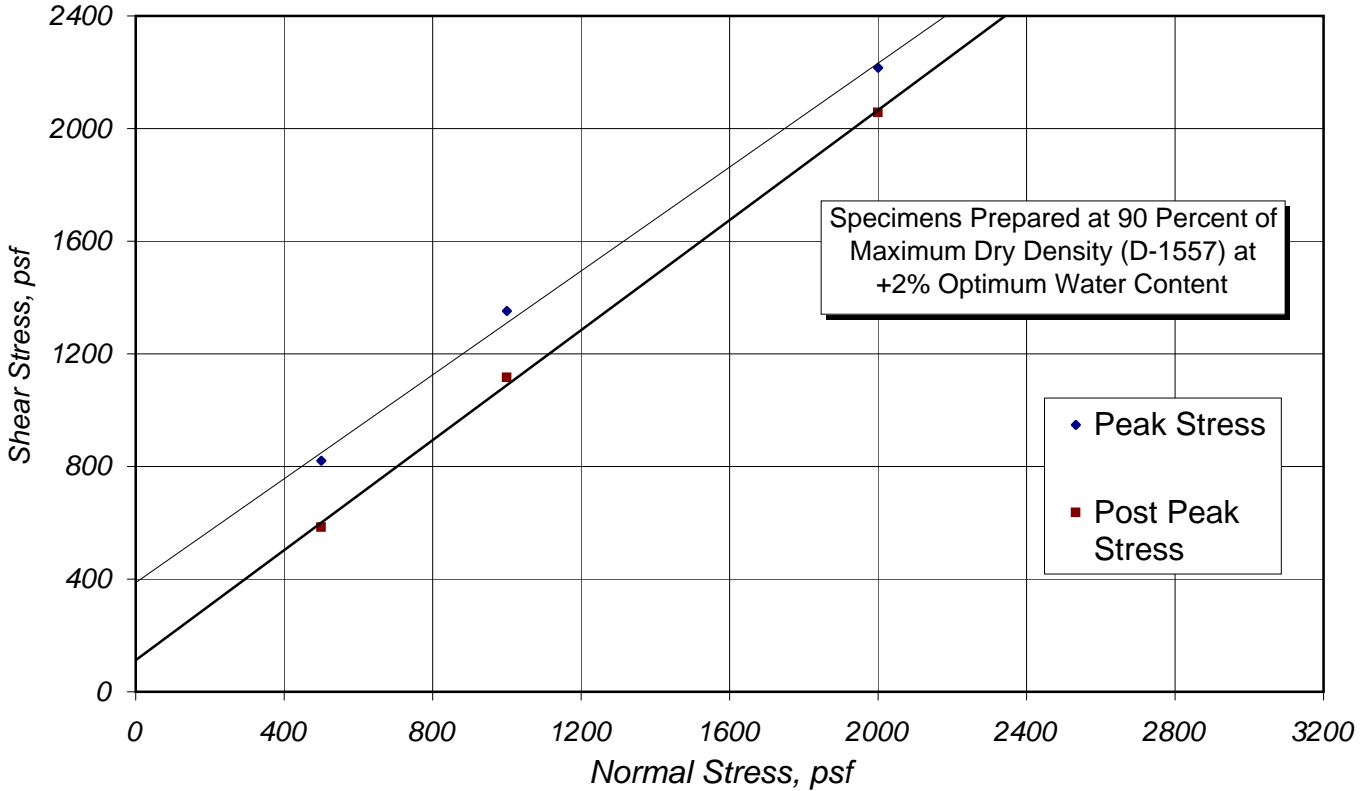
NORMAL STRESSES, psf : Point - 1 500 Point - 2 1000 Point - 3 2000

Client / Project Name:
ERRG / Meyers Landfill, # 28-072

Project No. : 071713.01
Lab Log: 2589FR

Sample : ML-GS-02C (Rec'd 7/25) Soil Description: Brown Silty Sand (SM) Report Date: September 11, 2008

STRENGTH ENVELOPE



		Peak	Post Peak
Coefficient of Friction	:	0.922	0.977
Friction Angle	:	42.7	44.3
Cohesion, psf:	:	390	110

Point No.	Normal Stress psf	Shear Stress		Initial		Final	
		Peak psf	Post-Peak	Water Content %	Dry Density pcf	Water Content %	Dry Density pcf
1	500	820	583	12.2	113.7	17.9	114.7
2	1000	1353	1115	12.1	113.4	17.9	114.9
3	2000	2217	2057	11.9	112.8	18.1	114.4

Horizontal Displacement Rate, in. / min. : 0.017 Sample Diameter, in.: 2.50

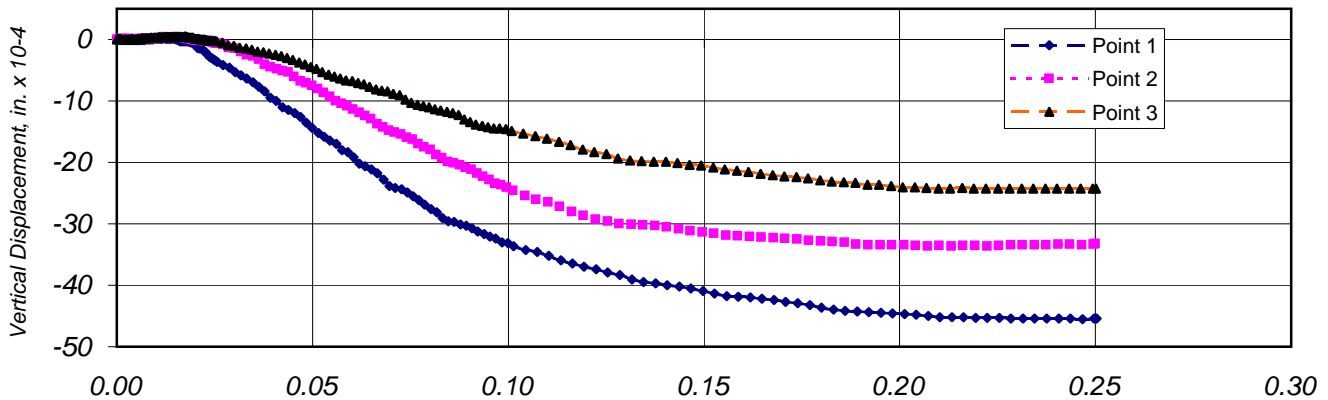
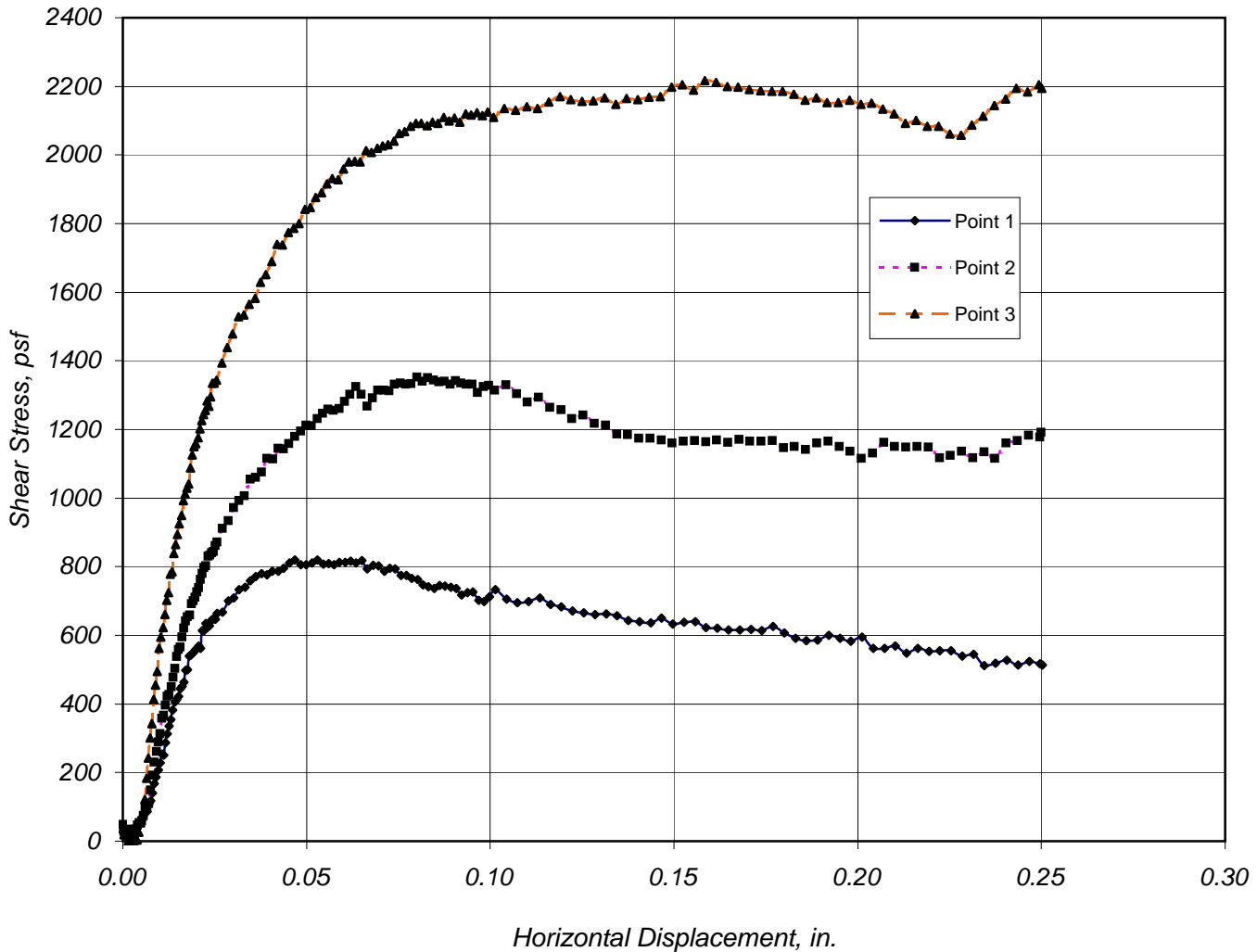
The test results given here are based on a mathematically determined best fit line. Further interpretation should be conducted by a qualified professional experienced in Geotechnical Engineering.

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Client / Project Name
ERRG / Meyers Landfill, # 28-072

Project No. : 071713.01 Lab Log: 2589FR

Sample : ML-GS-02C (Rec'd 7/25) Soil Description: Brown Silty Sand (SM) Report Date: September 11, 2008



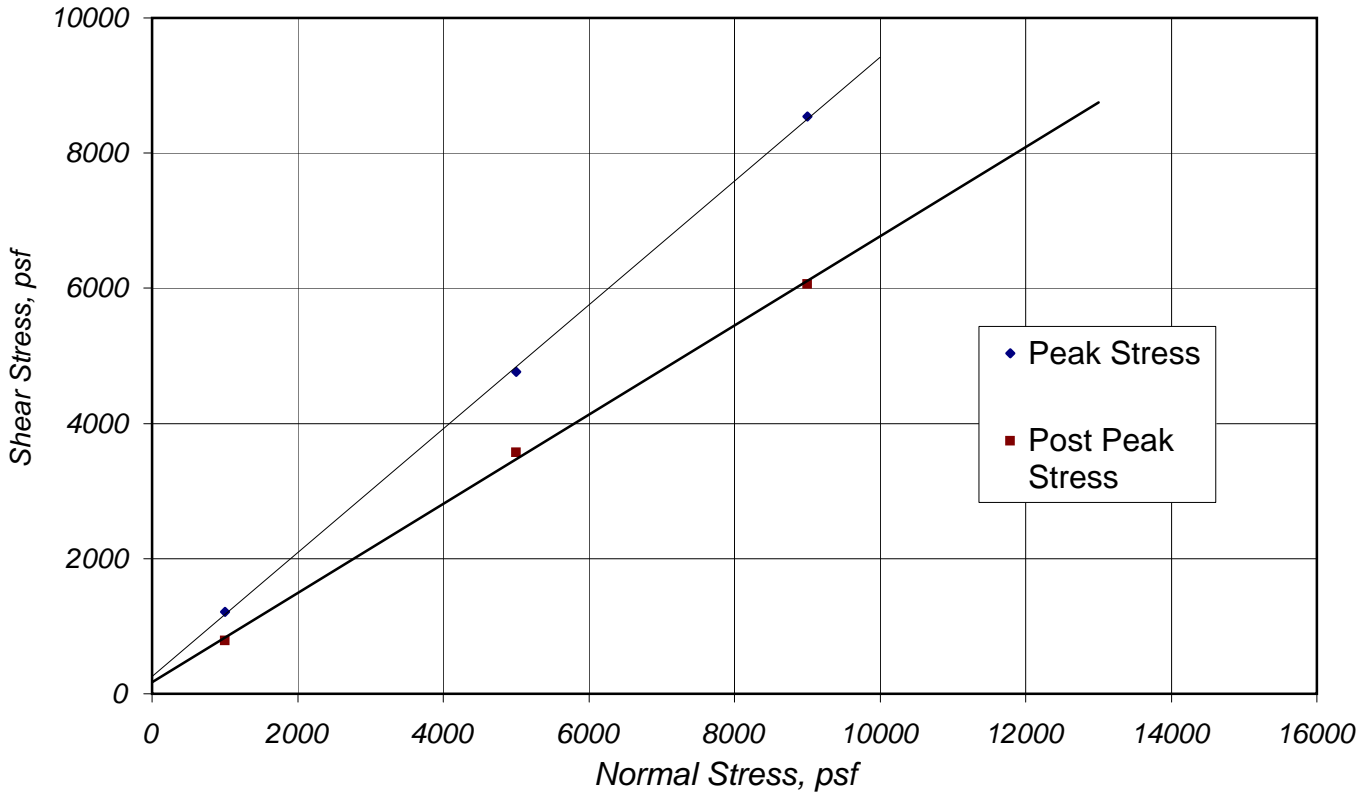
NORMAL STRESSES, psf : Point - 1 500 Point - 2 1000 Point - 3 2000

Client / Project Name:
ERRG / Meyers Landfill, # 28-072

Project No. : 71713.01
Lab Log: 2589T

Sample : ML-SB-01V (Rec'd 7/25) Soil Description: Brownish Gray Sand Report Date: August 20, 2008

STRENGTH ENVELOPE



		<u>Peak</u>	<u>Post Peak</u>
Coefficient of Friction	:	0.916	0.660
Friction Angle	:	42.5	33.4
Cohesion, psf:	:	260	170

Point No.	Normal Stress psf	Shear Stress		Initial		Final	
		Peak psf	Post-Peak	Water Content %	Dry Density pcf	Water Content %	Dry Density pcf
1	1000	1208	782	18.5	110.9	21.4	111.5
2	5000	4767	3568	18.8	109.2	20.8	111.7
3	9000	8539	6063	18.3	110.9	20.5	114.2
4							
5							
6							

Horizontal Displacement Rate, in. / min. : 0.02 Sample Diameter, in.: 2.43

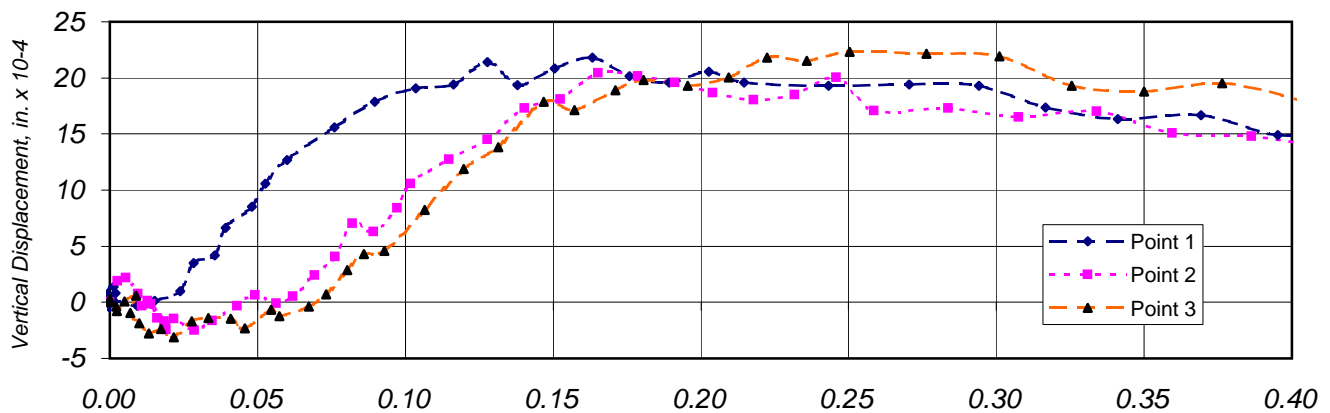
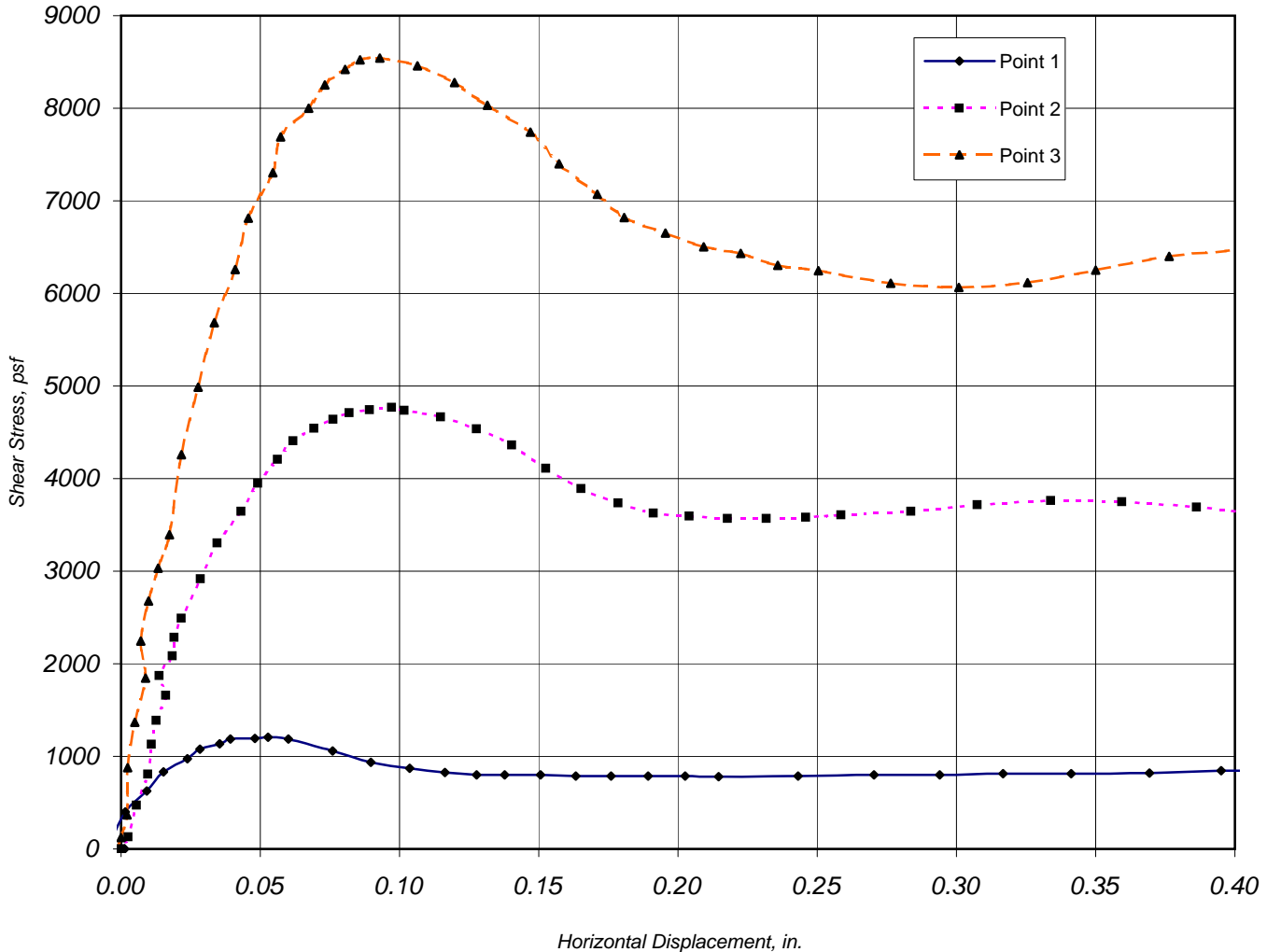
The test results given here are based on a mathematically determined best fit line. Further interpretation should be conducted by a qualified professional experienced in Geotechnical Engineering.

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Client / Project Name
ERRG / Meyers Landfill, # 28-072

Project No. : 71713.01 Lab Log: 2589T

Sample : ML-SB-01V (Rec'd 7/25) Soil Description: Brownish Gray Sand Report Date: August 20, 2008



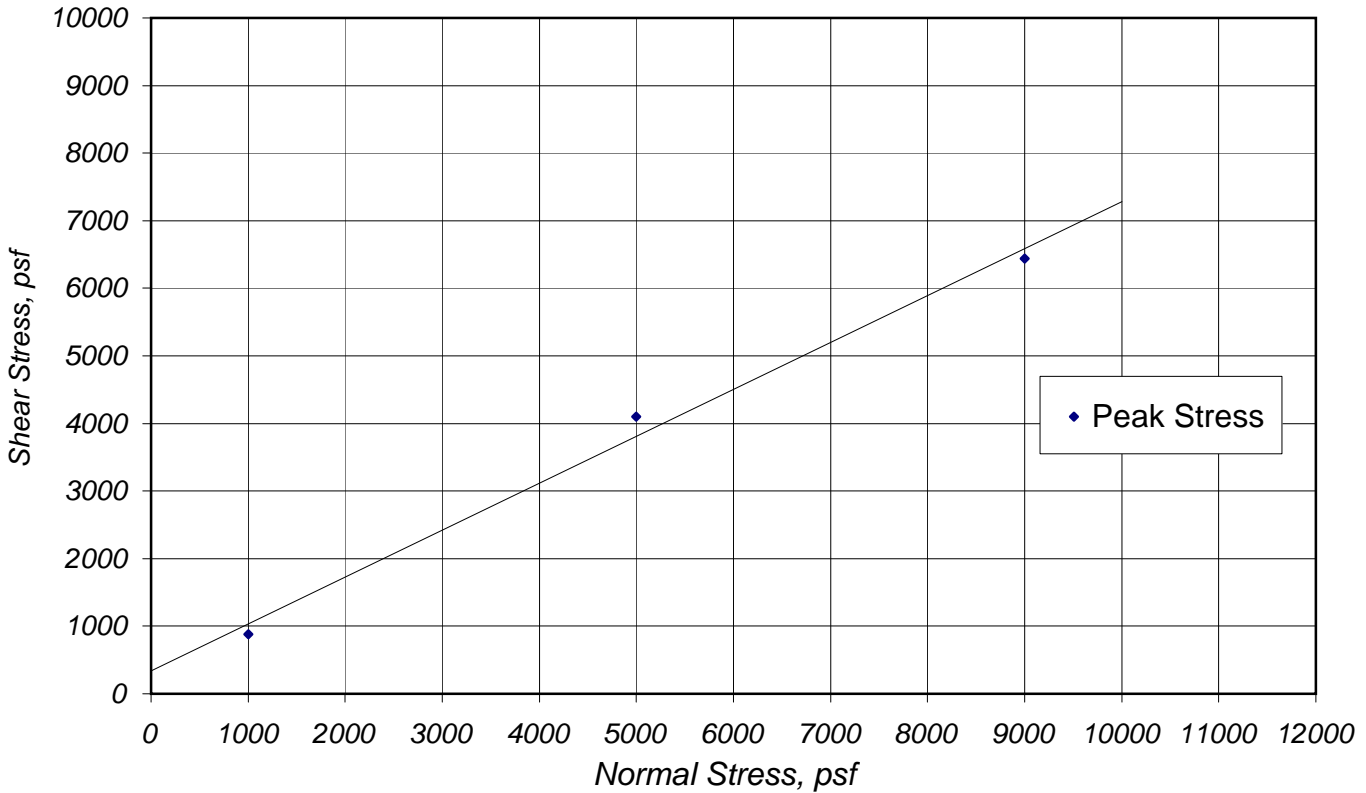
NORMAL STRESSES, psf : Point - 1 1000 Point - 2 5000 Point - 3 9000

Client / Project Name:
ERRG / Meyers Landfill, # 28-072

Project No. : 71713.01
Lab Log: 2589V

Sample : ML-SB-02D (Rec'd 7/25) Soil Description: Dk. Brn. Sand w/ Silt and Gravel Report Date: August 20, 2008

STRENGTH ENVELOPE



	<u>Peak*</u>
Coefficient of Friction	: 0.694
Friction Angle	: 34.8
Cohesion, psf:	: 340.0

Point No.	Normal Stress psf	Shear Stress Peak* psf	Post-Peak	Initial		Final	
				Water Content %	Dry Density pcf	Water Content %	Dry Density pcf
1	1000	885		10.9	95.5	25.3	98.5
2	5000	4100		10.2	99.0	21.1	104.6
3	9000	6439		11.1	98.2	20.5	104.5

*Peak Shear values taken at or near .19 inches.

Horizontal Displacement Rate, in. / min. : 0.02 Sample Diameter, in.: 2.43

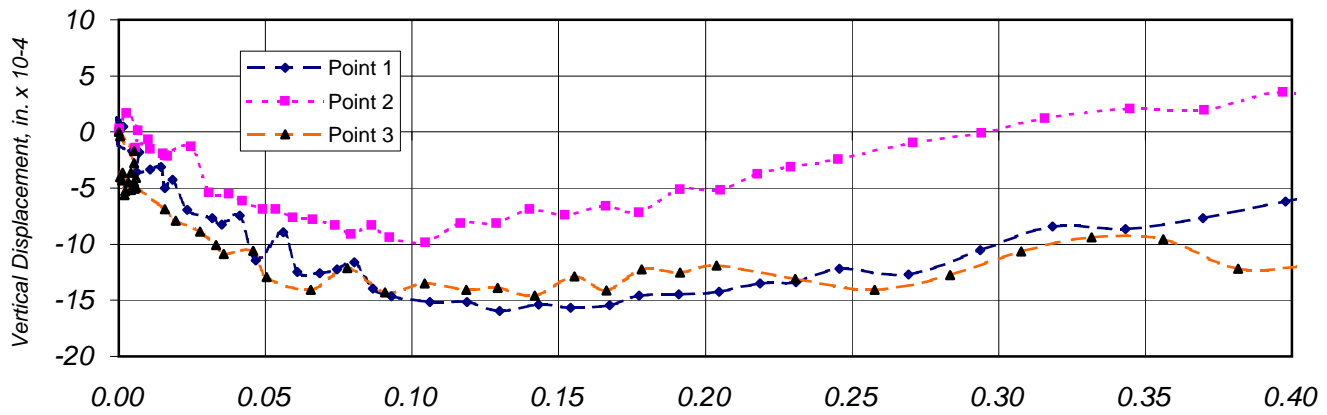
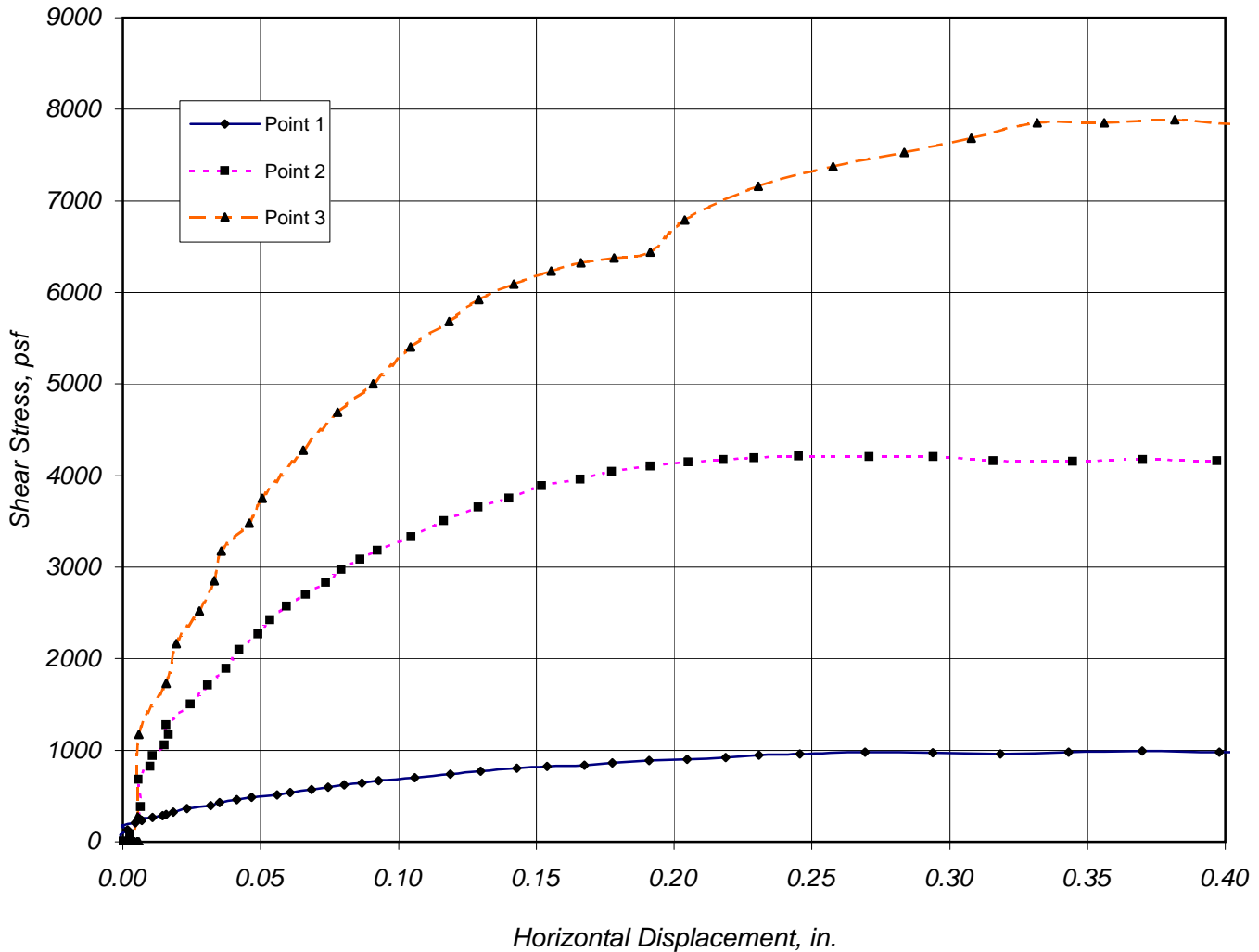
The test results given here are based on a mathematically determined best fit line. Further interpretation should be conducted by a qualified professional experienced in Geotechnical Engineering.

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Client / Project Name
ERRG / Meyers Landfill, # 28-072

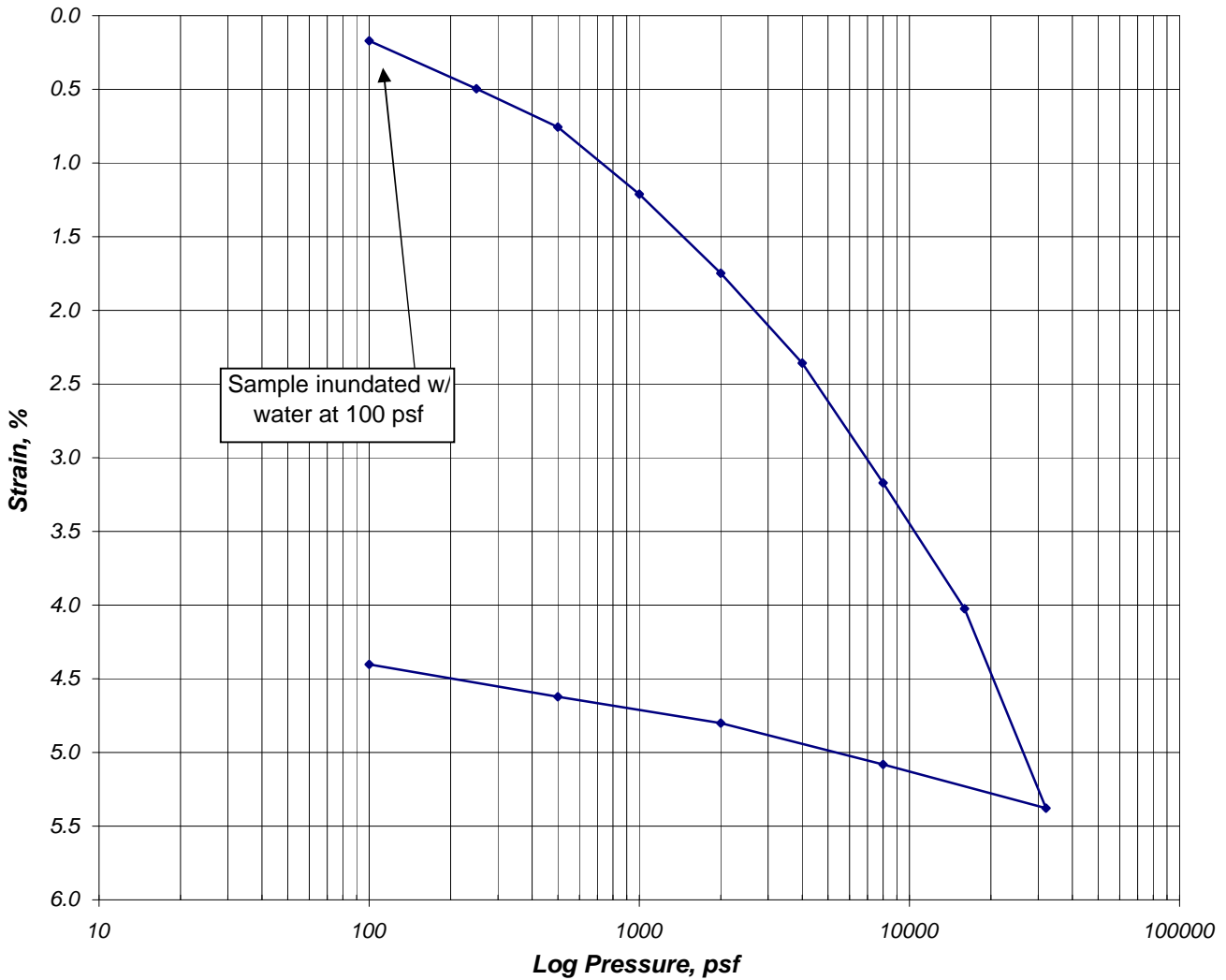
Project No. : 71713.01 Lab Log: 2589V

Sample : ML-SB-02D (Rec'd 7/25) Soil Description: Dk. Brn. Sand w/ Silt and Gravel Report Date: August 20, 2008



NORMAL STRESSES, psf : Point - 1 1000 Point - 2 5000 Point - 3 9000

Client Name: ERRG	Project Name: Meyers Landfill, # 28-072	Project No. : 071713.01	Lab Log: 2589H
Sample ID: ML-SB-01D	Soil Description: Gray Sand	Report Date: August 25, 2008	



SPECIMEN DATA

	<u>Initial</u>	<u>Final</u>
Water Content, %	3.6	22.8
Dry Density	94.1	98.5
Void Ratio (Specific Gravity = 2.7)	0.79	0.71
Saturation	12.3	85.4

Note: The final saturation is less than 100 due to the free drainage of the soil.

	<u>psf</u>	<u>kPa</u>
Estimated Overburden Pressure	Po	
Maximum Past Pressure	Pp	
Compression Index	Cc, last increment	

Vector Engineering Inc.

143E Spring Hill Dr., Grass Valley, CA 95945, 530-272-2448

Laboratory Services

CONSOLIDATION REPORT

ASTM D-2435

Client Name:

ERRG

Project Name:

Meyers Landfill, # 28-072

Project No. :

071713.01

Lab Log:

2589H

Sample :

ML-SB-01D

Soil Description:

Gray Sand

Report Date:

August 25, 2008

Inc.	Load Stress kPa	Load Stress PSF			Sample Height in.	Sample Height cm	Height Change %	Void Ratio, e	Strain, %	
1	4.79	100			1.004	2.551	-0.169	0.7878	0.1690	
2	11.97	250			1.001	2.543	-0.497	0.7819	0.4970	
3	23.94	500			0.998	2.536	-0.755	0.7773	0.7555	
4	47.88	1000			0.994	2.524	-1.213	0.7691	1.2127	
5	95.76	2000			0.988	2.511	-1.750	0.7595	1.7495	
6	191.52	4000			0.982	2.495	-2.356	0.7486	2.3559	
7	383.04	8000			0.974	2.474	-3.171	0.7340	3.1710	
8	766.08	16000			0.966	2.452	-4.026	0.7187	4.0258	
9	1532.17	32000			0.952	2.418	-5.378	0.6945	5.3777	
10	383.04	8000			0.955	2.425	-5.080	0.6998	5.0795	
11	95.76	2000			0.958	2.433	-4.801	0.7048	4.8012	
12	23.94	500			0.960	2.437	-4.622	0.7080	4.6223	
13	4.79	100			0.962	2.443	-4.404	0.7119	4.4036	

L:\Labexcel\Projects\2007\071713\2589H-Cns.xls

Entered By:

SS

Reviewed By:

Lab Log:

DCN: CNS-ws (rev. 08/24/06)

2589H

Attachment E. Analytical Laboratory Results

ANALYTICAL REPORT

Job Number: 720-15519-1

Job Description: USFS- Meyers Landfill

For:

ERRG

185 Mason Circle, Ste A

Concord, CA 94520

Attention: Ms. Caitlin Gorman



Dimple Sharma

Project Manager I

dimple.sharma@testamericainc.com

08/18/2008

Job Narrative
720-J15519-1

Comments

No additional comments.

Receipt

All the sample(s) were received with greater than 50% of holding time expired for all analyses except CAM 17 metals. As such, the laboratory had insufficient time remaining to perform the analysis within holding time.

Caitlin approved to analyze past hold time on 8-12-08 @9:54a.m. ; TAT will start 8-12-08.

All other samples were received in good condition within temperature requirements.

GC/MS VOA

Method(s) 8260B: The following samples were analyzed outside the method defined holding time because the request for the test was made after the holding time for the samples expired: ML-GS-01 A (720-15519-1), ML-GS-01 B (720-15519-2), ML-GS-02 A (720-15519-3), ML-GS-02 B (720-15519-4).

No other analytical or quality issues were noted.

GC/MS Semi VOA

Method(s) 8270C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch #39811 were outside control limits. The associated laboratory control standard (LCS) met acceptance criteria.

No other analytical or quality issues were noted.

GC VOA

No analytical or quality issues were noted.

GC Semi VOA

Method(s) 8015B: The following sample(s) was analyzed outside the method defined holding time because the request for the test was made after the holding time for the sample expired: ML-GS-01 A (720-15519-1), ML-GS-01 B (720-15519-2), ML-GS-02 A (720-15519-3), ML-GS-02 B (720-15519-4).

Method(s) 8081A: The following sample(s) was analyzed outside the method defined holding time because the request for the test was made after the holding time for the sample expired: ML-GS-01 A (720-15519-1), ML-GS-01 B (720-15519-2), ML-GS-02 A (720-15519-3), ML-GS-02 B (720-15519-4).

No other analytical or quality issues were noted.

Metals

Method(s) 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 39786 were outside control limits. The associated laboratory control standard (LCS) met acceptance criteria.

Method(s) 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 39846 were outside control limits. The associated laboratory control standard (LCS) met acceptance criteria.

No other analytical or quality issues were noted.

EXECUTIVE SUMMARY - Detections

Client: ERRG

Job Number: 720-15519-1

Lab Sample ID	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-15519-1	ML-GS-01 A				
Diesel Range Organics [C10-C28]		2.3 H	1.0	mg/Kg	8015B
Arsenic		1.0	0.98	mg/Kg	6010B
Barium		66	0.98	mg/Kg	6010B
Chromium		1.7	0.98	mg/Kg	6010B
Cobalt		2.8	0.98	mg/Kg	6010B
Copper		7.0	0.98	mg/Kg	6010B
Lead		1.7	0.98	mg/Kg	6010B
Nickel		1.4	0.98	mg/Kg	6010B
Vanadium		15	0.98	mg/Kg	6010B
Zinc		16	0.98	mg/Kg	6010B
720-15519-2	ML-GS-01 B				
Diesel Range Organics [C10-C28]		1.2 H	1.0	mg/Kg	8015B
Barium		65	0.97	mg/Kg	6010B
Chromium		1.8	0.97	mg/Kg	6010B
Cobalt		2.8	0.97	mg/Kg	6010B
Copper		6.9	0.97	mg/Kg	6010B
Lead		1.8	0.97	mg/Kg	6010B
Nickel		1.4	0.97	mg/Kg	6010B
Vanadium		15	0.97	mg/Kg	6010B
Zinc		15	0.97	mg/Kg	6010B
720-15519-3	ML-GS-02 A				
Diesel Range Organics [C10-C28]		4.6 H	1.0	mg/Kg	8015B
Arsenic		1.7	0.96	mg/Kg	6010B
Barium		85	0.96	mg/Kg	6010B
Chromium		6.1	0.96	mg/Kg	6010B
Cobalt		5.2	0.96	mg/Kg	6010B
Copper		9.2	0.96	mg/Kg	6010B
Lead		2.1	0.96	mg/Kg	6010B
Nickel		4.1	0.96	mg/Kg	6010B
Vanadium		33	0.96	mg/Kg	6010B
Zinc		24	0.96	mg/Kg	6010B

EXECUTIVE SUMMARY - Detections

Client: ERRG

Job Number: 720-15519-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-15519-4	ML-GS-02 B				
Naphthalene		65 H	5.0	ug/Kg	8270C
Diesel Range Organics [C10-C28]		4.7 H	1.0	mg/Kg	8015B
Arsenic		1.6	1.0	mg/Kg	6010B
Barium		81	1.0	mg/Kg	6010B
Chromium		6.2	1.0	mg/Kg	6010B
Cobalt		4.6	1.0	mg/Kg	6010B
Copper		9.9	1.0	mg/Kg	6010B
Lead		2.5	1.0	mg/Kg	6010B
Molybdenum		1.5	1.0	mg/Kg	6010B
Nickel		3.4	1.0	mg/Kg	6010B
Vanadium		33	1.0	mg/Kg	6010B
Zinc		20	1.0	mg/Kg	6010B

METHOD SUMMARY

Client: ERRG

Job Number: 720-15519-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Volatile Organic Compounds by GC/MS (Low Level)	TAL SF	SW846 8260B	
Purge and Trap for Solids	TAL SF		SW846 5030B
Total Petroleum Hydrocarbons by GC/MS	TAL SF	CA_LUFTMS	
Purge and Trap for Solids	TAL SF		SW846 5030B
Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)	TAL SF	SW846 8270C	
Ultrasonic Extraction	TAL SF		SW846 3550B
Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)	TAL SF	SW846 8015B	
Ultrasonic Extraction	TAL SF		SW846 3550B
Organochlorine Pesticides by Gas Chromatography	TAL SF	SW846 8081A	
Ultrasonic Extraction	TAL SF		SW846 3550B
Inductively Coupled Plasma - Atomic Emission Spectrometry	TAL SF	SW846 6010B	
Acid Digestion of Sediments, Sludges, and Soils	TAL SF		SW846 3050B
Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)	TAL SF	SW846 7471A	
Mercury in Solid or Semi-Solid Waste (Manual Cold	TAL SF		SW846 7471A

Lab References:

TAL SF = TestAmerica San Francisco

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

SAMPLE SUMMARY

Client: ERRG

Job Number: 720-15519-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-15519-1	ML-GS-01 A	Solid	07/25/2008 1500	08/08/2008 1800
720-15519-2	ML-GS-01 B	Solid	07/25/2008 1505	08/08/2008 1800
720-15519-3	ML-GS-02 A	Solid	07/25/2008 1510	08/08/2008 1800
720-15519-4	ML-GS-02 B	Solid	07/25/2008 1515	08/08/2008 1800

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 A

Lab Sample ID: 720-15519-1
Client Matrix: Solid

Date Sampled: 07/25/2008 1500
Date Received: 08/08/2008 1800

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-39770	Instrument ID: Agilent 75MSD
Preparation:	5030B	Prep Batch: 720-39632	Lab File ID: 081108008.D
Dilution:	1.0		Initial Weight/Volume: 5.05 g
Date Analyzed:	08/11/2008 1415		Final Weight/Volume: 10 mL
Date Prepared:	08/11/2008 1200		

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Methyl tert-butyl ether		ND	H	5.0
Acetone		ND	H	50
Benzene		ND	H	5.0
Dichlorobromomethane		ND	H	5.0
Bromobenzene		ND	H	5.0
Chlorobromomethane		ND	H	20
Bromoform		ND	H	5.0
Bromomethane		ND	H	9.9
2-Butanone (MEK)		ND	H	50
n-Butylbenzene		ND	H	5.0
sec-Butylbenzene		ND	H	5.0
tert-Butylbenzene		ND	H	5.0
Carbon disulfide		ND	H	5.0
Carbon tetrachloride		ND	H	5.0
Chlorobenzene		ND	H	5.0
Chloroethane		ND	H	9.9
Chloroform		ND	H	5.0
Chloromethane		ND	H	9.9
2-Chlorotoluene		ND	H	5.0
4-Chlorotoluene		ND	H	5.0
Chlorodibromomethane		ND	H	5.0
1,2-Dichlorobenzene		ND	H	5.0
1,3-Dichlorobenzene		ND	H	5.0
1,4-Dichlorobenzene		ND	H	5.0
1,3-Dichloropropane		ND	H	5.0
1,1-Dichloropropene		ND	H	5.0
1,2-Dibromo-3-Chloropropane		ND	H	50
Ethylene Dibromide		ND	H	5.0
Dibromomethane		ND	H	9.9
Dichlorodifluoromethane		ND	H	9.9
1,1-Dichloroethane		ND	H	5.0
1,2-Dichloroethane		ND	H	5.0
1,1-Dichloroethene		ND	H	5.0
cis-1,2-Dichloroethene		ND	H	5.0
trans-1,2-Dichloroethene		ND	H	5.0
1,2-Dichloropropane		ND	H	5.0
cis-1,3-Dichloropropene		ND	H	5.0
trans-1,3-Dichloropropene		ND	H	5.0
Ethylbenzene		ND	H	5.0
Hexachlorobutadiene		ND	H	5.0
2-Hexanone		ND	H	50
Isopropylbenzene		ND	H	5.0
4-Isopropyltoluene		ND	H	5.0
Methylene Chloride		ND	H	9.9

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 A

Lab Sample ID: 720-15519-1
 Client Matrix: Solid

Date Sampled: 07/25/2008 1500
 Date Received: 08/08/2008 1800

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-39770	Instrument ID: Agilent 75MSD
Preparation:	5030B	Prep Batch: 720-39632	Lab File ID: 081108008.D
Dilution:	1.0		Initial Weight/Volume: 5.05 g
Date Analyzed:	08/11/2008 1415		Final Weight/Volume: 10 mL
Date Prepared:	08/11/2008 1200		

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
4-Methyl-2-pentanone (MIBK)		ND	H	50
Naphthalene		ND	H	9.9
N-Propylbenzene		ND	H	5.0
Styrene		ND	H	5.0
1,1,1,2-Tetrachloroethane		ND	H	5.0
1,1,2,2-Tetrachloroethane		ND	H	5.0
Tetrachloroethene		ND	H	5.0
Toluene		ND	H	5.0
1,2,3-Trichlorobenzene		ND	H	5.0
1,2,4-Trichlorobenzene		ND	H	5.0
1,1,1-Trichloroethane		ND	H	5.0
1,1,2-Trichloroethane		ND	H	5.0
Trichloroethene		ND	H	5.0
Trichlorofluoromethane		ND	H	5.0
1,2,3-Trichloropropane		ND	H	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	H	5.0
1,2,4-Trimethylbenzene		ND	H	5.0
1,3,5-Trimethylbenzene		ND	H	5.0
Vinyl acetate		ND	H	50
Vinyl chloride		ND	H	5.0
Xylenes, Total		ND	H	9.9
2,2-Dichloropropane		ND	H	5.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	77	65 - 130
1,2-Dichloroethane-d4 (Surr)	86	80 - 120
Toluene-d8 (Surr)	84	66 - 123

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 B

Lab Sample ID: 720-15519-2
 Client Matrix: Solid

Date Sampled: 07/25/2008 1505
 Date Received: 08/08/2008 1800

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-39770	Instrument ID: Agilent 75MSD
Preparation:	5030B	Prep Batch: 720-39632	Lab File ID: 081108011.D
Dilution:	1.0		Initial Weight/Volume: 5.01 g
Date Analyzed:	08/11/2008 1531		Final Weight/Volume: 10 mL
Date Prepared:	08/11/2008 1200		

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Methyl tert-butyl ether		ND	H	5.0
Acetone		ND	H	50
Benzene		ND	H	5.0
Dichlorobromomethane		ND	H	5.0
Bromobenzene		ND	H	5.0
Chlorobromomethane		ND	H	20
Bromoform		ND	H	5.0
Bromomethane		ND	H	10
2-Butanone (MEK)		ND	H	50
n-Butylbenzene		ND	H	5.0
sec-Butylbenzene		ND	H	5.0
tert-Butylbenzene		ND	H	5.0
Carbon disulfide		ND	H	5.0
Carbon tetrachloride		ND	H	5.0
Chlorobenzene		ND	H	5.0
Chloroethane		ND	H	10
Chloroform		ND	H	5.0
Chloromethane		ND	H	10
2-Chlorotoluene		ND	H	5.0
4-Chlorotoluene		ND	H	5.0
Chlorodibromomethane		ND	H	5.0
1,2-Dichlorobenzene		ND	H	5.0
1,3-Dichlorobenzene		ND	H	5.0
1,4-Dichlorobenzene		ND	H	5.0
1,3-Dichloropropane		ND	H	5.0
1,1-Dichloropropene		ND	H	5.0
1,2-Dibromo-3-Chloropropane		ND	H	50
Ethylene Dibromide		ND	H	5.0
Dibromomethane		ND	H	10
Dichlorodifluoromethane		ND	H	10
1,1-Dichloroethane		ND	H	5.0
1,2-Dichloroethane		ND	H	5.0
1,1-Dichloroethene		ND	H	5.0
cis-1,2-Dichloroethene		ND	H	5.0
trans-1,2-Dichloroethene		ND	H	5.0
1,2-Dichloropropane		ND	H	5.0
cis-1,3-Dichloropropene		ND	H	5.0
trans-1,3-Dichloropropene		ND	H	5.0
Ethylbenzene		ND	H	5.0
Hexachlorobutadiene		ND	H	5.0
2-Hexanone		ND	H	50
Isopropylbenzene		ND	H	5.0
4-Isopropyltoluene		ND	H	5.0
Methylene Chloride		ND	H	10

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 B

Lab Sample ID: 720-15519-2
 Client Matrix: Solid

Date Sampled: 07/25/2008 1505
 Date Received: 08/08/2008 1800

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-39770	Instrument ID: Agilent 75MSD
Preparation:	5030B	Prep Batch: 720-39632	Lab File ID: 081108011.D
Dilution:	1.0		Initial Weight/Volume: 5.01 g
Date Analyzed:	08/11/2008 1531		Final Weight/Volume: 10 mL
Date Prepared:	08/11/2008 1200		

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
4-Methyl-2-pentanone (MIBK)		ND	H	50
Naphthalene		ND	H	10
N-Propylbenzene		ND	H	5.0
Styrene		ND	H	5.0
1,1,1,2-Tetrachloroethane		ND	H	5.0
1,1,2,2-Tetrachloroethane		ND	H	5.0
Tetrachloroethene		ND	H	5.0
Toluene		ND	H	5.0
1,2,3-Trichlorobenzene		ND	H	5.0
1,2,4-Trichlorobenzene		ND	H	5.0
1,1,1-Trichloroethane		ND	H	5.0
1,1,2-Trichloroethane		ND	H	5.0
Trichloroethene		ND	H	5.0
Trichlorofluoromethane		ND	H	5.0
1,2,3-Trichloropropane		ND	H	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	H	5.0
1,2,4-Trimethylbenzene		ND	H	5.0
1,3,5-Trimethylbenzene		ND	H	5.0
Vinyl acetate		ND	H	50
Vinyl chloride		ND	H	5.0
Xylenes, Total		ND	H	10
2,2-Dichloropropane		ND	H	5.0

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	85	65 - 130
1,2-Dichloroethane-d4 (Surr)	94	80 - 120
Toluene-d8 (Surr)	94	66 - 123

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 A

Lab Sample ID: 720-15519-3
 Client Matrix: Solid

Date Sampled: 07/25/2008 1510
 Date Received: 08/08/2008 1800

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-39770	Instrument ID: Agilent 75MSD
Preparation:	5030B	Prep Batch: 720-39632	Lab File ID: 081108012.D
Dilution:	1.0		Initial Weight/Volume: 5.21 g
Date Analyzed:	08/11/2008 1557		Final Weight/Volume: 10 mL
Date Prepared:	08/11/2008 1200		

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Methyl tert-butyl ether		ND	H	4.8
Acetone		ND	H	48
Benzene		ND	H	4.8
Dichlorobromomethane		ND	H	4.8
Bromobenzene		ND	H	4.8
Chlorobromomethane		ND	H	19
Bromoform		ND	H	4.8
Bromomethane		ND	H	9.6
2-Butanone (MEK)		ND	H	48
n-Butylbenzene		ND	H	4.8
sec-Butylbenzene		ND	H	4.8
tert-Butylbenzene		ND	H	4.8
Carbon disulfide		ND	H	4.8
Carbon tetrachloride		ND	H	4.8
Chlorobenzene		ND	H	4.8
Chloroethane		ND	H	9.6
Chloroform		ND	H	4.8
Chloromethane		ND	H	9.6
2-Chlorotoluene		ND	H	4.8
4-Chlorotoluene		ND	H	4.8
Chlorodibromomethane		ND	H	4.8
1,2-Dichlorobenzene		ND	H	4.8
1,3-Dichlorobenzene		ND	H	4.8
1,4-Dichlorobenzene		ND	H	4.8
1,3-Dichloropropane		ND	H	4.8
1,1-Dichloropropene		ND	H	4.8
1,2-Dibromo-3-Chloropropane		ND	H	48
Ethylene Dibromide		ND	H	4.8
Dibromomethane		ND	H	9.6
Dichlorodifluoromethane		ND	H	9.6
1,1-Dichloroethane		ND	H	4.8
1,2-Dichloroethane		ND	H	4.8
1,1-Dichloroethene		ND	H	4.8
cis-1,2-Dichloroethene		ND	H	4.8
trans-1,2-Dichloroethene		ND	H	4.8
1,2-Dichloropropane		ND	H	4.8
cis-1,3-Dichloropropene		ND	H	4.8
trans-1,3-Dichloropropene		ND	H	4.8
Ethylbenzene		ND	H	4.8
Hexachlorobutadiene		ND	H	4.8
2-Hexanone		ND	H	48
Isopropylbenzene		ND	H	4.8
4-Isopropyltoluene		ND	H	4.8
Methylene Chloride		ND	H	9.6

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 A

Lab Sample ID: 720-15519-3
 Client Matrix: Solid

Date Sampled: 07/25/2008 1510
 Date Received: 08/08/2008 1800

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-39770	Instrument ID: Agilent 75MSD
Preparation:	5030B	Prep Batch: 720-39632	Lab File ID: 081108012.D
Dilution:	1.0		Initial Weight/Volume: 5.21 g
Date Analyzed:	08/11/2008 1557		Final Weight/Volume: 10 mL
Date Prepared:	08/11/2008 1200		

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
4-Methyl-2-pentanone (MIBK)		ND	H	48
Naphthalene		ND	H	9.6
N-Propylbenzene		ND	H	4.8
Styrene		ND	H	4.8
1,1,1,2-Tetrachloroethane		ND	H	4.8
1,1,2,2-Tetrachloroethane		ND	H	4.8
Tetrachloroethene		ND	H	4.8
Toluene		ND	H	4.8
1,2,3-Trichlorobenzene		ND	H	4.8
1,2,4-Trichlorobenzene		ND	H	4.8
1,1,1-Trichloroethane		ND	H	4.8
1,1,2-Trichloroethane		ND	H	4.8
Trichloroethene		ND	H	4.8
Trichlorofluoromethane		ND	H	4.8
1,2,3-Trichloropropane		ND	H	4.8
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	H	4.8
1,2,4-Trimethylbenzene		ND	H	4.8
1,3,5-Trimethylbenzene		ND	H	4.8
Vinyl acetate		ND	H	48
Vinyl chloride		ND	H	4.8
Xylenes, Total		ND	H	9.6
2,2-Dichloropropane		ND	H	4.8

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	81	65 - 130
1,2-Dichloroethane-d4 (Surr)	90	80 - 120
Toluene-d8 (Surr)	89	66 - 123

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 B

Lab Sample ID: 720-15519-4
 Client Matrix: Solid

Date Sampled: 07/25/2008 1515
 Date Received: 08/08/2008 1800

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-39770	Instrument ID: Agilent 75MSD
Preparation:	5030B	Prep Batch: 720-39632	Lab File ID: 081108013.D
Dilution:	1.0		Initial Weight/Volume: 5.23 g
Date Analyzed:	08/11/2008 1622		Final Weight/Volume: 10 mL
Date Prepared:	08/11/2008 1200		

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Methyl tert-butyl ether		ND	H	4.8
Acetone		ND	H	48
Benzene		ND	H	4.8
Dichlorobromomethane		ND	H	4.8
Bromobenzene		ND	H	4.8
Chlorobromomethane		ND	H	19
Bromoform		ND	H	4.8
Bromomethane		ND	H	9.6
2-Butanone (MEK)		ND	H	48
n-Butylbenzene		ND	H	4.8
sec-Butylbenzene		ND	H	4.8
tert-Butylbenzene		ND	H	4.8
Carbon disulfide		ND	H	4.8
Carbon tetrachloride		ND	H	4.8
Chlorobenzene		ND	H	4.8
Chloroethane		ND	H	9.6
Chloroform		ND	H	4.8
Chloromethane		ND	H	9.6
2-Chlorotoluene		ND	H	4.8
4-Chlorotoluene		ND	H	4.8
Chlorodibromomethane		ND	H	4.8
1,2-Dichlorobenzene		ND	H	4.8
1,3-Dichlorobenzene		ND	H	4.8
1,4-Dichlorobenzene		ND	H	4.8
1,3-Dichloropropane		ND	H	4.8
1,1-Dichloropropene		ND	H	4.8
1,2-Dibromo-3-Chloropropane		ND	H	48
Ethylene Dibromide		ND	H	4.8
Dibromomethane		ND	H	9.6
Dichlorodifluoromethane		ND	H	9.6
1,1-Dichloroethane		ND	H	4.8
1,2-Dichloroethane		ND	H	4.8
1,1-Dichloroethene		ND	H	4.8
cis-1,2-Dichloroethene		ND	H	4.8
trans-1,2-Dichloroethene		ND	H	4.8
1,2-Dichloropropane		ND	H	4.8
cis-1,3-Dichloropropene		ND	H	4.8
trans-1,3-Dichloropropene		ND	H	4.8
Ethylbenzene		ND	H	4.8
Hexachlorobutadiene		ND	H	4.8
2-Hexanone		ND	H	48
Isopropylbenzene		ND	H	4.8
4-Isopropyltoluene		ND	H	4.8
Methylene Chloride		ND	H	9.6

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 B

Lab Sample ID: 720-15519-4
Client Matrix: Solid

Date Sampled: 07/25/2008 1515
Date Received: 08/08/2008 1800

8260B Volatile Organic Compounds by GC/MS (Low Level)

Method:	8260B	Analysis Batch: 720-39770	Instrument ID: Agilent 75MSD
Preparation:	5030B	Prep Batch: 720-39632	Lab File ID: 081108013.D
Dilution:	1.0		Initial Weight/Volume: 5.23 g
Date Analyzed:	08/11/2008 1622		Final Weight/Volume: 10 mL
Date Prepared:	08/11/2008 1200		

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
4-Methyl-2-pentanone (MIBK)		ND	H	48
Naphthalene		ND	H	9.6
N-Propylbenzene		ND	H	4.8
Styrene		ND	H	4.8
1,1,1,2-Tetrachloroethane		ND	H	4.8
1,1,2,2-Tetrachloroethane		ND	H	4.8
Tetrachloroethene		ND	H	4.8
Toluene		ND	H	4.8
1,2,3-Trichlorobenzene		ND	H	4.8
1,2,4-Trichlorobenzene		ND	H	4.8
1,1,1-Trichloroethane		ND	H	4.8
1,1,2-Trichloroethane		ND	H	4.8
Trichloroethene		ND	H	4.8
Trichlorofluoromethane		ND	H	4.8
1,2,3-Trichloropropane		ND	H	4.8
1,1,2-Trichloro-1,2,2-trifluoroethane		ND	H	4.8
1,2,4-Trimethylbenzene		ND	H	4.8
1,3,5-Trimethylbenzene		ND	H	4.8
Vinyl acetate		ND	H	48
Vinyl chloride		ND	H	4.8
Xylenes, Total		ND	H	9.6
2,2-Dichloropropane		ND	H	4.8

Surrogate	%Rec	Acceptance Limits
4-Bromofluorobenzene	72	65 - 130
1,2-Dichloroethane-d4 (Surr)	84	80 - 120
Toluene-d8 (Surr)	84	66 - 123

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 A

Lab Sample ID: 720-15519-1

Date Sampled: 07/25/2008 1500

Client Matrix: Solid

Date Received: 08/08/2008 1800

CA_LUFTMS Total Petroleum Hydrocarbons by GC/MS

Method:	CA_LUFTMS	Analysis Batch: 720-39907	Instrument ID: Varian 3900A
Preparation:	5030B	Prep Batch: 720-39905	Lab File ID: c:\saturnws\data\200808\08
Dilution:	1.0		Initial Weight/Volume: 5.28 g
Date Analyzed:	08/08/2008 2209		Final Weight/Volume: 10 mL
Date Prepared:	08/08/2008 2100		

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Gasoline Range Organics (GRO)-C5-C12		ND		0.24
Surrogate		%Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)		99		54 - 134
Toluene-d8 (Surr)		92		74 - 118

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 B

Lab Sample ID: 720-15519-2

Client Matrix: Solid

Date Sampled: 07/25/2008 1505

Date Received: 08/08/2008 1800

CA_LUFTMS Total Petroleum Hydrocarbons by GC/MS

Method: CA_LUFTMS Analysis Batch: 720-39907 Instrument ID: Varian 3900A
Preparation: 5030B Prep Batch: 720-39905 Lab File ID: c:\saturnws\data\200808\08
Dilution: 1.0 Initial Weight/Volume: 5.17 g
Date Analyzed: 08/08/2008 2232 Final Weight/Volume: 10 mL
Date Prepared: 08/08/2008 2100

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Gasoline Range Organics (GRO)-C5-C12		ND		0.24
Surrogate		%Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)		98		54 - 134
Toluene-d8 (Surr)		97		74 - 118

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 A

Lab Sample ID: 720-15519-3

Client Matrix: Solid

Date Sampled: 07/25/2008 1510

Date Received: 08/08/2008 1800

CA_LUFTMS Total Petroleum Hydrocarbons by GC/MS

Method:	CA_LUFTMS	Analysis Batch: 720-39907	Instrument ID: Varian 3900A
Preparation:	5030B	Prep Batch: 720-39905	Lab File ID: c:\saturnws\data\200808\08
Dilution:	1.0		Initial Weight/Volume: 5.64 g
Date Analyzed:	08/08/2008 2255		Final Weight/Volume: 10 mL
Date Prepared:	08/08/2008 2100		

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Gasoline Range Organics (GRO)-C5-C12		ND		0.22
Surrogate		%Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)		106		54 - 134
Toluene-d8 (Surr)		94		74 - 118

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 B

Lab Sample ID: 720-15519-4

Date Sampled: 07/25/2008 1515

Client Matrix: Solid

Date Received: 08/08/2008 1800

CA_LUFTMS Total Petroleum Hydrocarbons by GC/MS

Method:	CA_LUFTMS	Analysis Batch: 720-39907	Instrument ID: Varian 3900A
Preparation:	5030B	Prep Batch: 720-39905	Lab File ID: c:\saturnws\data\200808\08
Dilution:	1.0		Initial Weight/Volume: 5.75 g
Date Analyzed:	08/08/2008 2318		Final Weight/Volume: 10 mL
Date Prepared:	08/08/2008 2100		

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Gasoline Range Organics (GRO)-C5-C12		ND		0.22
Surrogate		%Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)		95		54 - 134
Toluene-d8 (Surr)		96		74 - 118

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 A

Lab Sample ID: 720-15519-1
 Client Matrix: Solid

Date Sampled: 07/25/2008 1500
 Date Received: 08/08/2008 1800

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C	Analysis Batch: 720-39893	Instrument ID: Sat 2K2
Preparation: 3550B	Prep Batch: 720-39811	Lab File ID: c:\saturnws\lepdata\data\200
Dilution: 1.0		Initial Weight/Volume: 30.08 g
Date Analyzed: 08/14/2008 1611		Final Weight/Volume: 1 mL
Date Prepared: 08/13/2008 1223		Injection Volume:

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Naphthalene		ND	H	5.0
Acenaphthene		ND	H	5.0
Acenaphthylene		ND	H	5.0
Fluorene		ND	H	5.0
Phenanthrene		ND	H	5.0
Anthracene		ND	H	5.0
Benzo[a]anthracene		ND	H	5.0
Chrysene		ND	H	5.0
Benzo[a]pyrene		ND	H	5.0
Benzo[b]fluoranthene		ND	H	5.0
Benzo[k]fluoranthene		ND	H	5.0
Benzo[g,h,i]perylene		ND	H	5.0
Indeno[1,2,3-cd]pyrene		ND	H	5.0
Fluoranthene		ND	H	5.0
Pyrene		ND	H	5.0
Dibenz(a,h)anthracene		ND	H	5.0

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	65	33 - 93
Terphenyl-d14	86	35 - 99

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 B

Lab Sample ID: 720-15519-2
Client Matrix: Solid

Date Sampled: 07/25/2008 1505
Date Received: 08/08/2008 1800

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C	Analysis Batch: 720-39893	Instrument ID: Sat 2K2
Preparation: 3550B	Prep Batch: 720-39811	Lab File ID: c:\saturnws\lepdata\data\200
Dilution: 1.0		Initial Weight/Volume: 30.01 g
Date Analyzed: 08/14/2008 1640		Final Weight/Volume: 1 mL
Date Prepared: 08/13/2008 1223		Injection Volume:

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Naphthalene		ND	H	5.0
Acenaphthene		ND	H	5.0
Acenaphthylene		ND	H	5.0
Fluorene		ND	H	5.0
Phenanthrene		ND	H	5.0
Anthracene		ND	H	5.0
Benzo[a]anthracene		ND	H	5.0
Chrysene		ND	H	5.0
Benzo[a]pyrene		ND	H	5.0
Benzo[b]fluoranthene		ND	H	5.0
Benzo[k]fluoranthene		ND	H	5.0
Benzo[g,h,i]perylene		ND	H	5.0
Indeno[1,2,3-cd]pyrene		ND	H	5.0
Fluoranthene		ND	H	5.0
Pyrene		ND	H	5.0
Dibenz(a,h)anthracene		ND	H	5.0

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	68	33 - 93
Terphenyl-d14	81	35 - 99

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 A

Lab Sample ID: 720-15519-3
Client Matrix: Solid

Date Sampled: 07/25/2008 1510
Date Received: 08/08/2008 1800

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C	Analysis Batch: 720-39893	Instrument ID: Sat 2K2
Preparation: 3550B	Prep Batch: 720-39811	Lab File ID: c:\saturnws\lepdata\data\200
Dilution: 1.0		Initial Weight/Volume: 30.01 g
Date Analyzed: 08/14/2008 1709		Final Weight/Volume: 1 mL
Date Prepared: 08/13/2008 1223		Injection Volume:

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Naphthalene		ND	H	5.0
Acenaphthene		ND	H	5.0
Acenaphthylene		ND	H	5.0
Fluorene		ND	H	5.0
Phenanthrene		ND	H	5.0
Anthracene		ND	H	5.0
Benzo[a]anthracene		ND	H	5.0
Chrysene		ND	H	5.0
Benzo[a]pyrene		ND	H	5.0
Benzo[b]fluoranthene		ND	H	5.0
Benzo[k]fluoranthene		ND	H	5.0
Benzo[g,h,i]perylene		ND	H	5.0
Indeno[1,2,3-cd]pyrene		ND	H	5.0
Fluoranthene		ND	H	5.0
Pyrene		ND	H	5.0
Dibenz(a,h)anthracene		ND	H	5.0

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	71	33 - 93
Terphenyl-d14	86	35 - 99

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 B

Lab Sample ID: 720-15519-4
Client Matrix: Solid

Date Sampled: 07/25/2008 1515
Date Received: 08/08/2008 1800

8270C Semivolatile Organic Compounds by GC/MS (Selective Ion Monitoring)

Method: 8270C	Analysis Batch: 720-39893	Instrument ID: Sat 2K2
Preparation: 3550B	Prep Batch: 720-39811	Lab File ID: c:\saturnws\lepdata\data\200
Dilution: 1.0		Initial Weight/Volume: 30.01 g
Date Analyzed: 08/14/2008 1738		Final Weight/Volume: 1 mL
Date Prepared: 08/13/2008 1223		Injection Volume:

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Naphthalene		65	H	5.0
Acenaphthene		ND	H	5.0
Acenaphthylene		ND	H	5.0
Fluorene		ND	H	5.0
Phenanthrene		ND	H	5.0
Anthracene		ND	H	5.0
Benzo[a]anthracene		ND	H	5.0
Chrysene		ND	H	5.0
Benzo[a]pyrene		ND	H	5.0
Benzo[b]fluoranthene		ND	H	5.0
Benzo[k]fluoranthene		ND	H	5.0
Benzo[g,h,i]perylene		ND	H	5.0
Indeno[1,2,3-cd]pyrene		ND	H	5.0
Fluoranthene		ND	H	5.0
Pyrene		ND	H	5.0
Dibenz(a,h)anthracene		ND	H	5.0

Surrogate	%Rec	Acceptance Limits
2-Fluorobiphenyl	65	33 - 93
Terphenyl-d14	82	35 - 99

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 A

Lab Sample ID: 720-15519-1

Date Sampled: 07/25/2008 1500

Client Matrix: Solid

Date Received: 08/08/2008 1800

8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method: 8015B

Analysis Batch: 720-39929

Instrument ID: HP DRO5

Preparation: 3550B

Prep Batch: 720-39773

Lab File ID: N/A

Dilution: 1.0

Initial Weight/Volume: 30.09 g

Date Analyzed: 08/13/2008 1944

Final Weight/Volume: 5 mL

Date Prepared: 08/12/2008 1807

Injection Volume:

Column ID: PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		2.3	H	1.0
Surrogate		%Rec		Acceptance Limits
p-Terphenyl		90		40 - 119

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 B

Lab Sample ID: 720-15519-2

Client Matrix: Solid

Date Sampled: 07/25/2008 1505

Date Received: 08/08/2008 1800

8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:	8015B	Analysis Batch: 720-39929	Instrument ID:	HP DRO5
Preparation:	3550B	Prep Batch: 720-39773	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	30.02 g
Date Analyzed:	08/13/2008 2113		Final Weight/Volume:	5 mL
Date Prepared:	08/12/2008 1807		Injection Volume:	
			Column ID:	PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		1.2	H	1.0
Surrogate		%Rec		Acceptance Limits
p-Terphenyl		91		40 - 119

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 A

Lab Sample ID: 720-15519-3

Client Matrix: Solid

Date Sampled: 07/25/2008 1510

Date Received: 08/08/2008 1800

8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:	8015B	Analysis Batch: 720-39929	Instrument ID:	HP DRO5
Preparation:	3550B	Prep Batch: 720-39773	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	30.01 g
Date Analyzed:	08/13/2008 2143		Final Weight/Volume:	5 mL
Date Prepared:	08/12/2008 1807		Injection Volume:	
			Column ID:	PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		4.6	H	1.0
Surrogate		%Rec		Acceptance Limits
p-Terphenyl		87		40 - 119

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 B

Lab Sample ID: 720-15519-4

Date Sampled: 07/25/2008 1515

Client Matrix: Solid

Date Received: 08/08/2008 1800

8015B Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Method:	8015B	Analysis Batch: 720-39929	Instrument ID:	HP DRO5
Preparation:	3550B	Prep Batch: 720-39773	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	30.00 g
Date Analyzed:	08/13/2008 2213		Final Weight/Volume:	5 mL
Date Prepared:	08/12/2008 1807		Injection Volume:	
			Column ID:	PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Diesel Range Organics [C10-C28]		4.7	H	1.0
Surrogate		%Rec		Acceptance Limits
p-Terphenyl		85		40 - 119

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 A

Lab Sample ID: 720-15519-1
Client Matrix: Solid

Date Sampled: 07/25/2008 1500
Date Received: 08/08/2008 1800

8081A Organochlorine Pesticides by Gas Chromatography

Method:	8081A	Analysis Batch: 720-39894	Instrument ID: Varian Pest 2
Preparation:	3550B	Prep Batch: 720-39800	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 30.23 g
Date Analyzed:	08/13/2008 2341		Final Weight/Volume: 10 mL
Date Prepared:	08/13/2008 1107		Injection Volume: 1.0 uL
			Column ID: PRIMARY

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Aldrin		ND	H	2.0
Dieldrin		ND	H	2.0
Endrin aldehyde		ND	H	2.0
Endrin		ND	H	2.0
Endrin ketone		ND	H	2.0
Heptachlor		ND	H	2.0
Heptachlor epoxide		ND	H	2.0
4,4'-DDT		ND	H	2.0
4,4'-DDE		ND	H	2.0
4,4'-DDD		ND	H	2.0
Endosulfan I		ND	H	2.0
Endosulfan II		ND	H	2.0
alpha-BHC		ND	H	2.0
beta-BHC		ND	H	2.0
gamma-BHC (Lindane)		ND	H	2.0
delta-BHC		ND	H	2.0
Endosulfan sulfate		ND	H	2.0
Methoxychlor		ND	H	2.0
Toxaphene		ND	H	40
Chlordane (technical)		ND	H	40
alpha-Chlordane		ND	H	2.0
gamma-Chlordane		ND	H	2.0

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	76	62 - 114
DCB Decachlorobiphenyl	89	51 - 121

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 B

Lab Sample ID: 720-15519-2
 Client Matrix: Solid

Date Sampled: 07/25/2008 1505
 Date Received: 08/08/2008 1800

8081A Organochlorine Pesticides by Gas Chromatography

Method:	8081A	Analysis Batch: 720-39894	Instrument ID: Varian Pest 2
Preparation:	3550B	Prep Batch: 720-39800	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 30.38 g
Date Analyzed:	08/14/2008 0004		Final Weight/Volume: 10 mL
Date Prepared:	08/13/2008 1107		Injection Volume: 1.0 uL
			Column ID: PRIMARY

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Aldrin		ND	H	2.0
Dieldrin		ND	H	2.0
Endrin aldehyde		ND	H	2.0
Endrin		ND	H	2.0
Endrin ketone		ND	H	2.0
Heptachlor		ND	H	2.0
Heptachlor epoxide		ND	H	2.0
4,4'-DDT		ND	H	2.0
4,4'-DDE		ND	H	2.0
4,4'-DDD		ND	H	2.0
Endosulfan I		ND	H	2.0
Endosulfan II		ND	H	2.0
alpha-BHC		ND	H	2.0
beta-BHC		ND	H	2.0
gamma-BHC (Lindane)		ND	H	2.0
delta-BHC		ND	H	2.0
Endosulfan sulfate		ND	H	2.0
Methoxychlor		ND	H	2.0
Toxaphene		ND	H	39
Chlordane (technical)		ND	H	39
alpha-Chlordane		ND	H	2.0
gamma-Chlordane		ND	H	2.0

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	82	62 - 114
DCB Decachlorobiphenyl	92	51 - 121

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 A

Lab Sample ID: 720-15519-3
 Client Matrix: Solid

Date Sampled: 07/25/2008 1510
 Date Received: 08/08/2008 1800

8081A Organochlorine Pesticides by Gas Chromatography

Method:	8081A	Analysis Batch: 720-39894	Instrument ID: Varian Pest 2
Preparation:	3550B	Prep Batch: 720-39800	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 30.13 g
Date Analyzed:	08/14/2008 0112		Final Weight/Volume: 10 mL
Date Prepared:	08/13/2008 1107		Injection Volume: 1.0 uL
			Column ID: PRIMARY

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Aldrin		ND	H	2.0
Dieldrin		ND	H	2.0
Endrin aldehyde		ND	H	2.0
Endrin		ND	H	2.0
Endrin ketone		ND	H	2.0
Heptachlor		ND	H	2.0
Heptachlor epoxide		ND	H	2.0
4,4'-DDT		ND	H	2.0
4,4'-DDE		ND	H	2.0
4,4'-DDD		ND	H	2.0
Endosulfan I		ND	H	2.0
Endosulfan II		ND	H	2.0
alpha-BHC		ND	H	2.0
beta-BHC		ND	H	2.0
gamma-BHC (Lindane)		ND	H	2.0
delta-BHC		ND	H	2.0
Endosulfan sulfate		ND	H	2.0
Methoxychlor		ND	H	2.0
Toxaphene		ND	H	40
Chlordane (technical)		ND	H	40
alpha-Chlordane		ND	H	2.0
gamma-Chlordane		ND	H	2.0

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	80	62 - 114
DCB Decachlorobiphenyl	90	51 - 121

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 B

Lab Sample ID: 720-15519-4
 Client Matrix: Solid

Date Sampled: 07/25/2008 1515
 Date Received: 08/08/2008 1800

8081A Organochlorine Pesticides by Gas Chromatography

Method:	8081A	Analysis Batch: 720-39894	Instrument ID: Varian Pest 2
Preparation:	3550B	Prep Batch: 720-39800	Lab File ID: N/A
Dilution:	1.0		Initial Weight/Volume: 30.22 g
Date Analyzed:	08/14/2008 0135		Final Weight/Volume: 10 mL
Date Prepared:	08/13/2008 1107		Injection Volume: 1.0 uL
			Column ID: PRIMARY

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL
Aldrin		ND	H	2.0
Dieldrin		ND	H	2.0
Endrin aldehyde		ND	H	2.0
Endrin		ND	H	2.0
Endrin ketone		ND	H	2.0
Heptachlor		ND	H	2.0
Heptachlor epoxide		ND	H	2.0
4,4'-DDT		ND	H	2.0
4,4'-DDE		ND	H	2.0
4,4'-DDD		ND	H	2.0
Endosulfan I		ND	H	2.0
Endosulfan II		ND	H	2.0
alpha-BHC		ND	H	2.0
beta-BHC		ND	H	2.0
gamma-BHC (Lindane)		ND	H	2.0
delta-BHC		ND	H	2.0
Endosulfan sulfate		ND	H	2.0
Methoxychlor		ND	H	2.0
Toxaphene		ND	H	40
Chlordane (technical)		ND	H	40
alpha-Chlordane		ND	H	2.0
gamma-Chlordane		ND	H	2.0

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	82	62 - 114
DCB Decachlorobiphenyl	91	51 - 121

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 A

Lab Sample ID: 720-15519-1

Client Matrix: Solid

Date Sampled: 07/25/2008 1500

Date Received: 08/08/2008 1800

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B Analysis Batch: 720-39837 Instrument ID: Varian ICP
Preparation: 3050B Prep Batch: 720-39786 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1.02 g
Date Analyzed: 08/13/2008 1548 Final Weight/Volume: 50 mL
Date Prepared: 08/13/2008 0558

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Antimony		ND		2.0
Arsenic		1.0		0.98
Barium		66		0.98
Beryllium		ND		0.49
Cadmium		ND		0.49
Chromium		1.7		0.98
Cobalt		2.8		0.98
Copper		7.0		0.98
Lead		1.7		0.98
Molybdenum		ND		0.98
Nickel		1.4		0.98
Selenium		ND		2.0
Silver		ND		0.98
Thallium		ND		0.98
Vanadium		15		0.98
Zinc		16		0.98

7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A Analysis Batch: 720-39810 Instrument ID: FIMS 100
Preparation: 7471A Prep Batch: 720-39788 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1.00 g
Date Analyzed: 08/13/2008 1113 Final Weight/Volume: 50 mL
Date Prepared: 08/13/2008 0717

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Mercury		ND		0.050

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-01 B

Lab Sample ID: 720-15519-2
Client Matrix: Solid

Date Sampled: 07/25/2008 1505
Date Received: 08/08/2008 1800

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B Analysis Batch: 720-39837 Instrument ID: Varian ICP
Preparation: 3050B Prep Batch: 720-39786 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1.03 g
Date Analyzed: 08/13/2008 1551 Final Weight/Volume: 50 mL
Date Prepared: 08/13/2008 0558

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Antimony		ND		1.9
Arsenic		ND		0.97
Barium		65		0.97
Beryllium		ND		0.49
Cadmium		ND		0.49
Chromium		1.8		0.97
Cobalt		2.8		0.97
Copper		6.9		0.97
Lead		1.8		0.97
Molybdenum		ND		0.97
Nickel		1.4		0.97
Selenium		ND		1.9
Silver		ND		0.97
Thallium		ND		0.97
Vanadium		15		0.97
Zinc		15		0.97

7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A Analysis Batch: 720-39810 Instrument ID: FIMS 100
Preparation: 7471A Prep Batch: 720-39788 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1.05 g
Date Analyzed: 08/13/2008 1115 Final Weight/Volume: 50 mL
Date Prepared: 08/13/2008 0717

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Mercury		ND		0.048

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 A

Lab Sample ID: 720-15519-3
Client Matrix: Solid

Date Sampled: 07/25/2008 1510
Date Received: 08/08/2008 1800

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B Analysis Batch: 720-39837 Instrument ID: Varian ICP
Preparation: 3050B Prep Batch: 720-39786 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1.04 g
Date Analyzed: 08/13/2008 1555 Final Weight/Volume: 50 mL
Date Prepared: 08/13/2008 0558

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Antimony		ND		1.9
Arsenic		1.7		0.96
Barium		85		0.96
Beryllium		ND		0.48
Cadmium		ND		0.48
Chromium		6.1		0.96
Cobalt		5.2		0.96
Copper		9.2		0.96
Lead		2.1		0.96
Molybdenum		ND		0.96
Nickel		4.1		0.96
Selenium		ND		1.9
Silver		ND		0.96
Thallium		ND		0.96
Vanadium		33		0.96
Zinc		24		0.96

7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A Analysis Batch: 720-39810 Instrument ID: FIMS 100
Preparation: 7471A Prep Batch: 720-39788 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1.01 g
Date Analyzed: 08/13/2008 1116 Final Weight/Volume: 50 mL
Date Prepared: 08/13/2008 0717

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Mercury		ND		0.050

Analytical Data

Client: ERRG

Job Number: 720-15519-1

Client Sample ID: ML-GS-02 B

Lab Sample ID: 720-15519-4
Client Matrix: Solid

Date Sampled: 07/25/2008 1515
Date Received: 08/08/2008 1800

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry

Method: 6010B Analysis Batch: 720-39914 Instrument ID: Varian ICP
Preparation: 3050B Prep Batch: 720-39846 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 0.98 g
Date Analyzed: 08/14/2008 2028 Final Weight/Volume: 50 mL
Date Prepared: 08/14/2008 0644

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Antimony		ND		2.0
Arsenic		1.6		1.0
Barium		81		1.0
Beryllium		ND		0.51
Cadmium		ND		0.51
Chromium		6.2		1.0
Cobalt		4.6		1.0
Copper		9.9		1.0
Lead		2.5		1.0
Molybdenum		1.5		1.0
Nickel		3.4		1.0
Selenium		ND		2.0
Silver		ND		1.0
Thallium		ND		1.0
Vanadium		33		1.0
Zinc		20		1.0

7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Method: 7471A Analysis Batch: 720-39810 Instrument ID: FIMS 100
Preparation: 7471A Prep Batch: 720-39788 Lab File ID: N/A
Dilution: 1.0 Initial Weight/Volume: 1.03 g
Date Analyzed: 08/13/2008 1117 Final Weight/Volume: 50 mL
Date Prepared: 08/13/2008 0717

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Mercury		ND		0.049

DATA REPORTING QUALIFIERS

Client: ERRG

Job Number: 720-15519-1

Lab Section	Qualifier	Description
GC/MS VOA		
	H	Sample was prepped or analyzed beyond the specified holding time
GC/MS Semi VOA		
	F	MS or MSD exceeds the control limits
	F	RPD of the MS and MSD exceeds the control limits
	H	Sample was prepped or analyzed beyond the specified holding time
GC Semi VOA		
	H	Sample was prepped or analyzed beyond the specified holding time
Metals		
	F	MS or MSD exceeds the control limits

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Prep Batch: 720-39632					
LCS 720-39632/1-A	Lab Control Spike	T	Solid	5030B	
LCSD 720-39632/2-A	Lab Control Spike Duplicate	T	Solid	5030B	
MB 720-39632/3-A	Method Blank	T	Solid	5030B	
720-15519-1	ML-GS-01 A	T	Solid	5030B	
720-15519-1MS	Matrix Spike	T	Solid	5030B	
720-15519-1MSD	Matrix Spike Duplicate	T	Solid	5030B	
720-15519-2	ML-GS-01 B	T	Solid	5030B	
720-15519-3	ML-GS-02 A	T	Solid	5030B	
720-15519-4	ML-GS-02 B	T	Solid	5030B	
Analysis Batch:720-39770					
LCS 720-39632/1-A	Lab Control Spike	T	Solid	8260B	720-39632
LCSD 720-39632/2-A	Lab Control Spike Duplicate	T	Solid	8260B	720-39632
MB 720-39632/3-A	Method Blank	T	Solid	8260B	720-39632
720-15519-1	ML-GS-01 A	T	Solid	8260B	720-39632
720-15519-1MS	Matrix Spike	T	Solid	8260B	720-39632
720-15519-1MSD	Matrix Spike Duplicate	T	Solid	8260B	720-39632
720-15519-2	ML-GS-01 B	T	Solid	8260B	720-39632
720-15519-3	ML-GS-02 A	T	Solid	8260B	720-39632
720-15519-4	ML-GS-02 B	T	Solid	8260B	720-39632
Prep Batch: 720-39905					
LCS 720-39905/2-A	Lab Control Spike	T	Solid	5030B	
LCSD 720-39905/3-A	Lab Control Spike Duplicate	T	Solid	5030B	
MB 720-39905/1-A	Method Blank	T	Solid	5030B	
720-15519-1	ML-GS-01 A	T	Solid	5030B	
720-15519-2	ML-GS-01 B	T	Solid	5030B	
720-15519-3	ML-GS-02 A	T	Solid	5030B	
720-15519-4	ML-GS-02 B	T	Solid	5030B	
Analysis Batch:720-39907					
LCS 720-39905/2-A	Lab Control Spike	T	Solid	CA_LUFTMS	720-39905
LCSD 720-39905/3-A	Lab Control Spike Duplicate	T	Solid	CA_LUFTMS	720-39905
MB 720-39905/1-A	Method Blank	T	Solid	CA_LUFTMS	720-39905
720-15519-1	ML-GS-01 A	T	Solid	CA_LUFTMS	720-39905
720-15519-2	ML-GS-01 B	T	Solid	CA_LUFTMS	720-39905
720-15519-3	ML-GS-02 A	T	Solid	CA_LUFTMS	720-39905
720-15519-4	ML-GS-02 B	T	Solid	CA_LUFTMS	720-39905

Report Basis

T = Total

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 720-39811					
LCS 720-39811/2-A	Lab Control Spike	T	Solid	3550B	
LCSD 720-39811/3-A	Lab Control Spike Duplicate	T	Solid	3550B	
MB 720-39811/1-A	Method Blank	T	Solid	3550B	
720-15519-1	ML-GS-01 A	T	Solid	3550B	
720-15519-2	ML-GS-01 B	T	Solid	3550B	
720-15519-3	ML-GS-02 A	T	Solid	3550B	
720-15519-4	ML-GS-02 B	T	Solid	3550B	
720-15533-A-13-C MS	Matrix Spike	T	Solid	3550B	
720-15533-A-13-D MSD	Matrix Spike Duplicate	T	Solid	3550B	
Analysis Batch:720-39893					
LCS 720-39811/2-A	Lab Control Spike	T	Solid	8270C	720-39811
LCSD 720-39811/3-A	Lab Control Spike Duplicate	T	Solid	8270C	720-39811
MB 720-39811/1-A	Method Blank	T	Solid	8270C	720-39811
720-15519-1	ML-GS-01 A	T	Solid	8270C	720-39811
720-15519-2	ML-GS-01 B	T	Solid	8270C	720-39811
720-15519-3	ML-GS-02 A	T	Solid	8270C	720-39811
720-15519-4	ML-GS-02 B	T	Solid	8270C	720-39811
720-15533-A-13-C MS	Matrix Spike	T	Solid	8270C	720-39811
720-15533-A-13-D MSD	Matrix Spike Duplicate	T	Solid	8270C	720-39811

Report Basis

T = Total

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC Semi VOA					
Prep Batch: 720-39773					
LCS 720-39773/2-A	Lab Control Spike	T	Solid	3550B	
LCSD 720-39773/3-A	Lab Control Spike Duplicate	T	Solid	3550B	
MB 720-39773/1-A	Method Blank	T	Solid	3550B	
720-15519-1	ML-GS-01 A	T	Solid	3550B	
720-15519-1MS	Matrix Spike	T	Solid	3550B	
720-15519-1MSD	Matrix Spike Duplicate	T	Solid	3550B	
720-15519-2	ML-GS-01 B	T	Solid	3550B	
720-15519-3	ML-GS-02 A	T	Solid	3550B	
720-15519-4	ML-GS-02 B	T	Solid	3550B	
Prep Batch: 720-39800					
LCS 720-39800/2-A	Lab Control Spike	T	Solid	3550B	
LCSD 720-39800/3-A	Lab Control Spike Duplicate	T	Solid	3550B	
MB 720-39800/1-A	Method Blank	T	Solid	3550B	
720-15519-1	ML-GS-01 A	T	Solid	3550B	
720-15519-2	ML-GS-01 B	T	Solid	3550B	
720-15519-2MS	Matrix Spike	T	Solid	3550B	
720-15519-2MSD	Matrix Spike Duplicate	T	Solid	3550B	
720-15519-3	ML-GS-02 A	T	Solid	3550B	
720-15519-4	ML-GS-02 B	T	Solid	3550B	
Analysis Batch:720-39894					
LCS 720-39800/2-A	Lab Control Spike	T	Solid	8081A	720-39800
LCSD 720-39800/3-A	Lab Control Spike Duplicate	T	Solid	8081A	720-39800
MB 720-39800/1-A	Method Blank	T	Solid	8081A	720-39800
720-15519-1	ML-GS-01 A	T	Solid	8081A	720-39800
720-15519-2	ML-GS-01 B	T	Solid	8081A	720-39800
720-15519-2MS	Matrix Spike	T	Solid	8081A	720-39800
720-15519-2MSD	Matrix Spike Duplicate	T	Solid	8081A	720-39800
720-15519-3	ML-GS-02 A	T	Solid	8081A	720-39800
720-15519-4	ML-GS-02 B	T	Solid	8081A	720-39800
Analysis Batch:720-39929					
LCS 720-39773/2-A	Lab Control Spike	T	Solid	8015B	720-39773
LCSD 720-39773/3-A	Lab Control Spike Duplicate	T	Solid	8015B	720-39773
MB 720-39773/1-A	Method Blank	T	Solid	8015B	720-39773
720-15519-1	ML-GS-01 A	T	Solid	8015B	720-39773
720-15519-1MS	Matrix Spike	T	Solid	8015B	720-39773
720-15519-1MSD	Matrix Spike Duplicate	T	Solid	8015B	720-39773
720-15519-2	ML-GS-01 B	T	Solid	8015B	720-39773
720-15519-3	ML-GS-02 A	T	Solid	8015B	720-39773
720-15519-4	ML-GS-02 B	T	Solid	8015B	720-39773

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
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Report Basis

T = Total

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 720-39786					
LCS 720-39786/2-A	Lab Control Spike	T	Solid	3050B	
LCSD 720-39786/3-A	Lab Control Spike Duplicate	T	Solid	3050B	
LCSSRM 720-39786/25-A	LCS-Standard Reference Material	T	Solid	3050B	
MB 720-39786/1-A	Method Blank	T	Solid	3050B	
720-15519-1	ML-GS-01 A	T	Solid	3050B	
720-15519-2	ML-GS-01 B	T	Solid	3050B	
720-15519-3	ML-GS-02 A	T	Solid	3050B	
720-15532-A-7-F MS	Matrix Spike	T	Solid	3050B	
720-15532-A-7-G MSD	Matrix Spike Duplicate	T	Solid	3050B	
Prep Batch: 720-39788					
LCS 720-39788/2-A	Lab Control Spike	T	Solid	7471A	
LCSD 720-39788/3-A	Lab Control Spike Duplicate	T	Solid	7471A	
MB 720-39788/1-A	Method Blank	T	Solid	7471A	
720-15519-1	ML-GS-01 A	T	Solid	7471A	
720-15519-2	ML-GS-01 B	T	Solid	7471A	
720-15519-3	ML-GS-02 A	T	Solid	7471A	
720-15519-4	ML-GS-02 B	T	Solid	7471A	
720-15532-A-7-K MS	Matrix Spike	T	Solid	7471A	
720-15532-A-7-I MSD	Matrix Spike Duplicate	T	Solid	7471A	
Analysis Batch:720-39810					
LCS 720-39788/2-A	Lab Control Spike	T	Solid	7471A	720-39788
LCSD 720-39788/3-A	Lab Control Spike Duplicate	T	Solid	7471A	720-39788
MB 720-39788/1-A	Method Blank	T	Solid	7471A	720-39788
720-15519-1	ML-GS-01 A	T	Solid	7471A	720-39788
720-15519-2	ML-GS-01 B	T	Solid	7471A	720-39788
720-15519-3	ML-GS-02 A	T	Solid	7471A	720-39788
720-15519-4	ML-GS-02 B	T	Solid	7471A	720-39788
720-15532-A-7-K MS	Matrix Spike	T	Solid	7471A	720-39788
720-15532-A-7-I MSD	Matrix Spike Duplicate	T	Solid	7471A	720-39788
Analysis Batch:720-39837					
LCS 720-39786/2-A	Lab Control Spike	T	Solid	6010B	720-39786
LCSD 720-39786/3-A	Lab Control Spike Duplicate	T	Solid	6010B	720-39786
LCSSRM 720-39786/25-A	LCS-Standard Reference Material	T	Solid	6010B	720-39786
MB 720-39786/1-A	Method Blank	T	Solid	6010B	720-39786
720-15519-1	ML-GS-01 A	T	Solid	6010B	720-39786
720-15519-2	ML-GS-01 B	T	Solid	6010B	720-39786
720-15519-3	ML-GS-02 A	T	Solid	6010B	720-39786
720-15532-A-7-F MS	Matrix Spike	T	Solid	6010B	720-39786
720-15532-A-7-G MSD	Matrix Spike Duplicate	T	Solid	6010B	720-39786

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 720-39846					
LCS 720-39846/2-A	Lab Control Spike	T	Solid	3050B	
LCSD 720-39846/3-A	Lab Control Spike Duplicate	T	Solid	3050B	
LCSSRM 720-39846/25-A	LCS-Standard Reference Material	T	Solid	3050B	
MB 720-39846/1-A	Method Blank	T	Solid	3050B	
720-15519-4	ML-GS-02 B	T	Solid	3050B	
720-15519-4MS	Matrix Spike	T	Solid	3050B	
720-15519-4MSD	Matrix Spike Duplicate	T	Solid	3050B	
Analysis Batch:720-39914					
LCS 720-39846/2-A	Lab Control Spike	T	Solid	6010B	720-39846
LCSD 720-39846/3-A	Lab Control Spike Duplicate	T	Solid	6010B	720-39846
LCSSRM 720-39846/25-A	LCS-Standard Reference Material	T	Solid	6010B	720-39846
MB 720-39846/1-A	Method Blank	T	Solid	6010B	720-39846
720-15519-4	ML-GS-02 B	T	Solid	6010B	720-39846
720-15519-4MS	Matrix Spike	T	Solid	6010B	720-39846
720-15519-4MSD	Matrix Spike Duplicate	T	Solid	6010B	720-39846

Report Basis

T = Total

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

Method Blank - Batch: 720-39632

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 720-39632/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/11/2008 1350
Date Prepared: 08/11/2008 1200

Analysis Batch: 720-39770
Prep Batch: 720-39632
Units: ug/Kg

Instrument ID: Agilent 75MSD
Lab File ID: 081108007.D
Initial Weight/Volume: 5 g
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Methyl tert-butyl ether	ND		5.0
Acetone	ND		50
Benzene	ND		5.0
Dichlorobromomethane	ND		5.0
Bromobenzene	ND		5.0
Chlorobromomethane	ND		20
Bromoform	ND		5.0
Bromomethane	ND		10
2-Butanone (MEK)	ND		50
n-Butylbenzene	ND		5.0
sec-Butylbenzene	ND		5.0
tert-Butylbenzene	ND		5.0
Carbon disulfide	ND		5.0
Carbon tetrachloride	ND		5.0
Chlorobenzene	ND		5.0
Chloroethane	ND		10
Chloroform	ND		5.0
Chloromethane	ND		10
2-Chlorotoluene	ND		5.0
4-Chlorotoluene	ND		5.0
Chlorodibromomethane	ND		5.0
1,2-Dichlorobenzene	ND		5.0
1,3-Dichlorobenzene	ND		5.0
1,4-Dichlorobenzene	ND		5.0
1,3-Dichloropropane	ND		5.0
1,1-Dichloropropene	ND		5.0
1,2-Dibromo-3-Chloropropane	ND		50
Ethylene Dibromide	ND		5.0
Dibromomethane	ND		10
Dichlorodifluoromethane	ND		10
1,1-Dichloroethane	ND		5.0
1,2-Dichloroethane	ND		5.0
1,1-Dichloroethene	ND		5.0
cis-1,2-Dichloroethene	ND		5.0
trans-1,2-Dichloroethene	ND		5.0
1,2-Dichloropropane	ND		5.0
cis-1,3-Dichloropropene	ND		5.0
trans-1,3-Dichloropropene	ND		5.0
Ethylbenzene	ND		5.0
Hexachlorobutadiene	ND		5.0
2-Hexanone	ND		50

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

Method Blank - Batch: 720-39632

**Method: 8260B
Preparation: 5030B**

Lab Sample ID: MB 720-39632/3-A
 Client Matrix: Solid
 Dilution: 1.0
 Date Analyzed: 08/11/2008 1350
 Date Prepared: 08/11/2008 1200

Analysis Batch: 720-39770
 Prep Batch: 720-39632
 Units: ug/Kg

Instrument ID: Agilent 75MSD
 Lab File ID: 081108007.D
 Initial Weight/Volume: 5 g
 Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Isopropylbenzene	ND		5.0
4-Isopropyltoluene	ND		5.0
Methylene Chloride	ND		10
4-Methyl-2-pentanone (MIBK)	ND		50
Naphthalene	ND		10
N-Propylbenzene	ND		5.0
Styrene	ND		5.0
1,1,1,2-Tetrachloroethane	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
Tetrachloroethene	ND		5.0
Toluene	ND		5.0
1,2,3-Trichlorobenzene	ND		5.0
1,2,4-Trichlorobenzene	ND		5.0
1,1,1-Trichloroethane	ND		5.0
1,1,2-Trichloroethane	ND		5.0
Trichloroethene	ND		5.0
Trichlorofluoromethane	ND		5.0
1,2,3-Trichloropropane	ND		5.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0
1,2,4-Trimethylbenzene	ND		5.0
1,3,5-Trimethylbenzene	ND		5.0
Vinyl acetate	ND		50
Vinyl chloride	ND		5.0
Xylenes, Total	ND		10
2,2-Dichloropropane	ND		5.0
Surrogate	% Rec	Acceptance Limits	
4-Bromofluorobenzene	82	65 - 130	
1,2-Dichloroethane-d4 (Surr)	93	80 - 120	
Toluene-d8 (Surr)	90	66 - 123	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

**Lab Control Spike/
Lab Control Spike Duplicate Recovery Report - Batch: 720-39632**

**Method: 8260B
Preparation: 5030B**

LCS Lab Sample ID: LCS 720-39632/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/11/2008 1259
Date Prepared: 08/11/2008 1200

Analysis Batch: 720-39770
Prep Batch: 720-39632
Units: ug/Kg

Instrument ID: Agilent 75MSD
Lab File ID: 081108005.D
Initial Weight/Volume: 5 g
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 720-39632/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/11/2008 1324
Date Prepared: 08/11/2008 1200

Analysis Batch: 720-39770
Prep Batch: 720-39632
Units: ug/Kg

Instrument ID: Agilent 75MSD
Lab File ID: 081108006.D
Initial Weight/Volume: 5 g
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	85	88	80 - 109	4	20		
Chlorobenzene	86	90	81 - 114	5	20		
1,1-Dichloroethene	75	77	66 - 131	3	20		
Toluene	88	91	79 - 110	3	20		
Trichloroethene	84	87	75 - 114	4	20		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
4-Bromofluorobenzene	81		81		65 - 130		
1,2-Dichloroethane-d4 (Surr)	90		90		80 - 120		
Toluene-d8 (Surr)	88		87		66 - 123		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-39632**

**Method: 8260B
Preparation: 5030B**

MS Lab Sample ID: 720-15519-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/11/2008 1440
Date Prepared: 08/11/2008 1200

Analysis Batch: 720-39770
Prep Batch: 720-39632

Instrument ID: Agilent 75MSD
Lab File ID: 081108009.D
Initial Weight/Volume: 5.13 g
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 720-15519-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/11/2008 1506
Date Prepared: 08/11/2008 1200

Analysis Batch: 720-39770
Prep Batch: 720-39632

Instrument ID: Agilent 75MSD
Lab File ID: 081108010.D
Initial Weight/Volume: 5.19 g
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Benzene	92	88	73 - 116	6	20		
Chlorobenzene	91	88	70 - 118	4	20		
1,1-Dichloroethene	80	76	68 - 138	6	20		
Toluene	94	91	68 - 117	5	20		
Trichloroethene	92	88	60 - 126	5	20		
Surrogate	MS % Rec		MSD % Rec		Acceptance Limits		
4-Bromofluorobenzene	85		80		65 - 130		
1,2-Dichloroethane-d4 (Surr)	93		87		80 - 120		
Toluene-d8 (Surr)	94		87		66 - 123		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

Method Blank - Batch: 720-39905

**Method: CA_LUFTMS
Preparation: 5030B**

Lab Sample ID: MB 720-39905/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/08/2008 2101
Date Prepared: 08/08/2008 2100

Analysis Batch: 720-39907
Prep Batch: 720-39905
Units: mg/Kg

Instrument ID: Varian 3900A
Lab File ID: c:\saturmws\data\200808\08
Initial Weight/Volume: 5.00 g
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Gasoline Range Organics (GRO)-C5-C12	ND		0.25
Surrogate	% Rec		Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		54 - 134
Toluene-d8 (Surr)	96		74 - 118

**Lab Control Spike/
Lab Control Spike Duplicate Recovery Report - Batch: 720-39905**

**Method: CA_LUFTMS
Preparation: 5030B**

LCS Lab Sample ID: LCS 720-39905/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/08/2008 2124
Date Prepared: 08/08/2008 2100

Analysis Batch: 720-39907
Prep Batch: 720-39905
Units: mg/Kg

Instrument ID: Varian 3900A
Lab File ID: c:\saturmws\data\200808\08
Initial Weight/Volume: 5.00 g
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 720-39905/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/08/2008 2147
Date Prepared: 08/08/2008 2100

Analysis Batch: 720-39907
Prep Batch: 720-39905
Units: mg/Kg

Instrument ID: Varian 3900A
Lab File ID: c:\saturmws\data\200808\08
Initial Weight/Volume: 5.00 g
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Gasoline Range Organics (GRO)-C5-C12	73	76	51 - 97	5	20		
Surrogate		LCS % Rec					Acceptance Limits
1,2-Dichloroethane-d4 (Surr)		111	93			54 - 134	
Toluene-d8 (Surr)		97	98			74 - 118	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

Method Blank - Batch: 720-39811

**Method: 8270C
Preparation: 3550B**

Lab Sample ID: MB 720-39811/1-A
 Client Matrix: Solid
 Dilution: 1.0
 Date Analyzed: 08/14/2008 1542
 Date Prepared: 08/13/2008 1223

Analysis Batch: 720-39893
 Prep Batch: 720-39811
 Units: ug/Kg

Instrument ID: Sat 2K2
 Lab File ID: c:\saturnws\lepdata\data\20
 Initial Weight/Volume: 30.05 g
 Final Weight/Volume: 1 mL
 Injection Volume:

Analyte	Result	Qual	RL
Naphthalene	ND		5.0
Acenaphthene	ND		5.0
Acenaphthylene	ND		5.0
Fluorene	ND		5.0
Phenanthrene	ND		5.0
Anthracene	ND		5.0
Benzo[a]anthracene	ND		5.0
Chrysene	ND		5.0
Benzo[a]pyrene	ND		5.0
Benzo[b]fluoranthene	ND		5.0
Benzo[k]fluoranthene	ND		5.0
Benzo[g,h,i]perylene	ND		5.0
Indeno[1,2,3-cd]pyrene	ND		5.0
Fluoranthene	ND		5.0
Pyrene	ND		5.0
Dibenz(a,h)anthracene	ND		5.0
Surrogate	% Rec		Acceptance Limits
2-Fluorobiphenyl	71		33 - 93
Terphenyl-d14	87		35 - 99

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

**Lab Control Spike/
Lab Control Spike Duplicate Recovery Report - Batch: 720-39811**

**Method: 8270C
Preparation: 3550B**

LCS Lab Sample ID: LCS 720-39811/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/14/2008 1444
Date Prepared: 08/13/2008 1223

Analysis Batch: 720-39893
Prep Batch: 720-39811
Units: ug/Kg

Instrument ID: Sat 2K2
Lab File ID: c:\satumwslpdata\data\20
Initial Weight/Volume: 30.00 g
Final Weight/Volume: 1 mL
Injection Volume:

LCSD Lab Sample ID: LCSD 720-39811/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/14/2008 1513
Date Prepared: 08/13/2008 1223

Analysis Batch: 720-39893
Prep Batch: 720-39811
Units: ug/Kg

Instrument ID: Sat 2K2
Lab File ID: c:\satumwslpdata\data\200
Initial Weight/Volume: 30.01 g
Final Weight/Volume: 1 mL
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Naphthalene	71	76	46 - 85	7	20		
Acenaphthene	71	77	49 - 88	9	20		
Acenaphthylene	73	78	52 - 89	6	20		
Fluorene	75	80	52 - 92	7	20		
Phenanthrene	75	78	53 - 88	3	20		
Anthracene	76	79	52 - 87	3	20		
Benzo[a]anthracene	78	79	52 - 96	1	20		
Chrysene	92	96	54 - 96	4	20		
Benzo[a]pyrene	81	84	54 - 96	4	20		
Benzo[b]fluoranthene	86	90	51 - 105	4	20		
Benzo[k]fluoranthene	92	94	56 - 101	3	20		
Benzo[g,h,i]perylene	86	93	48 - 101	8	20		
Indeno[1,2,3-cd]pyrene	89	96	48 - 105	8	20		
Fluoranthene	78	81	57 - 95	4	20		
Pyrene	85	84	53 - 95	2	20		
Dibenz(a,h)anthracene	90	97	50 - 104	8	20		
Surrogate	LCS % Rec		LCSD % Rec	Acceptance Limits			
2-Fluorobiphenyl	73		78	33 - 93			
Terphenyl-d14	87		89	35 - 99			

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-39811**

**Method: 8270C
Preparation: 3550B**

MS Lab Sample ID: 720-15533-A-13-C MS Analysis Batch: 720-39893
Client Matrix: Solid Prep Batch: 720-39811
Dilution: 5.0
Date Analyzed: 08/14/2008 2157
Date Prepared: 08/13/2008 1223

Instrument ID: Sat 2K2
Lab File ID: c:\saturnws\lepdata\data\2
Initial Weight/Volume: 30.05 g
Final Weight/Volume: 1 mL
Injection Volume:

MSD Lab Sample ID: 720-15533-A-13-D MSD Analysis Batch: 720-39893
Client Matrix: Solid Prep Batch: 720-39811
Dilution: 5.0
Date Analyzed: 08/14/2008 2226
Date Prepared: 08/13/2008 1223

Instrument ID: Sat 2K2
Lab File ID: c:\saturnws\lepdata\data\20
Initial Weight/Volume: 30.01 g
Final Weight/Volume: 1 mL
Injection Volume:

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Naphthalene	62	143	32 - 88	75	20		F
Acenaphthene	62	69	33 - 97	10	20		
Acenaphthylene	65	54	28 - 104	14	20		
Fluorene	56	49	35 - 99	8	20		
Phenanthrene	46	-45	28 - 103	62	20		F
Anthracene	60	39	36 - 99	23	20		F
Benzo[a]anthracene	57	23	29 - 115	27	20		F
Chrysene	72	38	29 - 116	23	20		F
Benzo[a]pyrene	65	30	24 - 118	26	20		F
Benzo[b]fluoranthene	64	24	17 - 132	29	20		F
Benzo[k]fluoranthene	67	55	35 - 109	11	20		
Benzo[g,h,i]perylene	84	58	21 - 118	20	20		
Indeno[1,2,3-cd]pyrene	79	58	20 - 126	19	20		
Fluoranthene	67	-18	24 - 120	47	20		F
Pyrene	73	-24	24 - 123	47	20		F
Dibenz(a,h)anthracene	73	60	36 - 104	16	20		
Surrogate		MS % Rec	MSD % Rec			Acceptance Limits	
2-Fluorobiphenyl		63	64			33 - 93	
Terphenyl-d14		73	72			35 - 99	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

Method Blank - Batch: 720-39773

Lab Sample ID: MB 720-39773/1-A
 Client Matrix: Solid
 Dilution: 1.0
 Date Analyzed: 08/15/2008 0952
 Date Prepared: 08/12/2008 1807

Analysis Batch: 720-39929
 Prep Batch: 720-39773
 Units: mg/Kg

**Method: 8015B
 Preparation: 3550B**

Instrument ID: HP DRO5
 Lab File ID: N/A
 Initial Weight/Volume: 30.03 g
 Final Weight/Volume: 5 mL
 Injection Volume:
 Column ID: PRIMARY

Analyte	Result	Qual	RL
Diesel Range Organics [C10-C28]	ND		1.0
Surrogate	% Rec		Acceptance Limits
p-Terphenyl	79		40 - 119

**Lab Control Spike/
 Lab Control Spike Duplicate Recovery Report - Batch: 720-39773**

LCS Lab Sample ID: LCS 720-39773/2-A
 Client Matrix: Solid
 Dilution: 1.0
 Date Analyzed: 08/14/2008 0539
 Date Prepared: 08/12/2008 1807

Analysis Batch: 720-39929
 Prep Batch: 720-39773
 Units: mg/Kg

**Method: 8015B
 Preparation: 3550B**

Instrument ID: HP DRO5
 Lab File ID: N/A
 Initial Weight/Volume: 30.05 g
 Final Weight/Volume: 5 mL
 Injection Volume:
 Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 720-39773/3-A
 Client Matrix: Solid
 Dilution: 1.0
 Date Analyzed: 08/14/2008 0609
 Date Prepared: 08/12/2008 1807

Analysis Batch: 720-39929
 Prep Batch: 720-39773
 Units: mg/Kg

Instrument ID: HP DRO5
 Lab File ID: N/A
 Initial Weight/Volume: 30.01 g
 Final Weight/Volume: 5 mL
 Injection Volume:
 Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Diesel Range Organics [C10-C28]	95	91	50 - 130	4	30		
Surrogate		LCS % Rec	LCSD % Rec			Acceptance Limits	
p-Terphenyl		89	86			40 - 119	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-39773**

**Method: 8015B
Preparation: 3550B**

MS Lab Sample ID: 720-15519-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/13/2008 2014
Date Prepared: 08/12/2008 1807

Analysis Batch: 720-39929
Prep Batch: 720-39773

Instrument ID: HP DRO5
Lab File ID: N/A
Initial Weight/Volume: 30.00 g
Final Weight/Volume: 5 mL
Injection Volume:
Column ID: PRIMARY

MSD Lab Sample ID: 720-15519-1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/13/2008 2043
Date Prepared: 08/12/2008 1807

Analysis Batch: 720-39929
Prep Batch: 720-39773

Instrument ID: HP DRO5
Lab File ID: N/A
Initial Weight/Volume: 30.03 g
Final Weight/Volume: 5 mL
Injection Volume:
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Diesel Range Organics [C10-C28]	83	87	50 - 130	4	30		
Surrogate		MS % Rec	MSD % Rec			Acceptance Limits	
p-Terphenyl		84	87			40 - 119	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

Method Blank - Batch: 720-39800

Method: 8081A
Preparation: 3550B

Lab Sample ID: MB 720-39800/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/13/2008 2232
Date Prepared: 08/13/2008 1107

Analysis Batch: 720-39894
Prep Batch: 720-39800
Units: ug/Kg

Instrument ID: Varian Pest 2
Lab File ID: N/A
Initial Weight/Volume: 30.03 g
Final Weight/Volume: 10 mL
Injection Volume: 1.0 uL
Column ID: PRIMARY

Analyte	Result	Qual	RL
Aldrin	ND		2.0
Dieldrin	ND		2.0
Endrin aldehyde	ND		2.0
Endrin	ND		2.0
Endrin ketone	ND		2.0
Heptachlor	ND		2.0
Heptachlor epoxide	ND		2.0
4,4'-DDT	ND		2.0
4,4'-DDE	ND		2.0
4,4'-DDD	ND		2.0
Endosulfan I	ND		2.0
Endosulfan II	ND		2.0
alpha-BHC	ND		2.0
beta-BHC	ND		2.0
gamma-BHC (Lindane)	ND		2.0
delta-BHC	ND		2.0
Endosulfan sulfate	ND		2.0
Methoxychlor	ND		2.0
Toxaphene	ND		40
Chlordane (technical)	ND		40
alpha-Chlordane	ND		2.0
gamma-Chlordane	ND		2.0
Surrogate	% Rec		Acceptance Limits
Tetrachloro-m-xylene	79		62 - 114
DCB Decachlorobiphenyl	92		51 - 121

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

**Lab Control Spike/
Lab Control Spike Duplicate Recovery Report - Batch: 720-39800**

**Method: 8081A
Preparation: 3550B**

LCS Lab Sample ID: LCS 720-39800/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/13/2008 2255
Date Prepared: 08/13/2008 1107

Analysis Batch: 720-39894
Prep Batch: 720-39800
Units: ug/Kg

Instrument ID: Varian Pest 2
Lab File ID: N/A
Initial Weight/Volume: 30.04 g
Final Weight/Volume: 10 mL
Injection Volume: 1.0 uL
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 720-39800/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/13/2008 2318
Date Prepared: 08/13/2008 1107

Analysis Batch: 720-39894
Prep Batch: 720-39800
Units: ug/Kg

Instrument ID: Varian Pest 2
Lab File ID: N/A
Initial Weight/Volume: 30.27 g
Final Weight/Volume: 10 mL
Injection Volume: 1.0 uL
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Aldrin	93	88	63 - 109	7	20		
Dieldrin	94	86	64 - 114	9	20		
Endrin	98	89	62 - 113	10	20		
Heptachlor	95	88	64 - 112	8	20		
4,4'-DDT	93	85	60 - 114	10	20		
gamma-BHC (Lindane)	94	87	64 - 109	9	20		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Tetrachloro-m-xylene	86		80		62 - 114		
DCB Decachlorobiphenyl	98		91		51 - 121		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-39800**

**Method: 8081A
Preparation: 3550B**

MS Lab Sample ID: 720-15519-2
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/14/2008 0027
Date Prepared: 08/13/2008 1107

Analysis Batch: 720-39894
Prep Batch: 720-39800

Instrument ID: Varian Pest 2
Lab File ID: N/A
Initial Weight/Volume: 30.14 g
Final Weight/Volume: 10 mL
Injection Volume: 1.0 uL
Column ID: PRIMARY

MSD Lab Sample ID: 720-15519-2
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/14/2008 0050
Date Prepared: 08/13/2008 1107

Analysis Batch: 720-39894
Prep Batch: 720-39800

Instrument ID: Varian Pest 2
Lab File ID: N/A
Initial Weight/Volume: 30.08 g
Final Weight/Volume: 10 mL
Injection Volume: 1.0 uL
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Aldrin	89	94	53 - 114	6	20		
Dieldrin	89	94	46 - 130	6	20		
Endrin	96	102	32 - 143	6	20		
Heptachlor	90	95	52 - 116	5	20		
4,4'-DDT	91	96	17 - 144	5	20		
gamma-BHC (Lindane)	89	93	60 - 106	5	20		
Surrogate		MS % Rec	MSD % Rec			Acceptance Limits	
Tetrachloro-m-xylene		82	87			62 - 114	
DCB Decachlorobiphenyl		94	99			51 - 121	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

Method Blank - Batch: 720-39786

Lab Sample ID: MB 720-39786/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/13/2008 1400
Date Prepared: 08/13/2008 0558

Analysis Batch: 720-39837
Prep Batch: 720-39786
Units: mg/Kg

Method: 6010B Preparation: 3050B

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Antimony	ND		2.0
Arsenic	ND		1.0
Barium	ND		1.0
Beryllium	ND		0.50
Cadmium	ND		0.50
Chromium	ND		1.0
Cobalt	ND		1.0
Copper	ND		1.0
Lead	ND		1.0
Molybdenum	ND		1.0
Nickel	ND		1.0
Selenium	ND		2.0
Silver	ND		1.0
Thallium	ND		1.0
Vanadium	ND		1.0
Zinc	ND		1.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

LCS-Standard Reference Material - Batch: 720-39786

Method: 6010B

Preparation: 3050B

Lab Sample ID: LCSSRM 720-39786/25-A

Analysis Batch: 720-39837

Instrument ID: Varian ICP

Client Matrix: Solid

Prep Batch: 720-39786

Lab File ID: N/A

Dilution: 1.0

Units: mg/Kg

Initial Weight/Volume: 1.02 g

Date Analyzed: 08/13/2008 1559

Final Weight/Volume: 50 mL

Date Prepared: 08/13/2008 0558

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	27.4	7.12	26	11 - 101	
Arsenic	22.7	20.0	88	69 - 119	
Barium	145	130	89	61 - 117	
Beryllium	1.09	0.961	88	56 - 102	
Cadmium	42.2	37.5	89	67 - 118	
Chromium	246	224	91	67 - 121	
Cobalt	65.1	60.2	93	64 - 133	
Copper	58.5	54.9	94	68 - 126	
Lead	44.1	37.5	85	62 - 113	
Molybdenum	61.0	52.2	86	62 - 128	
Nickel	96.8	85.1	88	65 - 117	
Selenium	165	153	93	63 - 126	
Silver	79.5	63.9	80	51 - 130	
Thallium	55.9	48.8	87	64 - 124	
Vanadium	56.7	52.0	92	67 - 123	
Zinc	44.0	36.2	82	62 - 110	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

**Lab Control Spike/
Lab Control Spike Duplicate Recovery Report - Batch: 720-39786**

**Method: 6010B
Preparation: 3050B**

LCS Lab Sample ID: LCS 720-39786/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/13/2008 1403
Date Prepared: 08/13/2008 0558

Analysis Batch: 720-39837
Prep Batch: 720-39786
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 720-39786/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/13/2008 1407
Date Prepared: 08/13/2008 0558

Analysis Batch: 720-39837
Prep Batch: 720-39786
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Antimony	91	93	80 - 120	3	20		
Arsenic	97	97	80 - 120	0	20		
Barium	94	94	80 - 120	0	20		
Beryllium	97	97	80 - 120	0	20		
Cadmium	94	94	80 - 120	0	20		
Chromium	98	98	80 - 120	0	20		
Cobalt	95	95	80 - 120	0	20		
Copper	100	100	80 - 120	0	20		
Lead	93	93	80 - 120	0	20		
Molybdenum	100	100	80 - 120	0	20		
Nickel	95	94	80 - 120	0	20		
Selenium	101	101	80 - 120	0	20		
Silver	98	98	80 - 120	0	20		
Thallium	91	91	80 - 120	0	20		
Vanadium	97	97	80 - 120	0	20		
Zinc	92	92	80 - 120	0	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-39786**

**Method: 6010B
Preparation: 3050B**

MS Lab Sample ID: 720-15532-A-7-F MS Analysis Batch: 720-39837
 Client Matrix: Solid Prep Batch: 720-39786
 Dilution: 1.0
 Date Analyzed: 08/13/2008 1411
 Date Prepared: 08/13/2008 0558

Instrument ID: Varian ICP
 Lab File ID: N/A
 Initial Weight/Volume: 0.99 g
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 720-15532-A-7-G MSD Analysis Batch: 720-39837
 Client Matrix: Solid Prep Batch: 720-39786
 Dilution: 1.0
 Date Analyzed: 08/13/2008 1415
 Date Prepared: 08/13/2008 0558

Instrument ID: Varian ICP
 Lab File ID: N/A
 Initial Weight/Volume: 1.02 g
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Antimony	24	26	75 - 125	2	20	F	F
Arsenic	74	76	75 - 125	0	20	F	
Barium	73	69	75 - 125	5	20	F	F
Beryllium	73	77	75 - 125	2	20	F	
Cadmium	68	71	75 - 125	1	20	F	F
Chromium	76	79	75 - 125	1	20		
Cobalt	70	73	75 - 125	2	20	F	F
Copper	85	90	75 - 125	1	20		
Lead	68	70	75 - 125	0	20	F	F
Molybdenum	71	73	75 - 125	1	20	F	F
Nickel	69	88	75 - 125	17	20	F	
Selenium	75	78	75 - 125	1	20		
Silver	78	82	75 - 125	2	20		
Thallium	65	68	75 - 125	1	20	F	F
Vanadium	80	78	75 - 125	5	20		
Zinc	70	79	75 - 125	7	20	F	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

Method Blank - Batch: 720-39846

Method: 6010B Preparation: 3050B

Lab Sample ID: MB 720-39846/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/14/2008 2011
Date Prepared: 08/14/2008 0644

Analysis Batch: 720-39914
Prep Batch: 720-39846
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Antimony	ND		2.0
Arsenic	ND		1.0
Barium	ND		1.0
Beryllium	ND		0.50
Cadmium	ND		0.50
Chromium	ND		1.0
Cobalt	ND		1.0
Copper	ND		1.0
Lead	ND		1.0
Molybdenum	ND		1.0
Nickel	ND		1.0
Selenium	ND		2.0
Silver	ND		1.0
Thallium	ND		1.0
Vanadium	ND		1.0
Zinc	ND		1.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

LCS-Standard Reference Material - Batch: 720-39846

Method: 6010B

Preparation: 3050B

Lab Sample ID: LCSSRM 720-39846/25-A

Analysis Batch: 720-39914

Instrument ID: Varian ICP

Client Matrix: Solid

Prep Batch: 720-39846

Lab File ID: N/A

Dilution: 1.0

Units: mg/Kg

Initial Weight/Volume: 1.01 g

Date Analyzed: 08/14/2008 2146

Final Weight/Volume: 50 mL

Date Prepared: 08/14/2008 0644

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	27.4	15.2	55	11 - 101	
Arsenic	22.7	20.5	91	69 - 119	
Barium	145	126	87	61 - 117	
Beryllium	1.09	0.955	88	56 - 102	
Cadmium	42.2	37.2	88	67 - 118	
Chromium	246	224	91	67 - 121	
Cobalt	65.1	61.7	95	64 - 133	
Copper	58.5	56.2	96	68 - 126	
Lead	44.1	37.6	85	62 - 113	
Molybdenum	61.0	54.5	89	62 - 128	
Nickel	96.8	86.1	89	65 - 117	
Selenium	165	147	89	63 - 126	
Silver	79.5	60.8	77	51 - 130	
Thallium	55.9	51.7	93	64 - 124	
Vanadium	56.7	52.6	93	67 - 123	
Zinc	44.0	36.1	82	62 - 110	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

**Lab Control Spike/
Lab Control Spike Duplicate Recovery Report - Batch: 720-39846**

**Method: 6010B
Preparation: 3050B**

LCS Lab Sample ID: LCS 720-39846/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/14/2008 2014
Date Prepared: 08/14/2008 0644

Analysis Batch: 720-39914
Prep Batch: 720-39846
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 720-39846/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/14/2008 2018
Date Prepared: 08/14/2008 0644

Analysis Batch: 720-39914
Prep Batch: 720-39846
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Antimony	94	97	80 - 120	3	20		
Arsenic	96	98	80 - 120	2	20		
Barium	92	94	80 - 120	2	20		
Beryllium	96	98	80 - 120	2	20		
Cadmium	93	95	80 - 120	2	20		
Chromium	96	98	80 - 120	2	20		
Cobalt	95	96	80 - 120	2	20		
Copper	98	100	80 - 120	2	20		
Lead	93	95	80 - 120	2	20		
Molybdenum	98	100	80 - 120	2	20		
Nickel	94	95	80 - 120	2	20		
Selenium	96	97	80 - 120	2	20		
Silver	96	98	80 - 120	2	20		
Thallium	94	96	80 - 120	2	20		
Vanadium	97	99	80 - 120	2	20		
Zinc	91	93	80 - 120	2	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-39846**

**Method: 6010B
Preparation: 3050B**

MS Lab Sample ID: 720-15519-4
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/14/2008 2021
Date Prepared: 08/14/2008 0644

Analysis Batch: 720-39914
Prep Batch: 720-39846

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 0.99 g
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 720-15519-4
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/14/2008 2025
Date Prepared: 08/14/2008 0644

Analysis Batch: 720-39914
Prep Batch: 720-39846

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 0.97 g
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Antimony	40	39	75 - 125	0	20	F	F
Arsenic	91	88	75 - 125	1	20		
Barium	83	82	75 - 125	0	20		
Beryllium	93	91	75 - 125	1	20		
Cadmium	87	84	75 - 125	1	20		
Chromium	91	89	75 - 125	0	20		
Cobalt	88	86	75 - 125	1	20		
Copper	95	92	75 - 125	0	20		
Lead	87	85	75 - 125	1	20		
Molybdenum	90	88	75 - 125	0	20		
Nickel	87	85	75 - 125	1	20		
Selenium	91	88	75 - 125	0	20		
Silver	94	92	75 - 125	1	20		
Thallium	87	85	75 - 125	1	20		
Vanadium	91	90	75 - 125	1	20		
Zinc	86	84	75 - 125	0	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

Method Blank - Batch: 720-39788

Method: 7471A
Preparation: 7471A

Lab Sample ID: MB 720-39788/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/13/2008 1044
Date Prepared: 08/13/2008 0717

Analysis Batch: 720-39810
Prep Batch: 720-39788
Units: mg/Kg

Instrument ID: FIMS 100
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Mercury	ND		0.050

**Lab Control Spike/
Lab Control Spike Duplicate Recovery Report - Batch: 720-39788**

Method: 7471A
Preparation: 7471A

LCS Lab Sample ID: LCS 720-39788/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/13/2008 1045
Date Prepared: 08/13/2008 0717

Analysis Batch: 720-39810
Prep Batch: 720-39788
Units: mg/Kg

Instrument ID: FIMS 100
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 720-39788/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/13/2008 1047
Date Prepared: 08/13/2008 0717

Analysis Batch: 720-39810
Prep Batch: 720-39788
Units: mg/Kg

Instrument ID: FIMS 100
Lab File ID: N/A
Initial Weight/Volume: 1 g
Final Weight/Volume: 50 mL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Mercury	94	93	80 - 120	1	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: ERRG

Job Number: 720-15519-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 720-39788

Method: 7471A
Preparation: 7471A

MS Lab Sample ID: 720-15532-A-7-K MS Analysis Batch: 720-39810
Client Matrix: Solid Prep Batch: 720-39788
Dilution: 1.0
Date Analyzed: 08/13/2008 1048
Date Prepared: 08/13/2008 0717

Instrument ID: FIMS 100
Lab File ID: N/A
Initial Weight/Volume: 0.97 g
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 720-15532-A-7-I MSD Analysis Batch: 720-39810
Client Matrix: Solid Prep Batch: 720-39788
Dilution: 1.0
Date Analyzed: 08/13/2008 1049
Date Prepared: 08/13/2008 0717

Instrument ID: FIMS 100
Lab File ID: N/A
Initial Weight/Volume: 0.97 g
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Mercury	97	88	75 - 125	8	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Login Sample Receipt Check List

Client: ERRG

Job Number: 720-15519-1

Login Number: 15519
Creator: Bullock, Tracy
List Number: 1

List Source: TestAmerica San Francisco

Question	T / F / NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	False	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	