Appendix E

Phase 2A Geotechnical Data

Appendix E1

Geotechnical Testing of Sediment

APPENDIX E1. GEOTECHNICAL TESTING OF SEDIMENT

(Modified from Exponent, 2001c)

E.1 Introduction

This appendix presents information regarding geotechnical testing performed in 2000 on sediments in Onondaga Lake during the Phase 2A remedial investigation (RI). This information includes sample collection procedures, locations, and dates, as well as laboratory and field test methods and results.

From July 23 through July 30, 2000, a total of 20 in-situ vane-shear tests were performed at 20 locations within the lake, as shown in Chapter 2, Figure 2-18. Subsequently, on July 31 and August 1, 2000, a total of ten 2.5-m sediment cores were collected at co-located points for geotechnical laboratory testing. Where possible, these points were located in the vicinity of other core locations where subsurface logging was performed during this project. These locations were surveyed on the lake using global positioning system (GPS) equipment. The testing and coring was conducted from a 10-m pontoon boat with a three-point anchoring system to minimize any movement during these activities.

The equipment and test methods used for the vane-shear field testing and geotechnical core sampling and testing are described in the next two sections, respectively.

E.2 Vane-Shear Field Testing

Vane-shear field testing of sediment was performed at 20 offshore locations (see Chapter 2, Figure 2-18) from July 23 through July 30, 2000. Where possible, the tests were performed at 1-m depth intervals to a total depth of 2 m at Stations S338, S339A, S340VS, S342A, S343, S344, S346VS, S348, S350, S351A, and S352A, and to a total depth of 8 m at Stations S302, S309-312, S314, and S315. At some of the planned core locations, shallow water prevented boat access and testing. Submerged debris that was present prevented testing at some of the other core locations. These conditions necessitated that the locations of certain cores be offset to nearby locations. In addition, the presence of relatively hard (crust-like) layers in some cores resulted in an inability to perform vane-shear testing at the respective depth intervals. The presence of this crust-like layer in surface sediments at Station S347 prevented vane-shear field testing at this location.

The ASTM D2573 method was used to perform vane-shear field testing for this project. The test equipment used was a ROCTEST M-1000 vane borer designed for use in cohesive soils. This equipment is comprised of a boring rig, vanes, rods, couplings, and a torque recorder. The boring rig was mounted on the pontoon boat with an opening in the deck through which the vane assembly was lowered. The test results were graphically scribed on wax-paper disks.

The first step in the procedure was to position the boat over the targeted area by pulling on anchors attached to both sides of the hull. This anchoring was critical in minimizing boat movement due to wind or the wake of another boat. After the boat was positioned in place, the vane was assembled and mounted

on the boring rig. The wax-paper disk was aligned and calibrated to scribe a zero-torque line. The vane was then advanced through the opening in the deck to the sediment surface. With a single thrust, the vane was then pushed to the depth at which the test was to be performed. A torque was then applied to the vane, using a geared torque instrument, at a rate of less than or equal to 0.1 degrees per second. Throughout the test, a continuous graphical record of the applied torque was scribed on the wax paper.

Prior to each test, the vane was internally disengaged and the friction of the rods was measured for data reduction purposes. Next, the vane was engaged and torque was applied to the sediment until it failed. This was depicted on the graphical record by a pronounced drop in the torque needed to rotate the vane, followed by an asymptotic curve for these values. At this point in the test, the vane was rapidly rotated ten times to completely remold the sediment. A remolded shear test was then performed using the same technique as described above.

The vane was then thrust down to the next depth interval and the next test was performed. Additional rods were used to reach greater depths. The relatively hard layers described above were encountered at the surface of the sediment and/or at various lower depths in the sediment at certain locations. Shear testing was performed within these intervals if the vane could be pushed down to the desired depth using only human force. Otherwise, the crust was broken through with mechanical force applied with on-board equipment and the vane was pulled back, cleaned, and positioned down to the next depth interval. At the conclusion of all tests at each core location, the vanes and rods were removed and cleaned for use at the next location.

Vane sizes that were used varied depending on the consistency of the bottom sediment. Smaller vanes were used for relatively stiff sediments and larger vanes were used for soft sediments. The table below summarizes the field vane sizes used for this field investigation.

Vane Dimensions (cm × cm)	Vane Constant, C (cm ⁻³ × 10 ⁻²)
5 × 11	0.2
8 × 17.2	0.05
9.8 × 17.5	0.024

The two smaller vanes were tapered at the bottom, and the larger vane was tapered at both ends. The torque data collected were reduced per ASTM D2573 using the constants for the equipment provided by the manufacturer. The shear strength values were calculated using the following equation:

Undrained shear strength in kg/cm², $S_u = M_V \times C$

where:

 $M_V =$ torque required to rotate vane in kg-cm C = vane-form constant, in cm⁻³ Thus,

$$M_{\rm V} = K \times (a_{\rm s} - a_{\rm f}) \times C$$

where:

Κ	=	calibration constant of 1.05 kg-cm/cm for torque recording head,
		as provided by manufacturer

a_s = distance in cm between the zero torque reference line and the peak of the curve

$$a_f = distance in cm between the zero torque reference line and the circular arc scribed during the first 15 degrees of rotation (corresponds to rod friction)$$

Both metric and English results for the vane-shear testing are presented below.

E.3 Geotechnical Core Collection and Testing

The 2.5-m sediment cores for geotechnical laboratory testing were collected by vibracorer in Lexan[®] tubes. As shown in Chapter 2, Figure 2-18, the 2.5-m cores were collected at ten locations on the lake, identified as Stations S302, S311, S312, S315, S339A, S341A, S342A, S343, S344, and S351A.

After they were collected, the geotechnical samples were transported to Parratt-Wolff Laboratories, Inc. (P-W Labs) in Syracuse, New York. P-W Labs performed the following geotechnical tests:

- Consolidation using ASTM D2435.
- Natural moisture content using ASTM D2216.
- Description and identification of soils (visual-manual) using ASTM D2488.
- Sieve analysis using ASTM D1140.
- Hydrometer analysis using ASTM D422.
- Atterberg limits using ASTM D4318.
- Specific gravity using ASTM D854.

Detailed descriptions of the above testing methods can be found in the *Annual Book of ASTM Standards*, *Volume 04.08* (ASTM, 2001). In addition, the samples were analyzed for total carbonate content by Science Laboratories, Inc., also of Syracuse.

Originally, samples from six of the cores (i.e., from Stations S302, S311, S312, S315, S341A, and S351A) were planned for geotechnical testing in the laboratory. The remaining four cores (i.e., from Stations S339, S342A, S343, and S344) were designated as archived samples and stored at the laboratory in case they were needed at a later time. However, within a few days of their receipt at P-W

Labs, vertical and horizontal cracks occurred in seven of the cores (i.e., from Stations S311, S312, S339, S341, S342, S343, and S344). In some of the more severely cracked sections the sediment was disturbed, and geotechnical testing was not performed for these areas. Portions of the tubes that were not cracked were selected for analysis and, in some cases, intact sections of archived samples were substituted for damaged sections.

In addition, some of the undisturbed sediment was too soft to be handled without causing disturbance, so other sections were substituted. As a result of this selection process, nine samples from eight of the cores (i.e., from Stations S302, S311, S315, S339A, S341A, S312, S344, and S351A) were subject to testing. The respective depths from the top of the core tubes where these samples were taken are specified in the results section that follows.

E.4 Summary of Geotechnical Test Results

This section provides a summary of results from geotechnical testing of offshore core samples collected during the Phase 2A investigation. The results of the vane-shear field testing and geotechnical laboratory testing are summarized in Tables E1-1 and E1-2, respectively. The analytical data are presented in Appendix E2 and the consolidation test results are presented in Appendix E3.

E.4.1 Vane-Shear Field Testing

In-situ vane-shear testing was performed at 20 locations on Onondaga Lake from July 23 through July 30, 2000. This field testing was performed using the ASTM D2573 method. As described earlier, offsetting was necessary at several locations due to the presence of underlying debris and hard, crust-like layers. Results of the vane-shear testing revealed some interesting behavioral properties of the sediment (Table E1-1).

At testing locations where harder material was present within a softer matrix, a sawtooth-like pattern was scribed on the graphical wax paper used to record strength measurements. These results probably represent the gradual breakdown of a cemented structure within the softer matrix. This type of behavior was noted for Stations S338, S339, S340 offset, S344, S343, S346, S348, S312, and S311. Near Station S340 in particular, the lake bottom was found to alternate between layers of hard, crust-like material and softer sediments. In some areas the hard crust could not be penetrated, and the sampling location was moved. Higher carbonate concentrations are typically associated with areas where a hard crust was noted.

The peak shear strengths varied from 0 pounds per square foot (psf) to $1,136 \text{ psf}(0.017 \text{ kg/cm}^2)$. The higher shear strengths corresponded to locations where hard layers were noted during testing. The remolded strengths (strengths measured after rapid rotation of the vane within the sediment to produce a homogeneous testing medium) varied from 0 to 41.5 psf (0.00063 kg/cm²).

The vane-shear results presented by Honeywell could not be independently verified, as the raw data used to determine the shear strengths were not provided by Honeywell/Exponent. The shear strength is arrived

at by multiplying the torque required to rotate the vane by a vane coefficient. One of the vane coefficients provided by Honeywell/Exponent is likely incorrect, but it is not possible to determine which results were affected, with the data supplied.

E.4.2 Soil Characterization Results

Based on a visual-manual description of nine samples using the ASTM D2488 method, the sediment was classified as ML (inorganic silt) or OL (organic silt), depending on location (Table E1-2). There was no consistent correlation between classification and depth. Typically, it is expected that organic material is near the surface, but the OL-classified samples were from at least 14 inches below the surface.

The results of the sieve analyses (ASTM D422 and D1140) also verified that the material was fine-grained, with eight of nine samples having 95 percent or greater passing the #200 sieve. The hydrometer analysis (ASTM D422) indicated that the material passing the #200 sieve was predominantly silt-sized particles, consistent again with the classification above.

E.4.3 Atterberg Limits Results

Atterberg Limit testing was performed on nine samples, in accordance with ASTM D4318. The results indicated that the material is non-plastic, consistent with the silt classifications provided above (Table E1-2).

E.4.4 Moisture Content Results

As part of the sampling effort, nine samples were analyzed for moisture content per ASTM D2216. The moisture contents ranged from 72.8 to 241.3 percent (Table E1-2). There was no apparent correlation between depth and measured moisture content.

E.4.5 Specific Gravity Results

The specific gravity of nine samples was evaluated using ASTM D854. The results ranged from 2.02 to 2.56, with an average value of 2.42 (Table E1-2). In general, the specific gravity of these samples increased with depth. Typically, a lower specific gravity indicates the presence of organics; however, for these samples, the classification of OL did not correlate with the lower specific gravities.

E.4.6 Carbonate Results

Total carbonate content was measured for nine samples. Seven of these nine samples had carbonate contents between 30 and 35 percent. The samples with higher carbonate contents (i.e., samples from Stations S339 and S341) were collected at locations where a relatively hard (crust) layer was noted during vane-shear field testing.

E.4.7 Consolidation Test Results

Consolidation testing using the ASTM D2435 method was performed on six samples (Appendix E3). Although consolidation testing also was planned for two other samples, they were determined to be too soft to be properly prepared. In addition, the harder layers could not be properly prepared for consolidation testing. As mentioned previously, cracking occurred in certain core tubes. These conditions, and the lack of a preconsolidation stress for most of these test results, is indicative of sample disturbance during sampling and prior to or during sample preparation. Sample disturbance during sampling is likely, considering that a vibracorer was used to collect the samples. Standard practice for the collection of undisturbed samples usually calls for the use of Shelby tubes or an Ostenberg sampler (Das, 1994). These results must be viewed with this perspective.

The calculated compression indices (C_c) for the six samples tested range from 0.39 (no unit) to 2.82. Water content appeared to increase with increasing compression index. Generally, the consolidation data showed that the samples behaved like normal soil during testing. This was not entirely anticipated because, based on visual characteristics, many of the samples appeared to be anthropogenic.

E.5 Discussion

The results of the geotechnical testing of sediments in Onondaga Lake provided useful information regarding the physical characteristics of these materials. In addition, the results of the carbonate analyses provided data that aid in the differentiation between the more carbonate-contaminated Solvay waste material and contaminated sediment/wastes that contain less carbonate. The geotechnical core samples were classified as either ML (inorganic silt) or OL (organic silt). Each of these samples was determined to be non-plastic.

During the logging of the 8-m sediment cores and the vane-shear field testing, the heterogeneity of the Solvay material and natural lake sediments was readily apparent. As anticipated, the horizontal extent of the respective layers was variable. In particular, the vertical profile of the Solvay layer was different at many of the locations.

During the logging and vane-shear testing, relatively hard layers (i.e., crusts) were found to be present within the Solvay waste material. Because it is brittle, this hard material prohibited laboratory testing of certain intervals. Because they could not be penetrated, these hard layers interfered with vane-shear field testing. This required offsetting to an adjacent location where the layers were relatively soft and, therefore, penetrable.

It can be expected that these hard layers have an effect on the cumulative geotechnical properties of the overall sediment sequence. Consolidation tests could not be performed on this harder material because of its brittle nature, but vane-shear test results indicated that it had higher shear strengths than the surrounding layers. The brittle nature of this material was also observed when penetrated with vane-shear equipment.

A few days after the collection of the cores for testing at the geotechnical laboratory, some of the Lexan[®] tubes developed stress cracks. These cracks were most prevalent in those core tubes that predominantly

contained Solvay waste material. It is not known whether this cracking was the result of expansion of certain samples after they were collected, or if there is a chemical incompatibility between some of the samples and the tubes.

E.6 References

Das, Braja M. 1994. Principles of Geotechnical Engineering, 3rd Edition. p. 611. PWS Publishing Company, Boston.

		Shear Stre	ngth (Metric)	Shear Stre	ngth (English)	
Core	Depth	S - Peak	S - Remolded	S - Peak S - Remolded		
Number	Interval (m)	(kg/cm^2)	(kg/cm^2)	(lb/ft^2)	(lb/ft^2)	
	0.3	4.2E-05	0.0E+00	2.8	0.0	
	1.3	1.3E-04	0.0E+00	8.7	0.0	
	2.3	3.2E-04	1.6E-05	20.8	1.0	
	3.3	2.3E-04	1.6E-05	15.2	1.0	
S302	4.3	3.9E-04	0.0E+00	26.0	0.0	
	5.3	3.5E-04	1.1E-05	22.9	0.7	
	6.3	8.7E-04	5.3E-05	57.1	3.5	
	7.3	8.9E-04	0.0E+00	58.9	0.0	
	8.3	5.3E-04	1.1E-05	34.6	0.7	
	0.3	1.3E-04	0.0E+00	8.7	0.0	
	1.3	1.9E-03	0.0E+00	128.1	0.0	
	2.3	6.3E-04	1.1E-04	41.5	6.9	
	3.3	2.6E-04	0.0E+00	17.3	0.0	
S309	4.3	5.8E-04	5.3E-05	38.1	3.5	
	5.3	8.9E-04	5.3E-05	58.9	3.5	
	6.3	2.0E-03	1.3E-04	135.0	8.7	
	7.3	9.5E-04	1.6E-04	62.3	10.4	
	8.3	2.0E-03	3.2E-04	131.6	20.8	
	0.3	0.0E+00	0.0E+00	0.0	0.0	
	0.3	1.8E-07	0.0E+00	0.0	0.0	
	1.3	1.6E-04	0.0E+00	10.4	0.0	
	2.3	1.3E-04	0.0E+00	8.7	0.0	
S310	3.3	3.7E-04	0.0E+00	24.2	0.0	
3310	4.3	1.9E-03	0.0E+00	128.1	0.0	
	5.3	5.3E-04	1.1E-05	34.6	0.7	
	6.3	4.7E-04	5.3E-05	31.2	3.5	
	7.3	7.4E-04	7.9E-05	48.5	5.2	
	8.3	2.9E-03	7.9E-05	190.4	5.2	
	0.3	5.5E-04	4.2E-05	36.4	2.8	
	1.3	5.0E-03	2.6E-05	328.9	1.7	
	2.3	3.7E-04	0.0E+00	24.2	0.0	
	3.3	3.9E-04	0.0E+00	26.0	0.0	
S311	4.3	5.0E-03	0.0E+00	332.4	0.0	
5511	4.3	1.6E-02	6.3E-04	1041.5	41.5	
	5.3	1.8E-03	7.9E-05	115.6	5.2	
	6.3	1.6E-03	1.1E-04	103.9	6.9	
	7.3	1.3E-03	5.3E-05	86.6	3.5	
	8.3	2.2E-03	3.7E-04	147.2	24.2	
	0.3	3.2E-04	0.0E+00	20.8	0.0	
	1.3	6.6E-04	2.6E-05	43.3	1.7	
S312	2.3	4.5E-03	0.0E+00	297.8	0.0	
	3.3	1.1E-03	7.9E-05	72.7	5.2	
	4.3	4.2E-04	5.3E-05	27.7	3.5	

Table E1-1.Onondaga Lake RI/FS Supplemental Data Phase 2A Summary of
Vane-Shear Field Test Results

Table E1-1. (cont.)

		Shear Stre	ngth (Metric)	Shear Stre	ngth (English) S - Remolded (lb/ft ²) 6.9 13.8 13.8 0.0		
Core	Depth	S - Peak	S - Remolded	S - Peak	S - Remolded		
Number	Interval (m)	(kg/cm^2)	(kg/cm ²)	(lb/ft^2)	(lb/ft^2)		
	5.3	6.6E-04	1.1E-04	43.3	6.9		
S312 (Cont.)	6.3	2.9E-03	2.1E-04	193.9	13.8		
3312 (Cont.)	7.3	8.9E-04	2.1E-04	58.9	13.8		
	8.3	1.1E-03	0.0E+00	72.7	0.0		
	0.3	1.3E-04	1.6E-05	8.7	1.0		
	1.3	2.7E-04	3.7E-05	18.0	2.4		
	2.3	5.0E-04	1.7E-04	32.9	11.1		
	3.3	6.9E-04	1.6E-04	45.7	10.4		
S314	4.3	8.1E-04	1.6E-04	53.7	10.4		
	5.3	1.1E-03	7.9E-05	71.0	5.2		
	6.3	8.1E-04	2.1E-04	53.7	13.8		
	7.3	1.6E-03	2.6E-04	107.3	17.3		
	8.3	3.2E-03	5.3E-04	207.7	34.6		
	0.3	2.6E-05	0.0E+00	1.7	0.0		
	1.3	1.6E-04	1.1E-05	10.4	0.7		
	2.3	2.4E-04	2.6E-05	15.6	1.7		
	3.3	3.9E-04	5.3E-05	26.0	3.5		
S315	4.3	7.5E-04	7.9E-05	49.2	5.2		
	5.3	6.3E-04	6.3E-05	41.5	4.2		
	6.3	8.9E-04	1.2E-04	58.9	7.6		
	7.3	1.3E-03	3.2E-04	86.6	20.8		
	8.3	1.0E-03	5.3E-05	65.8	3.5		
	0.3	9.6E-07	0.0E+00	0.1	0.0		
S338	1.3	1.1E-05	5.0E-07	0.7	0.0		
	2.3	7.8E-03	4.2E-04	512.4	27.7		
	0.3	5.5E-07	0.0E+00	0.0	0.0		
S339A	1.3	1.6E-05	2.5E-07	1.0	0.0		
	2.3	2.1E-03	3.4E-04	138.5	22.2		
S340VS ^{1,2}	0.3	7.1E-03	3.2E-04	468.1	20.8		
	0.9	1.9E-02	(See Note 3)	1263.1	(See Note 3)		
S341A ^{1,2}	0.3	4.6E-03	6.3E-05	304.7	4.2		
	0.3	1.2E-03	0.0E+00	76.2	0.0		
S342A	1.3	3.4E-04	1.5E-04	22.5	9.7		
	2.3	1.5E-03	0.0E+00	96.9	0.0		
	0.3	1.3E-02	0.0E+00	886.4	0.0		
S343	1.3	1.7E-02	5.3E-04	1135.7	34.6		
	2.3	3.6E-03	6.3E-04	235.4	41.5		
	0.3	1.1E-06	0.0E+00	0.1	0.0		
S344	1.3	2.1E-05	4.8E-07	1.4	0.0		
0044	2.3	2.4E-05	0.0E+00	1.6	0.0		
	2.3	1.3E-03	4.2E-04	83.1	27.7		
SACUS	0.3	2.2E-03	1.1E-04	142.0	6.9		
S346VS	1.3	2.5E-04	2.6E-05	16.6	1.7		

		Shear Stren	gth (Metric)	Shear Stren	gth (English)
Core	Depth	S - Peak	S - Remolded	S - Peak	S - Remolded
Number	Interval (m)	(kg/cm^2)	(kg/cm^2)	(lb/ft^2)	(lb/ft^2)
S346VS (Cont.)	2.3	4.5E-03	1.6E-04	294.3	10.4
S347	(See Note 4)				
	0.3	2.9E-03	6.3E-05	193.9	4.2
S348	1.3	8.3E-04	1.1E-05	54.7	0.7
	2.3	2.6E-03	2.6E-05	169.7	1.7
	0.3	1.3E-03	5.8E-05	84.8	3.8
S350	1.3	6.8E-04	1.1E-04	45.0	6.9
	2.3	5.8E-04	5.3E-05	38.1	3.5
	0.3	2.1E-04	0.0E+00	13.8	0.0
S351A	1.3	9.7E-04	8.4E-05	64.1	5.5
	2.3	6.6E-04	1.1E-04	43.6	6.9
	0.3	4.8E-04	5.3E-05	31.5	3.5
S352VS	1.3	3.2E-04	2.1E-05	20.8	1.4
	2.3	7.4E-04	7.9E-05	48.5	5.2

Table E1-1. (cont.)

Notes:

1. Sample locations were adjusted if the proposed sample location could not be accessed due to shallow water depth and/or the presence of tires and other debris.

2. Sampling could not be performed at all proposed depths because of the presence of impenatrable sediments.

3. Remolded test could not be performed due to equipment difficulties.

4. Vane-shear testing was not performed at location S347 because of the presence of impenatrable sediments.

Table E1-2. Onondaga Lake RI/FS Supplemental Data Phase 2A Summary of Laboratory Geotechnical Test Results

Sample ID: Station ID: Date: Depth (from top of tube):	S302 8/1/2000	CT-002 S315 8/1/2000 1.52 m	CT-003 S311 7/31/2000 1.70 m	CT-004 S312 7/31/2000 1.37 m	CT-005 S339 7/31/2000 0.36 m	CT-005 S339 7/31/2000 1.91 m	CT-006 S341 7/31/2000 1.68 m	CT-007 S342 7/31/2000 NA	CT-008 S343 8/1/2000 NA	CT-009 S344 7/31/2000 0.64 m	CT-010 S351 7/31/2000 1.80 m
Geotechnical Parameter ¹											
Description and Identification of Soils ²	OL	OL	ML	ML	OL	OL	ML	NA	NA	ML	ML
Natural Moisture Content (% Dry Weight)	72.8	157.8	139.8	141.2	135.2	241.3	118.2	NA	NA	90.6	74.3
Specific Gravity of Solids	2.63	2.21	2.56	2.02	2.54	2.50	2.52	NA	NA	2.32	2.46
% Passing No. 200 Sieve	99.5	97.1	98.2	99.7	96.1	98.9	95.0	NA	NA	96.5	50.3
Atterberg Limits	Non-Plastic	Non-Plastic	Non-Plastic	Non-Plastic	Non-Plastic	Non-Plastic	Non-Plastic	NA	NA	Non-Plastic	Non-Plastic
Compression Index, C _c ³	(See Note 4)	(See Note 5)	0.75	1.15	(See Note 5)	2.82	1.15	NA	NA	0.39	0.70
Total Carbonate (%)	35	17	34	32	32	30	35	NA	NA	33	23

Notes:

 $Geotechnical \ tests \ performed \ by \ Parratt \ Wolff \ Laboratories, \ Inc. \ in \ East \ Syracuse, \ New \ York$

NA - Not Applicable (Test not performed on sample)

1. Test methods included:

ASTM D2435 - Consolidation Test

ASTM D2216 - Natural Moisture Content

ASTM D2488 - Description and Identification of Soils (Visual-Manual)

ASTM D422 & D1140 - Sieve Analysis

ASTM D422 - Hydrometer Analysis

ASTM D4318 - Atterberg Limits

ASTM D854 - Specific Gravity

Total Carbonate

2. Soil Identification:

OL - organic silts and silty clays

ML - inorganic silts and very fine sands

3. See Appendix E3 for a complete set of consolidation test results.

4. Consolidation tests could not be performed due to the sample being too liquid.

5. Condolidation tests could not be completed due to "softness" of the sample.

Appendix E2

Columbia Analytical Services Data

					Upper	Lower		
Sample					Depth	Depth	Core	Data
Number	Station ID	Date	Sample ID	Field Rep	(m)	(m)	Length	Package ID
SB0019	S344	07/27/00	SB0019	1	0.3	1	2M	K2005759
SB0020	S344	07/27/00	SB0020		1	2	2M	K2005759
SB0029	S338	08/03/00	SB0029		0.3	1.3	2M	K2005951
SB0030	S338	08/03/00	SB0030		1.3	2	2M	K2005951
SB0031	S339	08/03/00	SB0031		0.3	1	2M	K2005951
SB0032	S339	08/03/00	SB0032		1	1.68	2M	K2005951
SB0033	S340	08/03/00	SB0033		0.3	1	2M	K2005951
SB0034	S340	08/03/00	SB0034		1	2	2M	K2005951
SB0037	S342	07/27/00	SB0037		0.3	1	2M	K2005759
SB0038	S342	07/27/00	SB0038		1	2	2M	K2005759
SB0039	S343	08/04/00	SB0039	1	0.3	1	2M	K2005960
SB0040	S343	08/04/00	SB0040	-	1	2	2M	K2005960
SB0045	S346	08/04/00	SB0045		0.3	1.6	2M	K2005960
SB0046	S346	08/04/00	SB0046		1.6	2	2M	K2005960
SB0047	S347	08/04/00	SB0047		0.3	1	2M	K2005960
SB0048	S347	08/04/00	SB0048		1	2	2M	K2005960
SB0049	S348	08/05/00	SB0049		0.3	1.1	2M	K2006045
SB0050	S348	08/05/00	SB0019 SB0050		1.1	2	2M	K2006045
SB0053	S350	08/05/00	SB0053		0.3	0.92	2M	K2006045
SB0055	S350	08/05/00	SB0055 SB0054	1	0.92	2	2M	K2006045
SB0055	S351	08/05/00	SB0051	1	0.3	1	2M 2M	K2006045
SB0055	S351	08/05/00	SB0055		1	2	2M 2M	K2006045
SB0057	S352	08/10/00	SB0057		0.3	1	2M	K2006154
SB0058	S352	08/10/00	SB0057 SB0058		1	2	2M	K2006154
SB0063	S341	08/04/00	SB0063		0.3	0.85	2M	K2005960
SB0064	S341	08/04/00	SB0063		0.85	1.6	2M	K2005960
SB0067	S350	08/05/00	SB0054	2	0.92	2	2M	K2006045
SB0070	S344	07/27/00	SB0031 SB0019	2	0.3	1	2M	K2005759
SF0049	S302	08/14/00	SF0049	-	0.15	0.3	8M	K2006427
SF0062	S302	08/14/00	SF0062		0.19	0.15	8M	K2006427
SF0063	S309	08/14/00	SF0063		0.15	0.3	8M	K2006427
SF0064	S310	08/14/00	SF0064		0.19	0.15	8M	K2006427
SF0065	S310	08/14/00	SF0065		0.15	0.3	8M	K2006427
SF0068	S312	08/14/00	SF0068		0.19	0.15	8M	K2006427
SF0069	S312	08/14/00	SF0069		0.15	0.3	8M	K2006427
SF0072	S314	08/10/00	SF0072		0.19	0.15	8M	K2006154
SF0072	S314	08/10/00	SF0072		0.15	0.3	8M	K2006154
SF0075	S315	08/14/00	SF0075		0.15	0.3	8M	K2006427
SF0112	S344	07/27/00	SF0112		0.15	0.3	2M	K2005759
SF0112 SF0119	S341	08/04/00	SF0112		1.6	2	2M 2M	K2005960
SF0121	S338	08/03/00	SF0112		1.0	0.15	2M 2M	K2005951
SF0121 SF0123_E	S339	08/03/00	SF0123_E		1.68	2	2M 2M	K2005951 K2005951
SF0123_E	S340	08/05/00	SF0123_E	1	1.08	0.02	2M 2M	K2005351 K2006339
SF0123_R	S340 S340	08/15/00	SF0123	2	0	0.02	2M 2M	K2006333 K2006412
SF0123_K	S340 S339	08/03/00	SF0123 SF0124	2	0	0.02	2M 2M	K2000412 K2005951
SF0124 SF0125	S339 S339	08/03/00	SF0124 SF0125		0.15	0.13	2M 2M	K2005951 K2005951
SF0125 SF0126	S339 S340	08/03/00	SF0125 SF0126		0.13	0.3	2M 2M	K2003931 K2005951
SF0120	S340 S340	08/03/00	SF0120 SF0127		0.15	0.13	2M 2M	K2005951 K2005951
51.0127	3340	06/05/00	SF0127		0.13	0.3	∠1 VI	K2003931

Sample information for the feasibility study

				Upper	Lower		
Number Stat				Depth	Depth	Core	Data
	ion ID Date	Sample ID	Field Rep	(m)	(m)	Length	Package ID
SF0128 S	341 08/04/0			0	0.15	2M	K2005960
SF0129 S	341 08/04/0	00 SF0129		0.15	0.3	2M	K2005960
SF0130_T S	342 08/10/0	00 SF0130_T		0	0.15	2M	K2006154
	342 07/27/0			0.15	0.3	2M	K2005759
	343 08/04/0			0	0.15	2M	K2005960
SF0133 S	343 08/04/0	00 SF0133		0.15	0.3	2M	K2005960
SF0138 S	346 08/04/0	00 SF0138		0	0.15	2M	K2005960
	346 08/04/0			0.15	0.3	2M	K2005960
SF0140 S	347 08/04/0	00 SF0140		0	0.15	2M	K2005960
	347 08/04/0			0.15	0.3	2M	K2005960
SF0142 S	348 08/05/0			0	0.15	2M	K2006045
	348 08/05/0	00 SF0143		0.15	0.3	2M	K2006045
	350 08/05/0	00 SF0146		0	0.15	2M	K2006045
	350 08/05/0			0.15	0.3	2M	K2006045
	351 08/05/0			0	0.15	2M	K2006045
	352 08/10/0			0	0.15	2M	K2006154
	352 08/10/0			0.15	0.3	2M	K2006154
	343 08/04/0		2	0.3	1	2M	K2005960
	351 08/15/0			0	0.02	2M	K2006339
	302 07/22/0			0.3	0.59	8M	K2005515
	302 07/22/0			0.59	1.59	8M	K2005515
	302 07/22/0			1.59	2.59	8M	K2005515
	302 07/22/0			2.59	3.59	8M	K2005515
	302 07/22/0			3.59	4.59	8M	K2005515
	302 07/22/0			4.59	5.59	8M	K2005515
	302 07/22/0			5.59	6.59	8M	K2005515
	302 07/22/0			6.59	7.61	8M	K2005515
	309 07/20/0			0.74	1.74	8M	K2005510
	309 07/20/0		1	1.74	2.74	8M	K2005510
	309 07/20/0			2.74	3.74	8M	K2005510
	309 07/20/0			3.74	4.74	8M	K2005510
	309 07/20/0			4.74	5.78	8M	K2005510
	309 07/20/0			5.78	6.27	8M	K2005510
	309 07/20/0			6.27	6.74	8M	K2005510
	309 07/20/0			6.74	6.96	8M	K2005510
	310 07/20/0			0.3	1	8M	K2005510
	310 07/20/0			1	2	8M	K2005510
	310 07/20/0			2	3	8M	K2005510
	310 07/20/0		1	3	4	8M	K2005510
	310 07/20/0		-	4	5	8M	K2005510
	310 07/20/0			5	6	8M	K2005510
	310 07/20/0			6	6.53	8M	K2005510
	310 07/20/0			6.53	7.24	8M	K2005510
	311 07/20/0			0.3	1	8M	K2005510
	311 07/20/0			1	2	8M	K2005510
	311 07/20/0			2	3	8M	K2005510
	311 07/20/0 311 07/20/0			3	4	8M	K2005510
	311 07/20/0			4	5	8M	K2005510

Sample information for the feasibility study (cont.)

					Upper	Lower		
Sample					Depth	Depth	Core	Data
Number	Station ID	Date	Sample ID	Field Rep	(m)	(m)	Length	Package ID
VC0086	S311	07/20/00	VC0086		5	6	8M	K2005510
VC0089	S312	07/20/00	VC0089		0.3	1	8M	K2005510
VC0090	S312	07/20/00	VC0090		1	2	8M	K2005510
VC0091	S312	07/20/00	VC0091	1	2	3	8M	K2005510
VC0092	S312	07/20/00	VC0092		3	4	8M	K2005510
VC0093	S312	07/20/00	VC0093		4	5	8M	K2005510
VC0094	S312	07/20/00	VC0094		5	6	8M	K2005510
VC0095	S312	07/20/00	VC0095		6	7	8M	K2005510
VC0105	S314	07/19/00	VC0105	1	0.3	1	8M	K2005531
VC0106	S314	07/19/00	VC0106		1	2	8M	K2005531
VC0107	S314	07/19/00	VC0107		2	3	8M	K2005531
VC0108	S314	07/19/00	VC0108		3	4	8M	K2005531
VC0109	S314	07/19/00	VC0109		4	5	8M	K2005531
VC0110	S314	07/19/00	VC0110		5	6	8M	K2005531
VC0111	S314	07/19/00	VC0111		6	7	8M	K2005531
VC0112	S314	07/19/00	VC0112		7	8	8M	K2005531
VC0113	S315	07/19/00	VC0113		0.3	1	8M	K2005531
VC0114	S315	07/19/00	VC0114		1	2	8M	K2005531
VC0115	S315	07/19/00	VC0115		2	3	8M	K2005531
VC0116	S315	07/19/00	VC0116		3	4	8M	K2005531
VC0117	S315	07/19/00	VC0117		4	5	8M	K2005531
VC0118	S315	07/19/00	VC0118		5	6	8M	K2005531
VC0119	S315	07/19/00	VC0119		6	6.73	8M	K2005531
VC0120	S315	07/19/00	VC0120		6.73	7.67	8M	K2005531
VC0186	S310	07/20/00	VC0076	2	3	4	8M	K2005510
VC0192	S309	07/20/00	VC0066	2	1.74	2.74	8M	K2005510
VC0193	S312	07/20/00	VC0091	2	2	3	8M	K2005510
VC0200	S314	07/19/00	VC0105	2	0.3	1	8M	K2005531
VC0209	S309	07/20/00	VC0209		6.96	7.3	8M	K2005510
VC0210	S309	07/20/00	VC0210		7.3	7.89	8M	K2005510

Sample information for the feasibility study (cont.)

Sample Number	Station ID	Date	Sample ID	Data Package ID
GS0001	S410	07/17/00	GS0001	K2005397
GS0002	S411	07/17/00	GS0002	K2005397
GS0003	S412	07/17/00	GS0003	K2005397
GS0004	S413	07/17/00	GS0004	K2005397
GS0005	S414	07/17/00	GS0005	K2005397
GS0006	S415	07/17/00	GS0006	K2005397
GS0007	S416	07/17/00	GS0007	K2005397
GS0008	S417	07/17/00	GS0008	K2005397
GS0009	S418	07/17/00	GS0009	K2005397
GS0010	S419	07/17/00	GS0010	K2005397
GS0011	S420	07/17/00	GS0011	K2005397
GS0012	S421	07/17/00	GS0012	K2005397
GS0013	S422	08/15/00	GS0013	K2006342
GS0014	S423	08/15/00	GS0014	K2006342
GS0015	S425	08/15/00	GS0015	K2006342
GS0016	S424	08/15/00	GS0016	K2006342
GS0017	S426	08/15/00	GS0017	K2006342
GS0018	S427	08/15/00	GS0018	K2006342
GS0019	S428	08/15/00	GS0019	K2006342
GS0020	S429	08/15/00	GS0020	K2006342
GS0021	S430	08/15/00	GS0021	K2006342
GS0022	S431	08/15/00	GS0022	K2006342
GS0023	S432	08/15/00	GS0023	K2006342
GS0024	S433	08/15/00	GS0024	K2006342

Sample information for the grain size study

Note: The sampling depth for the grain size study was 0 to 2 cm.

	Sample Name:	GS0001		
	Lab Code:	K2005397-001		
<u> </u>	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	97.8	0.850	850000	5.929
40	93.1	0.425	425000	5.628
60	87.1	0.250	250000	5.398
140	74.1	0.106	106000	5.025
200	68.3	0.0750	75000	4.875
2	66.1	0.0455	45459.53772	4.658
5	50.9	0.0299	29902.57503	4.476
15	35.6	0.0179	17904.3771	4.253
30	12.7	0.0133	13310.42452	4.124
60	17.8	0.0093	9311.696726	3.969
250	12.7	0.0046	4552.840263	3.658
1440	10.2	0.0020	1978.285903	3.296
	determined hydrome			· · · · · · · · · · · · · · · · · · ·
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	68.2
	0.005	5000	3.70	13.4
	0.001	1000	3.00	8.1

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Analytical Report

Client: Exponent Environmental Group, Inc. OL RI/FS Phase 2A / 8600BCP.003.0801 **Project:** Sample Matrix: Sediment

Service Request: K2005397 Date Collected: 7/17/00 Date Received: 7/18/00 Date Analyzed: 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0001 Lab Code: K2005397-001d

Gravel and Sand (Sieve Analysis)

Description	Sieve Size				
-		Weight (g)	Passing		
Gravel	No.3/4''(19.0 mm)	0.000	100		
Gravel	No.3/8"(9.50 mm)	0.0000	100		
Medium Gravel	No.4 (4.75 mm)	0.0000	100		
Fine Gravel	No.10 (2.00 mm)	0.0000	100		
Very Coarse Sand	No.20 (0.850 mm)	1.0468	97.9		
Coarse Sand	No.40 (0.425 mm)	2.4287	92.9		
Medium Sand	No.60 (0.250 mm)	2.7094	87.4		
Fine Sand	No.140 (0.106 mm)	6.2735	74.6		
Very Fine Sand	No.200 (0.0750 mm)		68.9		

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	68.6
0.005 mm	13.7
0.001 mm	12.7

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Approved By: _____Date: _____Date 1A/102094

	Sample Name:	GS0001		
	Lab Code:	K2005397-001d		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	97.9	0.850	850000	5.929
40	92.9	0.425	425000	5.628
60	87.4	0.250	250000	5.398
140	74.6	0.106	106000	5.025
200	68.9	0.0750	75000	4.875
2	61.1	0.0461	46074.39319	4.663
5	50.9	0.0299	29902.57503	4.476
15	35.6	0.0179	17904.3771	4.253
30	25.4	0.0130	12953.27673	4.112
60	20.4	0.0093	9261.192884	3.967
250	12.7	0.0046	4552.840263	3.658
1440	12.7	0.0020	1967.894439	3.294
	determined hydrome			(/ D)
	<u>mm</u>	mm to nm	log hyd x	<u>% Passing</u>
	0.074	74000	4.87	68.6
	0.005	5000	3.70	13.7
	0.001	1000	3.00	12.7

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005397

 Date Collected:
 7/17/00

 Date Received:
 7/18/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0002 Lab Code: K2005397-002

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Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
_		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3909	99.2
Coarse Sand	No.40 (0.425 mm)	0.1471	98.9
Medium Sand	No.60 (0.250 mm)	0.2425	98.4
Fine Sand	No.140 (0.106 mm)	1.1842	96.0
Very Fine Sand	No.200 (0.0750 mm)	1.1230	93.7

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.9
0.005 mm	13.7
0.001 mm	8.4

Approved By: ____ IA/102094

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005397

 Date Collected:
 7/17/00

 Date Received:
 7/18/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0001 Lab Code: K2005397-001

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	1.0572	97.8
Coarse Sand	No.40 (0.425 mm)	2.3261	93.1
Medium Sand	No.60 (0.250 mm)	2.9308	87.1
Fine Sand	No.140 (0.106 mm)	6.4212	74.1
Very Fine Sand	No.200 (0.0750 mm)	2.8528	68.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	68.2
0.005 mm	13.4
0.001 mm	8.1

Approved By: _____ 1A/102094

	Sample Name:	GS0002		
	Lab Code:	K2005397-002		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.2	0.850	850000	5.929
40	98.9	0.425	425000	5.628
60	98.4	0.250	250000	5.398
140	96.0	0.106	106000	5.025
200	93.7	0.0750	75000	4.875
2	97.7	0.0460	46002.73286	4.663
5	73.2	0.0311	31090.07875	4.493
15	43.4	0.0193	19264.58432	4.285
30	35.3	0.0139	13864.84424	4.142
60	21.7	0.0101	10083.49083	4.004
250	13.6	0.0050	4956.265601	3.695
1440	10.9	0.0022	2153.662638	3.333
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	% Passing
	0.074	74000	4.87	93.9
	0.005	5000	3.70	13.7
	0.001	1000	3.00	8.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005397

 Date Collected:
 7/17/00

 Date Received:
 7/18/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0003 Lab Code: K2005397-003

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.7837	98.4
Coarse Sand	No.40 (0.425 mm)	0.5731	97.3
Medium Sand	No.60 (0.250 mm)	0.7366	95.8
Fine Sand	No.140 (0.106 mm)	2.4940	90.7
Very Fine Sand	No.200 (0.0750 mm)	1.3951	87.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	88.0
0.005 mm	13.7
0.001 mm	8.3

Approved By: ____ 1A/102094

	Sample Name:	GS0003		
	Lab Code:	K2005397-003		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	98.4	0.850	850000	5.929
40	97.3	0.425	425000	5.628
60	95.8	0.250	250000	5.398
140	90.7	0.106	106000	5.025
200	87.9	0.0750	75000	4.875
2	93.5	0.0454	45418.66002	4.657
5	74.8	0.0302	30245.28666	4.481
15	48.1	0.0186	18644.28483	4.271
30	32.1	0.0137	13660.51789	4.135
60	21.4	0.0099	9877.916346	3.995
250	13.4	0.0049	4855.409267	3.686
1440	10.7	0.0021	2109.818454	3.324
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	88.0
	0.005	5000	3.70	13.7
	0.001	1000	3.00	8.3

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005397

 Date Collected:
 7/17/00

 Date Received:
 7/18/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0004 Lab Code: K2005397-004

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.4039	99.2
Coarse Sand	No.40 (0.425 mm)	0.1901	98.8
Medium Sand	No.60 (0.250 mm)	0.6164	97.5
Fine Sand	No.140 (0.106 mm)	3.2590	90.9
Very Fine Sand	No.200 (0.0750 mm)	1.7963	87.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	87.5
0.005 mm	13.8
0.001 mm	8.4

Approved By: 1A/102094

Approved By: ______Date: _____Date: _____Date: _____Date: _____Date: _____Date: _____Date: _____Date: ______Date: _____Date: ______Date: ______Date: ______Date: ______Date: ______Date: ______Date: ______Date: ______Date: _____Date: ______Date: ______Date: ______Date: ______Date: ______Date: ______Date: _____Date: ______Date: _____Date: ______Date: _____Date: _____Date: _____Date: _____Date: _____Date: _____Date: ______Date: ______Date: ______Date: ______Date: _____Date: ______Date: ______Date: ______Date: ______Date: ______Date: ______Date: ______Date: _____Date: ______Date: ______Date: ______Date: _____Date: _____Date: _____Date: ______Date: ______Date: _____Date: _____Date: _____Date: _____Date: _____Date: _____Date: _____Date: ______Date: ______Date: _____Date: _____Date: _____Date: _____Date: _____Date: ______Date: _____Date: ______Date: ______Date: ______Date: ______Date: ______Date: ______Date: ______Date: ______Date: ______Date: _____Date: _____Date: _____Date: _____Date: _____Date: ______Date: ______Date: _____Date: ______Date: ______Date: ______Date: ______Date: ______Date: _____Date: ______Date: ______Date: ______Date: ______Da

	Sample Name:	GS0004		
	Lab Code:	K2005397-004		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.2	0.850	850000	5.929
40	98.8	0.425	425000	5.628
60	97.5	0.250	250000	5.398
140	90.9	0.106	106000	5.025
200	87.3	0.0750	75000	4.875
2	95.9	0.0466	46552.93783	4.668
5	76.7	0.0310	31000.62725	4.491
15	46.6	0.0192	19226.87297	4.284
30	32.9	0.0140	14001.67331	4.146
60	24.7	0.0101	10069.09072	4.003
250	13.7	0.0050	4976.436868	3.697
1440	11.0	0.0022	2162.431475	3.335
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	87.5
	0.005	5000	3.70	13.8
	0.001	1000	3.00	8.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005397

 Date Collected:
 7/17/00

 Date Received:
 7/18/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0005 Lab Code: K2005397-005

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3523	99.3
Coarse Sand	No.40 (0.425 mm)	0.0782	99.1
Medium Sand	No.60 (0.250 mm)	0.1948	98.7
Fine Sand	No.140 (0.106 mm)	1.2107	96.3
Very Fine Sand	No.200 (0.0750 mm)	1.1100	94.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.3
0.005 mm	16.4
0.001 mm	5.9

Approved By: 1A/102094

Approved By: ______ Date: _____

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	Sample Name:	GS0005		
	Lab Code:	K2005397-005		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.3	0.850	850000	5.929
40	99.1	0.425	425000	5.628
60	98.7	0.250	250000	5.398
140	96.3	0.106	106000	5.025
200	94.0	0.0750	75000	4.875
2	104.0	0.0438	43803.32185	4.642
5	82.7	0.0295	29480.19612	4.470
15	53.3	0.0183	18337.28088	4.263
30	34.7	0.0135	13525.64525	4.131
60	24.0	0.0098	9782.864516	3.990
250	16.0	0.0048	4809.56999	3.682
1440	10.7	0.0021	2101.049617	3.322
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.3
	0.005	5000	3.70	16.4
	0.001	1000	3.00	5.9

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005397

 Date Collected:
 7/17/00

 Date Received:
 7/18/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0006 Lab Code: K2005397-006

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3872	99.2
Coarse Sand	No.40 (0.425 mm)	0.0238	99.2
Medium Sand	No.60 (0.250 mm)	0.0494	99.1
Fine Sand	No.140 (0.106 mm)	0.2185	98.6
Very Fine Sand	No.200 (0.0750 mm)	0.2237	98.2

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.7
0.005 mm	19.4
0.001 mm	8.6

Approved By: 1A/102094

Approved By: ______Date: ______Date: ______

	Sample Name:	GS0006			
	Lab Code:	K2005397-006			
	X	Y	C	Value of Y	
	arithmetic	logarithmic Particle Diameter	Convert Y mm to nm	Log form	
Sieve	Percent Passing (%)	(mm)	(ma)	<u>(log)</u>	
	100.0	19.0	19000000	7.279	
3/4"	100.0	9.5	9500000	6.978	
		4.75	4750000	6.677	
4	100.0	2.00	2000000	6.301	
$\frac{10}{20}$	99.2	0.850	850000	5.929	
40	99.2	0.425	425000	5.628	
60	99.2	0.250	250000	5.398	
	99.1	0.106	106000	5.025	
140			75000	4.875	
200	98.2	0.0750	43618.12982	4.640	
2	121.1	0.0436			
_5	107.4	0.0288	28803.68683	4.459	
15	63.3	0.0187	18701.93553	4.272	
30	46.8	0.0137	13733.4763	4.138	
60	33.0	0.0100	10001.19203	4.000	
250	19.3	0.0050	4973.351317	3.697	
1440	13.8	0.0022	2172.879678	3.337	
	determined hydrome	ter			
	mm	<u>mm to nm</u>	log hyd x	<u>% Passing</u>	
	0.074	74000	4.87	98.7	
	0.005	5000	3.70	19.4	
	0.001	1000	3.00	8.6	

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Analytical Report

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Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005397

 Date Collected:
 7/17/00

 Date Received:
 7/18/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0007 Lab Code: K2005397-007

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	6.4967	86.8
Coarse Sand	No.40 (0.425 mm)	4.3499	78.0
Medium Sand	No.60 (0.250 mm)	2.0934	73.8
Fine Sand	No.140 (0.106 mm)	2.3859	69.0
Very Fine Sand	No.200 (0.0750 mm)	0.5464	67.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	68.5
0.005 mm	14.3
0.001 mm	3.2

Approved By: 1A/102094

Approved By: ______Date: _____Date: _____

	Sample Name:	GS0007		
	Lab Code:	K2005397-007		
<u> </u>	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	86.8	0.850	850000	5.929
40	78.0	0.425	425000	5.628
60	73.8	0.250	250000	5.398
140	69.0	0.106	106000	5.025
200	67.9	0.0750	75000	4.875
2	91.5	0.0455	45469.59736	4.658
5	80.8	0.0296	29623.37708	4.472
15	64.6	0.0178	17826.67106	4.251
30	48.5	0.0131	13097.05271	4.117
60	29.6	0.0097	9650.822766	3.985
250	13.5	0.0048	4828.950435	3.684
1440	8.1	0.0021	2108.679312	3.324
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	68.5
	0.005	5000	3.70	14.3
		1000	3.00	3.2

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005397

 Date Collected:
 7/17/00

 Date Received:
 7/18/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0008 Lab Code: K2005397-008

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	2.7031	94.5
Coarse Sand	No.40 (0.425 mm)	1.4769	91.6
Medium Sand	No.60 (0.250 mm)	1.4294	88.7
Fine Sand	No.140 (0.106 mm)	2.2183	84.2
Very Fine Sand	No.200 (0.0750 mm)	0.4310	83.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	83.8
0.005 mm	11.4
0.001 mm	5.6

Approved By: ____ 1A/102094 _____Date: _____D

	Sample Name: Lab Code: X arithmetic	GS0008 K2005397-008 Y logarithmic		
			Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	94.5	0.850	850000	5.929
40	91.6	0.425	425000	5.628
60	88.7	0.250	250000	5.398
140	84.2	0.106	106000	5.025
200	83.3	0.0750	75000	4.875
2	103.9	0.0432	43246.94125	4.636
5	95.9	0.0280	28022.37723	4.448
15	74.6	0.0172	17168.56467	4.235
30	45.3	0.0130	13041.20717	4.115
60	24.0	0.0097	9658.604624	3.985
250	10.7	0.0048	4804.338449	3.682
1440	8.0	0.0021	2086.887307	3.319
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	83.8
	0.005	5000	3.70	11.4
	0.001	1000	3.00	5.6

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005397

 Date Collected:
 7/17/00

 Date Received:
 7/18/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

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Sample Name: GS0009 Lab Code: K2005397-009

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Weight (g)	Percent Passing
Gravel	No.3/4"(19.0 mm)		100
Gravel	No.3/8"(9.50 mm)		100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.8448	98.3
Coarse Sand	No.40 (0.425 mm)	0.3952	97.5
Medium Sand	No.60 (0.250 mm)	0.5761	96.3
Fine Sand	No.140 (0.106 mm)	0.5475	95.2
Very Fine Sand	No.200 (0.0750 mm)	0.1105	95.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	95.6
0.005 mm	15.6
0.001 mm	0.0

Approved By: 1A/102094

	Sample Name:	GS0009		
	Lab Code:	K2005397-009		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	98.3	0.850	850000	5.929
40	97.5	0.425	425000	5.628
60	96.3	0.250	250000	5.398
140	95.2	0.106	106000	5.025
200	95.0	0.0750	75000	4.875
2	120.9	0.0414	41386.64134	4.617
5	115.5	0.0267	26651.69347	4.426
15	96.7	0.0163	16313.71333	4.213
30	75.2	0.0122	12241.29797	4.088
60	51.0	0.0092	9184.980274	3.963
250	13.4	0.0048	4818.980829	3.683
1440	5.4	0.0021	2115.202924	3.325
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	95.6
	0.005	5000	3.70	15.6
	0.001	1000	3.00	0.0

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

Service Request: K2005397 Date Collected: 7/17/00 Date Received: 7/18/00 Date Analyzed: 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0010 Lab Code: K2005397-010

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	1.8999	96.2
Coarse Sand	No.40 (0.425 mm)	4.1185	87.8
Medium Sand	No.60 (0.250 mm)	4.5352	78.6
Fine Sand	No.140 (0.106 mm)	8.9792	60.5
Very Fine Sand	No.200 (0.0750 mm)	2.1029	56.2

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	56.4
0.005 mm	14.2
0.001 mm	

Approved By: 1A/102094

Approved By: _____ Date: _____

· · · · · · · · · · · · · · · · · · ·	Sample Name:	GS0010		
	Lab Code:	K2005397-010		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
~ -	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u> (%)</u>	(<u>mm</u>)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	96.2	0.850	850000	5.929
40	87.8	0.425	425000	5.628
60	78.6	0.250	250000	5.398
140	60.5	0.106	106000	5.025
200	56.2	0.0750	75000	4.875
2	64.1	0.0483	48316.44247	4.684
5	56.1	0.0312	31159.68389	4.494
15	42.8	0.0186	18554.57408	4.268
30	34.7	0.0134	13353.84534	4.126
60	26.7	0.0096	9605.057556	3.982
250	13.4	0.0048	4779.102404	3.679
1440	8.0	0.0021	2086.887307	3.319
	determined hydrome	ter		
	<u></u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	56.4
	0.005	5000	3.70	14.2
	0.001	1000	3.00	3.3

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005397

 Date Collected:
 7/17/00

 Date Received:
 7/18/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0011 Lab Code: K2005397-011

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.7194	98.5
Coarse Sand	No.40 (0.425 mm)	0.1158	98.3
Medium Sand	No.60 (0.250 mm)	0.1862	97.9
Fine Sand	No.140 (0.106 mm)	0.9606	96.0
Very Fine Sand	No.200 (0.0750 mm)	0.7574	94.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.9
0.005 mm	28.5
0.001 mm	11.7

Approved By: _____ 1A/102094 .

_____Date: _____D

	Sample Name: Lab Code:	GS0011		
		K2005397-011		
	<u> </u>	Y	<u> </u>	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	98.5	0.850	850000	5.929
40	98.3	0.425	425000	5.628
60	97.9	0.250	250000	5.398
140	96.0	0.106	106000	5.025
200	94.4	0.0750	75000	4.875
2	114.1	0.0432	43215.23238	4.636
5	100.5	0.0285	28496.49715	4.455
15	78.8	0.0175	17474.69476	4.242
30	62.5	0.0129	12871.98678	4.110
60	46.2	0.0095	9452.34386	3.976
250	27.2	0.0048	4767.293836	3.678
1440	19.0	0.0021	2094.35461	3.321
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.9
	0.005	5000	3.70	28.5
	0.001	1000	3.00	11.7

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005397

 Date Collected:
 7/17/00

 Date Received:
 7/18/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0012 Lab Code: K2005397-012

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3906	99.2
Coarse Sand	No.40 (0.425 mm)	0.0748	99.1
Medium Sand	No.60 (0.250 mm)	0.0851	98.9
Fine Sand	No.140 (0.106 mm)	0.3562	98.2
Very Fine Sand	No.200 (0.0750 mm)	0.3926	97.4

Silt and Clay (Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.9
0.005 mm	29.3
0.001 mm	12.3

Approved By: _____ 1A/102094 _Date: ____

	Sample Name:	GS0012		
	Lab Code:	K2005397-012		
	X arithmetic	Y	Convert Y	Value of Y
	Percent Passing	logarithmic Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(mm)	(nm)	<u>(log)</u>
<u>3/4"</u>	100.0	19.0	19000000	7.279
3/4 3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.2	0.850	850000	5.929
40	99.1	0.425	425000	5.628
60	98.9	0.250	250000	5.398
140	98.2	0.106	106000	5.025
200	97.4	0.0750	75000	4.875
2	119.7	0.0421	42110.61404	4.624
5	106.1	0.0278	27808.18307	4,444
15	78.9	0.0173	17332.45593	4.239
30	65.3	0.0127	12683.42491	4.103
60	49.0	0.0093	9318.368191	3.969
250	27.2	0.0047	4673.233371	3.670
1440	19.0	0.0020	2002.97252	3.302
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.9
	0.005	5000	3.70	29.3
	0.001	1000	3.00	12.3

Analytical Report

Client: Exponent Environmental Group, Inc. OL RI/FS Phase 2A / 8600BCP.003.0801 Project: Sample Matrix: Sediment

Service Request: K2006342 Date Collected: 8/15/00 Date Received: 8/16/00 Date Analyzed: 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0013 Lab Code: K2006342-001

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	99.9
Gravel	No.3/8"(9.50 mm)	0.0000	99.9
Medium Gravel	No.4 (4.75 mm)	0.0000	99.9
Fine Gravel	No.10 (2.00 mm)	0.4832	99.0
Very Coarse Sand	No.20 (0.850 mm)	0.6551	97.2
Coarse Sand	No.40 (0.425 mm)	1.5590	93.1
Medium Sand	No.60 (0.250 mm)	2.6235	86.1
Fine Sand	No.140 (0.106 mm)	3.5866	76.5
Very Fine Sand	No.200 (0.0750 mm)	0.6293	74.8

Silt and Clay (Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	76.9
0.005 mm	22.2
0.001 mm	4.4

Approved By: _____Date: _____Aate: ____AAte: _____AAte: _____AAte: _____AAte: ____AAte: 1A/102094

	Sample Name:	GS0013		
	Lab Code:	K2006342-001		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	99.9	19.0	1900000	7.279
3/8"	99.9	9.5	9500000	6.978
4	99.9	4.75	4750000	6.677
10	99.0	2.00	2000000	6.301
20	97.2	0.850	850000	5.929
40	93.1	0.425	425000	5.628
60	86.1	0.250	250000	5.398
140	76.5	0.106	106000	5.025
200	74.8	0.0750	75000	4.875
2	154.5	0.0442	44179.87184	4.645
5	140.1	0.0289	28915.02075	4.461
15	107.8	0.0179	17893.94602	4.253
30	71.9	0.0135	13533.38402	4.131
60	35.9	0.0102	10154.02172	4.007
250	18.0	0.0051	5111.589532	3.709
1440	10.8	0.0022	2152.263323	3.333
	determined hydrome			
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	76.9
	0.005	5000	3.70	22.2
	0.001	1000	3.00	4.4

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006342

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0014 Lab Code: K2006342-002

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	99.8
Gravel	No.3/8''(9.50 mm)	0.0000	99.8
Medium Gravel	No.4 (4.75 mm)	0.2904	99.3
Fine Gravel	No.10 (2.00 mm)	0.5200	98.3
Very Coarse Sand	No.20 (0.850 mm)	1.6253	93.8
Coarse Sand	No.40 (0.425 mm)	2.1633	87.9
Medium Sand	No.60 (0.250 mm)	2.4825	81.1
Fine Sand	No.140 (0.106 mm)	6.0184	64.7
Very Fine Sand	No.200 (0.0750 mm)	1.9253	59.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	61.2
0.005 mm	22.5
0.001 mm	14.5

Approved By: ____ 1A/102094

	Sample Name:	GS0014		
	Lab Code:	K2006342-002		
	<u>X</u> arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(mm)	(nm)	<u>(log)</u>
3/4"	99.8	19.0	19000000	7.279
3/8"	99.8	9.5	9500000	6.978
4	99.3	4.75	4750000	6.677
10	98.3	2.00	2000000	6.301
20	93.8	0.850	850000	5.929
40	87.9	0.425	425000	5.628
60	81.1	0.250	250000	5.398
140	64.7	0.106	106000	5.025
200	59.4	0.0750	75000	4.875
2	123.1	0.0466	46608.85394	4.668
5	105.0	0.0306	30583.46998	4.485
15	79.7	0.0185	18513.9675	4.267
30	57.9	0.0136	13589.0545	4.133
60	36.2	0.0099	9948.399575	3.998
250	14.5	0.0050	5034.523384	3.702
1440	14.5	0.0021	2097.718076	3.322
	determined hydrome	ter		
	mm	mm to nm	log hyd x	<u>% Passing</u>
	0.074	74000	4.87	61.2
	0.005	5000	3.70	22.5
	0.001	1000	3.00	14.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006342

 Date Collected:
 8/15/00

 Date Received:
 8/16/00.

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0014 Lab Code: K2006342-002DUP

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	99.6
Gravel	No.3/8''(9.50 mm)	0.0000	99.6
Medium Gravel	No.4 (4.75 mm)	0.0291	99.5
Fine Gravel	No.10 (2.00 mm)	0.5840	98.4
Very Coarse Sand	No.20 (0.850 mm)	1.4443	94.5
Coarse Sand	No.40 (0.425 mm)	1.9839	89.1
Medium Sand	No.60 (0.250 mm)	2.6561	81.9
Fine Sand	No.140 (0.106 mm)	5.8830	65.9
Very Fine Sand	No.200 (0.0750 mm)	1.8300	61.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	62.5
0.005 mm	21.3
0.001 mm	7.7

Approved By: 1A/102094

Approved By: _____ Date: _____

	Sample Name:	GS0014		
	Lab Code:	K2006342-002DUP		
	x	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	99.6	19.0	1900000	7.279
3/8"	99.6	9.5	9500000	6.978
4	99.5	4.75	4750000	6.677
10	98.4	2.00	2000000	6.301
20	94.5	0.850	850000	5.929
40	89.1	0.425	425000	5.628
60	81.9	0.250	250000	5.398
140	65.9	0.106	106000	5.025
200	61.0	0.0750	75000	4.875
2	115.1	0.0473	47315.74574	4.675
5	107.9	0.0304	30365.6011	4.482
15	82.7	0.0184	18394.03954	4.265
30	57.6	0.0136	13589.0545	4.133
60	36.0	0.0099	9948.399575	3.998
250	14.4	0.0050	5034.523384	3.702
1440	10.8	0.0021	2108.679312	3.324
+	determined hydrome	ler		
	<u>mm</u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	62.5
	0.005	5000	3.70	21.3
	0.001	1000	3.00	7.7

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006342

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0015 Lab Code: K2006342-003

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel		0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0143	99.9
Fine Gravel	No.10 (2.00 mm)	0.1113	99.7
Very Coarse Sand	No.20 (0.850 mm)	0.2724	99.0
Coarse Sand	No.40 (0.425 mm)	0.3320	98.1
Medium Sand	No.60 (0.250 mm)	0.6188	96.4
Fine Sand	No.140 (0.106 mm)	3.5134	86.7
Very Fine Sand	No.200 (0.0750 mm)	2.8020	79.0

Silt and Clay (Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	80.3
0.005 mm	19.8
0.001 mm	11.4

Approved By: _____ 1A/102094 _____Date: _____

	Sample Name:	GS0015		
	Lab Code:	K2006342-003		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	99.9	4.75	4750000	6.677
10	99.7	2.00	2000000	6.301
20	99.0	0.850	850000	5.929
40	98.1	0.425	425000	5.628
60	96.4	0.250	250000	5.398
140	86.7	0.106	106000	5.025
200	79.0	0.0750	75000	4.875
2	126.8	0.0458	45773.37519	4.661
5	105.0	0.0303	30267.40715	4.481
15	68.8	0.0187	18674.17627	4.271
30	39.8	0.0138	13845.70626	4.141
60	25.4	0.0100	10009.34958	4.000
250	18.1	0.0050	4956.322582	3.695
1440	14.5	0.0021	2076.039349	3.317
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	80.3
_	0.005	5000	3.70	19.8
	0.001	1000	3.00	11.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006342

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0016 Lab Code: K2006342-004

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	99.8
Gravel		0.0000	99.8
Medium Gravel	No.4 (4.75 mm)	0.1462	99.6
Fine Gravel	No.10 (2.00 mm)	0.5860	98.4
Very Coarse Sand	No.20 (0.850 mm)	0.6700	96.7
Coarse Sand	No.40 (0.425 mm)	1.6405	92.4
Medium Sand		2.7673	85.1
Fine Sand	No.140 (0.106 mm)	7.5081	65.5
Very Fine Sand	No.200 (0.0750 mm)	3.2012	57.1

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	58.3
0.005 mm	20.4
0.001 mm	4.5

Approved By: _____ IA/102094 _____Date: _____

-	Sample Name:	GS0016		
	Lab Code:	K2006342-004	<u> </u>	
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	99.8	19.0	1900000	7.279
3/8"	99.8	9.5	9500000	6.978
4	99.6	4.75	4750000	6.677
10	98.4	2.00	2000000	6.301
20	96.7	0.850	850000	5.929
40	92.4	0.425	425000	5.628
60	85.1	0.250	250000	5.398
140	65.5	0.106	106000	5.025
200	57.1	0.0750	75000	4.875
2	99.9	0.0479	47856.97273	4.680
5	86.1	0.0311	31114.93841	4.493
15	75.8	0.0183	18322.63614	4.263
30	44.8	0.0137	13688.25386	4.136
60	31.0	0.0099	9900.476504	3.996
250	17.2	0.0050	4956.322582	3.695
1440	10.3	0.0021	2086.887307	3.319
	determined hydrome	ter		
	mm	<u>mm to nm</u>	log hyd x	% Passing
	0.074	74000	4.87	58.3
+	0.005	5000	3.70	20.4
	0.001	1000	3.00	4.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006342

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0017 Lab Code: K2006342-005

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100.0
Medium Gravel	No.4 (4.75 mm)	0.0000	100.0
Fine Gravel	No.10 (2.00 mm)	0.0000	100.0
Very Coarse Sand	No.20 (0.850 mm)	0.1172	99.7
Coarse Sand	No.40 (0.425 mm)	0.1576	99.3
Medium Sand	No.60 (0.250 mm)	0.3508	98.4
Fine Sand	No.140 (0.106 mm)	2.6164	91.5
Very Fine Sand	No.200 (0.0750 mm)	5.3842	77.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	78.4
0.005 mm	22.8
0.001 mm	8.0

Approved By: 1A/102094

Approved By: _____Date: _____Date: _____

	Sample Name:	GS0017		
	Lab Code:	K2006342-005		
	X	Y	<u>}</u>	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.3	0.425	425000	5.628
60	98.4	0.250	250000	5.398
140	91.5	0.106	106000	5.025
200	77.3	0.0750	75000	4.875
2	118.8	0.0466	46608.85394	4.668
5	97.8	0.0308	30799.79776	4.489
15	66.4	0.0189	18869.17853	4.276
30	45.4	0.0138	13831.19139	4.141
60	31.4	0.0100	10003.86073	4.000
250	21.0	0.0050	4981.492694	3.697
1440	14.0	0.0021	2097.718076	3.322
	determined hydrome	ter		
	<u>mm</u>	<u>mm to nm</u>	log hyd x	<u>% Passing</u>
	0.074	74000	4.87	78.4
	0.005	5000	3.70	22.8
	0.001	1000	3.00	8.0

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006342

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0018 Lab Code: K2006342-006

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0623	99.8
Coarse Sand	No.40 (0.425 mm)	0.0694	99.7
Medium Sand	No.60 (0.250 mm)	0.0695	99.5
Fine Sand	No.140 (0.106 mm)	0.4953	98.2
Very Fine Sand	No.200 (0.0750 mm)	0.5112	96.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.2
0.005 mm	32.2
0.001 mm	14.9

	Sample Name:	GS0018		
	Lab Code:	K2006342-006		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	98.2	0.106	106000	5.025
200	96.8	0.0750	75000	4.875
2	154.4	0.0421	42072.02479	4.624
5	130.4	0.0283	28267.70521	4.451
15	89.2	0.0178	17843.14554	4.251
30	68.6	0.0131	13122.30108	4.118
60	44.6	0.0097	9679.057131	3.986
250	27.4	0.0049	4876.964393	3.688
1440	20.6	0.0021	2054.171579	3.313
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	98.2
	0.005	5000	3.70	32.2
	0.001	1000	3.00	14.9

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006342

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0019 Lab Code: K2006342-007

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0900	100
Fine Gravel	No.10 (2.00 mm)	0.0261	99.9
Very Coarse Sand	No.20 (0.850 mm)	0.2575	99.3
Coarse Sand	No.40 (0.425 mm)	0.1573	98.8
Medium Sand	No.60 (0.250 mm)	0.2275	98.2
Fine Sand	No.140 (0.106 mm)	4.1884	87.1
Very Fine Sand	No.200 (0.0750 mm)	4.9662	73.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	74.8
0.005 mm	27.7
0.001 mm	11.6

Approved By: ______ 1A/102094

__Date: _____

	Sample Name:	GS0019		
	Lab Code:	K2006342-007		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(<u>mm</u>)	(nm)	<u>(log)</u>
3/4"	100.2	19.0	19000000	7.279
3/8"	100.2	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	99.9	2.00	2000000	6.301
20	99.3	0.850	850000	5.929
40	98.8	0.425	425000	5.628
60	98.2	0.250	250000	5.398
140	87.1	0.106	106000	5.025
200	73.9	0.0750	75000	4.875
2	104.0	0.0470	47019.87261	4.672
5	83.2	0.0310	30996.1501	4.491
15	62.4	0.0186	18593.68418	4.269
30	48.5	0.0135	13466.73624	4.129
60	38.1	0.0097	9688.158092	3.986
250	24.3	0.0049	4852.355144	3.686
1440	17.3	0.0020	2043.569555	3.310
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	74.8
	0.005	5000	3.70	27.7
	0.001	1000	3.00	11.6

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006342

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0020 Lab Code: K2006342-008

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1622	99.5
Coarse Sand	No.40 (0.425 mm)	0.0729	99.2
Medium Sand	No.60 (0.250 mm)	0.1700	98.6
Fine Sand	No.140 (0.106 mm)	2.7245	89.5
Very Fine Sand	No.200 (0.0750 mm)	3.0510	79.2

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	80.6
0.005 mm	33.9
0.001 mm	14.7

Approved By: ______ IA/102094

_Date: _____

	Sample Name:	GS0020		
	Lab Code:	K2006342-008		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.5	0.850	850000	5.929
40	99.2	0.425	425000	5.628
60	98.6	0.250	250000	5.398
140	89.5	0.106	106000	5.025
200	79.2	0.0750	75000	4.875
2	122.3	0.0501	50051.98318	4.699
5	108.7	0.0323	32304.50284	4.509
15	77.0	0.0195	19497.13991	4.290
30	63.4	0.0140	14035.16945	4.147
60	45.3	0.0102	10154.02172	4.007
250	31.7	0.0051	5057.173875	3.704
1440	22.6	0.0021	2129.828972	3.328
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	80.6
	0.005	5000	3.70	33.9
	0.001	1000	3.00	14.7

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006342

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0021 Lab Code: K2006342-009

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Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0172	99.9
Very Coarse Sand	No.20 (0.850 mm)	0.4761	98.1
Coarse Sand	No.40 (0.425 mm)	0.2635	97.1
Medium Sand	No.60 (0.250 mm)	0.2066	96.3
Fine Sand	No.140 (0.106 mm)	1.7140	89.7
Very Fine Sand	No.200 (0.0750 mm)	1.8157	82.7

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	84.4
0.005 mm	33.4
0.001 mm	11.6

Approved By: 1A/102094

Approved By: ______Date: ______

	Sample Name:	GS0021		
	Lab Code:	K2006342-009		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	99.9	2.00	2000000	6.301
20	98.1	0.850	850000	5.929
40	97.1	0.425	425000	5.628
60	96.3	0.250	250000	5.398
140	89.7	0.106	106000	5.025
200	82.7	0.0750	75000	4.875
2	133.7	0.0499	49886.00705	4.698
5	113.2	0.0324	32398.52799	4.511
15	82.3	0.0194	19416.43051	4.288
30	61.7	0.0141	14054.72908	4.148
60	46.3	0.0101	10107.24496	4.005
250	30.9	0.0050	5032.973597	3.702
1440	20.6	0.0021	2119.396804	3.326
	determined hydrome			
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	84.4
	0.005	5000	3.70	33.4
	0.001	1000	3.00	11.6

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006342

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0022 Lab Code: K2006342-010

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0794	99.7
Coarse Sand	No.40 (0.425 mm)	0.1021	99.3
Medium Sand	No.60 (0.250 mm)	0.1437	98.8
Fine Sand	No.140 (0.106 mm)	0.7698	95.8
Very Fine Sand	No.200 (0.0750 mm)	0.8547	92.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.0
0.005 mm	36.5
0.001 mm	7.7

Approved By: ____ 1A/102094 .

_____Date: _____

	Sample Name:	GS0022		
	Lab Code:	K2006342-010		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.3	0.425	425000	5.628
60	98.8	0.250	250000	5.398
140	95.8	0.106	106000	5.025
200	92.5	0.0750	75000	4.875
2	147.8	0.0460	46027.51422	4.663
5	123.2	0.0301	30140.19928	4.479
15	88.7	0.0182	18201.26291	4.260
30	69.0	0.0132	13182.51963	4.120
60	49.3	0.0095	9537.155292	3.979
250	34.5	0.0047	4749.945778	3.677
1440	19.7	0.0020	2011.003167	3.303
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.0
	0.005	5000	3.70	36.5
	0.001	1000	3.00	7.7

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006342

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0023 Lab Code: K2006342-011

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size		
		Weight (g)	Passing	
Gravel	No.3/4"(19.0 mm)	0.0000	100	
Gravel	No.3/8''(9.50 mm)	0.0000	100	
Medium Gravel	No.4 (4.75 mm)	0.0000	100	
Fine Gravel	No.10 (2.00 mm)	0.0000	100	
Very Coarse Sand	No.20 (0.850 mm)	0.1103	99.6	
Coarse Sand	No.40 (0.425 mm)	0.1359	99.0	
Medium Sand	No.60 (0.250 mm)	0.1428	98.4	
Fine Sand	No.140 (0.106 mm)	0.7662	95.4	
Very Fine Sand	No.200 (0.0750 mm)	0.8066	92.2	

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.0
0.005 mm	36.6
0.001 mm	12.1

_Date: _____

	Sample Name:	GS0023		
	Lab Code:	K2006342-011		
	X	Y	Convert Y	Value of Y
	arithmetic	logarithmic		
<u>C</u>	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(<u>mm)</u>	(nm)	(log)
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
_20	99.6	0.850	850000	5.929
40	99.0	0.425	425000	5.628
60	98.4	0.250	250000	5.398
140	95.4	0.106	106000	5.025
200	92.2	0.0750	75000	4.875
2	153.7	0.0484	48356.71194	4.684
5	132.5	0.0314	31439.85146	4.497
15	95.4	0.0190	18986.10546	4.278
30	74.2	0.0138	13750.95285	4.138
60	53.0	0.0099	9948.399575	3.998
250	31.8	0.0050	4981.492694	3.697
1440	21.2	0.0021	2097.718076	3.322
	determined hydrome	ter		
	mm	<u>mm to nm</u>	log hyd x	% Passing
	0.074	74000	4.87	94.0
	0.005	5000	3.70	36.6
	0.001	1000	3.00	12.1

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006342

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: GS0024 Lab Code: K2006342-012

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0285	99.9
Coarse Sand	No.40 (0.425 mm)	0.0662	99.6
Medium Sand	No.60 (0.250 mm)	0.0738	99.3
Fine Sand	No.140 (0.106 mm)	0.2210	98.4
Very Fine Sand	No.200 (0.0750 mm)	0.2299	97.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	99.3
0.005 mm	52.7
0.001 mm	19.0

Approved By: 1A/102094

	Sample Name:	GS0024		
	Lab Code:	K2006342-012		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(<u>mm</u>)	(nm)	(log)
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.6	0.425	425000	5.628
60	99.3	0.250	250000	5.398
140	98.4	0.106	106000	5.025
200	97.4	0.0750	75000	4.875
2	161.9	0.0470	47019.87261	4.672
5	145.7	0.0304	30373.57971	4.482
15	86.3	0.0188	18820.61451	4.275
30	86.3	0.0133	13308.18415	4.124
60	70.2	0.0096	9577.985039	3.981
250	48.6	0.0048	4799.575407	3.681
1440	32.4	0.0020	2032.721203	3.308
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	99.3
	0.005	5000	3.70	52.7
	0.001	1000	3.00	19.0

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005759

 Date Collected:
 7/27/00

 Date Received:
 7/28/00

 Date Analyzed:
 8/17/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0019 Lab Code: K2005759-005

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	_100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3327	99.4
Coarse Sand	No.40 (0.425 mm)	0.2259	98.9
Medium Sand	No.60 (0.250 mm)	0.4197	98.1
Fine Sand	No.140 (0.106 mm)	1.8891	94.5
Very Fine Sand	No.200 (0.0750 mm)	0.6627	93.2

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.1
0.005 mm	25.4
0.001 mm	5.1

Approved By: ______ 1A/102094

__Date: _____

	Sample Name:	SB0019		
	Lab Code:	K2005759-005		
	x	Y	+	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.4	0.850	850000	5.929
40	98.9	0.425	425000	5.628
60	98.1	0.250	250000	5.398
140	94.5	0.106	106000	5.025
200	93.2	0.0750	75000	4.875
2	90.8	0.0287	28658.36959	4.457
5	84.9	0.0186	18631.63756	4.270
15	65.4	0.0117	11678.96659	4.067
30	49.8	0.0087	8744.90588	3.942
60	34.2	0.0065	6509.517162	3.814
250	10.7	0.0033	3334.616433	3.523
1440	6.8	0.0014	1437.790277	3.158
	determined hydromet	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	93.1
	0.005	5000	3.70	25.4
	0.001	1000	3.00	5.1

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

Service Request: K2005759 Date Collected: 7/27/00 Date Received: 7/28/00 Date Analyzed: 8/17/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0020 Lab Code: K2005759-006

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1347	99.7
Coarse Sand	No.40 (0.425 mm)	0.0544	99.6
Medium Sand	No.60 (0.250 mm)	0.0921	99.4
Fine Sand	No.140 (0.106 mm)	0.4144	98.6
Very Fine Sand	No.200 (0.0750 mm)	0.3864	97.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.8
0.005 mm	27.1
0.001 mm	4.5

Approved By: ______ 1A/102094

___Date: _____

	Sample Name:	SB0020		
	Lab Code:	K2005759-006		
		Y	++	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.6	0.425	425000	5.628
60	99.4	0.250	250000	5.398
140	98.6	0.106	106000	5.025
200	97.8	0.0750	75000	4.875
2	94.0	0.0285	28487.02065	4.455
5	87.9	0.0185	18520.23864	4.268
15	71.8	0.0114	11431.72257	4.058
30	53.6	0.0086	8633.637183	3.936
60	35.4	0.0065	6470.596634	3.811
250	13.1	0.0033	3297.039817	3.518
1440	7.1	0.0014	1429.193701	3.155
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.8
	0.005	5000	3.70	27.1
	0.001	1000	3.00	4.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

Service Request: K2005951 Date Collected: 8/3/00 Date Received: 8/4/00 Date Analyzed: 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0029 Lab Code: K2005951-008

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2919	99.3
Coarse Sand	No.40 (0.425 mm)	0.2425	98.7
Medium Sand	No.60 (0.250 mm)	0.2685	98.1
Fine Sand	No.140 (0.106 mm)	1.0366	95.6
Very Fine Sand	No.200 (0.0750 mm)	0.7499	93.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.6
0.005 mm	18.2
0.001 mm	7.6

Approved By: 1A/102094

	Sample Name:	SB0029	T	
	Lab Code:	K2005951-008		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.3	0.850	850000	5.929
40	98.7	0.425	425000	5.628
60	98.1	0.250	250000	5.398
140	95.6	0.106	106000	5.025
200	93.8	0.0750	75000	4.875
2	84.4	0.0339	33925.1386	4.531
5	79.3	0.0218	21779.10626	4.338
15	59.2	0.0133	13293.89963	4.124
30	39.0	0.0099	9882.957841	3.995
60	23.9	0.0072	7233.760596	3.859
250	11.3	0.0036	3640.978312	3.561
1440	8.8	0.0015	1525.043126	3.183
	determined hydrome	ter		·····
+	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	93.6
	0.005	5000	3.70	18.2
	0.001	1000	3.00	7.6

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005951

 Date Collected:
 8/3/00

 Date Received:
 8/4/00

 Date Analyzed:
 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0030 Lab Code: K2005951-009

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0539	99.9
Coarse Sand	No.40 (0.425 mm)	0.0481	99.8
Medium Sand	No.60 (0.250 mm)	0.1428	99.5
Fine Sand	No.140 (0.106 mm)	0.8008	97.9
Very Fine Sand	No.200 (0.0750 mm)	0.4402	97.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.1
0.005 mm	26.9
0.001 mm	11.4

Approved By: 1A/102094

Approved By: _____ Date: _____

	Sample Name:	SB0030		
	Lab Code:	K2005951-009		
	X	Y		
····	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.8	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	97.9	0.106	106000	5.025
200	97.0	0.0750	75000	4.875
2	100.3	0.0284	28429.61811	4.454
5	86.1	0.0192	19199.33509	4.283
15	61.8	0.0122	12197.00899	4.086
30	49.6	0.0090	8992.074231	3.954
60	33.4	0.0067	6689.142148	3.825
250	17.2	0.0034	3431.40365	3.535
1440	13.2	0.0014	1445.388164	3.160
	determined hydrome	ter		
	<u>mm</u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.1
	0.005	5000	3.70	26.9
	0.001	1000	3.00	11.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005951

 Date Collected:
 8/3/00

 Date Received:
 8/4/00

 Date Analyzed:
 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0031 Lab Code: K2005951-010

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0670	99.7
Coarse Sand	No.40 (0.425 mm)	0.1179	99.2
Medium Sand	No.60 (0.250 mm)	0.1829	98.4
Fine Sand	No.140 (0.106 mm)	0.6962	95.3
Very Fine Sand	No.200 (0.0750 mm)	0.4626	93.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.2
0.005 mm	18.4
0.001 mm	9.4

_Date: ____

	Sample Name:	SB0031		
	Lab Code:	K2005951-010		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.2	0.425	425000	5.628
60	98.4	0.250	250000	5.398
140	95.3	0.106	106000	5.025
200	93.3	0.0750	75000	4.875
2	90.3	0.0369	36927.48865	4.567
5	85.7	0.0235	23500.62115	4.371
15	44.0	0.0143	14302.56431	4.155
30	25.5	0.0103	10335.89011	4.014
60	20.8	0.0073	7347.375797	3.866
250	16.2	0.0036	3618.371458	3.559
1440	11.6	0.0015	1515.491792	3.181
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	% Passing
	0.074	74000	4.87	93.2
	0.005	5000	3.70	18.4
	0.001	1000	3.00	9.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005951

 Date Collected:
 8/3/00

 Date Received:
 8/4/00

 Date Analyzed:
 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0032 Lab Code: K2005951-011

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0981	99.8
Coarse Sand	No.40 (0.425 mm)	0.1146	99.6
Medium Sand	No.60 (0.250 mm)	0.1303	99.3
Fine Sand	No.140 (0.106 mm)	1.0027	97.3
Very Fine Sand	No.200 (0.0750 mm)	0.4649	96.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	96.4
0.005 mm	26.6
0.001 mm	10.6

Approved By: _____ 1A/102094

	Sample Name:	SB0032		
	Lab Code:	K2005951-011		
	X	Y		
Ì_	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.6	0.425	425000	5.628
60	99.3	0.250	250000	5.398
140	97.3	0.106	106000	5.025
200	96.4	0.0750	75000	4.875
2	101.2	0.0287	28682.08684	4.458
5	95.1	0.0187	18677.07085	4.271
15	72.6	0.0119	11850.68396	4.074
30	48.1	0.0091	9132.256607	3.961
60	31.7	0.0068	6789.107002	3.832
250	19.4	0.0034	3442.789431	3.537
1440	13.3	0.0015	1458.223909	3.164
	determined hydromet	ter		
	<u></u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	96.4
	0.005	5000	3.70	26.6
	0.001	1000	3.00	10.6

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

Service Request: K2005951 Date Collected: 8/3/00 Date Received: 8/4/00 Date Analyzed: 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0032 Lab Code: K2005951-011DUP

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0747	99.9
Coarse Sand	No.40 (0.425 mm)	0.0963	<u>99.7</u>
Medium Sand	No.60 (0.250 mm)	0.0955	99.5
Fine Sand	No.140 (0.106 mm)	0.4552	98.6
Very Fine Sand	No.200 (0.0750 mm)	0.5654	97.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	
0.005 mm	25.2
0.001 mm	10.6

Approved By: ____ 1A/102094

	Sample Name:	SB0032		
	Lab Code:	K2005951-011DUP		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	98.6	0.106	106000	5.025
200	97.4	0.0750	75000	4.875
2	94.7	0.0295	29531.04195	4.470
5	90.6	0.0190	19026.60587	4.279
15	60.1	0.0124	12394.25133	4.093
30	45.8	0.0092	9192.189096	3.963
60	29.5	0.0068	6829.428139	3.834
250	19.3	0.0034	3442.789431	3.537
1440	13.2	0.0015	1458.223909	3.164
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.4
	0.005	5000	3.70	25.2
	0.001	1000	3.00	10.6

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005951

 Date Collected:
 8/3/00

 Date Received:
 8/4/00

 Date Analyzed:
 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0033 Lab Code: K2005951-012

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	2.1714	95.8
Coarse Sand	No.40 (0.425 mm)	4.3207	87.4
Medium Sand	No.60 (0.250 mm)	3.9786	79.7
Fine Sand	No.140 (0.106 mm)	4.8600	70.3
Very Fine Sand	No.200 (0.0750 mm)	1.9969	66.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	66.4
0.005 mm	28.6
0.001 mm	8.2

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Approved By: 1A/102094

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Approved By: _____Date: _____D

	Sample Name:	SB0033		
	Lab Code:	K2005951-012		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	95.8	0.850	850000	5.929
40	87.4	0.425	425000	5.628
60	79.7	0.250	250000	5.398
140	70.3	0.106	106000	5.025
200	66.4	0.0750	75000	4.875
2	66.2	0.0329	32861.41051	4.517
5	60.3	0.0213	21250.91105	4.327
15	56.3	0.0124	12445.91973	4.095
30	48.4	0.0090	9045.310205	3.956
60	36.5	0.0066	6647.119803	3.823
250	16.8	0.0035	3451.718664	3.538
1440	10.9	0.0015	1461.746466	3.165
	determined hydrome			
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	66.4
	0.005	5000	3.70	28.6
	0.001	1000	3.00	8.2

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005951

 Date Collected:
 8/3/00

 Date Received:
 8/4/00

 Date Analyzed:
 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0034 Lab Code: K2005951-013

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.4140	99.2
Coarse Sand	No.40 (0.425 mm)	1.1295	96.9
Medium Sand	No.60 (0.250 mm)	1.3162	94.2
Fine Sand	No.140 (0.106 mm)	4.2352	85.7
Very Fine Sand	No.200 (0.0750 mm)	2.1771	81.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	81.2
0.005 mm	13.3
0.001 mm	7.3

Approved By: 1A/102094

Approved By: _____Date: _____D

	Sample Name:	SB0034		
	Lab Code:	K2005951-013		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.2	0.850	850000	5.929
40	96.9	0.425	425000	5.628
60	94.2	0.250	250000	5.398
140	85.7	0.106	106000	5.025
200	81.3	0.0750	75000	4.875
2	75.9	0.0323	32294.11816	4.509
5	67.6	0.0211	21063.62828	4.324
15	48.9	0.0130	12952.855	4.112
30	30.2	0.0097	9686.608272	3.986
60	17.7	0.0071	7087.259067	3.850
250	7.3	0.0036	3566.206401	3.552
1440	7.3	0.0015	1485.919334	3.172
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	81.2
	0.005	5000	3.70	13.3
	0.001	1000	3.00	7.3

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005759

 Date Collected:
 7/27/00

 Date Received:
 7/28/00

 Date Analyzed:
 8/17/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0037 Lab Code: K2005759-001

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2940	99.5
Coarse Sand	No.40 (0.425 mm)	0.2027	99.1
Medium Sand	No.60 (0.250 mm)	0.2260	98.7
Fine Sand	No.140 (0.106 mm)	1.0063	96.8
Very Fine Sand	No.200 (0.0750 mm)	0.6039	95.7

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	95.7
0.005 mm	27.2
0.001 mm	4.0

Approved By: 1A/102094

Approved By: ______Date: ______

	Sample Name:	SB0037	1 [
	Lab Code:	K2005759-001	ļ	
	x	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.5	0.850	850000	5.929
40	99.1	0.425	425000	5.628
60	98.7	0.250	250000	5.398
140	96.8	0.106	106000	5.025
200	95.7	0.0750	75000	4.875
2	93.2	0.0286	28583.40555	4.456
5	87.6	0.0186	18612.81202	4.270
15	68.7	0.0117	11717.19408	4.069
30	55.6	0.0087	8733.906241	3.941
60	36.7	0.0066	6602.574305	3.820
250	12.2	0.0034	3405.831072	3.532
1440	6.6	0.0015	1476.474867	3.169
	determined hydrome	ter		
	mm	mm to nm	log hyd x	<u>% Passing</u>
	0.074	74000	4.87	95.7
	0.005	5000	3.70	27.2
	0.001	1000	3.00	4.0

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005759

 Date Collected:
 7/27/00

 Date Received:
 7/28/00

 Date Analyzed:
 8/17/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0038 Lab Code: K2005759-002

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1722	99.7
Coarse Sand	No.40 (0.425 mm)	0.1106	99.5
Medium Sand	No.60 (0.250 mm)	0.1537	99.2
Fine Sand	No.140 (0.106 mm)	0.3926	98.4
Very Fine Sand	No.200 (0.0750 mm)	0.3270	97.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.8
0.005 mm	33.0
0.001 mm	4.4

Approved By: __ 1A/102094

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	Sample Name:	SB0038		
	Lab Code:	K2005759-002		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	(nm)	(log)
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.5	0.425	425000	5.628
60	99.2	0.250	250000	5.398
140	98.4	0.106	106000	5.025
200	97.8	0.0750	75000	4.875
2	97.5	0.0278	27801.52836	4.444
5	89.8	0.0183	18287.70026	4.262
15	70.5	0.0115	11512.52874	4.061
30	57.0	0.0086	8581.350271	3.934
60	41.5	0.0064	6405.579685	3.807
250	18.3	0.0033	3292.036083	3.517
1440	8.7	0.0014	1443.104855	3.159
	determined hydrome	ter		
	mm	mm to nm	log hyd x	<u>% Passing</u>
	0.074	74000	4.87	97.8
	0.005	5000	3.70	33.0
	0.001	1000	3.00	4.4

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0039 Lab Code: K2005960-015

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.7363	98.6
Medium Gravel	No.4 (4.75 mm)	0.3958	97.9
Fine Gravel	No.10 (2.00 mm)	3.5903	91.3
Very Coarse Sand	No.20 (0.850 mm)	3.5465	84.6
Coarse Sand	No.40 (0.425 mm)	2.2613	80.3
Medium Sand	No.60 (0.250 mm)	2.5511	75.5
Fine Sand	No.140 (0.106 mm)	9.4579	57.6
Very Fine Sand	No.200 (0.0750 mm)	4.0925	49.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	49.7
0.005 mm	10.6
0.001 mm	0.0

Approved By 1A/102094

Approved By: ______Date: ______Date: ______

	Sample Name:	SB0039	Ţ	
	Lab Code:	K2005960-015	ļ	
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(<u>mm</u>)	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	98.6	9.5	9500000	6.978
4	97.9	4.75	4750000	6.677
10	91.3	2.00	2000000	6.301
20	84.6	0.850	850000	5.929
40	80.3	0.425	425000	5.628
60	75.5	0.250	250000	5.398
140	57.6	0.106	106000	5.025
200	49.8	0.0750	75000	4.875
2	43.5	0.0342	34243.50017	4.535
5	35.8	0.0222	22213.33866	4.347
15	28.0	0.0131	13137.95909	4.119
30	20.3	0.0095	9506.168174	3.978
60	14.5	0.0068	6834.303913	3.835
250	4.8	0.0034	3358.614858	3.526
1440	1.0	0.0014	1447.180127	3.161
+	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	49.7
	0.005	5000	3.70	10.6
	0.001	1000	3.00	-0.7

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0040 Lab Code: K2005960-016

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.7878	98.3
Medium Gravel	No.4 (4.75 mm)	1.7131	95.0
Fine Gravel	No.10 (2.00 mm)	1.8329	91.5
Very Coarse Sand	No.20 (0.850 mm)	3.7230	84.0
Coarse Sand	No.40 (0.425 mm)	3.9335	76.0
Medium Sand	No.60 (0.250 mm)	4.4683	67.0
Fine Sand	No.140 (0.106 mm)	7.6217	51.6
Very Fine Sand	No.200 (0.0750 mm)	2.2326	47.1

Silt	and	Clay	
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(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	47.0
0.005 mm	13.3
0.001 mm	0.0

Approved By: 1A/102094

Approved By: _____Date: _____Date

_	Sample Name:	SB0040		
	Lab Code:	K2005960-016		
	X	Y		X7-1 C X7
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(<u>mm</u>)	<u>(nm)</u>	<u>(log)</u>
	99.8	19.0	19000000	7.279
3/8"	98.3	9.5	9500000	6.978
4	95.0	4.75	4750000	6.677
10	91.5	2.00	2000000	6.301
20	84.0	0.850	850000	5.929
40	76.0	0.425	425000	5.628
60	67.0	0.250	250000	5.398
140	51.6	0.106	106000	5.025
200	47.1	0.0750	75000	4.875
2	44.4	0.0345	34465.31933	4.537
5	40.2	0.0221	22075.68892	4.344
15	32.0	0.0131	13060.39221	4.116
30	25.8	0.0094	9398.675914	3.973
60	17.5	0.0068	6797.034565	3.832
250	7.2	0.0033	3341.246551	3.524
1440	1.0	0.0014	1447.180127	3.161
	determined hydromet	ter		
	<u></u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	47.0
	0.005	5000	3.70	13.3
	0.001	1000	3.00	-1.7

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0045 Lab Code: K2005960-019

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	99.9
Medium Gravel	No.4 (4.75 mm)	0.0000	99.9
Fine Gravel	No.10 (2.00 mm)	0.0974	99.7
Very Coarse Sand	No.20 (0.850 mm)	0.3023	99.1
Coarse Sand	No.40 (0.425 mm)	0.5422	98.1
Medium Sand	No.60 (0.250 mm)	0.7951	96.6
Fine Sand	No.140 (0.106 mm)	3.1393	90.5
Very Fine Sand	No.200 (0.0750 mm)	1.6007	87.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	87.4
0.005 mm	22.5
0.001 mm	1.6

Approved By: 1A/102094

Approved By: _____Date: _____Date

	Sample Name:	SB0045			
	Lab Code:	K2005960-019			
	X	Y			
	arithmetic	logarithmic	Convert Y	Value of Y	
	Percent Passing	Particle Diameter	mm to nm	Log form	
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>	
3/4"	99.9	19.0	19000000	7.279	
3/8"	99.9	9.5	9500000	6.978	
4	99.9	4.75	4750000	6.677	
10	99.7	2.00	2000000	6.301	
20	99.1	0.850	850000	5.929	
40	98.1	0.425	425000	5.628	
60	96.6	0.250	250000	5.398	
140	90.5	0.106	106000	5.025	
200	87.5	0.0750	75000	4.875	
2	81.2	0.0295	29541.37052	4.470	
5	73.4	0.0193	19317.78416	4.286	
15	57.7	0.0119	11851.5301	4.074	
30	42.1	0.0088	8846.617149	3.947	
60	28.4	0.0065	6530.380179	3.815	
250	12.7	0.0033	3269.27188	3.514	
1440	4.9	0.0014	1424.061158	3.154	
	determined hydrome	ter			
	mm	<u>mm to nm</u>	<u>log hyd x</u>	% Passing	
	0.074	74000	4.87	87.4	
	0.005	5000	3.70	22.5	
	0.001	1000	3.00	1.6	

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0046 Lab Code: K2005960-020

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.4297	99.2
Fine Gravel	No.10 (2.00 mm)	1.8196	95.7
Very Coarse Sand	No.20 (0.850 mm)	1.6821	92.4
Coarse Sand	No.40 (0.425 mm)	1.2502	89.9
Medium Sand	No.60 (0.250 mm)	1.8741	86.2
Fine Sand	No.140 (0.106 mm)	7.4153	71.5
Very Fine Sand	No.200 (0.0750 mm)	3.6531	64.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	64.1
0.005 mm	17.3
0.001 mm	2.1

Approved By 1A/102094

Approved By: _____ Date: _____

	Sample Name:	SB0046		
	Lab Code:	K2005960-020		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	99.2	4.75	4750000	6.677
10	95.7	2.00	2000000	6.301
20	92.4	0.850	850000	5.929
40	89.9	0.425	425000	5.628
60	86.2	0.250	250000	5.398
140	71.5	0.106	106000	5.025
200	64.3	0.0750	75000	4.875
2	55.8	0.0353	35300.61616	4.548
5	49.5	0.0228	22780.584	4.358
15	38.9	0.0136	13578.46767	4.133
30	32.6	0.0098	9777.746501	3.990
60	22.1	0.0071	7116.853852	3.852
250	11.6	0.0035	3500.467065	3.544
1440	5.3	0.0015	1516.650935	3.181
	determined hydrome			
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	64.1
	0.005	5000	3.70	17.3
	0.001	1000	3.00	2.1

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0047 Lab Code: K2005960-021

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	2.1596	96.1
Medium Gravel	No.4 (4.75 mm)	2.9379	90.8
Fine Gravel	No.10 (2.00 mm)	3.1553	85.1
Very Coarse Sand	No.20 (0.850 mm)	1.6301	82.2
Coarse Sand	No.40 (0.425 mm)	1.9645	78.7
Medium Sand	No.60 (0.250 mm)	1.8186	75.4
Fine Sand	No.140 (0.106 mm)	3.7154	68.8
Very Fine Sand	No.200 (0.0750 mm)	1.5818	66.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	66.0
0.005 mm	16.7
0.001 mm	1.9

Approved By: 1A/102094

	Sample Name:	SB0047		
	Lab Code:	K2005960-021		
	x	Y		<u> </u>
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(<u>mm</u>)	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	96.1	9.5	9500000	6.978
4	90.8	4.75	4750000	6.677
10	85.1	2.00	2000000	6.301
20	82.2	0.850	850000	5.929
40	78.7	0.425	425000	5.628
60	75.4	0.250	250000	5.398
140	68.8	0.106	106000	5.025
200	66.0	0.0750	75000	4.875
2	67.4	0.0331	33051.04307	4.519
5	59.8	0.0215	21547.25169	4.333
15	46.5	0.0131	13065.49066	4.116
30	35.1	0.0096	9601.426567	3.982
60	21.8	0.0071	7076.73086	3.850
250	10.4	0.0035	3500.467065	3.544
1440	4.7	0.0015	1516.650935	3.181
	determined hydrome			
	<u>mm</u>	<u>mm to nm</u>	log hyd x	<u>% Passing</u>
	0.074	74000	4.87	66.0
	0.005	5000	3.70	16.7
	0.001	1000	3.00	1.9

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0048 Lab Code: K2005960-022

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	99.7
Medium Gravel	No.4 (4.75 mm)	0.0000	99.7
Fine Gravel	No.10 (2.00 mm)	0.5779	98.6
Very Coarse Sand	No.20 (0.850 mm)	1.3418	95.7
Coarse Sand	No.40 (0.425 mm)	1.4125	92.7
Medium Sand	No.60 (0.250 mm)	1.6382	89.3
Fine Sand	No.140 (0.106 mm)	4.0449	80.7
Very Fine Sand	No.200 (0.0750 mm)	1.4357	77.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	77.5
0.005 mm	19.7
0.001 mm	4.6

Approved By: ______ 1A/102094

__Date: _____

	Sample Name: Lab Code:	SB0048		
		K2005960-022		
	X arithmetic	Y	Convert Y	Value of Y
	Percent Passing	logarithmic Particle Diameter	mm to nm	Log form
Siava	·	(mm)	(nm)	(log)
<u>Sieve</u> 3/4"	<u>(%)</u> 99.7	<u>(IIIII)</u> 19.0	19000000	7,279
3/4 3/8"	99.7	9.5	9500000	6.978
		4.75	4750000	6.677
4	99.7	2.00	2000000	6.301
10				5.929
20	95.7	0.850	850000	
40	92.7	0.425	425000	5.628
60	89.3	0.250	250000	
_140	80.7	0.106	106000	5.025
200	77.6	0.0750	75000	4.875
2	72.6	0.0314	31421.8003	4.497
5	68.3	0.0202	20172.02452	4.305
15	55.3	0.0121	12149.71676	4.085
30	42.3	0.0089	8932.927211	3.951
60	27.1	0.0066	6587.290732	3.819
250	7.6	0.0033	3311.803415	3.520
1440	5.4	0.0014	1387.091113	3.142
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	<u>% Passing</u>
	0.074	74000	4.87	77.5
	0.005	5000	3.70	19.7
	0.001	1000	3.00	4.6

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006045

 Date Collected:
 8/5/00

 Date Received:
 8/9/00

 Date Analyzed:
 9/6/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0049 Lab Code: K2006045-013

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Gravel and Sand (Sieve Analysis)

Description	Sieve Size		
		Weight (g)	Passing
Gravel Gravel	No.3/4"(19.0 mm)	0.0000	100_
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	1.2644	97.4
Coarse Sand	No.40 (0.425 mm)	1.8068	93.8
Medium Sand	No.60 (0.250 mm)	1.4954	90.8
Fine Sand	No.140 (0.106 mm)	4.1975	82.3
Very Fine Sand	No.200 (0.0750 mm)	1.0840	80.1

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	80.2
0.005 mm	20.3
0.001 mm	6.3

Approved By: 1A/102094

	Sample Name: Lab Code:	SB0049		
		K2006045-013		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	97.4	0.850	850000	5.929
40	93.8	0.425	425000	5.628
60	90.8	0.250	250000	5.398
140	82.3	0.106	106000	5.025
200	80.1	0.0750	75000	4.875
2	89.7	0.0300	29999.99031	4.477
5	83.5	0.0195	19475.79548	4.289
15	56.7	0.0124	12422.68881	4.094
30	42.3	0.0092	9201.620239	3.964
60	27.8	0.0068	6788.889135	3.832
250	9.3	0.0035	3495.679375	3.544
1440	7.2	0.0015	1464.183894	3.166
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	80.2
	0.005	5000	3.70	20.3
	0.001	1000	3.00	6.3

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006045

 Date Collected:
 8/5/00

 Date Received:
 8/9/00

 Date Analyzed:
 9/6/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0050 Lab Code: K2006045-016

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3978	99.2
Coarse Sand	No.40 (0.425 mm)	0.2775	98.6
Medium Sand	No.60 (0.250 mm)	0.1924	98.2
Fine Sand	No.140 (0.106 mm)	0.2839	97.7
Very Fine Sand	No.200 (0.0750 mm)	0.1745	97.3

Silt and Clay (Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.3
0.005 mm	30.7
0.001 mm	7.8

Approved By 1A/102094

	Sample Name: Lab Code:	SB0050		
		K2006045-016		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.2	0.850	850000	5.929
40	98.6	0.425	425000	5.628
60	98.2	0.250	250000	5.398
140	97.7	0.106	106000	5.025
200	97.3	0.0750	75000	4.875
2	93.3	0.0293	29283.88423	4.467
5	87.1	0.0190	19028.83572	4.279
15	70.7	0.0117	11732.74466	4.069
30	52.3	0.0089	8852.557145	3.947
60	37.9	0.0065	6549.316111	3.816
250	19.5	0.0034	3382.180404	3.529
1440	11.3	0.0014	1440.238775	3.158
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	% Passing
	0.074	74000	4.87	97.3
	0.005	5000	3.70	30.7
	0.001	1000	3.00	7.8

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Analytical Report

Exponent Environmental Group, Inc. **Client: Project:** OL RI/FS Phase 2A / 8600BCP.003.0801 Sample Matrix: Sediment

Service Request: K2006045 Date Collected: 8/5/00 Date Received: 8/9/00 Date Analyzed: 9/6/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0053 Lab Code: K2006045-017

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1471	99.7
Coarse Sand	No.40 (0.425 mm)	0.3376	99.0
Medium Sand	No.60 (0.250 mm)	0.4341	98.1
Fine Sand	No.140 (0.106 mm)	1.1135	95.9
Very Fine Sand	No.200 (0.0750 mm)	0.5554	94.7

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.8
0.005 mm	21.8
0.001 mm	4.5

Approved By: _____Date: _____Date 1A/102094

	Sample Name:	SB0053		
	Lab Code:	K2006045-017		
	X	Y	<u> </u>	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.0	0.425	425000	5.628
60	98.1	0.250	250000	5.398
140	95.9	0.106	106000	5.025
200	94.7	0.0750	75000	4.875
2	102.8	0.0276	27560.36771	4.440
5	90.6	0.0185	18468.34534	4.266
15	64.1	0.0119	11857.32708	4.074
30	43.8	0.0090	8980.277811	3.953
60	27.5	0.0067	6667.953921	3.824
250	13.2	0.0034	3397.051423	3.531
1440	7.1	0.0014	1438.101365	3.158
	determined hydrome	ter		
		mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.8
	0.005	5000	3.70	21.8
	0.001	1000	3.00	4.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006045

 Date Collected:
 8/5/00

 Date Received:
 8/9/00

 Date Analyzed:
 9/6/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0054 Lab Code: K2006045-022

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0699	100
Fine Gravel	No.10 (2.00 mm)	0.1838	99.7
Very Coarse Sand	No.20 (0.850 mm)	0.1313	99.5
Coarse Sand	No.40 (0.425 mm)	0.4504	98.5
Medium Sand	No.60 (0.250 mm)	1.1454	96.2
Fine Sand	No.140 (0.106 mm)	2.9981	90.2
Very Fine Sand	No.200 (0.0750 mm)	1.0805	88.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	88.0
0.005 mm	10.3
0.001 mm	6.3

Approved By 1A/102094

Approved By: ______Date: ______

	Sample Name:	SB0054		
	Lab Code:	K2006045-022		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.2	19.0	1900000	7.279
3/8"	100.2	9.5	9500000	6.978
4	100.1	4.75	4750000	6.677
10	99.7	2.00	2000000	6.301
20	99.5	0.850	850000	5.929
40	98.5	0.425	425000	5.628
60	96.2	0.250	250000	5.398
140	90.2	0.106	106000	5.025
200	88.0	0.0750	75000	4.875
2	87.5	0.0304	30356.81422	4.482
5	79.2	0.0199	19862.27597	4.298
15	23.7	0.0138	13775.6415	4.139
30	15.4	0.0100	9959.923319	3.998
60	11.3	0.0071	7118.919655	3.852
250	9.3	0.0035	3506.05787	3.545
1440	7.2	0.0015	1468.530982	3.167
			+	
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	<u>% Passing</u>
	0.074	74000	4.87	88.0
	0.005	5000	3.70	10.3
	0.001	1000	3.00	6.3

Analytical Report

Client: Exponent Environmental Group, Inc. OL RI/FS Phase 2A / 8600BCP.003.0801 **Project:** Sample Matrix: Sediment

Service Request: K2006045 Date Collected: 8/5/00 Date Received: 8/9/00 Date Analyzed: 9/6/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0055 Lab Code: K2006045-019

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Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	9.5809	86.4
Fine Gravel	No.10 (2.00 mm)	9.7065	72.3
Very Coarse Sand	No.20 (0.850 mm)	0.2632	72.0
Coarse Sand	No.40 (0.425 mm)	0.4906	71.2
Medium Sand	No.60 (0.250 mm)	0.6646	70.3
Fine Sand	No.140 (0.106 mm)	2.4030	66.7
Very Fine Sand	No.200 (0.0750 mm)	1.8442	64.0

Silt and Clay (Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	63.9
0.005 mm	7.0
0.001 mm	5.3

Approved By: _____Date: _____ 1A/102094

	Sample Name:	SB0055		
	Lab Code:	K2006045-019		
	X	Y	++	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.2	19.0	1900000	7.279
3/8"	100.2	9.5	9500000	6.978
4	86.4	4.75	4750000	6.677
10	72.3	2.00	2000000	6.301
20	72.0	0.850	850000	5.929
40	71.2	0.425	425000	5.628
60	70.3	0.250	250000	5.398
140	66.7	0.106	106000	5.025
200	64.0	0.0750	75000	4.875
2	57.9	0.0317	31683.9075	4.501
5	53.4	0.0205	20525.98673	4.312
15	26.3	0.0134	13415.47528	4.128
30	11.3	0.0100	10048.37225	4.002
60	8.3	0.0072	7182.139099	3.856
250	5.3	0.0036	3555.77339	3.551
1440	5.3	0.0015	1481.572246	3.171
	determined hydrome	 ter		
		mm to nm	log hyd x	% Passing
	0.074	74000	4.87	63.9
	0.005	5000	3.70	7.0
	0.001	1000	3.00	5.3

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006045

 Date Collected:
 8/5/00

 Date Received:
 8/9/00

 Date Analyzed:
 9/6/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0056 Lab Code: K2006045-018

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel		0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	_100
Very Coarse Sand	No.20 (0.850 mm)	3.7709	89.9
Coarse Sand	No.40 (0.425 mm)	2.9187	82.1
Medium Sand	No.60 (0.250 mm)	2.0403	76.6
Fine Sand	No.140 (0.106 mm)	1.2832	73.2
Very Fine Sand	No.200 (0.0750 mm)	0.6632	71.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	72.1
0.005 mm	11.2
0.001 mm	9.7

Approved By: _ 1A/102094

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_____Date: _____D

	Sample Name:	SB0056		
	Lab Code:	K2006045-018		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	89.9	0.850	850000	5.929
40	82.1	0.425	425000	5.628
60	76.6	0.250	250000	5.398
140	73.2	0.106	106000	5.025
200	71.4	0.0750	75000	4.875
2	117.3	0.0309	30895.98055	4.490
5	100.7	0.0205	20544.09883	4.313
15	23.5	0.0143	14257.45383	4.154
30	15.2	0.0102	10246.48432	4.011
60	12.4	0.0073	7283.820751	3.862
250	9.7	0.0036	3587.072424	3.555
1440	9.7	0.0015	1494.61351	3.175
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	72.1
	0.005	5000	3.70	11.2
	0.001	1000	3.00	9.7

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006154

 Date Collected:
 8/10/00

 Date Received:
 8/10/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0057 Lab Code: K2006154-017

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
	_	Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0961	99.8
Coarse Sand	No.40 (0.425 mm)	0.4393	98.9
Medium Sand	No.60 (0.250 mm)	1.4492	96.1
Fine Sand	No.140 (0.106 mm)	7.9037	80.6
Very Fine Sand	No.200 (0.0750 mm)	3.6247	73.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	73.3
0.005 mm	7.3
0.001 mm	5.0

Approved By: 1A/102094

Approved By: ______Date: _____

	Sample Name:	SB0057		
	Lab Code:	K2006154-017		
ł	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	98.9	0.425	425000	5.628
60	96.1	0.250	250000	5.398
140	80.6	0.106	106000	5
200	73.5	0.0750	75000	5
2	62.5	0.0328	32767.10203	5
5	58.5	0.0210	21026.55833	4
15	20.8	0.0137	13689.70809	4.136
30	10.9	0.0099	9948.465	3.998
60	8.9	0.0071	7071.970598	3.850
250	5.0	0.0035	3500.846134	3.544
1440	5.0	0.0015	1476.779116	3.169
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	73.3
	0.005	5000	3.70	7.3
	0.001	1000	3.00	5.0

Analytical Report

Client: Exponent Environmental Group, Inc. OL RI/FS Phase 2A/8600BCP.003.0801 **Project:** Sample Matrix: Sediment

Service Request: K2006154 Date Collected: 8/10/00 Date Received: 8/10/00 Date Analyzed: 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0058 Lab Code: K2006154-018

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0828	99.8
Coarse Sand	No.40 (0.425 mm)	1.0047	97.9
Medium Sand	No.60 (0.250 mm)	4.6695	88.8
Fine Sand	No.140 (0.106 mm)	14.5764	60.6
Very Fine Sand	No.200 (0.0750 mm)	6.6200	47.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	47.5
0.005 mm	14.8
0.001 mm	9.8

Approved By: ______Date: ______D 1A/102094

	Sample Name:	SB0058		
	Lab Code:	K2006154-018	<u>↓</u>	
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	97.9	0.425	425000	5.628
60	88.8	0.250	250000	5.398
140	60.6	0.106	106000	5
200	47.8	0.0750	75000	5
2	33.6	0.0349	34907.21943	5
5	29.7	0.0223	22345.07607	4
15	24.0	0.0131	13129.45392	4.118
30	18.2	0.0094	9442.747983	3.975
60	16.3	0.0067	6714.048428	3.827
250	12.5	0.0033	3325.171252	3.522
1440	10.6	0.0014	1410.250022	3.149
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	47.5
	0.005	5000	3.70	14.8
	0.001	1000	3.00	9.8

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

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 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0063 Lab Code: K2005960-013

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.5189	99.0
Very Coarse Sand	No.20 (0.850 mm)	1.4784	96.2
Coarse Sand	No.40 (0.425 mm)	0.8780	94.5
Medium Sand	No.60 (0.250 mm)	0.6229	93.3
Fine Sand	No.140 (0.106 mm)	1.5071	90.4
Very Fine Sand	No.200 (0.0750 mm)	0.9582	88.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	88.5
0.005 mm	17.1
0.001 mm	3.2

Approved By: 1A/102094

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Approved By: _____Date: _____Aate: _____AAte

	Sample Name:	SB0063		
	Lab Code:	K2005960-013		
	X arithmetic	Y logarithmic	Convert Y	
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/4 3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	99.0	2.00	2000000	6.301
20	96.2	0.850	850000	5.929
40	94.5	0.425	425000	5.628
60	93.3	0.250	250000	5.398
140	90.4	0.106	106000	5.025
200	88.6	0.0750	75000	4.875
2	80.9	0.0298	29801.37234	4.474
5	69.2	0.0198	19799.93631	4.297
15	49.7	0.0123	12292.9801	4.090
30	38.0	0.0090	9038.259783	3.956
60	22.4	0.0067	6703.186557	3.826
250	8.8	0.0033	3294.498202	3.518
1440	4.9	0.0014	1436.594716	3.157
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	88.5
	0.005	5000	3.70	17.1
	0.001	1000	3.00	3.2

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0064 Lab Code: K2005960-014

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.1569	99.7
Fine Gravel	No.10 (2.00 mm)	0.2612	99.2
Very Coarse Sand	No.20 (0.850 mm)	0.2852	98.7
Coarse Sand	No.40 (0.425 mm)	0.1171	98.5
Medium Sand	No.60 (0.250 mm)	0.1316	98.2
Fine Sand	No.140 (0.106 mm)	0.7794	96.8
Very Fine Sand	No.200 (0.0750 mm)	0.8432	95.2

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	95.0
0.005 mm	25.6
0.001 mm	4.2

Approved By 1A/102094

Approved By: ______Date: ______Date: ______

	Sample Name:	SB0064		
	Lab Code:	K2005960-014		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	(<u>mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	99.7	4.75	4750000	6.677
10	99.2	2.00	2000000	6.301
20	98.7	0.850	850000	5.929
40	98.5	0.425	425000	5.628
60	98.2	0.250	250000	5.398
140	96.8	0.106	106000	5.025
200	95.2	0.0750	75000	4.875
2	84.8	0.0290	29021.44178	4.463
5	77.2	0.0190	19011.22368	4.279
15	60.0	0.0118	11784.40862	4.071
30	48.6	0.0087	8693.008191	3.939
60	33.3	0.0065	6470.885654	3.811
250	12.4	0.0033	3298.251018	3.518
1440	6.7	0.0014	1429.257539	3.155
	determined hydromet		log had a	0% Decoing
<u> </u>	<u>mm</u>	<u>mm to nm</u> 74000	<u>log hyd x</u> 4.87	<u>% Passing</u> 95.0
	0.074			
	0.005	5000	3.70	25.6
	0.001	1000	3.00	4.2

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006045

 Date Collected:
 8/5/00

 Date Received:
 8/9/00

 Date Analyzed:
 9/6/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0067 Lab Code: K2006045-020

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1323	99.7
Coarse Sand	No.40 (0.425 mm)	0.3595	99.0
Medium Sand	No.60 (0.250 mm)	1.2013	96.5
Fine Sand	No.140 (0.106 mm)	2.8340	90.6
Very Fine Sand	No.200 (0.0750 mm)	1.0514	88.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	88.4
0.005 mm	18.5
0.001 mm	7.6

Approved By: _____ 1A/102094 _Date: ____

	Sample Name:	SB0067		
	Lab Code:	K2006045-020		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.0	0.425	425000	5.628
60	96.5	0.250	250000	5.398
140	90.6	0.106	106000	5.025
200	88.5	0.0750	75000	4.875
2	85.5	0.0310	30976.78776	4.491
5	81.3	0.0199	19921.07151	4.299
15	55.9	0.0126	12583.00862	4.100
30	30.6	0.0096	9601.593148	3.982
60	22.2	0.0069	6947.377334	3.842
250	13.7	0.0035	3479.200189	3.541
1440	9.5	0.0015	1465.181819	3.166
	determined hydrome	ter		·····
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	88.4
	0.005	5000	3.70	18.5
	0.001	1000	3.00	7.6

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

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 Service Request:
 K2005759

 Date Collected:
 7/27/00

 Date Received:
 7/28/00

 Date Analyzed:
 8/17/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0070 Lab Code: K2005759-007

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2350	99.5
Coarse Sand	No.40 (0.425 mm)	0.2383	99.1
Medium Sand	No.60 (0.250 mm)	0.4969	98.1
Fine Sand	No.140 (0.106 mm)	1.6810	94.8
Very Fine Sand	No.200 (0.0750 mm)	0.6073	93.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.6
0.005 mm	24.7
0.001 mm	5.3

Approved By 1A/102094

Approved By: ______Date: ______Date: ______

	Sample Name:	SB0070		
	Lab Code:	K2005759-007		
	X	Ŷ		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.5	0.850	850000	5.929
40	99.1	0.425	425000	5.628
60	98.1	0.250	250000	5.398
140	94.8	0.106	106000	5.025
200	93.5	0.0750	75000	4.875
2	95.0	0.0284	28386.40399	4.453
5	87.0	0.0186	18631.63756	4.270
15	71.0	0.0115	11500.48418	4.061
30	53.0	0.0087	8685.568362	3.939
60	33.0	0.0065	6549.118583	3.816
250	11.0	0.0033	3334.616433	3.523
1440	7.0	0.0014	1437.790277	3.158
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	93.6
	0.005	5000	3.70	24.7
<u>}</u>	0.001	1000	3.00	5.3

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005759

 Date Collected:
 7/27/00

 Date Received:
 7/28/00

 Date Analyzed:
 8/17/00

Particle Size Determination ASTM Method D 422

Sample Name: SB0070 Lab Code: K2005759-007d

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size		
-		Weight (g)	Passing	
Gravel	No.3/4"(19.0 mm)	0.0000	100	
Gravel	No.3/8"(9.50 mm)	0.0000	100	
Medium Gravel	No.4 (4.75 mm)	0.0000	100	
Fine Gravel	No.10 (2.00 mm)	0.0000	100	
Very Coarse Sand	No.20 (0.850 mm)	0.1588	99.7	
Coarse Sand	No.40 (0.425 mm)	0.1792	99.3	
Medium Sand	No.60 (0.250 mm)	0.3104	98.7	
Fine Sand	No.140 (0.106 mm)	1.5366	95.7	
Very Fine Sand	No.200 (0.0750 mm)	0.5911	94.5	

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.5
0.005 mm	24.6
0.001 mm	5.3

Approved By: ____ 1A/102094 __Date: ____

	Sample Name:	SB0070		
	Lab Code:	K2005759-007d		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.3	0.425	425000	5.628
60	98.7	0.250	250000	5.398
140	95.7	0.106	106000	5.025
200	94.5	0.0750	75000	4.875
2	90.7	0.0289	28927.7784	4.461
5	82.7	0.0190	18961.78501	4.278
15	66.8	0.0117	11678.96659	4.067
30	50.8	0.0087	8744.90588	3.942
60	32.9	0.0065	6549.118583	3.816
250	11.0	0.0033	3334.616433	3.523
1440	7.0	0.0014	1437.790277	3.158
	determined hydrome			
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.5
	0.005	5000	3.70	24.6
	0.001	1000	3.00	5.3

Analytical Report

Client: Exponent Environmental Group, Inc. OL RI/FS Phase 2A / 8600BCP.003.0801 **Project:** Sample Matrix: Sediment

Service Request: K2006427 Date Collected: 8/14/00 Date Received: 8/15/00 Date Analyzed: 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0049 Lab Code: K2006427-001

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0134	100
Coarse Sand	No.40 (0.425 mm)	0.0375	99.9
Medium Sand	No.60 (0.250 mm)	0.0421	99.8
Fine Sand	No.140 (0.106 mm)	0.3127	99.2
Very Fine Sand	No.200 (0.0750 mm)	0.7894	97.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.5
0.005 mm	27.2
0.001 mm	7.5

Approved By: _____Date: ____Date: ____Date: _____Date: _____Date: _____Date: _____Date: 1A/102094

	Sample Name:	SF0049		
	Lab Code:	K2006427-001		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	100.0	0.850	850000	5.929
40	99.9	0.425	425000	5.628
60	99.8	0.250	250000	5.398
140	99.2	0.106	106000	5.025
200	97.6	0.0750	75000	4.875
2	84.7	0.0298	29817.64788	4.474
5	74.7	0.0197	19668.92627	4.294
15	56.8	0.0122	12152.91898	4.085
30	46.8	0.0089	8891.101637	3.949
60	32.9	0.0066	6570.336525	3.818
250	18.9	0.0034	3351.87589	3.525
1440	11.0	0.0014	1445.048639	3.160
	determined hydrome	ter		
	mm	<u>mm to nm</u>	log hyd x	% Passing
	0.074	74000	4.87	97.5
	0.005	5000	3.70	27.2
	0.001	1000	3.00	7.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006427

 Date Collected:
 8/14/00

 Date Received:
 8/15/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0062 Lab Code: K2006427-002

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	99.9
Medium Gravel	No.4 (4.75 mm)	0.0144	99.9
Fine Gravel	No.10 (2.00 mm)	0.0877	99.7
Very Coarse Sand	No.20 (0.850 mm)	0.3963	98.7
Coarse Sand	No.40 (0.425 mm)	1.1159	95.8
Medium Sand		2.1450	90.1
Fine Sand	No.140 (0.106 mm)	5.0501	76.9
Very Fine Sand	No.200 (0.0750 mm)	1.6719	72.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	72.9
0.005 mm	24.6
0.001 mm	9.7

Approved By 1A/102094

Approved By: _____Date: _____Date: _____

	Sample Name:	SF0062		
	Lab Code:	K2006427-002		
	x	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	99.9	19.0	19000000	7.279
3/8"	99.9	9.5	9500000	6.978
4	99.9	4.75	4750000	6.677
10	99.7	2.00	2000000	6.301
20	98.7	0.850	850000	5.929
40	95.8	0.425	425000	5.628
60	90.1	0.250	250000	5.398
140	76.9	0.106	106000	5.025
200	72.5	0.0750	75000	4.875
2	100.7	0.0330	32955.45798	4.518
5	92.5	0.0213	21333.82145	4.329
15	70.4	0.0130	13042.88755	4.115
30	48.3	0.0097	9708.840953	3.987
60	31.7	0.0071	7112.100386	3.852
250	17.9	0.0036	3581.886147	3.554
1440	12.4	0.0015	1527.059337	3.184
	determined hydrome			
<u> </u>		mm to nm	log hyd x	% Passing
	0.074	74000	4,87	72.9
	0.005	5000	3.70	24.6
	0.001	1000	3.00	9.7

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006427

 Date Collected:
 8/14/00

 Date Received:
 8/15/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0063 Lab Code: K2006427-003

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1651	99.7
Coarse Sand	No.40 (0.425 mm)	0.3175	99.0
Medium Sand	No.60 (0.250 mm)	0.4953	98.1
Fine Sand	No.140 (0.106 mm)	1.8200	94.5
Very Fine Sand	No.200 (0.0750 mm)	0.7477	93.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	92.9
0.005 mm	17.3
0.001 mm	4.1

Approved By: ____ 1A/102094

	Sample Name:	SF0063		
	Lab Code:	K2006427-003		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.0	0.425	425000	5.628
60	98.1	0.250	250000	5.398
140	94.5	0.106	106000	5.025
200	93.0	0.0750	75000	4.875
2	90.8	0.0305	30525.04905	4.485
5	86.7	0.0197	19654.00006	4.293
15	62.2	0.0125	12485.84987	4.096
30	37.7	0.0096	9566.425346	3.981
60	21.4	0.0071	7090.909939	3.851
250	13.3	0.0036	3551.080359	3.550
1440	7.1	0.0015	1521.89295	3.182
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	92.9
	0.005	5000	3.70	17.3
	0.001	1000	3.00	4.1

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006427

 Date Collected:
 8/14/00

 Date Received:
 8/15/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0064 Lab Code: K2006427-004

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0335	99.9
Coarse Sand	No.40 (0.425 mm)	0.0823	99.7
Medium Sand	No.60 (0.250 mm)	0.2160	99.2
Fine Sand	No.140 (0.106 mm)	1.8518	94.4
Very Fine Sand	No.200 (0.0750 mm)	1.4702	90.7

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	90.9
0.005 mm	31.8
0.001 mm	9.4

Approved By 1A/102094

Approved By: _____ Date: _____

	Sample Name:	SF0064		·
	Lab Code:	K2006427-004		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(mm)	(nm)	(log)
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.2	0.250	250000	5.398
140	94.4	0.106	106000	5.025
200	90.7	0.0750	75000	4.875
2	105.2	0.0312	31159.63905	4.494
5	89.6	0.0207	20685.87704	4.316
15	66.2	0.0127	12743.75545	4.105
30	53.3	0.0093	9310.896822	3.969
60	37.7	0.0068	6829.428139	3.834
250	24.7	0.0034	3442.789431	3.537
1440	14.3	0.0015	1484.197084	3.171
	determined hydrome	ter		
	<u></u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	90.9
	0.005	5000	3.70	31.8
	0.001	1000	3.00	9.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006427

 Date Collected:
 8/14/00

 Date Received:
 8/15/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0065 Lab Code: K2006427-005

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	_100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0384	99.9
Coarse Sand	No.40 (0.425 mm)	0.1527	99.6
Medium Sand	No.60 (0.250 mm)	0.2025	99.2
Fine Sand	No.140 (0.106 mm)	1.4644	96.2
Very Fine Sand	No.200 (0.0750 mm)	0.6684	94.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.9
0.005 mm	22.2
0.001 mm	9.5

Approved By 1A/102094

	Sample Name:	SF0065		
	Lab Code:	K2006427-005		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.6	0.425	425000	5.628
60	99.2	0.250	250000	5.398
140	96.2	0.106	106000	5.025
200	94.9	0.0750	75000	4.875
2	91.6	0.0297	29730.63039	4.473
5	85.5	0.0193	19309.86783	4.286
15	64.9	0.0121	12072.38082	4.082
30	46.3	0.0091	9084.305716	3.958
60	27.8	0.0068	6788.889135	3.832
250	15.4	0.0034	3440.005443	3.537
1440	11.3	0.0015	1466.797775	3.166
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.9
	0.005	5000	3.70	22.2
	0.001	1000	3.00	9.5

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006427

 Date Collected:
 8/14/00

 Date Received:
 8/15/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0065 Lab Code: K2006427-005dup

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0448	99.9
Coarse Sand	No.40 (0.425 mm)	0.1151	99.7
Medium Sand	No.60 (0.250 mm)	0.3263	99.0
Fine Sand	No.140 (0.106 mm)	1.4468	96.2
Very Fine Sand	No.200 (0.0750 mm)	0.7164	94.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.7
0.005 mm	23.9
0.001 mm	8.4

Approved By: ______ 1A/102094

_____Date: ______

	Sample Name:	SF0065		
	Lab Code:	K2006427-005dup		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.0	0.250	250000	5.398
140	96.2	0.106	106000	5.025
200	94.8	0.0750	75000	4.875
2	91.7	0.0295	29458.80766	4.469
5	81.7	0.0195	19475.79548	4.289
15	61.5	0.0122	12160.90388	4.085
30	45.4	0.0091	9084.305716	3.958
60	29.2	0.0067	6749.275111	3.829
250	17.1	0.0034	3421.246143	3.534
1440	11.1	0.0015	1466.797775	3.166
	determined hydrome			
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.7
	0.005	5000	3.70	23.9
	0.001	1000	3.00	8.4

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006427

 Date Collected:
 8/14/00

 Date Received:
 8/15/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0068 Lab Code: K2006427-006

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	<u> </u>	Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1771	99.6
Coarse Sand	No.40 (0.425 mm)	0.3634	98.9
Medium Sand	No.60 (0.250 mm)	0.3548	98.2
Fine Sand	No.140 (0.106 mm)	0.9860	96.3
Very Fine Sand	No.200 (0.0750 mm)	0.5846	95.1

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing		
0.074 mm	95.1		
0.005 mm	11.2		
0.001 mm	2.1		

Approved By: 1A/102094

Approved By: _____Date: _____Date: _____

	Sample Name:	SF0068		
	Lab Code:	K2006427-006		
	X	Y	 -	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.6	0.850	850000	5.929
40	98.9	0.425	425000	5.628
60	98.2	0.250	250000	5.398
140	96.3	0.106	106000	5.025
200	95.1	0.0750	75000	4.875
2	95.3	0.0290	29046.30434	4.463
5	85.2	0.0192	19226.36701	4.284
15	38.5	0.0131	13136.11195	4.118
30	22.3	0.0097	9739.586091	3.989
60	14.2	0.0070	7040.949744	3.848
250	8.1	0.0035	3504.872385	3.545
1440	4.1	0.0015	1493.873116	3.174
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	95.1
	0.005	5000	3.70	11.2
	0.001	1000	3.00	2.1

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006427

 Date Collected:
 8/14/00

 Date Received:
 8/15/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0069 Lab Code: K2006427-007

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
•		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0191	100
Coarse Sand	No.40 (0.425 mm)	0.0515	99.9
Medium Sand	No.60 (0.250 mm)	0.1052	99.7
Fine Sand	No.140 (0.106 mm)	0.3781	98.9
Very Fine Sand	No.200 (0.0750 mm)	0.3013	98.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.2
0.005 mm	12.1
0.001 mm	0.0

Approved By 1A/102094

Approved By: _____Date: _____D

	Sample Name:	SF0069		
	Lab Code:	K2006427-007		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	100.0	0.850	850000	5.929
40	99.9	0.425	425000	5.628
60	99.7	0.250	250000	5.398
140	98.9	0.106	106000	5.025
200	98.3	0.0750	75000	4.875
2	93.0	0.0296	29583.11753	4.471
5	84.9	0.0194	19397.61335	4.288
15	64.7	0.0121	12135.00543	4.084
30	40.4	0.0093	9312.932497	3.969
60	20.2	0.0070	6987.440738	3.844
250	4.0	0.0036	3572.948558	3.553
1440	0.0	0.0015	1522.552722	3.183
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	98.2
	0.005	5000	3.70	12.1
	0.001	1000	3.00	-2.0

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006154

 Date Collected:
 8/10/00

 Date Received:
 8/10/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SFO072 Lab Code: K2006154-011

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Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	99.9
Gravel	No.3/8''(9.50 mm)	0.0000	99.9
Medium Gravel	No.4 (4.75 mm)	0.0747	99.8
Fine Gravel	No.10 (2.00 mm)	0.2600	99.3
Very Coarse Sand	No.20 (0.850 mm)	0.2297	98.8
Coarse Sand	No.40 (0.425 mm)	0.7642	97.2
Medium Sand	No.60 (0.250 mm)	1.3979	94.4
Fine Sand	No.140 (0.106 mm)	4.6100	84.9
Very Fine Sand	No.200 (0.0750 mm)	2.4940	79.7

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	79.6
0.005 mm	21.3
0.001 mm	1.9

Approved By: 1A/102094

Approved By: ______Date: ______

	Sample Name:	SFO072		
	Lab Code:	K2006154-011		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	<u>(nm)</u>	<u>(log)</u>
3/4"	99.9	19.0	1900000	7.279
3/8"	99.9	9.5	9500000	6.978
4	99.8	4.75	4750000	6.677
10	99.3	2.00	2000000	6.301
20	98.8	0.850	850000	5.929
40	97.2	0.425	425000	5.628
60	94.4	0.250	250000	5.398
140	84.9	0.106	106000	5.025
200	79.7	0.0750	75000	4.875
2	71.2	0.0350	34960.88278	4.544
5	58.1	0.0231	23080.90126	4.363
15	51.5	0.0136	13597.05041	4.133
30	40.5	0.0099	9926.045148	3.997
60	29.6	0.0072	7232.318253	3.859
250	12.1	0.0037	3704.341665	3.569
1440	5.5	0.0016	1587.247585	3.201
	determined hydrome	ter		
	<u>mm</u>	mm to nm	<u>log hyd x</u>	<u>% Passing</u>
	0.074	74000	4.87	79.6
	0.005	5000	3.70	21.3
	0.001	1000	3.00	1.9

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006154

 Date Collected:
 8/10/00

 Date Received:
 8/10/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SFO073 Lab Code: K2006154-012

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0325	99.9
Coarse Sand	No.40 (0.425 mm)	0.0536	99.8
Medium Sand	No.60 (0.250 mm)	0.1307	99.6
Fine Sand	No.140 (0.106 mm)	1.0999	97.3
Very Fine Sand	No.200 (0.0750 mm)	0.8860	95.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	95.4
0.005 mm	30.7
0.001 mm	3.0

Approved By 1A/102094

Approved By: ______Date: _____

-	Sample Name:	SFO073		
	Lab Code:	K2006154-012		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.8	0.425	425000	5.628
60	99.6	0.250	250000	5.398
140	97.3	0.106	106000	5
200	95.5	0.0750	75000	5
2	91.5	0.0318	31794.5911	5
5	82.9	0.0208	20803.00451	4
15	67.8	0.0127	12681.69973	4.103
30	57.0	0.0093	9291.436542	3.968
60	42.0	0.0069 '	6878.082858	3.837
250	16.1	0.0036	3613.629885	3.558
1440	7.5	0.0016	1557.060057	3.192
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	95.4
	0.005	5000	3.70	30.7
	0.001	1000	3.00	3.0

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006427

 Date Collected:
 8/14/00

 Date Received:
 8/15/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0075 Lab Code: K2006427-008

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0078	100
Coarse Sand	No.40 (0.425 mm)	0.0238	99.9
Medium Sand	No.60 (0.250 mm)	0.0350	99.8
Fine Sand	No.140 (0.106 mm)	0.2415	99.1
Very Fine Sand	No.200 (0.0750 mm)	0.3017	98.2

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.1
0.005 mm	25.3
0.001 mm	4.6

Approved By 1A/102094

Approved By: _____Date: _____Date: _____

	Sample Name:	SF0075		
	Lab Code:	K2006427-008		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	100.0	0.850	850000	5.929
40	99.9	0.425	425000	5.628
60	99.8	0.250	250000	5.398
140	99.1	0.106	106000	5.025
200	98.2	0.0750	75000	4.875
2	91.3	0.0336	33577.08784	4.526
5	85.4	0.0215	21544.07312	4.333
15	64.8	0.0130	13041.8906	4.115
30	44.2	0.0096	9629.800756	3.984
60	32.4	0.0070	6968.715129	3.843
250	17.7	0.0035	3509.138856	3.545
1440	8.8	0.0015	1503.816951	3.177
	determined hydrome	ter		
	<u>mm</u>	mm to nm	<u>log hyd x</u>	% Passing
	0.074	74000	4.87	98.1
	0.005	5000	3.70	25.3
	0.001	1000	3.00	4.6

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005759

 Date Collected:
 7/27/00

 Date Received:
 7/28/00

 Date Analyzed:
 8/17/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0112 Lab Code: K2005759-011

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0749	99.9
Coarse Sand	No.40 (0.425 mm)	0.0130	99.8
Medium Sand	No.60 (0.250 mm)	0.0225	99.8
Fine Sand	No.140 (0.106 mm)	0.1067	99.6
Very Fine Sand	No.200 (0.0750 mm)	0.0857	99.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	99.2
0.005 mm	25.9
0.001 mm	5.0

Approved By 1A/102094

	Sample Name:	SF0112		
	Lab Code:	K2005759-011		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.8	0.425	425000	5.628
60	99.8	0.250	250000	5.398
140	99.6	0.106	106000	5.025
200	99.4	0.0750	75000	4.875
2	83.1	0.0297	29723.41134	4.473
5	79.3	0.0191	19131.84433	4.282
15	65.9	0.0117	11694.01483	4.068
30	52.5	0.0087	8703.183607	3.940
60	35.3	0.0065	6527.696793	3.815
250	10.5	0.0034	3364.445972	3.527
1440	6.7	0.0015	1450.68514	3.162
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	99.2
	0.005	5000	3.70	25.9
	0.001	1000	3.00	5.0

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RJ/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0119 Lab Code: K2005960-012

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.1564	99.7
Very Coarse Sand	No.20 (0.850 mm)	0.2005	99.4
Coarse Sand	No.40 (0.425 mm)	0.0870	99.2
Medium Sand	No.60 (0.250 mm)	0.1751	98.9
Fine Sand	No.140 (0.106 mm)	0.6258	97.7
Very Fine Sand	No.200 (0.0750 mm)	0.5113	96.7

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	96.7
0.005 mm	33.3
0.001 mm	4.4

Approved By 1A/102094

Approved By: _____ Date: _____

	Sample Name:	SF0119		
	Lab Code:	K2005960-012		
		Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	99.7	2.00	2000000	6.301
20	99.4	0.850	850000	5.929
40	99.2	0.425	425000	5.628
60	98.9	0.250	250000	5.398
140	97.7	0.106	106000	5.025
200	96.7	0.0750	75000	4.875
2	94.0	0.0283	28274.43734	4.451
5	86.3	0.0186	18571.16861	4.269
15	68.8	0.0116	11567.01576	4.063
30	57.2	0.0086	8554.275075	3.932
60	41.7	0.0064	6385.369308	3.805
250	18.4	0.0032	3244.581667	3.511
1440	8.7	0.0014	1438.551685	3.158
	determined hydrome			
	<u>mm</u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	96.7
	0.005	5000	3.70	33.3
	0.001	1000	3.00	4.4

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005951

 Date Collected:
 8/3/00

 Date Received:
 8/4/00

 Date Analyzed:
 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0121 Lab Code: K2005951-018

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0000	100
Coarse Sand	No.40 (0.425 mm)	0.0665	99.4
Medium Sand	No.60 (0.250 mm)	0.1068	98.5
Fine Sand	No.140 (0.106 mm)	0.3705	95.4
Very Fine Sand	No.200 (0.0750 mm)	0.2328	<u>93</u> .5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.6
0.005 mm	32.0
0.001 mm	22.1

Approved By: ____ 1A/102094 _Date: _____

	Sample Name:	SF0121		
	Lab Code:	K2005951-018		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	100.0	0.850	850000	5.929
40	99.4	0.425	425000	5.628
60	98.5	0.250	250000	5.398
140	95.4	0.106	106000	5.025
200	93.5	0.0750	75000	4.875
2	101.6	0.0387	38731.22719	4.588
5	92.7	0.0246	24634.66279	4.392
15	75.1	0.0144	14381.85738	4.158
30	57.4	0.0103	10280.72889	4.012
60	39.7	0.0073	7347.375797	3.866
250	22.1	0.0036	3637.180302	3.561
1440	22.1	0.0015	1515.491792	3.181
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	93.6
	0.005	5000	3.70	32.0
	0.001	1000	3.00	22.1

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

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 Service Request:
 K2005951

 Date Collected:
 8/3/00

 Date Received:
 8/4/00

 Date Analyzed:
 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0123 Lab Code: K2005951-027

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing_
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	_100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0760	99.8
Very Coarse Sand	No.20 (0.850 mm)	0.1427	99.6
Coarse Sand	No.40 (0.425 mm)	0.2223	99.1
Medium Sand	No.60 (0.250 mm)	0.2388	98.6
Fine Sand	No.140 (0.106 mm)	0.9796	96.7
Very Fine Sand	No.200 (0.0750 mm)	0.9774	94.7

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.6
0.005 mm	27.3
0.001 mm	10.5

Approved By 1A/102094

Approved By: _____ Date: _____

	Sample Name:	SF0123		
	Lab Code:	K2005951-027		
	x	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	99.8	2.00	2000000	6.301
20	99.6	0.850	850000	5.929
40	99.1	0.425	425000	5.628
60	98.6	0.250	250000	5.398
140	96.7	0.106	106000	5.025
200	94.7	0.0750	75000	4.875
2	89.8	0.0300	30042.95302	4.478
5	87.7	0.0192	19171.43395	4.283
15	65.3	0.0121	12099.29528	4.083
30	49.0	0.0090	9048.729104	3.957
60	34.7	0.0067	6688.689915	3.825
250	16.3	0.0035	3451.009401	3.538
1440	12.2	0.0015	1453.561039	3.162
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.6
	0.005	5000	3.70	27.3
	0.001	1000	3.00	10.5

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006339

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0123 Lab Code: K2006339-022

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	27.8644	64.9
Gravel	No.3/8"(9.50 mm)	0.0749	64.8
Medium Gravel	No.4 (4.75 mm)	0.6520	64.0
Fine Gravel	No.10 (2.00 mm)	0.6340	63.2
Very Coarse Sand	No.20 (0.850 mm)	0.0300	63.2
Coarse Sand	No.40 (0.425 mm)	0.0291	63.1
Medium Sand	No.60 (0.250 mm)	0.0360	63.0
Fine Sand	No.140 (0.106 mm)	0.1624	62.8
Very Fine Sand	No.200 (0.0750 mm)	0.2020	62.4

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	antor	Amaluc

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	61.8
0.005 mm	7.7
0.001 mm	5.8

Approved By: 1A/102094

Approved By: _____ Date: _____

	Sample Name:	SF0123		
	Lab Code:	K2006339-022		
	X	Y	C	V-L AV
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(<u>mm)</u>	(nm)	<u>(log)</u>
3/4"	64.9	19.0	1900000	7.279
3/8"	64.8	9.5	9500000	6.978
	64.0	4.75	4750000	6.677
10	63.2	2.00	2000000	6.301
_20	63.2	0.850	850000	5.929
40	63.1	0.425	425000	5.628
60	63.0	0.250	250000	5.398
140	62.8	0.106	106000	5.025
200	62.4	0.0750	75000	4.875
2	27.3	0.0362	36204.12365	4.559
5	20.7	0.0234	23443.15162	4.370
15	12.4	0.0139	13918.67774	4.144
30	10.8	0.0099	9895.371415	3.995
60	9.1	0.0070	7034.627064	3.847
250	5.8	0.0035	3482.742311	3.542
1440	5.8	0.0015	1451.14263	3.162
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	61.8
	0.005	5000	3.70	7.7
	0.001	1000	3.00	5.8

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006412

 Date Collected:
 8/17/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0123 R Lab Code: K2006412-027

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	7.2588	89
Gravel	No.3/8''(9.50 mm)	3.8458	82.9
Medium Gravel	No.4 (4.75 mm)	2.3279	79.3
Fine Gravel	No.10 (2.00 mm)	1.7940	76.6
Very Coarse Sand	No.20 (0.850 mm)	1.7129	73.1
Coarse Sand	No.40 (0.425 mm)	1.7991	69.4
Medium Sand	No.60 (0.250 mm)	2.9077	63.5
Fine Sand	No.140 (0.106 mm)	2.5478	58.3
Very Fine Sand	No.200 (0.0750 mm)	0.6371	57.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	57.4
0.005 mm	10.8
0.001 mm	4.3

Approved By: 1A/102094

Approved By: ______Date: _____

	Sample Name:	SF0123 R		
	Lab Code:	K2006412-027		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	88.7	19.0	19000000	7.279
3/8"	82.9	9.5	9500000	6.978
4	79.3	4.75	4750000	6.677
10	76.6	2.00	2000000	6.301
20	73.1	0.850	850000	5.929
40	69.4	0.425	425000	5.628
60	63.5	0.250	250000	5.398
140	58.3	0.106	106000	5.025
200	57.0	0.0750	75000	4.875
2	81.3	0.0306	30593.08486	4.486
5	75.1	0.0198	19827.06793	4.297
15	36.0	0.0131	13061.2136	4.116
30	19.6	0.0097	9676.032238	3.986
60	13.4	0.0070	6955.162863	3.842
250	7.2	0.0035	3461.876288	3.539
1440	. 5.1	0.0014	1449.946519	3.161
	determined hydrome	ter	+	
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	57.4
	0.005	5000	3.70	10.8
	0.001	1000	3.00	4.3

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

Service Request: K2005951 Date Collected: 8/3/00 Date Received: 8/4/00 Date Analyzed: 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0124 Lab Code: K2005951-028

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	2.7198	96.3
Coarse Sand	No.40 (0.425 mm)	3.1531	92.1
Medium Sand	No.60 (0.250 mm)	3.0450	88.0
Fine Sand	No.140 (0.106 mm)	5.1658	81.1
Very Fine Sand	No.200 (0.0750 mm)	2.1981	78.1

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	77.4
0.005 mm	7.1
0.001 mm	2.8

Approved By: 1A/102094 .

Approved By: ______ Date: _____

	Sample Name:	SF0124		
	Lab Code:	K2005951-028		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	96.3	0.850	850000	5.929
40	92.1	0.425	425000	5.628
60	88.0	0.250	250000	5.398
140	81.1	0.106	106000	5.025
200	78.1	0.0750	75000	4.875
2	37.7	0.0342	34222.94731	4.534
5	33.6	0.0221	22091.19408	4.344
15	24.0	0.0133	13336.75046	4.125
30	13.0	0.0099	9880.15596	3.995
60	8.9	0.0071	7101.887647	3.851
250	4.8	0.0035	3534.907367	3.548
1440	3.4	0.0015	1480.534313	3.170
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	77.4
	0.005	5000	3.70	7.1
	0.001	1000	3.00	2.8

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005951

 Date Collected:
 8/3/00

 Date Received:
 8/4/00

 Date Analyzed:
 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0125 Lab Code: K2005951-020

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	1.0606	97.9
Coarse Sand	No.40 (0.425 mm)	1.3552	95.3
Medium Sand	No.60 (0.250 mm)	1.2070	93.0
Fine Sand	No.140 (0.106 mm)	2.6739	87.8
Very Fine Sand	No.200 (0.0750 mm)	1.4425	85.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	84.9
0.005 mm	10.1
0.001 mm	6.1

Approved By: ______

	Sample Name:	SF0125		
	Lab Code:	K2005951-020		
	X	Y	Convert Y	Value of Y
	arithmetic	logarithmic		
<u>C'</u>	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(<u>mm</u>)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	97.9	0.850	850000	5.929
40	95.3	0.425	425000	5.628
60	93.0	0.250	250000	5.398
140	87.8	0.106	106000	5.025
200	85.0	0.0750	75000	4.875
2	78.5	0.0326	32613.54651	4.513
5	68.3	0.0215	21456.14158	4.332
15	23.5	0.0143	14305.757	4.156
30	15.3	0.0103	10343.20201	4.015
60	11.2	0.0074	7392.870577	3.869
250	9.2	0.0036	3640.978312	3.561
1440	7.1	0.0015	1525.043126	3.183
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	84.9
	0.005	5000	3.70	10.1
	0.001	1000	3.00	6.1

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

Service Request: K2005951 Date Collected: 8/3/00 Date Received: 8/4/00 Date Analyzed: 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0126 Lab Code: K2005951-021

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	1.4718	94.2
Coarse Sand	No.40 (0.425 mm)	1.4738	88.5
Medium Sand	No.60 (0.250 mm)	2.0162	80.5
Fine Sand	No.140 (0.106 mm)	3.3726	67.3
Very Fine Sand	No.200 (0.0750 mm)	0.7610	64.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	64.4
0.005 mm	20.9
0.001 mm	13.9

Approved By: 1A/102094

Approved By: ______Date: ______Date: ______

	Sample Name:	SF0126		
	Lab Code:	K2005951-021		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	94.2	0.850	850000	5.929
40	88.5	0.425	425000	5.628
60	80.5	0.250	250000	5.398
140	67.3	0.106	106000	5.025
200	64.3	0.0750	75000	4.875
2	65.3	0.0362	36204.12365	4.559
5	57.4	0.0232	23171.93114	4.365
15	49.5	0.0135	13534.9099	4.131
30	37.6	0.0097	9734.353301	3.988
60	25.7	0.0070	6997.08423	3.845
250	13.9	0.0035	3482.742311	3.542
1440	13.9	0.0015	1451.14263	3.162
+	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	64.4
	0.005	5000	3.70	20.9
	0.001	1000	3.00	13.9

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005951

 Date Collected:
 8/3/00

 Date Received:
 8/4/00

 Date Analyzed:
 9/27/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0127 Lab Code: K2005951-022

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.6416	98.7
Coarse Sand	No.40 (0.425 mm)	1.2158	96.3
Medium Sand	No.60 (0.250 mm)	1.1494	94.0
Fine Sand	No.140 (0.106 mm)	2.3069	89.4
Very Fine Sand	No.200 (0.0750 mm)	0.9858	87.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	87.4
0.005 mm	26.0
0.001 mm	6.4

Approved By: _____ 1A/102094

	Sample Name:	SF0127		
	Lab Code:	K2005951-022		
	X	Y		V-h63V
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	(<u>nm</u>)	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	98.7	0.850	850000	5.929
40	96.3	0.425	425000	5.628
60	94.0	0.250	250000	5.398
140	89.4	0.106	106000	5.025
200	87.4	0.0750	75000	4.875
2	85.6	0.0302	30177.09211	4.480
5	79.6	0.0196	19582.01025	4.292
15	63.5	0.0120	12036.53853	4.081
30	49.4	0.0089	8938.838257	3.951
60	33.2	0.0066	6649.540274	3.823
250	15.1	0.0034	3429.792241	3.535
1440	9.1	0.0015	1452.2087	3.162
	determined hydrome	ter		
	<u></u> <u>mm</u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	87.4
	0.005	5000	3.70	26.0
	0.001	1000	3.00	6.4

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0128 Lab Code: K2005960-001

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.3042	99.5
Medium Gravel	No.4 (4.75 mm)	1.6336	96.4
Fine Gravel	No.10 (2.00 mm)	3.7378	89.5
Very Coarse Sand	No.20 (0.850 mm)	2.0605	85.7
Coarse Sand	No.40 (0.425 mm)	5.4993	75.3
Medium Sand	No.60 (0.250 mm)	6.9532	62.2
Fine Sand	No.140 (0.106 mm)	4.5762	53.5
Very Fine Sand	No.200 (0.0750 mm)	0.6833	52.2

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	52.2
0.005 mm	10.0
0.001 mm	3.9

Approved By: _____ 1A/102094 _____Date: _____

	Sample Name:	SF0128		
	Lab Code:	K2005960-001		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	99.5	9.5	9500000	6.978
4	96.4	4.75	4750000	6.677
10	89.5	2.00	200000	6.301
20	85.7	0.850	850000	5.929
40	75.3	0.425	425000	5,628
60	62.2	0.250	250000	5.398
140	53.5	0.106	106000	5.025
200	52.2	0.0750	75000	4.875
2	52.4	0.0335	33507.54009	4.525
5	48.6	0.0215	21484.59421	4.332
15	27.6	0.0133	13294.84978	4.124
30	16.2	0.0097	9727.248383	3.988
60	12.4	0.0070	6953.427561	3.842
250	6.7	0.0034	3379.975745	3.529
1440	4.8	0.0014	1449.58476	3.161
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	52.2
	0.005	5000	3.70	10.0
	0.001	1000	3.00	3.9

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0129 Lab Code: K2005960-002

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size		
-		Weight (g)	Passing	
Gravel	No.3/4''(19.0 mm)	0.0000	100	
Gravel	No.3/8"(9.50 mm)	0.0000	100	
Medium Gravel	No.4 (4.75 mm)	0.8946	98.5	
Fine Gravel	No.10 (2.00 mm)	7.0758	85.1	
Very Coarse Sand	No.20 (0.850 mm)	4.4748	76.4	
Coarse Sand	No.40 (0.425 mm)	2.2588	72.0	
Medium Sand	No.60 (0.250 mm)	2.1812	67.7	
Fine Sand	No.140 (0.106 mm)	5.0785	57.7	
Very Fine Sand	No.200 (0.0750 mm)	1.9502	53.9	

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	53.8
0.005 mm	10.1
0.001 mm	0.2

Approved By 1A/102094

Approved By: ______Date: _____

	Sample Name: Lab Code:	SF0129		
		K2005960-002		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.2	19.0	1900000	7.279
3/8"	100.2	9.5	9500000	6.978
4	98.5	4.75	4750000	6.677
10	85.1	2.00	2000000	6.301
20	76.4	0.850	850000	5.929
40	72.0	0.425	425000	5.628
60	67.7	0.250	250000	5.398
140	57.7	0.106	106000	5.025
200	53.9	0.0750	75000	4.875
2	47.5	0.0329	32873.93447	4.517
5	39.7	0.0213	21338.97678	4.329
15	30.1	0.0127	12704.25203	4.104
30	22.3	0.0092	9194.815227	3.964
60	14.5	0.0066	6647.941195	3.823
250	2.9	0.0033	3283.039927	3.516
1440	1.0	0.0014	1407.717378	3.149
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	53.8
	0.005	5000	3.70	10.1
	0.001	1000	3.00	0.2

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006154

 Date Collected:
 8/10/00

 Date Received:
 8/10/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SFO130 T Lab Code: K2006154-007

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	99.9
Gravel	No.3/8"(9.50 mm)	0.1476	99.5
Medium Gravel	No.4 (4.75 mm)	0.9510	96.9
Fine Gravel	No.10 (2.00 mm)	0.0851	96.7
Very Coarse Sand	No.20 (0.850 mm)	1.1780	93.4
Coarse Sand	No.40 (0.425 mm)	1.0361	90.6
Medium Sand	No.60 (0.250 mm)	1.9433	85.2
Fine Sand	No.140 (0.106 mm)	1.0511	82.4
Very Fine Sand	No.200 (0.0750 mm)	0.2423	81.7

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	81.9
0.005 mm	4.4
0.001 mm	0.0

Approved By: ______ 1A/102094

___Date: _____

	Sample Name:	SFO130 T		
	Lab Code:	K2006154-007		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	(nm)	<u>(log)</u>
3/4"	99.9	19.0	1900000	7.279
3/8"	99.5	9.5	9500000	6.978
4	96.9	4.75	4750000	6.677
10	96.7	2.00	2000000	6.301
20	93.4	0.850	850000	5.929
40	90.6	0.425	425000	5.628
60	85.2	0.250	250000	5.398
140	82.4	0.106	106000	5
200	81.7	0.0750	75000	5
2	94.0	0.0328	32764.70796	5
5	77.2	0.0216	21644.49235	4
15	32.3	0.0138	13816.41961	4.140
30	7.0	0.0103	10257.44261	4.011
60	7.0	0.0073	7253.107229	3.861
250	1.4	0.0036	3589.750163	3.555
1440	-1.4	0.0015	1521.889199	3.182
	determined hydrome	ter		
	mm	mm to nm	log hyd x	<u>% Passing</u>
	0.074	74000	4.87	81.9
	0.005	5000	3.70	4.4
	0.001	1000	3.00	0.0

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005759.

 Date Collected:
 7/27/00

 Date Received:
 7/28/00

 Date Analyzed:
 8/17/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0131 Lab Code: K2005759-004

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	_100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel		0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3306	99.4
Coarse Sand		0.2767	98.8
Medium Sand	No.60 (0.250 mm)	0.4723	97.9
Fine Sand	No.140 (0.106 mm)	1.9055	94.2
Very Fine Sand	No.200 (0.0750 mm)	1.1093	92.1

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	92.0
0.005 mm	27.4
0.001 mm	7.1

Approved By: 1A/102094

Approved By: _____Date: _____Date: _____

	Sample Name: Lab Code:	SF0131		
		K2005759-004		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.4	0.850	850000	5.929
40	98.8	0.425	425000	5.628
60	97.9	0.250	250000	5.398
140	94.2	0.106	106000	5.025
200	92.1	0.0750	75000	4.875
2	87.0	0.0292	29194.70122	4.465
5	81.1	0.0190	18961.78501	4.278
15	63.5	0.0118	11767.19265	4.071
30	51.8	0.0087	8685.568362	3.939
60	36.2	0.0065	6469.673342	3.811
250	12.7	0.0033	3316.820045	3.521
1440	8.8	0.0014	1430.277371	3.155
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	92.0
	0.005	5000	3.70	27.4
	0.001	1000	3.00	7.1

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0132 Lab Code: K2005960-003

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
	·	Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.1231	99.7
Fine Gravel	No.10 (2.00 mm)	1.5665	96.8
Very Coarse Sand	No.20 (0.850 mm)	1.2183	94.5
Coarse Sand	No.40 (0.425 mm)	2.3498	90.0
Medium Sand	No.60 (0.250 mm)	3.9695	82.4
Fine Sand	No.140 (0.106 mm)	3.9731	74.8
Very Fine Sand	No.200 (0.0750 mm)	0.9869	73.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	72.9
0.005 mm	16.8
0.001 mm	3.1

Approved By 1A/102094

Approved By: ______Date: ______

	Sample Name:	SF0132		
	Lab Code:	K2005960-003		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	99.7	4.75	4750000	6.677
10	96.8	2.00	2000000	6.301
20	94.5	0.850	850000	5.929
40	90.0	0.425	425000	5.628
60	82.4	0.250	250000	5.398
140	74.8	0.106	106000	5.025
200	73.0	0.0750	75000	4.875
2	70.9	0.0318	31808.60798	4.503
5	67.0	0.0204	20434.66735	4.310
15	51.5	0.0125	12503.57391	4.097
30	37.9	0.0093	9255.901064	3.966
60	22.3	0.0069	6864.599278	3.837
250	8.7	0.0034	3412.294126	3.533
1440	4.9	0.0015	1471.187915	3.168
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	<u>% Passing</u>
	0.074	74000	4.87	72.9
	0.005	5000	3.70	16.8
	0.001	1000	3.00	3.1

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0133 Lab Code: K2005960-004

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size		
-		Weight (g)	Passing	
Gravel	No.3/4"(19.0 mm)	0.0000	100	
Gravel	No.3/8''(9.50 mm)	0.0000	100	
Medium Gravel	No.4 (4.75 mm)	0.1729	99.8	
Fine Gravel	No.10 (2.00 mm)	0.1886	99.4	
Very Coarse Sand	No.20 (0.850 mm)	0.6484	98.2	
Coarse Sand	No.40 (0.425 mm)	0.8889	96.6	
Medium Sand	No.60 (0.250 mm)	1.9174	93.0	
Fine Sand	No.140 (0.106 mm)	4.1558	85.4	
Very Fine Sand	No.200 (0.0750 mm)	0.8374	83.8	

Silt and Clay

(Hydrometer Analysis)

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Particle Diameter	Percent Passing
0.074 mm	83.8
0.005 mm	19.9
0.001 mm	

Approved By: 1A/102094

Approved By: ______Date: ______

	Sample Name:	SF0133		
	Lab Code:	K2005960-004		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.1	19.0	1900000	7.279
3/8"	100.1	9.5	9500000	6.978
4	99.8	4.75	4750000	6.677
10	99.4	2.00	2000000	6.301
20	98.2	0.850	850000	5.929
40	96.6	0.425	425000	5.628
60	93.0	0.250	250000	5.398
140	85.4	0.106	106000	5.025
200	83.8	0.0750	75000	4.875
2	78.0	0.0302	30160.47283	4.479
5	72.4	0.0196	19562.77068	4.291
15	53.6	0.0122	12186.10079	4.086
30	40.4	0.0090	9032.016846	3.956
60	27.3	0.0067	6667.238198	3.824
250	8.5	0.0034	3372.310273	3.528
1440	4.7	0.0015	1453.905391	3.163
	determined hydrome	tor		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	83.8
	0.005	5000	3.70	19.9
	0.001	1000	3.00	3.0

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0138 Lab Code: K2005960-007

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
_		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.4787	99.1
Medium Gravel	No.4 (4.75 mm)	6.3140	88.4
Fine Gravel	No.10 (2.00 mm)	5.5571	79.0
Very Coarse Sand	No.20 (0.850 mm)	3.1671	73.6
Coarse Sand	No.40 (0.425 mm)	2.2301	69.8
Medium Sand	No.60 (0.250 mm)	1.1243	67.8
Fine Sand	No.140 (0.106 mm)	2.0419	64.3
Very Fine Sand	No.200 (0.0750 mm)	0.4490	63.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	63.5
0.005 mm	14.4
0.001 mm	3.6

Approved By: 1A/102094

Approved By: ______Date: ______

	Sample Name:	SF0138		
	Lab Code:	K2005960-007		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	99.9	19.0	19000000	7.279
3/8"	99.1	9.5	9500000	6.978
4	88.4	4.75	4750000	6.677
10	79.0	2.00	2000000	6.301
20	73.6	0.850	850000	5.929
40	69.8	0.425	425000	5.628
60	67.8	0.250	250000	5.398
140	64.3	0.106	106000	5.025
200	63.6	0.0750	75000	4.875
2	60.7	0.0311	31118.75016	4.493
5	57.3	0.0200	19986.66958	4.301
15	43.6	0.0122	12219.27747	4.087
30	29.9	0.0091	9095.763578	3.959
60	19.7	0.0067	6662.997567	3.824
250	6.0	0.0033	3329.733397	3.522
1440	4.3	0.0014	1427.981605	3.155
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	63.5
	0.005	5000	3.70	14.4
	0.001	1000	3.00	3.6

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0138 Lab Code: K2005960-007D

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	3.5207	93
Gravel	No.3/8''(9.50 mm)	0.0000	93.2
Medium Gravel	No.4 (4.75 mm)	1.8363	89.7
Fine Gravel	No.10 (2.00 mm)	4.4651	81.3
Very Coarse Sand	No.20 (0.850 mm)	2.3922	76.7
Coarse Sand	No.40 (0.425 mm)	2.1004	72.7
Medium Sand	No.60 (0.250 mm)	0.9041	71.0
Fine Sand	No.140 (0.106 mm)	1.9110	67.3
Very Fine Sand	Nø.200 (0.0750 mm)	0.4348	66.5

Silt and Clay	
(Hydrometer Analysis)	

Particle Diameter	Percent Passing
0.074 mm	66.5
0.005 mm	10.1
0.001 mm	4.0

Approved By: 1A/102094

Approved By: ______Date: _____Date: _____

_	Sample Name:	SF0138		
	Lab Code:	K2005960-007D		· · · · · · · · · · · · · · · · · · ·
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	93.2	19.0	19000000	7.279
3/8"	93.2	9.5	9500000	6.978
4	89.7	4.75	4750000	6.677
10	81.3	2.00	2000000	6.301
20	76.7	0.850	850000	5.929
40	72.7	0.425	425000	5.628
60	71.0	0.250	250000	5.398
140	67.3	0.106	106000	5.025
200	66.5	0.0750	75000	4.875
2	63.9	0.0316	31601.69936	4.500
5	60.1	0.0203	20287.5153	4.307
15	44.8	0.0124	12383.43708	4.093
30	33.4	0.0091	9095.763578	3.959
60	12.4	0.0068	6849.800663	3.836
250	6.7	0.0033	3329.733397	3.522
1440	4.8	0.0014	1427.981605	3.155
	determined hydrome			
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	66.5
	0.005	5000	3.70	10.1
	0.001	1000	3.00	4.0

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL, RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0139 Lab Code: K2005960-008

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	99.9
Medium Gravel	No.4 (4.75 mm)	0.1831	99.6
Fine Gravel	No.10 (2.00 mm)	1.5018	96.9
Very Coarse Sand	No.20 (0.850 mm)	1.1127	94.9
Coarse Sand	No.40 (0.425 mm)	0.7152	93.7
Medium Sand	No.60 (0.250 mm)	0.6133	92.6
Fine Sand	No.140 (0.106 mm)	2.8990	87.4
Very Fine Sand	No.200 (0.0750 mm)	1.3234	85.0

Silt and Clay

(Hydrometer	Ana	lysis))
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Particle Diameter	Percent Passing
0.074 mm	85.1
0.005 mm	17.7
0.001 mm	3.8

1A/102094

Approved By: ______Date: ______

	Sample Name:	SF0139		
	Lab Code:	K2005960-008		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	99.9	19.0	1900000	7.279
3/8"	99.9	9.5	9500000	6.978
4	99.6	4.75	4750000	6.677
10	96.9	2.00	2000000	6.301
20	94.9	0.850	850000	5.929
40	93.7	0.425	425000	5.628
60	92.6	0.250	250000	5.398
140	87.4	0.106	106000	5.025
200	85.0	0.0750	75000	4.875
2	96.8	0.0263	26300.4165	4.420
5	71.4	0.0190	19000.14655	4.279
15	53.3	0.0118	11849.53889	4.074
30	40.7	0.0088	8788.203443	3.944
60	24.4	0.0066	6567.605796	3.817
250	6.3	0.0033	3282.360278	3.516
1440	4.5	0.0014	1423.821896	3.153
	determined hydrome	ter		
	<u>mm</u>	mm to nm	log hyd x	<u>% Passing</u>
	0.074	74000	4.87	85.1
	0.005	5000	3.70	17.7
	0.001	1000	3.00	3.8

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0140 Lab Code: K2005960-009

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	99.9
Medium Gravel	No.4 (4.75 mm)	1.1958	97.8
Fine Gravel	No.10 (2.00 mm)	3.3041	91.7
Very Coarse Sand	No.20 (0.850 mm)	2.9937	86.2
Coarse Sand	No.40 (0.425 mm)	8.6528	70.1
Medium Sand	No.60 (0.250 mm)	7.3855	56.4
Fine Sand	No.140 (0.106 mm)	5.1356	46.8
Very Fine Sand	No.200 (0.0750 mm)	1.5953	43.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	43.8
0.005 mm	13.7
0.001 mm	3.9

Approved By: ____ 1A/102094 _____Date: _____

	Sample Name:	SF0140		
	Lab Code:	K2005960-009		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	99.9	19.0	1900000	7.279
3/8"	99.9	9.5	9500000	6.978
4	97.8	4.75	4750000	6.677
10	91.7	2.00	2000000	6.301
20	86.2	0.850	850000	5.929
40	70.1	0.425	425000	5.628
60	56.4	0.250	250000	5.398
140	46.8	0.106	106000	5.025
200	43.9	0.0750	75000	4.875
2	41.9	0.0358	35793.60956	4.554
5	38.0	0.0229	22926.48393	4.360
15	30.2	0.0136	13563.73852	4.132
30	24.4	0.0098	9760.900018	3.989
60	18.5	0.0070	7020.072542	3.846
250	6.8	0.0034	3429.575961	3.535
1440	4.9	0.0015	1487.685996	3.173
	determined hydrome	ter		
	mm	<u>mm to nm</u>	log hyd x	% Passing
	0.074	74000	4.87	43.8
	0.005	5000	3.70	13.7
	0.001	1000	3.00	3.9

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0141 Lab Code: K2005960-010

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	99.5
Medium Gravel	No.4 (4.75 mm)	2.6322	94.6
Fine Gravel	No.10 (2.00 mm)	5.1911	84.7
Very Coarse Sand	No.20 (0.850 mm)	4.7756	75.1
Coarse Sand	No.40 (0.425 mm)	4.6555	65.8
Medium Sand	No.60 (0.250 mm)	5.1383	55.5
Fine Sand	No.140 (0.106 mm)	6.5476	42.3
Very Fine Sand	No.200 (0.0750 mm)	1.8362	38.6

Silt and Clay (Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	38.7
0.005 mm	9.3
0.001 mm	3.2

Approved By: __ 1A/102094 _____Date: _____

	Sample Name:	SF0141		
	Lab Code:	K2005960-010	ļ	
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	99.5	19.0	19000000	7.279
3/8"	99.5	9.5	9500000	6.978
4	94.6	4.75	4750000	6.677
10	84.7	2.00	2000000	6.301
20	75.1	0.850	850000	5.929
40	65.8	0.425	425000	5.628
60	55.5	0.250	250000	5.398
140	42.3	0.106	106000	5.025
200	38.6	0.0750	75000	4.875
2	39.1	0.0370	36997.93817	4.568
5	34.9	0.0237	23686.88866	4.375
15	26.4	0.0140	14001.5254	4.146
30	20.1	0.0101	10069.94476	4.003
60	13.7	0.0072	7238.308441	3.860
250	3.2	0.0035	3514.719905	3.546
1440	3.2	0.0015	1516.737196	3.181
	determined hydrome	 ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	38.7
	0.005	5000	3.70	· 9.3
	0.001	1000	3.00	3.2

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2006045

 Date Collected:
 8/5/00

 Date Received:
 8/9/00

 Date Analyzed:
 9/6/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0142 Lab Code: K2006045-001

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size		
		Weight (g)	Passing	
Gravel	No.3/4''(19.0 mm)	0.0000	100	
Gravel	No.3/8"(9.50 mm)	0.0000	100	
Medium Gravel	No.4 (4.75 mm)	0.0000	100	
Fine Gravel	No.10 (2.00 mm)	0.0000	100	
Very Coarse Sand	No.20 (0.850 mm)	0.5804	98.8	
Coarse Sand	No.40 (0.425 mm)	0.3829	98.0	
Medium Sand	No.60 (0.250 mm)	0.5167	97.0	
Fine Sand	No.140 (0.106 mm)	1.5834	93.8	
Very Fine Sand	No.200 (0.0750 mm)	0.5514	92.6	

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	92.7
0.005 mm	30.1
0.001 mm	5.6

Approved By: 1A/102094

	Sample Name:	SF0142		
	Lab Code:	K2006045-001		
	X	Y		Mala e XI
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	98.8	0.850	850000	5.929
40	98.0	0.425	425000	5.628
60	97.0	0.250	250000	5.398
140	93.8	0.106	106000	5.025
200	92.6	0.0750	75000	4.875
2	94.4	0.0296	29633.73108	4.472
5	86.1	0.0194	19424.52787	4.288
15	71.6	0.0119	11872.91267	4.075
30	57.1	0.0088	8836.326998	3.946
60	38.4	0.0066	6627.559065	3.821
250	17.6	0.0034	3441.561157	3.537
1440	9.3	0.0015	1465.181819	3.166
	determined hydromet	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	92.7
	0.005	5000	3.70	30.1
	0.001	1000	3.00	5.6

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2006045

 Date Collected:
 8/5/00

 Date Received:
 8/9/00

 Date Analyzed:
 9/6/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0143 Lab Code: K2006045-002

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Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0765	99.8
Coarse Sand	No.40 (0.425 mm)	0.1135	99.6
Medium Sand	No.60 (0.250 mm)	0.2748	99.1
Fine Sand	No.140 (0.106 mm)	0.8973	97.3
Very Fine Sand	No.200 (0.0750 mm)	0.4749	96.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	96.3
0.005 mm	25.3
0.001 mm	4.4

Approved By: ____ 1A/102094 _____Date: _____

	Sample Name:	SF0143		
	Lab Code:	K2006045-002		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.6	0.425	425000	5.628
60	99.1	0.250	250000	5.398
140	97.3	0.106	106000	5.025
200	96.3	0.0750	75000	4.875
2	96.3	0.0288	28821.6703	4.460
5	88.2	0.0189	18917.32799	4.277
15	65.9	0.0119	11947.6263	4.077
30	49.7	0.0089	8938.838257	3.951
60	33.4	0.0066	6649.540274	3.823
250	13.2	0.0034	3448.394402	3.538
1440	7.1	0.0015	1459.836806	3.164
	determined hydromet	tor		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	<u>96.3</u>
	0.005	5000	3.70	25.3
	0.003	1000	3.00	4.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2006045

 Date Collected:
 8/5/00

 Date Received:
 8/9/00

 Date Analyzed:
 9/6/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0146 Lab Code: K2006045-003

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.2681	99.5
Fine Gravel	No.10 (2.00 mm)	0.0275	99.5
Very Coarse Sand	No.20 (0.850 mm)	0.3898	98.4
Coarse Sand	No.40 (0.425 mm)	0.6587	96.7
Medium Sand	No.60 (0.250 mm)	0.6714	94.9
Fine Sand	No.140 (0.106 mm)	1.3325	91.3
Very Fine Sand	No.200 (0.0750 mm)	0.5301	89.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	90.3
0.005 mm	32.1
0.001 mm	6.1

Approved By: 1A/102094

Approved By: _____ Date: _____

	Sample Name:	SF0146		
	Lab Code:	K2006045-003		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	<u>(nm)</u>	<u>(log)</u>
3/4"	100.1	19.0	19000000	7.279
3/8"	100.1	9.5	9500000	6.978
4	99.5	4.75	4750000	6.677
10	99.5	2.00	2000000	6.301
20	98.4	0.850	850000	5.929
40	96.7	0.425	425000	5.628
60	94.9	0.250	250000	5.398
140	91.3	0.106	106000	5.025
200	89.9	0.0750	75000	4.875
2	123.7	0.0282	28231.33444	4.451
5	115.7	0.0184	18354.00962	4.264
15	91.8	0.0114	11417.36664	4.058
30	70.5	0.0086	8556.145682	3.932
60	41.2	0.0065	6490.307744	3.812
250	17.3	0.0033	3345.708444	3.524
1440	9.3	0.0014	1416.365925	3.151
	determined bydrome	ter		
	<u></u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	90.3
	0.005	5000	3.70	32.1
	0.001	1000	3.00	6.1

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

Service Request: K2006045 Date Collected: 8/5/00 Date Received: 8/9/00 Date Analyzed: 9/6/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0147 Lab Code: K2006045-004

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100_
Very Coarse Sand	No.20 (0.850 mm)	0.2835	99.4
Coarse Sand	No.40 (0.425 mm)	0.2785	98.9
Medium Sand	No.60 (0.250 mm)	0.5716	97.7
Fine Sand	No.140 (0.106 mm)	1.5307	94.6
Very Fine Sand	No.200 (0.0750 mm)	0.6330	93.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.3
0.005 mm	23.3
0.001 mm	7.5

Approved By: 1A/102094

Approved By: _____Date: ____Date: _____Date:

	Sample Name:	SF0147		
	Lab Code:	K2006045-004		
	X	Ŷ		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.4	0.850	850000	5.929
40	98.9	0.425	425000	5.628
60	97.7	0.250	250000	5.398
140	94.6	0.106	106000	5.025
200	93.3	0.0750	75000	4.875
2	93.7	0.0291	29108.96081	4.464
5	83.4	0.0192	19244.50487	4.284
15	62.8	0.0120	12016.48345	4.080
30	46.3	0.0090	8976.422336	3.953
60	29.8	0.0067	6669.122083	3.824
250	13.4	0.0034	3417.588614	3.534
1440	9.3	0.0014	1439.23558	3.158
	determined hydrome	ter		
	<u>mm</u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	93.3
	0.005	5000	3.70	23.3
	0.001	1000	3.00	7.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006045

 Date Collected:
 8/5/00

 Date Received:
 8/9/00

 Date Analyzed:
 9/6/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0149 Lab Code: K2006045-009

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size		
-		Weight (g)	Passing	
Gravel	No.3/4"(19.0 mm)	0.0000	100	
Gravel	No.3/8"(9.50 mm)	10.5011	85.1	
Medium Gravel	No.4 (4.75 mm)	4.6760	78.3	
Fine Gravel	No.10 (2.00 mm)	4.2006	72.3	
Very Coarse Sand	No.20 (0.850 mm)	3.4421	67.3	
Coarse Sand	No.40 (0.425 mm)	4.5067	60.7	
Medium Sand	No.60 (0.250 mm)	4.6001	54.1	
Fine Sand	No.140 (0.106 mm)	5.3723	46.3	
Very Fine Sand	No.200 (0.0750 mm)	1.8064	43.7	

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	43.6
0.005 mm	10.7
0.001 mm	3.9

Approved By: _____ 1A/102094

_____Date: _____Date: _____

	Sample Name:	SF0149		
	Lab Code:	K2006045-009		·····
	X arithmetic	Y	Convert Y	Value of Y
	Percent Passing	logarithmic Particle Diameter	mm to nm	Log form
Sieve	<u>rercent rassing</u>	(mm)	(nm)	<u>(log)</u>
<u>3/4"</u>	100.2	19.0	19000000	7,279
3/8"	85.1	9.5	9500000	6.978
4	78.3	4.75	4750000	6.677
	72.3	2.00	2000000	6.301
20	67.3	0.850	850000	5.929
40	60.7	0.425	425000	5.628
60	54.1	0.250	250000	5.398
140	46.3	0.106	106000	5.025
200	43.7	0.0750	75000	4.875
2	41.9	0.0352	35233.01167	4.547
5	35.8	0.0229	22894.44144	4.360
15	26.7	0.0137	13730.37455	4.138
30	17.5	0.0101	10058.02882	4.003
60	12.9	0.0072	7232.396538	3.859
250	8.4	0.0036	3601.104746	3.556
1440	5.3	0.0015	1516.34895	3.181
	determined hydrome	ter		
	imm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	43.6
	0.005	5000	3.70	10.7
	0.001	1000	3.00	3.9

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006154

 Date Collected:
 8/10/00

 Date Received:
 8/10/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0151 Lab Code: K2006154-019

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.5589	98.9
Fine Gravel	No.10 (2.00 mm)	1.2308	96.5
Very Coarse Sand	No.20 (0.850 mm)	1.6622	93.2
Coarse Sand	No.40 (0.425 mm)	3.0664	87.2
Medium Sand	No.60 (0.250 mm)	3.1707	80.9
Fine Sand	No.140 (0.106 mm)	8.2938	64.6
Very Fine Sand	No.200 (0.0750 mm)	2.3885	59.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	59.7
0.005 mm	15.8
0.001 mm	5.2

Approved By: 1A/102094

Approved By: _____Date: _____Date: _____

	Sample Name:	SF0151		
	Lab Code:	K2006154-019		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	98.9	4.75	4750000	6.677
10	96.5	2.00	2000000	6.301
20	93.2	0.850	850000	5.929
40	87.2	0.425	425000	5.628
60	80.9	0.250	250000	5.398
140	64.6	0.106	106000	5
200	59.9	0.0750	75000	5
2	52.8	0.0357	35719.41863	5
5	48.6	0.0229	22894.44144	4
15	36.2	0.0137	13730.37455	4.138
30	27.9	0.0099	9942.995528	3,998
60	19.7	0.0072	7192.521376	3.857
250	11.4	0.0036	3601.104746	3.556
1440	7.2	0.0015	1535.080615	3.186
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	<u>% Passing</u>
	0.074	74000	4.87	59.7
	0.005	5000	3.70	15.8
	0.001	1000	3.00	5.2

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006154

 Date Collected:
 8/10/00

 Date Received:
 8/10/00

 Date Analyzed:
 8/28/00

Particle Size Determination ASTM Method D 422

Sample Name: SFO152 Lab Code: K2006154-020

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size		
		Weight (g)	Passing	
Gravel	No.3/4"(19.0 mm)	0.0000	100	
Gravel	No.3/8"(9.50 mm)	0.0000	100	
Medium Gravel	No.4 (4.75 mm)	0.0000	100	
Fine Gravel	No.10 (2.00 mm)	0.0948	99.8	
Very Coarse Sand	No.20 (0.850 mm)	0.1070	99.6	
Coarse Sand	No.40 (0.425 mm)	0.0901	99.4	
Medium Sand	No.60 (0.250 mm)	0.1256	99.2	
Fine Sand	No.140 (0.106 mm)	0.3846	98.4	
Very Fine Sand	No.200 (0.0750 mm)	0.3424	97.8	

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.7
0.005 mm	26.4
0.001 mm	8.2

Approved By: _____ 1A/102094 _Date: _____

	Sample Name:	SF0152		
	Lab Code:	K2006154-020		
	x	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	99.8	2.00	2000000	6.301
20	99.6	0.850	850000	5.929
40	99.4	0.425	425000	5.628
60	99.2	0.250	250000	5.398
140	98.4	0.106	106000	5
200	97.8	0.0750	75000	5
2	95.4	0.0295	29508.26945	4
5	85.4	0.0195	19540.33382	4
15	65.3	0.0122	12232.24651	4.088
30	51.2	0.0091	9090.515272	3.959
60	33.1	0.0068	6807.947772	3.833
250	17.1	0.0035	3492.348692	3.543
1440	11.0	0.0015	1497.246565	3.175
	determined hydromet	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.7
	0.005	5000	3.70	26.4
	0.001	1000	3.00	8.2

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2005960

 Date Collected:
 8/4/00

 Date Received:
 8/7/00

 Date Analyzed:
 8/22/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0167 Lab Code: K2005960-011

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size		
-		Weight (g)	Passing	
Gravel	No.3/4''(19.0 mm)	0.0000	100	
Gravel	No.3/8"(9.50 mm)	0.0000	100	
Medium Gravel	No.4 (4.75 mm)	0.0000	100	
Fine Gravel	No.10 (2.00 mm)	0.2300	99.6	
Very Coarse Sand	No.20 (0.850 mm)	3.5685	92.9	
Coarse Sand	No.40 (0.425 mm)	3.0199	87.3	
Medium Sand	No.60 (0.250 mm)	3.0886	81.5	
Fine Sand	No.140 (0.106 mm)	10.0984	62.6	
Very Fine Sand	No.200 (0.0750 mm)	4.4923	54.2	

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	54.0
0.005 mm	10.4
0.001 mm	0.0

Approved By: ____ 1A/102094

	Sample Name:	SF0167		
	Lab Code:	K2005960-011		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	99.6	2.00	2000000	6.301
20	92.9	0.850	850000	5.929
40	87.3	0.425	425000	5.628
60	81.5	0.250	250000	5.398
140	62.6	0.106	106000	5.025
200	54.2	0.0750	75000	4.875
2	41.0	0.0348	34769.23271	4.541
5	35.3	0.0224	22409.21471	4.350
15	27.6	0.0133	13253.80892	4.122
30	20.0	0.0096	9589.993066	3.982
60	14.3	0.0069	6894.568447	3.839
250	4.8	0.0033	3348.749463	3.525
1440	1.0	0.0015	1459.941286	3.164
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	54.0
	0.005	5000	3.70	10.4
	0.001	1000	3.00	-0.8

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Sediment

 Service Request:
 K2006339

 Date Collected:
 8/15/00

 Date Received:
 8/16/00

 Date Analyzed:
 9/18/00

Particle Size Determination ASTM Method D 422

Sample Name: SF0173 Lab Code: K2006339-023

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.8735	98.3
Very Coarse Sand	No.20 (0.850 mm)	0.0271	98.2
Coarse Sand	No.40 (0.425 mm)	0.1449	97.8
Medium Sand	No.60 (0.250 mm)	0.5252	96.5
Fine Sand	No.140 (0.106 mm)	2.1544	90.9
Very Fine Sand	No.200 (0.0750 mm)	1.2887	87.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	87.6
0.005 mm	22.6
0.001 mm	9.5

Approved By: _____ 1A/102094

_	Sample Name:	SF0173		
	Lab Code:	K2006339-023		~
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	98.3	2.00	2000000	6.301
20	98.2	0.850	850000	5.929
40	97.8	0.425	425000	5.628
60	96.5	0.250	250000	5.398
140	90.9	0.106	106000	5.025
200	87.6	0.0750	75000	4.875
2	89.2	0.0333	33344.92328	4.523
5	70.6	0.0222	22180.35755	4.346
15	49.3	0.0135	13489.84699	4.130
30	38.6	0.0098	9771.623396	3.990
60	28.0	0.0071	7070.405281	3.849
250	17.3	0.0035	3540.811764	3.549
1440	12.0	0.0015	1491.128058	3.174
	determined hydrome	ter		
	<u>mm</u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	87.6
· · · · · · · · · · · · · · · · · · ·	0.005	5000	3.70	22.6
	0.001	1000	3.00	9.5

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/22/00

 Date Received:
 7/23/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0009 Lab Code: K2005515-001

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0216	100
Coarse Sand	No.40 (0.425 mm)	0.0311	99.9
Medium Sand	No.60 (0.250 mm)	0.1538	99.6
Fine Sand	No.140 (0.106 mm)	2.0186	95.4
Very Fine Sand	No.200 (0.0750 mm)	0.4355	94.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.4
0.005 mm	31.5
0.001 mm	0.9

Approved By: ____ 1A/102094 _____Date: _____Date: _____

	Sample Name:	VC0009		
	Lab Code:	K2005515-001		
	X	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(mm)	(nm)	(log)
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	100.0	0.850	850000	5.929
40	99.9	0.425	425000	5.628
60	99.6	0.250	250000	5.398
140	95.4	0.106	106000	5.025
200	94.5	0.0750	75000	4.875
2	84.1	0.0299	29879.29106	4.475
5	79.9	0.0192	19215.27494	4.284
15	69.5	0.0115	11540.10016	4.062
30	57.1	0.0085	8523.259038	3.931
60	40.5	0.0064	6353.132941	3.803
250	15.6	0.0033	3260.324769	3.513
1440	5.2	0.0014	1411.435279	3.150
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.4
	0.005	5000	3.70	31.5
	0.001	1000	3.00	0.9

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/22/00

 Date Received:
 7/23/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0010 Lab Code: K2005515-002

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0790	99.8
Coarse Sand	No.40 (0.425 mm)	0.0175	99.8
Medium Sand	No.60 (0.250 mm)	0.0143	99.8
Fine Sand	No.140 (0.106 mm)	0.1276	99.5
Very Fine Sand	No.200 (0.0750 mm)	0.0924	99.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	99.3
0.005 mm	42.3
0.001 mm	5.7

Approved By: ____ 1A/102094

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	Sample Name:	VC0010		
	Lab Code:	K2005515-002		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.8	0.425	425000	5.628
60	99.8	0.250	250000	5.398
140	99.5	0.106	106000	5.025
200	99.3	0.0750	75000	4.875
2	95.7	0.0277	27714.38682	4.443
5	93.7	0.0177	17696.05135	4.248
15	79.6	0.0109	10871.33239	4.036
30	65.5	0.0081	8123.679121	3.910
60	49.4	0.0061	6077.881238	3.784
250	25.2	0.0031	3132.614125	3.496
1440	11.1	0.0014	1372.851548	3.138
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	99.3
	0.005	5000	3.70	42.3
	0.001	1000	3.00	5.7

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/22/00

 Date Received:
 7/23/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0011 Lab Code: K2005515-003

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1104	99.8
Coarse Sand	No.40 (0.425 mm)	0.0261	99.7
Medium Sand	No.60 (0.250 mm)	0.0240	99.7
Fine Sand	No.140 (0.106 mm)	0.3896	98.9
Very Fine Sand	No.200 (0.0750 mm)	0.1652	98.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.5
0.005 mm	34.4
0.001 mm	9.6

Approved By: _____ 1A/102094 _____Date: _____

	Sample Name:	VC0011		
	Lab Code:	K2005515-003		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.7	0.250	250000	5.398
140	98.9	0.106	106000	5.025
200	98.6	0.0750	75000	4.875
2	96.0	0.0275	27547.13969	4.440
5	87.9	0.0181	18080.77989	4.257
15	71.8	0.0112	11160.46415	4.048
30	57.6	0.0083	8312.410396	3.920
60	43.5	0.0062	6160.939584	3.790
250	15.2	0.0032	3201.991671	3.505
1440	11.1	0.0014	1364.565565	3.135
	determined hydrome	ter		
	mm	mm to nm	log hyd x	<u>% Passing</u>
	0.074	74000	4.87	98.5
	0.005	5000	3.70	34.4
	0.001	1000	3.00	9.6

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/22/00

 Date Received:
 7/23/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0012 Lab Code: K2005515-004

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0771	99.8
Coarse Sand	No.40 (0.425 mm)	0.0331	99.8
Medium Sand	No.60 (0.250 mm)	0.0220	99.7
Fine Sand	No.140 (0.106 mm)	0.1143	99.5
Very Fine Sand	No.200 (0.0750 mm)	0.2011	99.1

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	99.0
0.005 mm	20.5
0.001 mm	5.2

Approved By: 1A/102094

	Sample Name:	VC0012		
	Lab Code:	K2005515-004		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	(<u>nm</u>)	(log)
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.8	0.425	425000	5.628
60	99.7	0.250	250000	5.398
140	99.5	0.106	106000	5.025
200	99.1	0.0750	75000	4.875
2	92.1	0.0282	28242.94479	4.451
5	88.0	0.0182	18190.55385	4.260
15	69.8	0.0113	11315.68671	4.054
30	55.7	0.0084	8421.615721	3.925
60	21.2	0.0066	6621.319264	3.821
250	19.2	0.0032	3186.204417	3.503
1440	9.1	0.0014	1380.139373	3.140
	determined hydromet			
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	<u></u>
+	0.005	5000	3.70	20.5
+-	0.001	1000	3.00	5.2

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/22/00

 Date Received:
 7/23/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0013 Lab Code: K2005515-005

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel		0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0162	100
Coarse Sand		0.0129	99.9
Medium Sand	No.60 (0.250 mm)	0.0152	99.9
Fine Sand	No.140 (0.106 mm)	0.3340	99.2
Very Fine Sand	No.200 (0.0750 mm)	0.3723	98.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.4
0.005 mm	40.8
0.001 mm	4.3

Approved By: 1A/102094

Approved By: _____Date: _____Date

	Sample Name:	VC0013		
	Lab Code:	K2005515-005		
		Y	┽╼╾╴┥╴	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	100.0	0.850	850000	5.929
40	99.9	0.425	425000	5.628
60	99.9	0.250	250000	5.398
140	99.2	0.106	106000	5.025
200	98.5	0.0750	75000	4.875
2	92.7	0.0286	28583.8184	4.456
5	86.6	0.0186	18573.92893	4.269
15	74.3	0.0113	11274.5254	4.052
30	62.1	0.0083	8343.647298	3.921
60	49.9	0.0062	6151.237234	3.789
250	21.4	0.0032	3206.690693	3.506
1440	9.2	0.0014	1396.799311	3.145
+	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
+	0.074	74000	4.87	98.4
	0.005	5000	3.70	40.8
	0.001	1000	3.00	4.3

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/22/00

 Date Received:
 7/23/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0014 Lab Code: K2005515-006

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0918	99.8
Coarse Sand	No.40 (0.425 mm)	0.0290	99.8
Medium Sand	No.60 (0.250 mm)	0.0272	99.7
Fine Sand	No.140 (0.106 mm)	0.2194	99.3
Very Fine Sand	No.200 (0.0750 mm)	0.3263	98.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.4
0.005 mm	45.5
0.001 mm	12.9

Approved By 1A/102094

	Sample Name:	VC0014		
	Lab Code:	K2005515-006		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	(log)
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.8	0.425	425000	5.628
60	99.7	0.250	250000	5.398
140	99.3	0.106	106000	5.025
200	98.6	0.0750	75000	4.875
2	88.4	0.0288	28761.79104	4.459
5	84.3	0.0185	18512.88543	4.267
15	72.2	0.0112	11228.22276	4.050
30	66.1	0.0081	8123.679121	3.910
60	51.8	0.0060	6037.19268	3.781
250	29.5	0.0031	3096.372023	3.491
1440	17.3	0.0014	1350.752171	3.131
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	% Passing
	0.074	74000	4.87	98.4
	0.005	5000	3.70	45.5
	0.001	1000	3.00	12.9

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/22/00

 Date Received:
 7/23/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0015 Lab Code: K2005515-007

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1298	99.7
Coarse Sand	No.40 (0.425 mm)	0.0901	99.6
Medium Sand	No.60 (0.250 mm)	0.0509	99.5
Fine Sand	No.140 (0.106 mm)	0.1416	99.2
Very Fine Sand	No.200 (0.0750 mm)	0.1273	98.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.7
0.005 mm	48.3
0.001 mm	0.0

Approved By: 1A/102094

Approved By: _____Date: _____Date

	Sample Name:	VC0015		
	Lab Code:	K2005515-007		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	<u>(nm)</u>	(log)
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.6	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	99.2	0.106	106000	5.025
200	98.9	0.0750	75000	4.875
2	93.7	0.0508	50848.05736	4.706
5	91.7	0.0325	32461.45364	4.511
15	81.6	0.0196	19591.03504	4.292
30	75.5	0.0142	14201.13819	4.152
60	69.5	0.0103	10282.03104	4.012
250	51.4	0.0052	5243.167685	3.720
1440	25.2	0.0024	2396.711347	3.380
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	98.7
	0.005	5000	3.70	48.3
	0.001	1000	3.00	-4.1

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/22/00

 Date Received:
 7/23/00

 Date Analyzed:
 8/1/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0016 Lab Code: K2005515-008

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3423	<u>99.</u> 3
Coarse Sand	No.40 (0.425 mm)	0.0571	99.2
Medium Sand	No.60 (0.250 mm)	0.0419	<u>99.</u> 1
Fine Sand	No.140 (0.106 mm)	0.1223	98.9
Very Fine Sand	No.200 (0.0750 mm)	0.2449	98.4

Silt and Clay (Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.2

0.005 mm

0.001 mm

Approved By: ____ 1A/102094 _Date: _____

51.2 19.0

	Sample Name:	VC0016		
	Lab Code:	K2005515-008		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.3	0.850	850000	5.929
40	99.2	0.425	425000	5.628
60	99.1	0.250	250000	5.398
140	98.9	0.106	106000	5.025
200	98.4	0.0750	75000	4.875
2	93.8	0.0508	50848.05736	4.706
5	87.7	0.0331	33057.79739	4.519
15	79.7	0.0198	19756.53444	4.296
30	73.6	0.0143	14315.31786	4.156
60	67.6	0.0104	10360.89582	4.015
250	51.4	0.0054	5374.878469	3.730
1440	35.3	0.0023	2326.771272	3.367
	determined hydromet	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	98.2
	0.005	5000	3.70	51.2
	0.001	1000	3.00	19.0

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0065 Lab Code: K2005510-001

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.6026	98.8
Coarse Sand	No.40 (0.425 mm)	0.6256	97.5
Medium Sand	No.60 (0.250 mm)	0.4800	96.6
Fine Sand	No.140 (0.106 mm)	1.1415	94.3
Very Fine Sand	No.200 (0.0750 mm)	0.6792	92.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	92.9
0.005 mm	25.0
0.001 mm	2.5

Approved By: ______ 1A/102094

	Sample Name:	VC0065		
	Lab Code:	K2005510-001		
	x	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	98.8	0.850	850000	5.929
40	97.5	0.425	425000	5.628
60	96.6	0.250	250000	5.398
140	94.3	0.106	106000	5.025
200	92.9	0.0750	75000	4.875
2	92.6	0.0295	29495.94512	4.470
5	82.3	0.0195	19492.74927	4.290
15	63.8	0.0121	12076.15566	4.082
30	51.4	0.0089	8905.580287	3.950
60	32.9	0.0067	6667.017662	3.824
250	14.4	0.0034	3396.785228	3.531
1440	6.2	0.0015	1463.079416	3.165
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
······	0.074	74000	4.87	92.9
	0.005	5000	3.70	25.0
	0.001	1000	3.00	2.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0066 Lab Code: K2005510-002

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2246	99.5
Coarse Sand	No.40 (0.425 mm)	0.2831	99.0
Medium Sand	No.60 (0.250 mm)	0.4222	98.1
Fine Sand	No.140 (0.106 mm)	1.4731	95.1
Very Fine Sand	No.200 (0.0750 mm)	0.8460	93.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.4
0.005 mm	37.8
0.001 mm	5.9

Approved By: ______ 1A/102094

	Sample Name:	VC0066		
	Lab Code:	K2005510-002		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.5	0.850	850000	5.929
40	99.0	0.425	425000	5.628
60	98.1	0.250	250000	5.398
140	95.1	0.106	106000	5.025
200	93.4	0.0750	75000	4.875
2	91.4	0.0296	29590.27391	4.471
5	85.2	0.0192	19214.21911	4.284
15	74.8	0.0116	11558.16742	4.063
30	60.2	0.0086	8611.970191	3.935
60	47.8	0.0063	6343.639644	3.802
250	20.8	0.0033	3321.581039	3.521
1440	10.4	0.0014	1439.299741	3.158
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	93.4
	0.005	5000	3.70	37.8
	0.001	1000	3.00	5.9

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0067 Lab Code: K2005510-003

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Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2165	99.6
Coarse Sand	No.40 (0.425 mm)	0.1335	99.3
Medium Sand	No.60 (0.250 mm)	0.3520	98.6
Fine Sand	No.140 (0.106 mm)	1.1135	96.3
Very Fine Sand	No.200 (0.0750 mm)	0.6759	94.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.9
0.005 mm	21.1
0.001 mm	7.5

Approved By: 1A/102094

	Sample Name:	VC0067		
	Lab Code:	K2005510-003	Ţ	
	X	Y	<u>↓</u>	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.6	0.850	850000	5.929
40	99.3	0.425	425000	5.628
60	98.6	0.250	250000	5.398
140	96.3	0.106	106000	5.025
200	94.9	0.0750	75000	4.875
2	91.9	0.0296	29590.27391	4.471
5	89.9	0.0189	18882.56395	4.276
15	75.2	0.0116	11558.16742	4.063
30	50.2	0.0089	8912.385295	3.950
60	29.3	0.0067	6706.704623	3.827
250	10.4	0.0034	3413.163684	3.533
1440	8.4	0.0014	1446.899962	3.160
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.9
	0.005	5000	3.70	21.1
	0.001	1000	3.00	7.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0068 Lab Code: K2005510-004

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1269	99.7
Coarse Sand	No.40 (0.425 mm)	0.0427	99.7
Medium Sand	No.60 (0.250 mm)	0.0719	99.5
Fine Sand	No.140 (0.106 mm)	0.4025	98.7
Very Fine Sand	No.200 (0.0750 mm)	0.3816	97.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.9
0.005 mm	22.1
0.001 mm	0.4

Approved By: 1A/102094

	Sample Name:	VC0068		
	Lab Code:	K2005510-004		
	x	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	98.7	0.106	106000	5.025
200	97.9	0.0750	75000	4.875
2	98.1	0.0287	28693.24878	4.458
5	91.8	0.0187	18659.08246	4.271
15	66.8	0.0119	11881.67709	4.075
30	41.7	0.0091	9118.517276	3.960
60	29.2	0.0067	6686.833084	3.825
250	12.5	0.0034	3385.012705	3.530
1440	4.2	0.0015	1457.650117	3.164
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	<u>% Passing</u>
	0.074	74000	4.87	97.9
	0.005	5000	3.70	22.1
	0.001	1000	3.00	0.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0069 Lab Code: K2005510-005

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1543	99.7
Coarse Sand	No.40 (0.425 mm)	0.1814	99.3
Medium Sand	No.60 (0.250 mm)	0.2559	98.8
Fine Sand	No.140 (0.106 mm)	0.8258	97.1
Very Fine Sand	No.200 (0.0750 mm)	0.6039	95.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	95.8
0.005 mm	31.5
0.001 mm	0.9

1A/102094

Approved By: _____Date: _____Date: ______Date: _____Date: _____Date: _____Date: _____Date: _____Date: _____Date: ______Date: _____Date: ______Date: _____Date: ______Date: _______Date: ______Date: ______Date: ______Date: _______Date: __________AAIE

	Sample Name:	VC0069		
	Lab Code:	K2005510-005		
_	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.3	0.425	425000	5.628
60	98.8	0.250	250000	5.398
140	97.1	0.106	106000	5.025
200	95.9	0.0750	75000	4.875
2	90.5	0.0291	29064.22932	4.463
5	84.3	0.0189	18872.63606	4.276
15	69.9	0.0115	11530.25741	4.062
30	55.5	0.0086	8578.117749	3.933
60	39.1	0.0064	6391.815176	3.806
250	18.5	0.0033	3280.880075	3.516
1440	6.2	0.0014	1428.603625	3.155
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	95.8
	0.005	5000	3.70	31.5
	0.001	1000	3.00	0.9

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0070 Lab Code: K2005510-006

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	[Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2377	99.5
Coarse Sand	No.40 (0.425 mm)	0.2386	99.0
Medium Sand	No.60 (0.250 mm)	0.2999	98.4
Fine Sand	No.140 (0.106 mm)	0.8767	96.5
Very Fine Sand	No.200 (0.0750 mm)	0.5686	95.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	95.2
0.005 mm	41.7
0.001 mm	3.7

Approved By: 1A/102094

Approved By: _____Date: _____Date: _____

	Sample Name:	VC0070		
	Lab Code:	K2005510-006	ļ	
	X	Y	+	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4 _	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.5	0.850	850000	5.929
40	99.0	0.425	425000	5.628
60	98.4	0.250	250000	5.398
140	96.5	0.106	106000	5.025
200	95.3	0.0750	75000	4.875
2	86.4	0.0314	31365.4344	4.496
5	82.1	0.0202	20168.22428	4.305
15	73.4	0.0120	12017.202	4.080
30	64.8	0.0088	8753.300262	3.942
60	51.8	0.0065	6451.387671	3.810
250	25.9	0.0034	3361.870212	3.527
1440	10.8	0.0015	1473.41617	3.168
	determined hydrome	ter		··
	<u></u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	95.2
	0.005	5000	3.70	41.7
	0.001	1000	3.00	3.7

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0070 Lab Code: K2005510-006d

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2694	99.4
Coarse Sand	No.40 (0.425 mm)	0.2430	98.9
Medium Sand	No.60 (0.250 mm)	0.2609	98.4
Fine Sand	No.140 (0.106 mm)	0.8051	96.7
Very Fine Sand	No.200 (0.0750 mm)	0.5428	95.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	95.4
0.005 mm	40.3
0.001 mm	3.7

Approved By: 1A/102094

Approved By: ______Date: ______Date: ______

	Sample Name:	VC0070		
	Lab Code:	K2005510-006d		
	<u> </u>	Y	+	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.4	0.850	850000	5.929
40	98.9	0.425	425000	5.628
60	98.4	0.250	250000	5.398
140	96.7	0.106	106000	5.025
200	95.6	0.0750	75000	4.875
2	86.4	0.0314	31365.4344	4.496
5	84.3	0.0200	20003.41796	4.301
15	73.5	0.0120	12017.202	4.080
30	64.8	0.0088	8753.300262	3.942
60	49.7	0.0065	6494.00605	3.813
250	25.9	0.0034	3361.870212	3.527
1440	10.8	0.0015	1473.41617	3.168
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	95.4
	0.005	5000	3.70	40.3
	0.001	1000	3.00	3.7

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0071 Lab Code: K2005510-007

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1222	99.7
Coarse Sand	No.40 (0.425 mm)	0.2873	99.2
Medium Sand	No.60 (0.250 mm)	0.4485	98.2
Fine Sand	No.140 (0.106 mm)	0.9096	96.4
Very Fine Sand	No.200 (0.0750 mm)	0.3261	95.7

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	95.7
0.005 mm	59.8
0.001 mm	3.5

Approved By: 1A/102094

	Sample Name:	VC0071		
	Lab Code:	K2005510-007		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.2	0.425	425000	5.628
60	98.2	0.250	250000	5.398
140	96.4	0.106	106000	5.025
200	95.7	0.0750	75000	4.875
2	93.1	0.0288	28800.90695	4.459
5	95.1	0.0180	18047.21648	4.256
15	86.9	0.0108	10802.49227	4.034
30	80.6	0.0078	7835.455095	3.894
60	68.2	0.0058	5809.011548	3.764
250	33.1	0.0031	3114.619126	3.493
1440	12.4	0.0014	1406.207683	3.148
	determined hydrome	ter		
	<u>mm</u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	95.7
	0.005	5000	3.70	59.8
	0.001	1000	3.00	3.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL, RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0072 Lab Code: K2005510-008

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.4089	99.2
Coarse Sand	No.40 (0.425 mm)	0.3372	98.5
Medium Sand	No.60 (0.250 mm)	0.3624	97.7
Fine Sand	No.140 (0.106 mm)	0.7635	96.2
Very Fine Sand	No.200 (0.0750 mm)	0.3708	95.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	95.4
0.005 mm	53.0
0.001 mm	4.0

Approved By: 1A/102094

	Sample Name:	VC0072		
	Lab Code:	K2005510-008		
	x	Y	+	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.2	0.850	850000	5.929
40	98.5	0.425	425000	5.628
60	97.7	0.250	250000	5.398
140	96.2	0.106	106000	5.025
200	95.4	0.0750	75000	4.875
2	94.0	0.0295	29495.94512	4.470
5	91.9	0.0188	18825.43237	4.275
15	83.5	0.0113	11254.14404	4.051
30	75.2	0.0082	8221.289882	3.915
60	62.6	0.0061	6082.030904	3.784
250	31.3	0.0032	3208.643703	3.506
1440	12.5	0.0014	1440.143004	3.158
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	95.4
	0.005	5000	3.70	53.0
	0.001	1000	3.00	4.0

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0073 Lab Code: K2005510-009

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.4524	99.1
Coarse Sand	No.40 (0.425 mm)	0.0823	98.9
Medium Sand	No.60 (0.250 mm)	0.0926	98.7
Fine Sand	No.140 (0.106 mm)	0.4444	97.8
Very Fine Sand	No.200 (0.0750 mm)	0.3016	97.2

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.2
0.005 mm	27.9
0.001 mm	2.4

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Approved By: _____ 1A/102094 _____Date: _____

	Sample Name:	VC0073		
	Lab Code:	K2005510-009		
+		Y	┨	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.1	0.850	850000	5.929
40	98.9	0.425	425000	5.628
60	98.7	0.250	250000	5.398
140	97.8	0.106	106000	5.025
200	97.2	0.0750	75000	4.875
2	95.6	0.0294	29395.93588	4.468
5	87.3	0.0193	19274.87858	4.285
15	72.8	0.0118	11786.96828	4.071
30	52.0	0.0090	8958.042737	3.952
60	37.4	0.0066	6625.43142	3.821
250	14.6	0.0034	3376.930268	3.529
1440	6.2	0.0015	1471.698364	3.168
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.2
[0.005	5000	3.70	27.9
	0.001	1000	3.00	2.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0074 Lab Code: K2005510-010

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1480	<u> </u>
Coarse Sand	No.40 (0.425 mm)	0.0376	99.6
Medium Sand	No.60 (0.250 mm)	0.0392	99.5
Fine Sand	No.140 (0.106 mm)	0.1805	99.2
Very Fine Sand	No.200 (0.0750 mm)	0.2121	98.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.7
0.005 mm	26.6
0.001 mm	2.5

	Sample Name:	VC0074		
	Lab Code:	K2005510-010		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.6	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	99.2	0.106	106000	5.025
200	98.8	0.0750	75000	4.875
2	93.9	0.0289	28879.4672	4.461
5	89.8	0.0186	18603.63249	4.270
15	69.4	0.0117	11669.38444	4.067
30	53.1	0.0087	8741.342056	3.942
60	34.7	0.0065	6548.867444	3.816
250	14.3	0.0033	3317.749422	3.521
1440	6.1	0.0014	1445.84152	3.160
	determined hydrome	ter		
+	mm	mm to nm	log hyd x	% Passing
+-	0.074	74000	4.87	98.7
+	0.005	5000	3.70	26.6
	0.001	1000	3.00	2.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0075 Lab Code: K2005510-011

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2222	99.6
Coarse Sand	No.40 (0.425 mm)	0.1794	99.2
Medium Sand	No.60 (0.250 mm)	0.2636	98.7
Fine Sand	No.140 (0.106 mm)	0.7127	97.2
Very Fine Sand	No.200 (0.0750 mm)	0.4541	96.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	96.2
0.005 mm	25.4
0.001 mm	5.5

Approved By: 1A/102094

	Sample Name:	VC0075		
	Lab Code:	K2005510-011		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	(<u>nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.6	0.850	850000	5.929
40	99.2	0.425	425000	5.628
60	98.7	0.250	250000	5.398
140	97.2	0.106	106000	5.025
200	96.3	0.0750	75000	4.875
2	89.9	0.0293	29327.25162	4.467
5	85.9	0.0189	18879.7894	4.276
15	65.4	0.0118	11811.05854	4.072
30	49.1	0.0088	8833.164803	3.946
60	32.7	0.0066	6568.829765	3.817
250	14.3	0.0033	3307.885948	3.520
1440	8.2	0.0014	1434.038744	3.157
		· · · · · · · · · · · · · · · · · · ·		
+	determined hydromet		log hyd y	Ø. Doceina
	<u>mm</u>	<u>mm to nm</u> 74000	<u>log hyd x</u> 4.87	<u>% Passing</u> 96.2
	0.074		<u> </u>	
	0.005	5000	3.70	25.4
	0.001	1000	3.00	5.5

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0076 Lab Code: K2005510-012

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size		
-		Weight (g)	Passing	
Gravel	No.3/4"(19.0 mm)	0.0000	100	
Gravel	No.3/8"(9.50 mm)	0.0000	100	
Medium Gravel	No.4 (4.75 mm)	0.0000	100	
Fine Gravel	No.10 (2.00 mm)	0.0000	100	
Very Coarse Sand	No.20 (0.850 mm)	0.3588	99.3	
Coarse Sand	No.40 (0.425 mm)	0.2594	98.7	
Medium Sand	No.60 (0.250 mm)	0.2536	98.2	
Fine Sand	No.140 (0.106 mm)	0.5167	97.2	
Very Fine Sand	No.200 (0.0750 mm)	0.3867	96.4	

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	96.3
0.005 mm	27.2
0.001 mm	2.6

1A/102094

	Sample Name:	VC0076		
	Lab Code:	K2005510-012		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.3	0.850	850000	5.929
40	98.7	0.425	425000	5.628
60	98.2	0.250	250000	5.398
140	97.2	0.106	106000	5.025
200	96.4	0.0750	75000	4.875
2	91.9	0.0288	28801.60819	4.459
5	83.8	0.0189	18873.09556	4.276
15	63.3	0.0118	11791.88198	4.072
30	53.1	0.0086	8637.334609	3.936
60	34.7	0.0064	6395.531009	3.806
250	14.3	0.0033	3278.926819	3.516
1440	6.1	0.0014	1428.638408	3.155
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	96.3
	0.005	5000	3.70	27.2
	0.001	1000	3.00	2.6

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0077 Lab Code: K2005510-013

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size		
-		Weight (g)	Passing_	
Gravel	No.3/4"(19.0 mm)	0.0000	100	
Gravel	No.3/8"(9.50 mm)	0.0000	100	
Medium Gravel	No.4 (4.75 mm)	0.0000	100	
Fine Gravel	No.10 (2.00 mm)	0.0000	100	
Very Coarse Sand	No.20 (0.850 mm)	0.1024	99.8	
Coarse Sand	No.40 (0.425 mm)	0.0473	99.7	
Medium Sand	No.60 (0.250 mm)	0.0828	99.5	
Fine Sand	No.140 (0.106 mm)	0.3664	98.8	
Very Fine Sand	No.200 (0.0750 mm)	0.3396	98.1	

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.0
0.005 mm	31.0
0.001 mm	1.8

Approved By: ______ 1A/102094

__Date: ____

	Sample Name:	VC0077		
	Lab Code:	K2005510-013		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	98.8	0.106	106000	5.025
200	98.1	0.0750	75000	4.875
2	92.0	0.0287	28715.99572	4.458
5	87.9	0.0185	18492.19678	4.267
15	69.5	0.0115	11496.26375	4.061
30	55.2	0.0086	8552.827624	3.932
60	38.8	0.0063	6298.693954	3.799
250	16.3	0.0033	3251.447196	3.512
1440	6.1	0.0014	1424.391796	3.154
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	% Passing
	0.074	74000	4.87	98.0
	0.005	5000	3.70	31.0
	0.001	1000	3.00	1.8

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RL/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0078 Lab Code: K2005510-014

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1532	99.7
Coarse Sand	No.40 (0.425 mm)	0.1115	99.5
Medium Sand	No.60 (0.250 mm)	0.1649	99.1
Fine Sand	No.140 (0.106 mm)	0.5970	97.9
Very Fine Sand	No.200 (0.0750 mm)	0.4054	97.1

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.0
0.005 mm	23.2
0.001 nm	1.5

Approved By: 1A/102094

	Sample Name:	VC0078		
	Lab Code:	K2005510-014		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.5	0.425	425000	5.628
60	99.1	0.250	250000	5.398
140	97.9	0.106	106000	5.025
200	97.1	0.0750	75000	4.875
2	91.3	0.0290	28978.54176	4.462
5	85.1	0.0188	18816.99549	4.275
15	62.3	0.0118	11842.41242	4.073
30	45.7	0.0088	8843.077387	3.947
60	31.1	0.0065	6453.402558	3.810
250	10.4	0.0033	3304.354895	3.519
1440	4.2	0.0014	1431.757712	3.156
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	<u>% Passing</u>
	0.074	74000	4.87	97.0
	0.005	5000	3.70	23.2
	0.001	1000	3.00	1.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0079 Lab Code: K2005510-015

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0838	99.8
Coarse Sand	No.40 (0.425 mm)	0.0738	99.7
Medium Sand	No.60 (0.250 mm)	0.1130	99.5
Fine Sand	No.140 (0.106 mm)	0.6192	98.2
Very Fine Sand	No.200 (0.0750 mm)	0.4352	97.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.2
0.005 mm	21.1
0.001 mm	1.2

Approved By: 1A/102094

Approved By: _____ Date: _____

	Sample Name:	VC0079		
	Lab Code:	K2005510-015		
	X	Y	<u> </u>	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	98.2	0.106	106000	5.025
200	97.3	0.0750	75000	4.875
2	91.5	0.0306	30633.4652	4.486
5	83.0	0.0200	20049.11388	4.302
15	61.7	0.0125	12496.33541	4.097
30	46.8	0.0093	9264.906508	3.967
60	29.8	0.0068	6801.206104	3.833
250	10.6	0.0035	3462.010567	3.539
1440	4.3	0.0015	1500.054874	3.176
	determined hydrome	ter		
	<u>mm</u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.2
	0.005	5000	3.70	21.1
	0.001	1000	3.00	1.2

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC00079 Lab Code: K2005510-015d

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	2	Percent
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0901	99.8
Coarse Sand	No.40 (0.425 mm)	0.0642	99.7
Medium Sand	No.60 (0.250 mm)	0.1214	99.4
Fine Sand	No.140 (0.106 mm)	0.6261	98.2
Very Fine Sand	No.200 (0.0750 mm)	0.4275	97.3

Silt and Clay (Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.3
0.005 mm	23.4
0.001 mm	3.3

Approved By: _____ 1A/102094 _____Date: _____

	Sample Name:	VC00079		
	Lab Code:	K2005510-015d		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(<u>mm)</u>	<u>(nm)</u>	(log)
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.4	0.250	250000	5.398
140	98.2	0.106	106000	5.025
200	97.3	0.0750	75000	4.875
2	95.8	0.0301	30085.79525	4.478
5	89.4	0.0195	19545.19119	4.291
15	66.0	0.0123	12317.65062	4.091
30	49.0	0.0092	9204.891206	3.964
60	31.9	0.0068	6761.287275	3.830
250	12.8	0.0034	3443.632377	3.537
1440	6.4	0.0015	1492.337593	3.174
	determined hydrome	ter		
	<u>mm</u>	mm to nm	<u>log hyd x</u>	<u>% Passing</u>
	0.074	74000	4.87	97.3
	0.005	5000	3.70	23.4
	0.001	1000	3.00	3.3

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

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 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0080 Lab Code: K2005510-016

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1190	99.8
Coarse Sand	No.40 (0.425 mm)	0.0138	99.7
Medium Sand	No.60 (0.250 mm)	0.0246	99.7
Fine Sand	No.140 (0.106 mm)	0.1562	99.4
Very Fine Sand	No.200 (0.0750 mm)	0.1903	99.0

Silt and Clay (Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.9
0.005 mm	32.8
0.001 mm	3.5

Approved By: 1A/102094

Approved By: _____ Date: _____

	Sample Name:	VC0080		
	Lab Code:	K2005510-016		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(<u>mm</u>)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.7	0.250	250000	5.398
140	99.4	0.106	106000	5.025
200	99.0	0.0750	75000	4.875
2	93.7	0.0297	29657.7329	4.472
5	87.5	0.0193	19267.10114	4.285
15	72.9	0.0118	11782.21223	4.071
30	56.2	0.0088	8833.316442	3.946
60	41.7	0.0065	6464.727483	3.811
250	18.7	0.0033	3339.686951	3.524
1440	8.3	0.0015	1463.457507	3.165
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	98.9
	0.005	5000	3.70	32.8
	0.001	1000	3.00	3.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0081 Lab Code: K2005510-017

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Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3031	99.4
Coarse Sand	No.40 (0.425 mm)	0.1806	99.0
Medium Sand	No.60 (0.250 mm)	0.4753	98.1
Fine Sand	No.140 (0.106 mm)	0.9499	96.1
Very Fine Sand	No.200 (0.0750 mm)	0.6427	94.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.8
0.005 mm	25.0
0.001 mm	0.5

Approved By: ____ 1A/102094 _____Date: _____D

	Sample Name:	VC0081		
	Lab Code:	K2005510-017		
	X	<u>Y</u>		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
	100.0	19.0	19000000	7.279
	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.4	0.850	850000	5.929
40	99.0	0.425	425000	5.628
60	98.1	0.250	250000	5.398
140	96.1	0.106	106000	5.025
200	94.8	0.0750	75000	4.875
2	92.2	0.0288	28801.60819	4.459
5	81.9	0.0190	19033.88838	4.280
15	63.5	0.0118	11791.88198	4.072
30	49.2	0.0088	8754.157451	3.942
60	32.8	0.0064	6434.203709	3.808
250	12.3	0.0033	3296.614797	3.518
1440	4.1	0.0014	1436.026284	3.157
	determined hydrome			
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.8
	0.005	5000	3.70	25.0
	0.001	1000	3.00	0.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0082 Lab Code: K2005510-018

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1387	99.7
Coarse Sand	No.40 (0.425 mm)	0.2116	99.3
Medium Sand	No.60 (0.250 mm)	0.3554	98.6
Fine Sand	No.140 (0.106 mm)	1.5360	95.4
Very Fine Sand	No.200 (0.0750 mm)	1.2266	92.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	92.8
0.005 mm	24.9
0.001 mm	6.4

Approved By 1A/102094

Approved By: ______Date: ______Date: ______

	Sample Name:	VC0082		
	Lab Code:	K2005510-018		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.3	0.425	425000	5.628
60	98.6	0.250	250000	5.398
140	95.4	0.106	106000	5.025
200	92.9	0.0750	75000	4.875
2	86.3	0.0296	29583.84347	4.471
5	80.2	0.0192	19192.86688	4.283
15	63.7	0.0118	11791.59488	4.072
30	49.3	0.0088	8753.944311	3.942
60	32.9	0.0065	6509.917026	3.814
250	12.3	0.0033	3295.980096	3.518
1440	8.2	0.0014	1438.684766	3.158
	determined hydrome	ter		
	<u>mm</u>	mm to nm	<u>log hyd x</u>	<u>% Passing</u>
	0.074	74000	4.87	92.8
	0.005	5000	3.70	24.9
	0.001	1000	3.00	6.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0083 Lab Code: K2005510-019

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
_		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0879	99.8
Coarse Sand	No.40 (0.425 mm)	0.0873	99.6
Medium Sand	No.60 (0.250 mm)	0.3549	98.9
Fine Sand	No.140 (0.106 mm)	3.7188	91.4
Very Fine Sand	No.200 (0.0750 mm)	2.3646	86.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	86.4
0.005 mm	24.6
0.001 mm	3.3

Approved By 1A/102094

Approved By: _____Date: _____Aate: _____AAte

	Sample Name:	VC0083		
	Lab Code:	K2005510-019		
	x	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.6	0.425	425000	5.628
60	98.9	0.250	250000	5.398
140	91.4	0.106	106000	5.025
200	86.6	0.0750	75000	4.875
2	76.0	0.0311	31123.74012	4.493
5	71.9	0.0200	19997.15611	4.301
15	57.5	0.0122	12156.28859	4.085
30	49.3	0.0088	8833.164803	3.946
60	32.9	0.0066	6568.829765	3.817
250	12.3	0.0033	3325.730143	3.522
1440	6.2	0.0015	1459.277549	3.164
	determined hydrome	ter		
	<u>mm</u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	86.4
	0.005	5000	3.70	24.6
	0.001	1000	3.00	3.3

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0084 Lab Code: K2005510-020

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0157	100
Coarse Sand	No.40 (0.425 mm)	0.0215	99.9
Medium Sand	No.60 (0.250 mm)	0.0723	99.8
Fine Sand	No.140 (0.106 mm)	1.4827	96.8
Very Fine Sand	No.200 (0.0750 mm)	1.4525	93.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.7
0.005 mm	22.1
0.001 mm	

Approved By: 1A/102094

Approved By: ______Date: ______

	Sample Name:	VC0084		
	Lab Code:	K2005510-020		
	X	Y		Value of Y
	arithmetic	logarithmic	Convert Y	
<u></u>	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(<u>mm)</u>	(<u>nm)</u>	(log)
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	100.0	0.850	850000	5.929
40	99.9	0.425	425000	5.628
60	99.8	0.250	250000	5.398
140	96.8	0.106	106000	5.025
200	93.8	0.0750	75000	4.875
2	85.4	0.0295	29494.60193	4.470
5	79.3	0.0191	19134.97038	4.282
15	61.0	0.0118	11841.6006	4.073
30	48.8	0.0087	8727.53748	3.941
60	28.5	0.0066	6567.603849	3.817
250	12.2	0.0033	3286.063414	3.517
1440	6.1	0.0014	1441.843945	3.159
	determined hydrome	ter		
	mm	mm to nm	log hyd x	<u>% Passing</u>
	0.074	74000	4.87	93.7
	0.005	5000	3.70	22.1
	0.001	1000	3.00	3.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0085 Lab Code: K2005510-021

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
_		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1566	99.7
Coarse Sand	No.40 (0.425 mm)	0.1867	99.3
Medium Sand	No.60 (0.250 mm)	0.2436	98.8
Fine Sand	No.140 (0.106 mm)	1.3794	96.0
Very Fine Sand	No.200 (0.0750 mm)	1.2031	93.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.5
0.005 mm	30.7
0.001 mm	4.5

Approved By: ______ 1A/102094

_____Date: ______

	Sample Name:	VC0085		
	Lab Code:	K2005510-021		
	X	Y	+	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.3	0.425	425000	5.628
60	98.8	0.250	250000	5.398
140	96.0	0.106	106000	5.025
200	93.5	0.0750	75000	4.875
2	88.8	0.0295	29502.10989	4.470
$\frac{2}{5}$	82.6	0.0191	19148.25603	4.282
15	66.1	0.0118	11775.74927	4.071
30	55.7	0.0086	8629.870626	3.936
60	39.2	0.0064	6430.377811	3.808
250	16.5	0.0033	3280.134991	3.516
1440	8.3	0.0014	1447.356257	3.161
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	<u>% Passing</u>
	0.074	74000	4.87	93.5
	0.005	5000	3.70	30.7
	0.001	1000	3.00	4.5

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0086 Lab Code: K2005510-022

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0585	99.9
Coarse Sand	No.40 (0.425 mm)	0.0759	99.7
Medium Sand	No.60 (0.250 mm)	0.1363	99.4
Fine Sand	No.140 (0.106 mm)	0.5158	98.4
Very Fine Sand	No.200 (0.0750 mm)	0.3669	97.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.6
0.005 mm	36.7
0.001 mm	5.7

Approved By: ____ 1A/102094 _____Date: _____

	Sample Name:	VC0086		
	Lab Code:	K2005510-022		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.4	0.250	250000	5.398
140	98.4	0.106	106000	5.025
200	97.6	0.0750	75000	4.875
2	94.9	0.0287	28707.31098	4.458
5	90.8	0.0185	18492.73255	4.267
15	76.4	0.0113	11330.8079	4.054
30	64.0	0.0084	8388.220415	3.924
60	45.4	0.0063	6309.326376	3.800
250	20.6	0.0032	3244.064151	3.511
1440	10.3	0.0014	1439.75364	3.158
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.6
	0.005	5000	3.70	36.7
	0.001	1000	3.00	5.7

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0089 Lab Code: K2005510-023

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3140	99.4
Coarse Sand	No.40 (0.425 mm)	0.2778	98.8
Medium Sand	No.60 (0.250 mm)	0.3896	98.0
Fine Sand	No.140 (0.106 mm)	1.0146	96.0
Very Fine Sand	No.200 (0.0750 mm)	0.7280	94.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.4
0.005 mm	31.7
0.001 mm	7.5

Approved By: ______ 1A/102094

___Date: _____

	Sample Name:	VC0089		
	Lab Code:	K2005510-023		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.4	0.850	850000	5.929
40	98.8	0.425	425000	5.628
60	98.0	0.250	250000	5.398
140	96.0	0.106	106000	5.025
200	94.5	0.0750	75000	4.875
2	92.1	0.0291	29148.42604	4.465
5	86.0	0.0189	18936.23071	4.277
15	69.6	0.0117	11669.38444	4.067
30	57.3	0.0086	8621.491307	3.936
60	40.9	0.0064	6428.604309	3.808
250	16.4	0.0033	3299.754947	3.518
1440	10.2	0.0014	1448.379581	3.161
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	<u>% Passing</u>
	0.074	74000	4.87	94.4
	0.005	5000	3.70	31.7
	0.001	1000	3.00	7.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0090 Lab Code: K2005510-024

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0660	99.9
Coarse Sand	No.40 (0.425 mm)	0.1321	99.6
Medium Sand	No.60 (0.250 mm)	0.2732	
Fine Sand	No.140 (0.106 mm)	1.1831	96.7
Very Fine Sand	No.200 (0.0750 mm)	0.7892	95.1

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	95.0
0.005 mm	25.5
0.001 mm	2.3

____Date: _____

	Sample Name:	VC0090		
	Lab Code:	K2005510-024	ļ	
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00_	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.6	0.425	425000	5.628
60	99.0	0.250	250000	5.398
140	96.7	0.106	106000	5.025
200	95.1	0.0750	75000	4.875
2	92.8	0.0290	29007.07812	4.463
5	88.6	0.0187	18679.64468	4.271
15	70.1	0.0116	11612.79671	4.065
30	51.5	0.0088	8757.978836	3.942
60	33.0	0.0066	6556.518239	3.817
250	14.4	0.0033	3341.42176	3.524
1440	6.2	0.0015	1474.096113	3.169
	determined hydrome	ter		
	mm	mm to nm	<u>log hyd x</u>	% Passing
	0.074	74000	4.87	95.0
	0.005	5000	3.70	25.5
	0.001	1000	3.00	2.3

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0091 Lab Code: K2005510-025

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing_
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2504	99.5
Coarse Sand	No.40 (0.425 mm)	0.3888	98.7
Medium Sand	No.60 (0.250 mm)	0.5893	97.5
Fine Sand	No.140 (0.106 mm)	1.7241	94.0
Very Fine Sand	No.200 (0.0750 mm)	1.2531	91.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	91.4
0.005 mm	27.8
0.001 mm	4.4

Approved By: ______ 1A/102094

__Date: _____

	Sample Name:	VC0091		
	Lab Code:	K2005510-025		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.5	0.850	850000	5.929
40	98.7	0.425	425000	5.628
60	97.5	0.250	250000	5.398
140	94.0	0.106	106000	5.025
200	91.5	0.0750	75000	4.875
2	90.3	0.0291	29064.93697	4.463
5	82.1	0.0190	19033.88838	4.280
15	65.7	0.0117	11705.41572	4.068
30	51.3	0.0087	8695.942209	3.939
60	34.9	0.0065	6470.946801	3.811
250	16.4	0.0033	3299.754947	3.518
1440	8.2	0.0015	1456.027748	3.163
	determined hydromet	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	91.4
	0.005	5000	3.70	27.8
	0.001	1000	3.00	4.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0092 Lab Code: K2005510-026

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1827	99.6
Coarse Sand	No.40 (0.425 mm)	0.2774	99.1
Medium Sand	No.60 (0.250 mm)	0.4211	98.2
Fine Sand	No.140 (0.106 mm)	1.2417	95.7
Very Fine Sand	No.200 (0.0750 mm)	0.7137	94.2

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.3
0.005 mm	32.6
0.001 mm	5.6

1A/102094

Approved By: _____Date: _____Aate: _____Date: _____AAte: ____AAte: _____AAte: ____AAte: _____AAte: _____AAte:

	Sample Name:	VC0092		
	Lab Code:	K2005510-026		
	X	Y	C	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(<u>mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.6	0.850	850000	5.929
40	99.1	0.425	425000	5.628
60	98.2	0.250	250000	5.398
140	95.7	0.106	106000	5.025
200	94.2	0.0750	75000	4.875
2	98.0	0.0284	28435.64265	4.454
5	91.8	0.0185	18491.56243	4.267
15	70.9	0.0116	11599.08695	4.064
30	56.3	0.0086	8629.324574	3.936
60	39.6	0.0064	6429.970932	3.808
250	20.9	0.0033	3282.87255	3.516
1440	10.4	0.0015	1457.005523	3.163
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.3
	0.005	5000	3.70	32.6
	0.001	1000	3.00	5.6

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0093 Lab Code: K2005510-027

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing_
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0792	99.8
Coarse Sand	No.40 (0.425 mm)	0.0359	99.8
Medium Sand	No.60 (0.250 mm)	0.1254	99.5
Fine Sand	No.140 (0.106 mm)	0.4258	98.6
Very Fine Sand	No.200 (0.0750 mm)	0.3889	97.9

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing		
0.074 mm	97.9		
0.005 mm	32.1		
0.001 mm	4.3		

Approved By: 1A/102094

Approved By: _____Date: ____Date: _____Date: _____Date: ____Date: _____Date: _____Date:

	Sample Name:	VC0093		
	Lab Code:	K2005510-027		
	X	Y	+	
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.8	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	98.6	0.106	106000	5.025
200	97.9	0.0750	75000	4.875
2	102.4	0.0289	28912.186	4.461
5	96.0	0.0188	18811.34332	4.274
15	79.0	0.0116	11631.40679	4.066
30	61.9	0.0087	8735.665458	3.941
60	42.7	0.0066	6559.812113	3.817
250	17.1	0.0034	3407.664703	3.532
1440	8.5	0.0015	1503.720948	3.177
	determined hydromet	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.9
	0.005	5000	3.70	32.1
	0.001	1000	3.00	4.3

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RL/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0094 Lab Code: K2005510-028

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1521	99.7
Coarse Sand	No.40 (0.425 mm)	0.0533	99.6
Medium Sand	No.60 (0.250 mm)	0.0493	99.5
Fine Sand	No.140 (0.106 mm).	0.2117	99.1
Very Fine Sand	No.200 (0.0750 mm)	0.2499	98.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.5
0.005 mm	25.5
0.001 mm	2.2

Approved By: ______ 1A/102094

_Date: _____

	Sample Name:	VC0094		
	Lab Code:	K2005510-028		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.6	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	99.1	0.106	106000	5.025
200	98.6	0.0750	75000	4.875
2	95.8	0.0290	29044.78456	4.463
5	87.5	0.0190	19044.62909	4.280
15	70.8	0.0117	11736.18456	4.070
30	52.1	0.0089	8851.033777	3.947
60	33.3	0.0066	6626.182305	3.821
250	14.6	0.0034	3376.930268	3.529
1440	6.2	0.0015	1489.786357	3.173
	determined hydrome	ter		
+	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	98.5
	0.005	5000	3.70	25.5
	0.001	1000	3.00	2.2

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0095 Lab Code: K2005510-029

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2168	99.6
Coarse Sand	No.40 (0.425 mm)	0.2444	99.1
Medium Sand	No.60 (0.250 mm)	0.5307	98.0
Fine Sand	No.140 (0.106 mm)	1.3289	95.3
Very Fine Sand	No.200 (0.0750 mm)	0.7282	93.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.8
0.005 mm	24.7
0.001 mm	3.3

Approved By: _ 1A/102094

	Sample Name:	VC0095		
	Lab Code:	K2005510-029		
	X	Y		·
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.6	0.850	850000	5.929
40	99.1	0.425	425000	5.628
60	98.0	0.250	250000	5.398
140	95.3	0.106	106000	5.025
200	93.8	0.0750	75000	4.875
2	93.2	0.0291	29058.4456	4.463
5	82.9	0.0192	19203.62246	4.283
15	66.3	0.0118	11809.79838	4.072
30	49.7	0.0088	8832.222367	3.946
60	33.2	0.0066	6568.128917	3.817
250	12.4	0.0034	3365.396872	3.527
1440	6.2	0.0015	1476.711153	3.169
	determined hydrome	ter		
	mm	<u>mm to nm</u>	log hyd x	% Passing
	0.074	74000	4.87	93.8
	0.005	5000	3.70	24.7
	0.001	1000	3.00	3.3

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0105 Lab Code: K2005531-001

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0839	99.8
Coarse Sand	No.40 (0.425 mm)	0.1015	99.6
Medium Sand	No.60 (0.250 mm)	0.1926	99.2
Fine Sand	No.140 (0.106 mm)	0.6307	97.9
Very Fine Sand	No.200 (0.0750 mm)	0.4471	97.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.0
0.005 mm	31.7
0.001 mm	5.5

Approved By 1A/102094

Approved By: ______Date: ______

	Sample Name:	VC0105		
	Lab Code:	K2005531-001		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.6	0.425	425000	5.628
60	99.2	0.250	250000	5.398
140	97.9	0.106	106000	5.025
200	97.0	0.0750	75000	4.875
2	93.7	0.0303	30348.51157	4.482
5	89.5	0.0195	19540.33382	4.291
15	70.5	0.0121	12140.53366	4.084
30	57.9	0.0090	8966.725747	3.953
60	41.1	0.0067	6683.687597	3.825
250	17.9	0.0034	3449.965517	3.538
1440	9.5	0.0015	1486.803685	3.172
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.0
	0.005	5000	3.70	31.7
	0.001	1000	3.00	5.5

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0106 Lab Code: K2005531-002

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent Passing
Gravel	No.3/4"(19.0 mm)	Weight (g) 0.0000	<u>100</u>
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0026	100
Coarse Sand	No.40 (0.425 mm)	0.0358	99.9
Medium Sand	No.60 (0.250 mm)	0.0626	99.8
Fine Sand	No.140 (0.106 mm)	0.4392	98.9
Very Fine Sand	No.200 (0.0750 mm)	0.4536	98.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.9
0.005 mm	26.9
0.001 mm	7.4

Approved By: ______ 1A/102094

___Date: _____

	Sample Name:	VC0106		
	Lab Code:	K2005531-002	∔	
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	100.0	0.850	850000	5.929
40	99.9	0.425	425000	5.628
60	99.8	0.250	250000	5.398
140	98.9	0.106	106000	5.025
200	98.0	0.0750	75000	4.875
2	94.8	0.0291	29097.80611	4.464
5	90.7	0.0187	18747.47561	4.273
15	70.3	0.0118	11767.78667	4.071
30	56.0	0.0088	8758.087749	3.942
60	35.7	0.0066	6609.331619	3.820
250	13.2	0.0034	3406.469897	3.532
1440	9.2	0.0015	1452.2087	3.162
	determined hydromet	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.9
	0.005	5000	3.70	26.9
	0.001	1000	3.00	7.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0107 Lab Code: K2005531-003

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size Weight (g)	
Gravel	No.3/4''(19.0 mm)		Passing 100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2547	99.5
Coarse Sand	No.40 (0.425 mm)	0.2165	99.1
Medium Sand	No.60 (0.250 mm)	0.5225	98.0
Fine Sand	No.140 (0.106 mm)	0.7181	96.6
Very Fine Sand	No.200 (0.0750 mm)	0.2149	96.1

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	96.1
0.005 mm	27.7
0.001 mm	3.3

Approved By: 1A/102094

Approved By: _____ Date: _____

	Sample Name:	VC0107	1 1	
	Lab Code:	K2005531-003		
	X	Y Y		
	arithmetic	logarithmic	Convert Y	Value of Y
<u> </u>	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.5	0.850	850000	5.929
40	99.1	0.425	425000	5.628
60	98.0	0.250	250000	5.398
140	96.6	0.106	106000	5.025
200	96.1	0.0750	75000	4.875
2	94.2	0.0300	29983.57793	4.477
5	88.0	0.0195	19483.50069	4.290
15	71.4	0.0120	12013.08068	4.080
30	52.8	0.0091	9064.07548	3.957
60	36.2	0.0067	6747.10005	3.829
250	15.5	0.0035	3458.783742	3.539
1440	7.2	0.0015	1490.266422	3.173
	determined hydrome	ter		
	<u>nım</u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	96.1
<u> </u>	0.005	5000	3.70	27.7
	0.001	1000	3.00	3.3

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0108 Lab Code: K2005531-004

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0319	99.9
Coarse Sand	No.40 (0.425 mm)	0.1016	99.7
Medium Sand	No.60 (0.250 mm)	0.1290	99.5
Fine Sand	No.140 (0.106 mm)	0.5343	98.4
Very Fine Sand	No.200 (0.0750 mm)	0.5830	97.2

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.2
0.005 mm	31.7
0.001 mm	3.5

_Date: _____

	Sample Name:	VC0108		
	Lab Code:	K2005531-004	Ţ	
	<u> </u>	Y		
	arithmetic	logarithmic	Cónvert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	98.4	0.106	106000	5.025
200	97.2	0.0750	75000	4.875
2	94.9	0.0299	29896.11622	4.476
5	86.5	0.0196	19596.51794	4.292
15	67.8	0.0122	12161.09146	4.085
30	55.3	0.0090	8976.311888	3.953
60	38.6	0.0067	6686.24128	3.825
250	21.9	0.0034	3391.952487	3.530
1440	9.4	0.0015	1478.154939	3.170
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.2
	0.005	5000	3.70	31.7
	0.001	1000	3.00	3.5

05531weLmr4/4/4/01

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0109 Lab Code: K2005531-005

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
L -		Weight (g)	Passing_
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0360	99.9
Coarse Sand	No.40 (0.425 mm)	0.0751	99.8
Medium Sand	No.60 (0.250 mm)	0.1336	99.5
Fine Sand	No.140 (0.106 mm)	0.8151	97.9
Very Fine Sand	No.200 (0.0750 mm)	0.9175	96.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	95.9
0.005 mm	38.5
0.001 mm	7.8

Approved By: 1A/102094

Approved By: _____ Date: _____

	Sample Name:	VC0109		
	Lab Code:	K2005531-005		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.8	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	97.9	0.106	106000	5.025
200	96.0	0.0750	75000	4.875
2	91.6	0.0300	29995.43661	4.477
5	83.4	0.0196	19649.26344	4.293
15	71.0	0.0119	11907.95467	4.076
30	58.7	0.0088	8800.594237	3.945
60	46.3	0.0065	6480.787976	3.812
250	25.7	0.0033	3333.957312	3.523
1440	13.4	0.0015	1453.945327	3.163
		+	++	
	determined hydrome		log hyd x	% Passing
	<u></u>	<u>mm to nm</u> 74000	4.87	<u>95.9</u>
		5000	3.70	38.5
	0.005		3.00	7.8
	0.001	1000		/.0

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0110 Lab Code: K2005531-006

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0273	99.9
Coarse Sand	No.40 (0.425 mm)	0.1093	99.7
Medium Sand	· No.60 (0.250 mm)	0.1082	99.5
Fine Sand	No.140 (0.106 mm)	0.4390	98.6
Very Fine Sand	No.200 (0.0750 mm)	0.6320	97.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.3
0.005 mm	40.6
0.001 mm	10.1

Approved By: 1A/102094

Approved By: ______Date: ______

	Sample Name:	VC0110	1 1	
	Lab Code:	K2005531-006		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	<u>(nm)</u>	(log)
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.7	0.425	425000	5.628
60	99.5	0.250	250000	5.398
140	98.6	0.106	106000	5.025
200	97.4	0.0750	75000	4.875
2	90.5	0.0295	29465.82417	4.469
5	86.4	0.0190	18972.0026	4.278
15	72.2	0.0116	11607.28593	4.065
30	62.0	0.0085	8522.467098	3.931
60	47.8	0.0063	6324.852107	3.801
250	27.4	0.0033	3256.146846	3.513
1440	15.2	0.0014	1420.569098	3.152
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.3
	0.005	5000	3.70	40.6
	0.001	1000	3.00	10.1

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0111 Lab Code: K2005531-007

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0161	100
Coarse Sand	No.40 (0.425 mm)	0.0249	99.9
Medium Sand	No.60 (0.250 mm)	0.0299	99.9
Fine Sand	No.140 (0.106 mm)	0.4005	99.1
Very Fine Sand	No.200 (0.0750 mm)	0.2948	98.5

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.3
0.005 mm	37.9
0.001 mm	6.1

Approved By: 1A/102094

	Sample Name:	VC0111		
	Lab Code:	K2005531-007		
		Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	100.0	0.850	850000	5.929
40	99.9	0.425	425000	5.628
60	99.9	0.250	250000	5.398
140	99.1	0.106	106000	5.025
200	98.5	0.0750	75000	4.875
2	90.5	0.0293	29289.28669	4.467
5	86.4	0.0189	18858.33636	4.276
15	70.2	0.0116	11627.61866	4.065
30	60.0	0.0085	8532.627158	3.931
60	45.8	0.0063	6328.217838	3.801
250	23.4	0.0032	3235.215539	3.510
1440	11.2	0.0014	1409.965045	3.149
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	98.3
	0.005	5000	3.70	37.9
	0.001	1000	3.00	6.1

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0112 Lab Code: K2005531-008

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0193	100
Coarse Sand	No.40 (0.425 mm)	0.0879	99.8
Medium Sand	No.60 (0.250 mm)	0.0773	99.6
Fine Sand	No.140 (0.106 mm)	0.6882	98.2
Very Fine Sand	No.200 (0.0750 mm)	0.7416	96.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	96.7
0.005 mm	41.2
0.001 mm	11.2

Approved By: ____ 1A/102094 _____Date: _____

	Sample Name:	VC0112		
	Lab Code:	K2005531-008		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	100.0	0.850	850000	5.929
40	99.8	0.425	425000	5.628
60	99.6	0.250	250000	5.398
140	98.2	0.106	106000	5.025
200	96.8	0.0750	75000	4.875
2	89.5	0.0289	28936.21173	4.461
5	83.5	0.0188	18793.89763	4.274
15	69.4	0.0115	11487.45065	4.060
30	59.3	0.0084	8429.768491	3.926
60	49.3	0.0062	6170.139076	3.790
250	25.1	0.0032	3178.060756	3.502
1440	15.1	0.0014	1378.043959	3.139
	determined hydromet	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	96.7
	0.005	5000	3.70	41.2
	0.001	1000	3.00	11.2

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0113 Lab Code: K2005531-009

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size		
-		Weight (g)	Passing	
Gravel	No.3/4"(19.0 mm)	0.0000	100	
Gravel	No.3/8"(9.50 mm)	0.0000	100	
Medium Gravel	No.4 (4.75 mm)	0.0000	100	
Fine Gravel	No.10 (2.00 mm)	0.0000	100	
Very Coarse Sand	No.20 (0.850 mm)	0.0427	99.9	
Coarse Sand	No.40 (0.425 mm)	0.0798	99.8	
Medium Sand	No.60 (0.250 mm)	0.0915	99.6	
Fine Sand	No.140 (0.106 mm)	0.3830	98.8	
Very Fine Sand	No.200 (0.0750 mm)	0.4149	98.0	

Silt and Clay

(Hydrometer	Analysis)
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Particle Diameter	Percent Passing
0.074 mm	97.9
0.005 mm	31.8
0.001 mm	12.9

Approved By: _____ 1A/102094

	Sample Name:	VC0113		
	Lab Code:	K2005531-009		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(<u>mm)</u>	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.9	0.850	850000	5.929
40	99.8	0.425	425000	5.628
60	99.6	0.250	250000	5.398
140	98.8	0.106	106000	5.025
200	98.0	0.0750	75000	4.875
2	94.8	0.0302	30245.96307	4.481
5	88.5	0.0197	19654.00006	4.293
15	69.8	0.0122	12211.15522	4.087
30	55.2	0.0091	9081.353439	3.958
60	38.5	0.0068	6764.484234	3.830
250	21.9	0.0034	3390.583829	3.530
1440	15.6	0.0015	1453.783079	3.162
	determined hydromet	ter		
		mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.9
	0.005	5000	3.70	31.8
	0.001	1000	3.00	12.9

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0114 Lab Code: K2005531-010

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3329	99.3
Coarse Sand	No.40 (0.425 mm)	0.2529	98.8
Medium Sand	No.60 (0.250 mm)	0.3796	98.0
Fine Sand	No.140 (0.106 mm)	0.6813	96.6
Very Fine Sand	No.200 (0.0750 mm)	0.6921	95.2

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	95.2
0.005 mm	38.7
0.001 mm	10.9

Approved By: 1A/102094

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Approved By: ______Date: ______

	Sample Name:	VC0114		
	Lab Code:	K2005531-010		
	x	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.3	0.850	850000	5.929
40	98.8	0.425	425000	5.628
60	98.0	0.250	250000	5.398
140	96.6	0.106	106000	5.025
200	95.2	0.0750	75000	4.875
2	94.5	0.0330	32962.78482	4.518
5	83.4	0.0217	21743.58577	4.337
15	72.3	0.0131	13050.52964	4.116
30	61.2	0.0096	9566.55999	3.981
60	47.8	0.0070	7041.028328	3.848
250	27.8	0.0036	3555.458548	3.551
1440	16.7	0.0015	1542.145387	3.188
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	95.2
	0.005	5000	3.70	38.7
	0.001	1000	3.00	10.9

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005531

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

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Particle Size Determination ASTM Method D 422

Sample Name: VC0114 Lab Code: K2005531-010DUP

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Sieve Size		
		Weight (g)	Passing	
Gravel	No.3/4''(19.0 mm)	0.0000	100	
Gravel	No.3/8"(9.50 mm)	0.0000	100	
Medium Gravel	No.4 (4.75 mm)	0.0000	100	
Fine Gravel	No.10 (2.00 mm)	0.0000	100	
Very Coarse Sand	No.20 (0.850 mm)	1.0348	97.9	
Coarse Sand	No.40 (0.425 mm)	0.3495	97.2	
Medium Sand	No.60 (0.250 mm)	1.4875	94.1	
Fine Sand	No.140 (0.106 mm)	0.7727	92.5	
Very Fine Sand	No.200 (0.0750 mm)	0.5589	91.4	

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	91.3
0.005 mm	26.8
0.001 mm	16.7

Approved By: ______ 1A/102094

__Date: _____

	Sample Name:	VC0114		
	Lab Code:	K2005531-010DUP	ļ	
	X	Y	Comment W	Value of Y
	arithmetic	logarithmic Particle Diameter	Convert Y	
<u></u>	Percent Passing		mm to nm	Log form (log)
<u>Sieve</u> 3/4"	<u> (%)</u> 100.0	<u>(mm)</u> 19.0	(nm) 19000000	7.279
	100.0	9.5	9500000	6.978
3/8"		4.75	4750000	6.677
4	100.0			6.301
10	100.0	2.00	2000000	
20	97.9	0.850	850000	5.929
40	97.2	0.425	425000	5.628
60	94.1	0.250	250000	5.398
140	92.5	0.106	106000	5.025
200	91.4	0.0750	75000	4.875
2	83.4	0.0340	33964.35804	4.531
5	74.5	0.0222	22163.71501	4.346
15	61.1	0.0134	13365.74088	4.126
30	50.0	0.0098	9773.928825	3.990
60	34.5	0.0072	7218.764533	3.858
250	16.7	0.0036	3613.704053	3.558
1440	16.7	0.0015	1523.445733	3.183
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	91.3
	0.005	5000	3.70	26.8
	0.001	1000	3.00	16.7

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0115 Lab Code: K2005531-011

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
•		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1137	99.8
Coarse Sand	No.40 (0.425 mm)	0.1511	99.5
Medium Sand	No.60 (0.250 mm)	0.3408	98.8
Fine Sand	No.140 (0.106 mm)	0.7734	97.2
Very Fine Sand	No.200 (0.0750 mm)	0.5320	96.1

Silt and Clay (Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	96.1
0.005 mm	31.4
0.001 mm	7.7

Approved By: _____ 1A/102094 _____Date: _____

	Sample Name:	VC0115		
	Lab Code:	K2005531-011		
+	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.5	0.425	425000	5.628
60	98.8	0.250	250000	5.398
140	97.2	0.106	106000	5.025
200	96.1	0.0750	75000	4.875
2	94.5	0.0307	30701.58653	4.487
5	88.2	0.0199	19940.49807	4.300
15	69.0	0.0124	12374.55662	4.093
30	54.2	0.0092	9196.27444	3.964
60	39.3	0.0068	6803.605711	3.833
250	20.2	0.0034	3429.276726	3.535
1440	11.7	0.0015	1478.017035	3.170
	determined hydrome	ter		
	<u>mm</u>	<u>mm to nm</u>	<u>log hyd x</u>	<u>% Passing</u>
	0.074	74000	4.87	96.1
	0.005	5000	3.70	31.4
	0.001	1000	3.00	7.7

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005531

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0116 Lab Code: K2005531-012

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.0865	99.8
Coarse Sand	No.40 (0.425 mm)	0.0226	99.8
Medium Sand	No.60 (0.250 mm)	0.0207	99.7
Fine Sand	No.140 (0.106 mm)	0.1795	99.4
Very Fine Sand	No.200 (0.0750 mm)	0.2708	98.8

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing	
0.074 mm	98.7	
0.005 mm	40.3	
0.001 mm	13.2	

Approved By: ____ 1A/102094

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______Date: ______

	Sample Name:	VC0116		
	Lab Code:	K2005531-012		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.8	0.850	850000	5.929
40	99.8	0.425	425000	5.628
60	99.7	0.250	250000	5.398
140	99.4	0.106	106000	5.025
200	98.8	0.0750	75000	4.875
2	93.0	0.0313	31336.01715	4.496
5	86.6	0.0203	20343.13528	4.308
15	71.6	0.0124	12423.0199	4.094
30	60.9	0.0091	9111.368456	3.960
60	48.1	0.0067	6709.643184	3.827
250	28.9	0.0034	3390.635544	3.530
1440	18.2	0.0015	1470.963896	3.168
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	98.7
	0.005	5000	3.70	40.3
	0.001	1000	3.00	13.2

Analytical Report

Client: Exponent Environmental Group, Inc. OL RI/FS Phase 2A / 8600BCP.003.0801 **Project:** Sample Matrix: Soil

Service Request: K2005515 Date Collected: 7/19/00 Date Received: 7/20/00 Date Analyzed: 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0117 Lab Code: K2005531-013

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing_
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3600	99.3
Coarse Sand	No.40 (0.425 mm)	0.1002	99.1
Medium Sand	No.60 (0.250 mm)	0.1931	98.7
Fine Sand	No.140 (0.106 mm)	2.2435	94.1
Very Fine Sand	No.200 (0.0750 mm)	0.7636	92.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	92.5
0.005 mm	45.1
0.001 mm	18.0

Approved By: _____ Date: _____ 1A/102094

	Sample Name:	VC0117			
	Lab Code:	K2005531-013			
	X	Y	C	V-L CV	
	arithmetic	logarithmic	Convert Y	Value of Y	
<u></u>	Percent Passing	Particle Diameter	mm to nm	Log form	
Sieve	<u>(%)</u>	(<u>mm</u>)	(<u>nm)</u>	<u>(log)</u> 7.279	
3/4"	100.0	19.0	1900000		
_3/8"	100.0	9.5	9500000	6.978	
4	100.0	4.75	4750000	6.677	
10	100.0	2.00	2000000	6.301	
20	99.3	0.850	850000	5.929	
40	99.1	0.425	425000	5.628	
60	98.7	0.250	250000	5.398	
140	94.1	0.106	106000	5.025	
200	92.6	0.0750	75000	4.875	
2	86.3	0.0313	31323.6316	4.496	
5	79.9	0.0203	20308.73502	4.308	
15	71.4	0.0121	12097.93918	4.083	
30	62.9	0.0088	8810.184226	3.945	
60	52.2	0.0064	6448.58302	3.809	
250	33.0	0.0033	3303.406957	3.519	
1440	22.4	0.0014	1416.821404	3.151	
	determined hydrome	ter			
	mm	mm to nm	log hyd x	% Passing	
	0.074	74000	4.87	92.5	
	0.005	5000	3.70	45.1	
	0.001	1000	3.00	18.0	

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0118 Lab Code: K2005531-014

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1820	99.6
Coarse Sand	No.40 (0.425 mm)	0.0520	99.5
Medium Sand	No.60 (0.250 mm)	0.0555	99.4
Fine Sand	No.140 (0.106 mm)	0.5710	98.3
Very Fine Sand	No.200 (0.0750 mm)	0.9861	96.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	96.1
0.005 mm	48.3
0.001 mm	19.0

Approved By: 1A/102094

Approved By: _____ Date: _____

	Sample Name:	VC0118		
	Lab Code:	K2005531-014		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(mm)	(nm)	(log)
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.6	0.850	850000	5.929
40	99.5	0.425	425000	5.628
60	99.4	0.250	250000	5.398
140	98.3	0.106	106000	5.025
200	96.3	0.0750	75000	4.875
2	86.5	0.0295	29543.65159	4.470
5	82.5	0.0190	19010.37455	4.279
15	70.2	0.0115	11520.77172	4.061
30	64.1	0.0083	8332.463062	3.921
60	54.0	0.0061	6104.903398	3.786
250	35.6	0.0031	3095.782382	3.491
1440	23.4	0.0014	1352.061625	3.131
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
+	0.074	74000	4.87	96.1
	0.005	5000	3.70	48.3
	0.001	1000	3.00	19.0

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0119 Lab Code: K2005531-015

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
		Weight (g)	Passing
Gravel	No.3/4''(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2303	99.5
Coarse Sand	No.40 (0.425 mm)	0.0529	99.4
Medium Sand	No.60 (0.250 mm)	0.1049	99.2
Fine Sand	No.140 (0.106 mm)	1.3978	96.4
Very Fine Sand	No.200 (0.0750 mm)	1.4867	93.4

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Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.2
0.005 mm	43.7
0.001 mm	21.8

Approved By: 1A/102094

Approved By: _____Date: ____Date: _____Date: _____Date: ____Date:

	Sample Name: Lab Code:	VC0119		
		K2005531-015		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.5	0.850	850000	5.929
40	99.4	0.425	425000	5.628
60	99.2	0.250	250000	5.398
140	96.4	0.106	106000	5.025
200	93.4	0.0750	75000	4.875
2	81.7	0.0296	29606.04487	4.471
5	71.6	0.0195	19502.57778	4.290
15	61.5	0.0117	11691.79089	4.068
30	57.5	0.0084	8386.410394	3.924
60	47.4	0.0061	6135.515862	3.788
250	35.3	0.0030	3049.350366	3.484
1440	25.2	0.0013	1324.191982	3.122
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	93.2
	0.005	5000	3.70	43.7
	0.001	1000	3.00	21.8

Analytical Report

Exponent Environmental Group, Inc. Client: OL RI/FS Phase 2A / 8600BCP.003.0801 **Project:** Sample Matrix: Soil

Service Request: K2005515 Date Collected: 7/19/00 Date Received: 7/20/00 Date Analyzed: 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0120 Lab Code: K2005531-016

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1452	99.7
Coarse Sand	No.40 (0.425 mm)	0.0490	99.6
Medium Sand	No.60 (0.250 mm)	0.0867	99.4
Fine Sand	No.140 (0.106 mm)	0.5484	98.3
Very Fine Sand	No.200 (0.0750 mm)	0.5572	97.2

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.1
0.005 mm	
0.001 mm	9.9

Approved By: _____Date: _____Aate: _____AAte 1A/102094

	Sample Name:	VC0120		
	Lab Code:	K2005531-016		
	X arithmetic	Y logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	(mm)	(nm)	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.7	0.850	850000	5.929
40	99.6	0.425	425000	5.628
60	99.4	0.250	250000	5.398
140	98.3	0.106	106000	5.025
200	97.2	0.0750	75000	4.875
2	95.8	0.0307	30678.42448	4.487
5	89.4	0.0199	19925.45446	4.299
15	72.1	0.0123	12272.51109	4.089
30	59.2	0.0091	9064.201319	3.957
60	42.0	0.0068	6756.344695	3.830
250	16.2	0.0035	3466.152616	3.540
1440	11.8	0.0015	1477.058702	3.169
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.1
	0.005	5000	3.70	31.5
	0.001	1000	3.00	9.9

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0186 Lab Code: K2005510-030

Gravel and Sand (Sieve Analysis)

Description	Sieve Size		Percent
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.1938	99.6
Coarse Sand	No.40 (0.425 mm)	0.2052	99.2
Medium Sand	No.60 (0.250 mm)	0.1262	98.9
Fine Sand	No.140 (0.106 mm)	0.3394	98.3
Very Fine Sand	No.200 (0.0750 mm)	0.2956	97.7

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	97.5
0.005 mm	33.0
0.001 mm	5.2

Approved By: _____ 1A/102094 _____Date: _____

	Sample Name:	VC0186		
	Lab Code:	K2005510-030		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	(%)	(<u>mm</u>)	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.6	0.850	850000	5.929
40	99.2	0.425	425000	5.628
60	98.9	0.250	250000	5.398
140	98.3	0.106	106000	5.025
200	97.7	0.0750	75000	4.875
2	83.7	0.0245	24488.44357	4.389
5	78.2	0.0159	15908.88018	4.202
15	61.4	0.0099	9878.414712	3.995
30	48.4	0.0073	7343.856625	3.866
60	35.4	0.0054	5434.745701	3.735
250	16.7	0.0028	2823.120969	3.451
1440	7.4	0.0012	1222.658854	3.087
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	97.5
	0.005	5000	3.70	33.0
	0.001	1000	3.00	5.2

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0192 Lab Code: K2005510-031

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.4483	99.1
Coarse Sand	No.40 (0.425 mm)	0.2584	98.6
Medium Sand	No.60 (0.250 mm)	0.4459	97.7
Fine Sand	No.140 (0.106 mm)	1.3965	94.8
Very Fine Sand	No.200 (0.0750 mm)	0.7500	93.3

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	93.3
0.005 mm	42.0
0.001 mm	1.4

Approved By 1A/102094

Approved By: _____Date: _____

	Sample Name:	VC0192		
	Lab Code:	K2005510-031		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
<u>Sieve</u>	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.1	0.850	850000	5.929
40	98.6	0.425	425000	5.628
60	97.7	0.250	250000	5.398
140	94.8	0.106	106000	5.025
200	93.3	0.0750	75000	4.875
2	92.4	0.0281	28127.42894	4.449
5	86.3	0.0183	18272.9415	4.262
15	73.9	0.0111	11087.22036	4.045
30	63.7	0.0081	8142.943552	3.911
60	49.3	0.0060	6045.227563	3.781
250	24.6	0.0032	3188.401684	3.504
1440	8.2	0.0014	1404.313978	3.147
	determined hydrome			
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	93.3
	0.005	5000	3.70	42.0
	0.001	1000	3.00	1.4

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0193 Lab Code: K2005510-032

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.3126	99.4
Coarse Sand	No.40 (0.425 mm)	0.3677	98.6
Medium Sand	No.60 (0.250 mm)	0.4611	97.7
Fine Sand	No.140 (0.106 mm)	1.4714	94.7
Very Fine Sand	No.200 (0.0750 mm)	1.0375	92.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	92.1
0.005 mm	20.5
0.001 mm	2.6

Approved By: ____ 1A/102094

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	Sample Name:	VC0193		
	Lab Code:	K2005510-032		
		Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.4	0.850	850000	5.929
40	98.6	0.425	425000	5.628
60	97.7	0.250	250000	5.398
140	94.7	0.106	106000	5.025
200	92.6	0.0750	75000	4.875
2	62.2	0.0326	32627.25976	4.514
5	62.2	0.0206	20635.29093	4.315
15	45.6	0.0126	12581.378	4.100
30	33.1	0.0092	9234.597141	3.965
60	24.9	0.0067	6684.532512	3.825
250	14.5	0.0034	3367.066794	3.527
1440	6.2	0.0014	1449.87147	3.161
	determined hydrome			
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	92.1
	0.005	5000	3.70	20.5
	0.001	1000	3.00	2.6

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A / 8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005515

 Date Collected:
 7/19/00

 Date Received:
 7/20/00

 Date Analyzed:
 8/3/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0200 Lab Code: K2005531-017

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.2078	99.6
Coarse Sand	No.40 (0.425 mm)	0.0445	99.5
Medium Sand	No.60 (0.250 mm)	0.0439	99.4
Fine Sand	No.140 (0.106 mm)	0.1667	99.1
Very Fine Sand	No.200 (0.0750 mm)	0.2243	98.6

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	98.5
0.005 mm	49.7
0.001 mm	20.3

Approved By: 1A/102094

Approved By: _____Date: _____D

	Sample Name:	VC0200		
	Lab Code:	K2005531-017		
	X	Y		· <u> </u>
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	99.6	0.850	850000	5.929
40	99.5	0.425	425000	5.628
60	99.4	0.250	250000	5.398
140	99.1	0.106	106000	5.025
200	98.6	0.0750	75000	4.875
2	90.5	0.0290	29020.14554	4.463
5	84.4	0.0188	18848.41214	4.275
15	70.2	0.0115	11520.77172	4.061
30	64.1	0.0083	8332.463062	3.921
60	53.9	0.0061	6104.903398	3.786
250	39.7	0.0031	3057.76728	3.485
1440	25.4	0.0013	1344.35212	3.129
	determined hydrome	ter		
	<u>mm</u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	98.5
	0.005	5000	3.70	49.7
	0.001	1000	3.00	20.3

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Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0209 Lab Code: K2005510-036

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8"(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	0.5923	98.8
Coarse Sand	No.40 (0.425 mm)	0.5303	97.7
Medium Sand	No.60 (0.250 mm)	0.5458	96.6
Fine Sand	No.140 (0.106 mm)	0.6998	95,1
Very Fine Sand	No.200 (0.0750 mm)	0.3596	94.4

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	94.4
0.005 mm	36.7
0.001 mm	8.2

Approved By 1A/102094

	Sample Name:	VC0209		
	Lab Code:	K2005510-036	Ţ	
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	19000000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	98.8	0.850	850000	5.929
40	97.7	0.425	425000	5.628
60	96.6	0.250	250000	5.398
140	95.1	0.106	106000	5.025
200	94.4	0.0750	75000	4.875
2	94.1	0.0286	28550.56678	4.456
5	85.7	0.0187	18708.59334	4.272
15	71.1	0.0114	11430.03534	4.058
30	56.4	0.0085	8503.555948	3.930
60	43.9	0.0063	6256.989835	3.796
250	23.0	0.0033	3254.82061	3.513
1440	12.5	0.0014	1410.421961	3.149
	determined hydrome	ter		
	<u>mm</u>	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	94.4
	0.005	5000	3.70	36.7
	0.001	1000	3.00	8.2

Analytical Report

Client:Exponent Environmental Group, Inc.Project:OL RI/FS Phase 2A/8600BCP.003.0801Sample Matrix:Soil

 Service Request:
 K2005510

 Date Collected:
 7/20/00

 Date Received:
 7/21/00

 Date Analyzed:
 8/10/00

Particle Size Determination ASTM Method D 422

Sample Name: VC0210 Lab Code: K2005510-037

Gravel and Sand (Sieve Analysis)

Description	Sieve Size	Percent	
-		Weight (g)	Passing
Gravel	No.3/4"(19.0 mm)	0.0000	100
Gravel	No.3/8''(9.50 mm)	0.0000	100
Medium Gravel	No.4 (4.75 mm)	0.0000	100
Fine Gravel	No.10 (2.00 mm)	0.0000	100
Very Coarse Sand	No.20 (0.850 mm)	1.2367	97.4
Coarse Sand	No.40 (0.425 mm)	1.2767	94.8
Medium Sand	No.60 (0.250 mm)	1.2567	92.2
Fine Sand	No.140 (0.106 mm)	3.3687	85.2
Very Fine Sand	No.200 (0.0750 mm)	1.5222	82.0

Silt and Clay

(Hydrometer Analysis)

Particle Diameter	Percent Passing
0.074 mm	82.0
0.005 mm	24.8
0.001 mm	1.4

Approved By 1A/102094

Approved By: _____ Date: _____

	Sample Name:	VC0210		
	Lab Code:	K2005510-037		
	X	Y		
	arithmetic	logarithmic	Convert Y	Value of Y
	Percent Passing	Particle Diameter	mm to nm	Log form
Sieve	<u>(%)</u>	<u>(mm)</u>	<u>(nm)</u>	<u>(log)</u>
3/4"	100.0	19.0	1900000	7.279
3/8"	100.0	9.5	9500000	6.978
4	100.0	4.75	4750000	6.677
10	100.0	2.00	2000000	6.301
20	97.4	0.850	850000	5.929
40	94.8	0.425	425000	5.628
60	92.2	0.250	250000	5.398
140	85.2	0.106	106000	5.025
200	82.0	0.0750	75000	4.875
2	84.4	0.0356	35570.87211	4.551
5	79.7	0.0228	22848.86885	4.359
15	60.9	0.0140	13974.91718	4.145
30	49.2	0.0102	10212.6148	4.009
60	37.5	0.0074	7448.014743	3.872
250	16.4	0.0038	3840.513562	3.584
1440	7.0	0.0017	1653.70886	3.218
	determined hydrome	ter		
	mm	mm to nm	log hyd x	% Passing
	0.074	74000	4.87	82.0
	0.005	5000	3.70	24.8
	0.001	1000	3.00	1.4

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Appendix E3

Geotechnical Data from Parratt-Wolff Laboratories



PW LABORATORIES,INC. P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057 315-437-1429 • 800-782-7260 • Fax 315-437-1770

December 19, 2000

RECEIVED DEC 2 7 2000 EXPONENT

Page One of Two

Ms. Tina Cheng Exponent, Inc. 15375 SE 30th Place Suite 250 Bellvue, Washington 98007

Re: L-00100 Laboratory Testing Subcontract No. S16CBCP-3 Reference No. 8600BCP.003-0801 Phase 2A Supplemental Data Investigation Onondaga Lake RI/FS

Dear Ms. Cheng:

Enclosed are the results of laboratory testing performed at your request on nine tube material samples delivered to our laboratory on July 31, 2000 and August 1, 2000 for the above referenced project. Results include:

1.	Consolidation Test ASTM D2435 Laboratory I.D. #14170, 14178, 14172A, 14172, 14171, 14175, 14174	6 each
2.	Natural Moisture Content ASTM D2216 Laboratory I.D. #14176, 14177, 14170, 14178, 14172, 14172A, 14171, 14175, 14174	9 each
3.	Description and identification of Soils (Visual-Manual) ASTM D2488 Laboratory I.D. #14176, 14177, 14170, 14178, 14172, 14172A, 14171, 14175, 14174	9 each
4.	Sieve Analysis ASTM D422 & D1140 Laboratory I.D. #14176, 14177, 14170, 14178, 14172, 14172A, 14171, 14175, 14174	9 each

P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057

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Dece	ember 19, 2000	
Expo	onent, Inc.	Page Two of Two
Re:	L-00100 Laboratory Testing Subcontract No. S16CBCP-3 Reference No. 8600BCP.003-0801 Phase 2A Supplemental Data Investigation Onondaga Lake RI/FS	
5.	Hydrometer Analysis ASTM D422 Laboratory I.D. #14176, 14177, 14170, 14178, 14172, 14172A, 14171, 14175, 14174	, 9 each
6.	Atterberg Limits ASTM D4318 Laboratory I.D. #14176, 14177, 14170, 14178, 14172, 14172A, 14171, 14175, 14174	9 each
7.	Specific Gravity ASTM D854 Laboratory I.D. #14176, 14177, 14170, 14178, 14172, 14172A, 14171, 14175, 14174	. 9 each
8.	Total Carbonate Laboratory I.D. #14176, 14177, 14170, 14178, 14172, 14172A, 14171, 14175, 14174	9 each

If any other information is required please feel free to contact our office at 1-800-782-7260.

Thank you for this opportunity to work with you.

Very truly yours,

PW LABORATORIES, INC.

Maguna 4 Thins

Virginia J. Thoma Manager - Laboratory Services VJT/bap encs:



On August 1, 2000, PW Laboratories received ten 2.5 meter long plastic tube samples from Jane Sexton of Exponent. On August 2, 2000 sample CT-0001's upper cap exploded, (Probably due to gas pressures) expelling liquid saturated soil material. On the morning of August 4th 2000, it was noticed that some of the tubes were exhibiting signs of internal "cracking". It looked to be internal as no exterior seepage could be seen.

At about 5:00 PM on August 4th, 2000 the tube cracking was noticeably worse and some seepage was now detected. After attempting to contact Jane Sexton by Cell Phone, with no answer, word was left at her motel. At about 6:00 PM, Jane was reached on her Cell Phone and was informed of the situation.

Don Blasland of PW Laboratories, Inc. directed that the tubes be moved to outside of the laboratory, stored vertically and protected in plastic. In transporting the samples two of the tubes partially separated in a number of places along their length. The other eight tubes were placed in the upright position and the caps were loosened to relieve possible gas pressures (thought to be the cause at this point). On August 5th, 2000, at Jane's request, Todd Merrill of Blasland, Bouck and Lee, Inc, contacted Virginia Thoma of PW Laboratories at her residence and expressed concern that the samples be contained from expelling the contents in the laboratory. Todd was informed that the tubes had been moved out of doors on the previous evening.

It was decided that the tubes be wrapped on the outside with Saran Wrap, laid down on a tarp and covered, in order to contain any effluent or material, until a representative of Blasland Bouck, and Lee, Inc., look at the specimens on August 7th, 2000.



December 18, 2000

L-00100

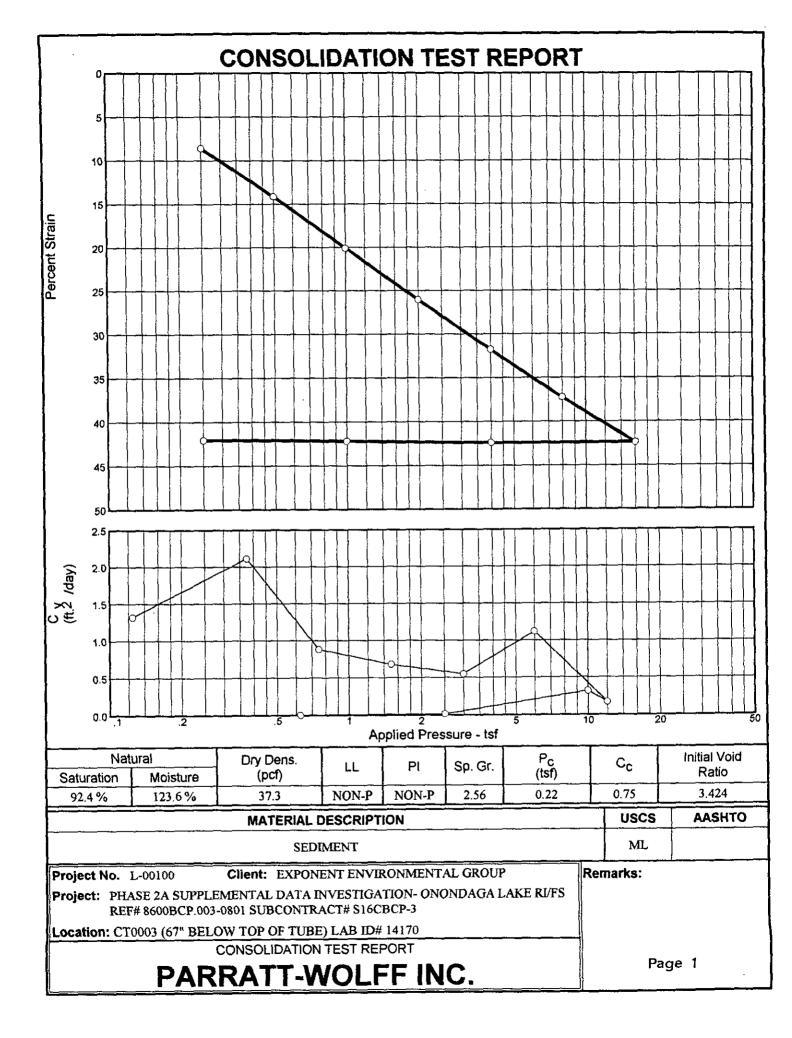
Laboratory Testing Subcontract No. S16CBCP-3 Reference No. 8600BCP.003-0801 Phase 2A Supplemental Data Investigation Onondaga Lake RI/FS

Standard Test Method for One-Dimensional Consolidation Properties of Soils <u>ASTM D2435</u>

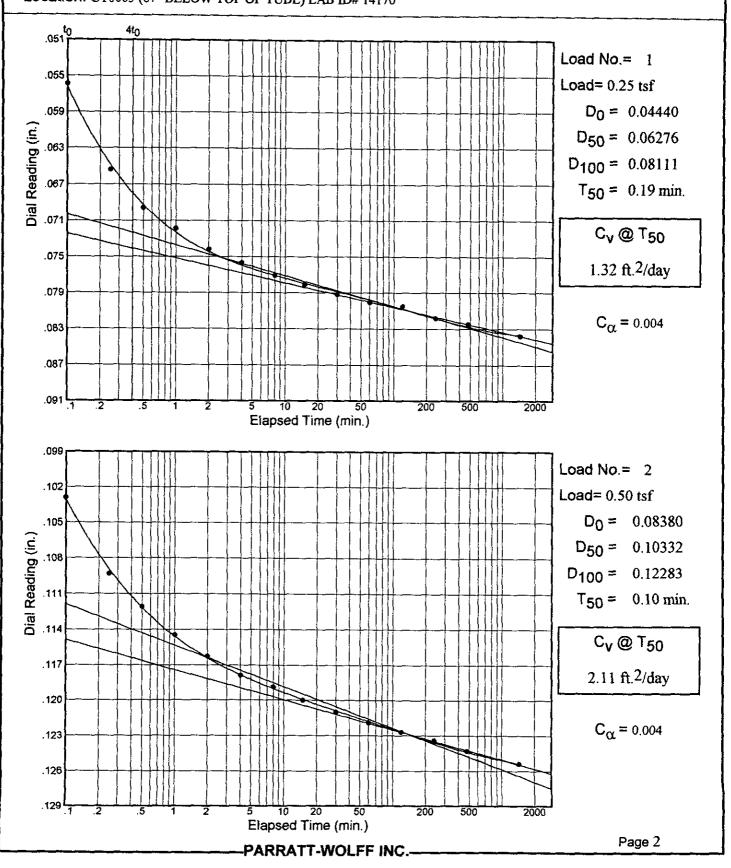
SUMMARY INDEX

Sample	Depth (from top of top)	Lab <u>I.D. #</u>	Page #'s
CT-0003	67" ±	14170	1 - 12
CT-0004	54" 土	14178	13 – 24
CT-0005	75"±	14172A	25 - 36
CT-0006	66" ±	14171	37 – 48
CT-0009	25" ±	14175	49 - 60
CT-0010	61" ±	14174	61 - 72

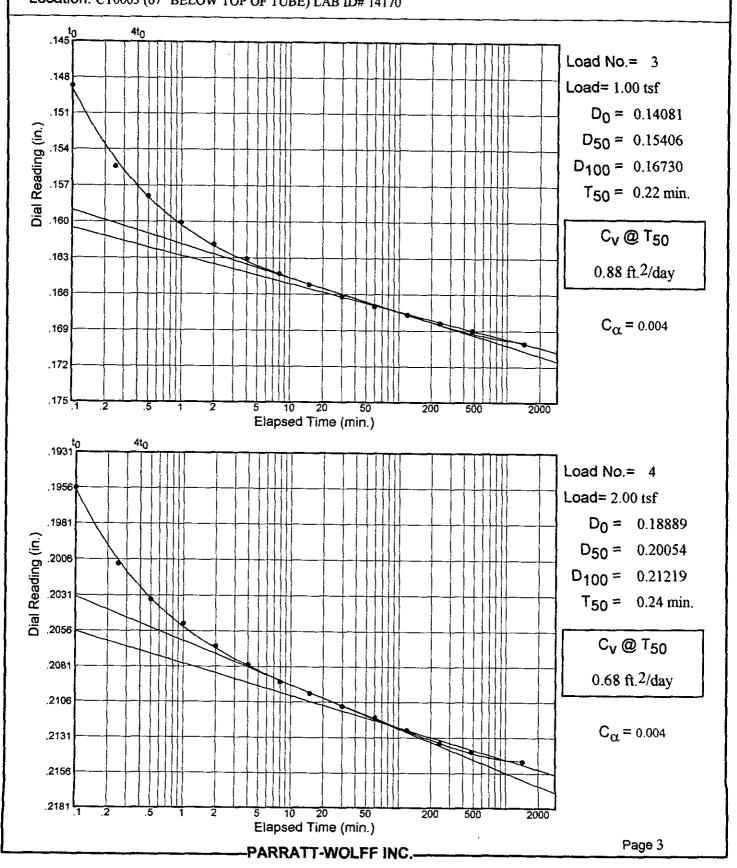
Note: Consolidation Testing was attempted on samples CT-0002 @ 60" below top of tube and CT-0005 @ 14" below top of tube. Due to the "softness" of samples they were determined to be un-testable.



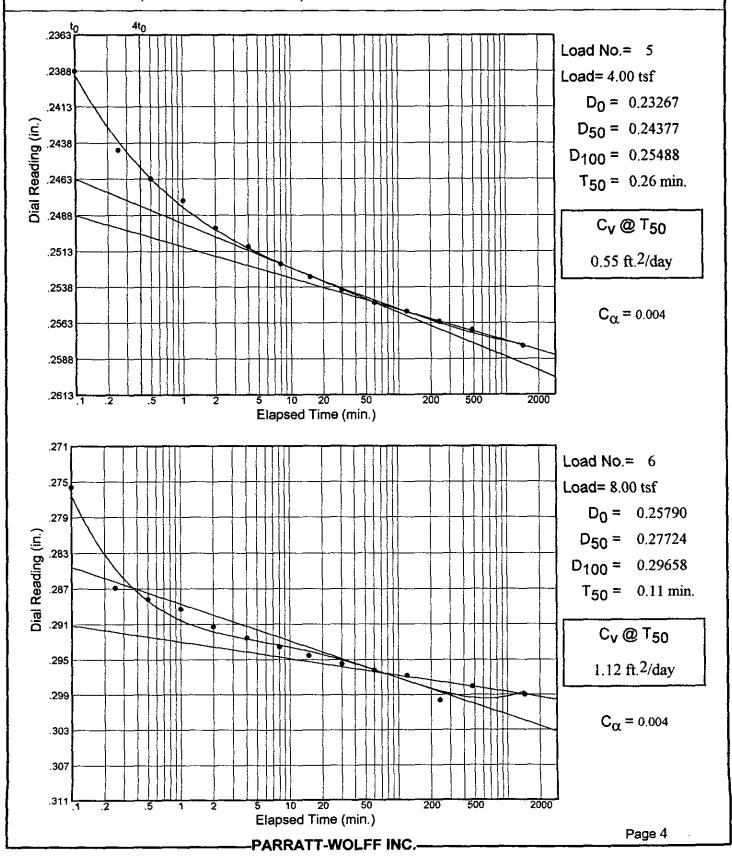
Project No.: L-00100



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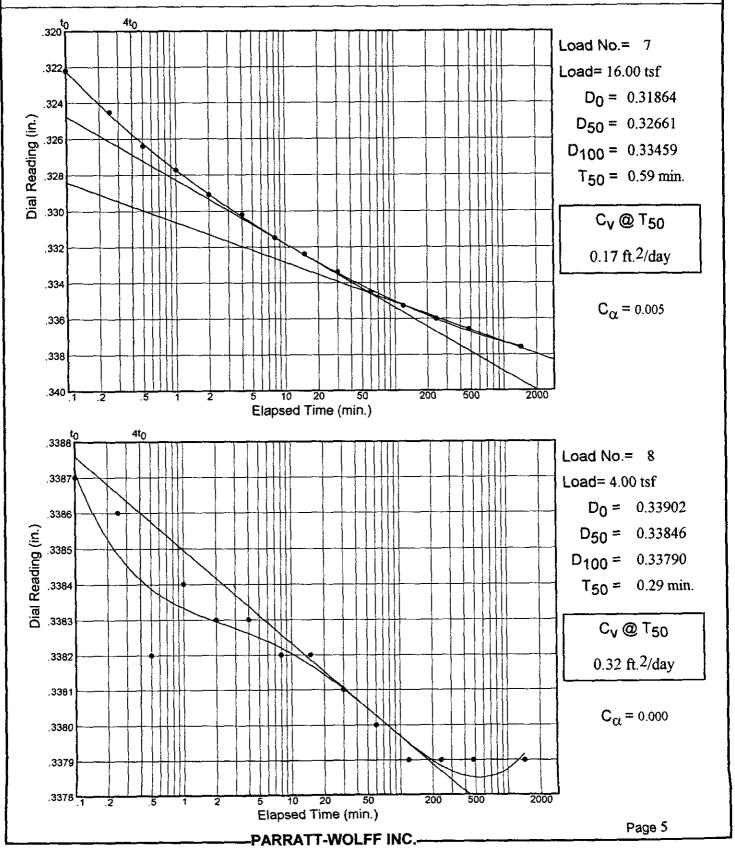
Project No.: L-00100



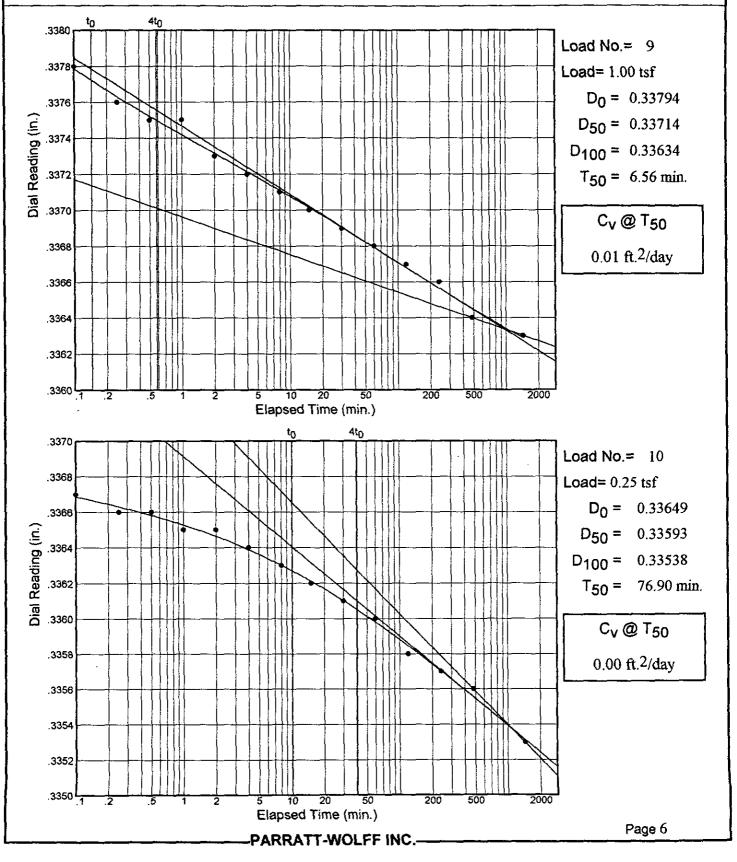
Project No.: L-00100

Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3

Location: CT0003 (67" BELOW TOP OF TUBE) LAB ID# 14170



Project No.: L-00100



CONSOLIDATION TEST DATA

Client: EXPONENT ENVIRONMENTAL GROUP Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Project Number: L-00100

Sample Data

Source: L-00100 Sample No.: LAB ID# 14170 Elev. or Depth: Sample Length (in./cm.): Location: CT0003 (67" BELOW TOP OF TUBE) LAB ID# 14170 Description: SEDIMENT Liquid Limit: NON-P Plasticity Index: NON-P USCS: ML AASHTO: Figure No.: 1 Testing Remarks:

Test Specimen Data

TOTAL SAMPLE Wet w+t = 155.66 g. Dry w+t = 110.94 g. Tare Wt. = 74.75 g.	BEFORE TEST Consolidometer # = 2 Spec. Gravity = 2.56	AFTER TEST Wet w+t = 127.90 g. Dry w+t = 109.75 g. Tare Wt . = 74.75 g.
Height = .75 in. Diameter = 2.50 in. Weight = 80.91 g.	Height = .75 in. Diameter = 2.50 in. Defl. Table = ring #2 (in	
Moisture = 123.6 % Wet Den. = 83.5 pcf Dry Den. = 37.3 pcf	Ht. Solids = 0.1700 in. Dry Wt. = 36.19 g. Void Ratio = 3.424 Saturation = 92.4 %	Moisture = 51.9 % Dry Wt. = 35.00 g.* Void Ratio = 1.564

* Final dry weight used in calculations

End-of-Load Summary						
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C _v (ft. ² /day)	c_{α}	Void Ratio	<pre>% Compression /Swell</pre>
start	0.01910				3.424	
0.25	0.08540	0.00160	1.32	0.004	3.044	8.6 Comprs.
0.50	0.12800	0.00260	2.11	0.004	2.799	14.1 Comprs.
1.00	0.17390	0.00380	0.88	0.004	2.536	20.1 Comprs.
2.00	0.22040	0.00560	0.68	0.004	2.273	26.0 Comprs.
4.00	0.26550	0.00760	0.55	0.004	2.019	31.8 Comprs.
8.00	0.30900	0.01000	1.12	0.004	1.778	37.2 Comprs.
16.00	0.35050	0.01290	0.17	0.005	1.551	42.4 Comprs.
4.00	0.34580	0.00790	0.32	0.000	1.549	42.4 Comprs.
1.00	0.34200	0.00570	0.01		1.558	42.2 Comprs.
0.25	0.33930	0.00400	0.00		1.564	42.1 Comprs.

Pressure: 0.25 tsf		tsf TEST READINGS		DINGS	Load No. 1	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	$0.051 - 4t_0$ $0.055 - 4t_0$ $0.055 - 4t_0$
1	0.00	0.01910	11	60.00	0.08170	
2 3 4 5 6 7 8 9	$\begin{array}{c} 0.10 \\ 0.25 \\ 0.50 \\ 1.00 \\ 2.00 \\ 4.00 \\ 8.00 \\ 15.00 \end{array}$	0.05750 0.06700 0.07120 0.07350 0.07580 0.07730 0.07870 0.07970	12 13 14 15	120.00 240.00 480.00 1440.00	0.08210 0.08340 0.08410 0.08540	.063 .067 .071 .075 .079 .083 .087 .091 .1 .5 1 2 5 20 200
10	30.00	0.08080				

Void Ratio = 3.044 Compression = 8.6 %

Pressure: 0.50 tsf				TEST REAL	DINGS	Load No. 2
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	
1	0.00	0.08540	11	60.00	0.12450	
2 3 4 5 6 7 8 9	$\begin{array}{c} 0.10 \\ 0.25 \\ 0.50 \\ 1.00 \\ 2.00 \\ 4.00 \\ 8.00 \\ 15.00 \end{array}$	0.10550 0.11190 0.11470 0.11710 0.11890 0.12050 0.12150 0.12260	12 13 14 15	120.00 240.00 480.00 1440.00	0.12530 0.12600 0.12690 0.12800	$ \begin{array}{c} 109 \\ .111 \\ .114 \\ .117 \\ .120 \\ .123 \\ .126 \\ .129 \\ .1 \\ .5 \\ .1 \\ .5 \\ .2 \\ .2 \\ .2 \\ .2 \\ .2 \\ .2 \\ .2 \\ .2$
10	30.00	0.12360				

Void Ratio = 2.799	Compression = 14.1 %
$D_0 = 0.08380$ $D_{50} =$	$0.10332 \mathbf{D_{100}} = 0.12283$
	1 ft.2/day $c_{\alpha} = 0.004$



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Pressure: 1.00 tsf			TEST READINGS			Load No. 3	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dìal Reading	.145 .148	
1	0.00	0.12800	11	60.00	0.17080	.151	
2 3 4 5 6 7	0.10 0.25 0.50 1.00 2.00 4.00	0.15250 0.15920 0.16170 0.16390 0.16570 0.16690	12 13 14 15	$ \begin{array}{r} 120.00\\ 240.00\\ 480.00\\ 1440.00 \end{array} $	0.17150 0.17220 0.17280 0.17390	$ \begin{array}{c} .154 \\ .157 \\ .160 \\ .163 \\ .166 \\ .169 \\ .172 \\ .175 \\ .1 \\ .5 \\ .1 \\ .5 \\ .2 \\ .200$	
8 9 10	8.00 15.00 30.00	0.16810 0.16900 0.17000				.173 1 .5 1 2 5 20 200	

Void Ratio = 2.536Compression = 20.1 % $D_0 = 0.14081$ $D_{50} = 0.15406$ $D_{100} = 0.16730$ C_v at 0.2 min. = 0.88 ft.2/day $C_{\alpha} = 0.004$

Pressure: 2.00 tsf			TEST READINGS			Load No. 4	
No .	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.1931 ⁰ , 4to	
1	0.00	0.17390	11	60.00	0.21730	.1381	
2	0.10	0.20120	12	120.00	0.21820	.2006	
3	0.25	0.20650	13	240.00	0.21910	.2031	
4	0.50	0.20900	14	480.00	0.21970	.2081	
5	1.00	0.21070	15	1440.00	0.22040	.2106	
6	2.00	0.21230				.2131	
7	4.00	0.21360				.2156	
8	8.00	0.21480				.2181 .1 .5 1 2 5 20 200	
9	15.00	0.21560					
10	30.00	0.21650					

Void Ratio = 2	.273 Compress	ion = 26.0 %
$D_0 = 0.18889$	D₅₀ = 0.20054	D₁₀₀ = 0.21219
		$c_{\alpha} = 0.004$

Pressure: 4.00 tsf			TEST READINGS			Load No. 5	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading		
1	0.00	0.22040	11	60.00	0.26250	.2413	
2	0.10	0.24640	12	120.00	0.26310	.2438	
3	0.25	0.25190	13	240.00	0.26380	.2463	
4	0.50	0.25390	14	480.00	0.26440	.2513	
5	1.00	0.25540	15	1440.00	0.26550	.2538	
6	2.00	0.25730				.2563	
7	4.00	0.25860					
8	8.00	0.25980				.2013 .1 .5 1 2 5 20 200	
9	15.00	0.26070					
10	30.00	0.26160					

Void Ratio = 2.019Compression = 31.8 % $D_0 = 0.23267$ $D_{50} = 0.24377$ $D_{100} = 0.25488$ C_v at 0.3 min. = 0.55 ft.2/day $C_{\alpha} = 0.004$

Pressure: 8.00 tsf			TEST READINGS			Load No. 6
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.271
1	0.00	0.26550	11	60.00	0.30620	.279
2	0.10	0.28560	12	120.00	0.30680	.283
3	0.25	0.29690	13	240.00	0.30960	.287
4	0.50	0.29820	14	480.00	0.30810	.295
5	1.00	0.29930	15	1440.00	0.30900	.299
6	2.00	0.30130				. 303
7	4.00	0.30260	-			
8	8.00	0.30360				.311 .1 .3 1 2 5 20 200
9	15.00	0.30460				
10	30.00	0.30550				

Void Ratio = 1	.778 Compress:	ion = 37.2 %
$D_0 = 0.25790$	$D_{50} = 0.27724$	$D_{100} = 0.29658$
		$c_{\alpha} = 0.004$

Press	sure: 16.0	0 tsf		TEST REAL	DINGS	Load No.	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	. 320 4to	
1	0.00	0.30900	11	60.00	0.34740	.324	
2	0.10	0.33510	12	120.00	0.34820		
3	0.25	0.33740	13	240.00	0.34890	. 328	
4	0.50	0.33930	14	480.00	0.34950	.332	
5	1.00	0.34060	15	1440.00	0.35050	. 334	
6	2.00	0.34200				-336	
7	4.00	0.34310				.338	
8	8.00	0.34440				. 340 . 1 . 5 1 2 5 20 200	
9	15.00	0.34530					
10	30.00	0.34630					

Void Ratio = 1.551Compression = 42.4 % $D_0 = 0.31864$ $D_{50} = 0.32661$ $D_{100} = 0.33459$ C_v at 0.6 min. = 0.17 ft.2/day $C_{\alpha} = 0.005$

Pressure: 4.00 tsf			TEST READINGS			Load No. 8	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.3388 ^t 0 4 ^t 0 .3387	
1	0.00	0.35050	11	60.00	0.34590	. 3386	
2	0.10	0.34660	12	120.00	0.34580	.3385	
3	0.25	0.34650	13	240.00	0.34580	.3384	
4	0.50	0.34610	14	480.00	0.34580	.3382	
5	1.00	0.34630	15	1440.00	0.34580	. 3391	
6	2.00	0.34620				. 3380	
7	4.00	0.34620					
8	8.00	0.34610				.3378 .1 .5 1 2 5 20 200	
9	15.00	0.34610					
10	30.00	0.34600					

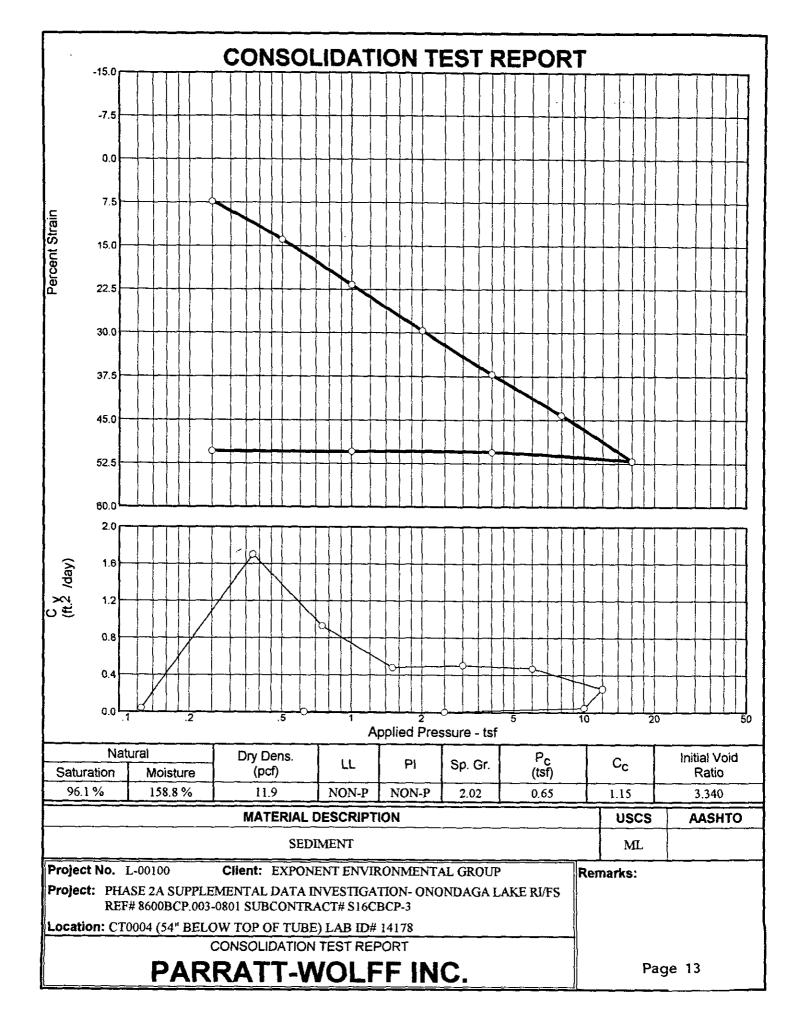
Void Ratio = 1	.549 Compress	sion = 42.4 %
D₀ = 0.33902	$D_{50} = 0.33846$	$D_{100} = 0.33790$
		$c_{\alpha} = 0.000$

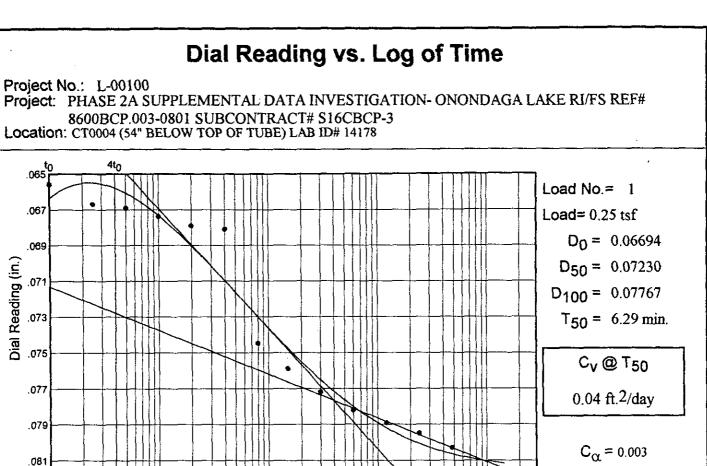
Pressure: 1.00 tsf			TEST READINGS			Load No. 9	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading		
1	0.00	0.3458Õ	11	60.00	0.34250	.3376	
2	0.10	0.34350	12	120.00	0.34240		
3	0.25	0.34330	13	240.00	0.34230		
4	0.50	0.34320	14	480.00	0.34210	. 3368	
5	1.00	0.34320	15	1440.00	0.34200	.3366	
6	2.00	0.34300				. 3364	
7	4.00	0.34290					
8	8.00	0.34280				.3360 .1 .5 1 2 5 20 200	
9	15.00	0.34270					
10	30.00	0.34260					

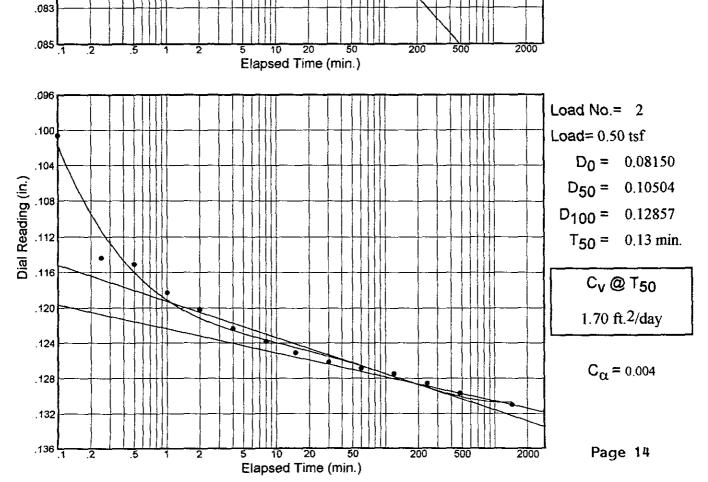
Void Ratio = 1.558 Compression = 42.2 % $D_0 = 0.33794$ $D_{50} = 0.33714$ $D_{100} = 0.33634$ C_v at 6.6 min. = 0.01 ft.2/day

Pressure: 0.25 tsf			TEST READINGS			Load No. 10	
No .	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.3370 .3368	
1	0.00	0.34200	11	60.00	0.34000	. 3366	
2	0.10	0.34070	12	120.00	0.33980	,3364	
3	0.25	0.34060	13	240.00	0.33970	.3362	
4	0.50	0.34060	14	480.00	0.33960	. 3358	
5	1.00	0.34050	15	1440.00	0.33930	. 3356	
6	2.00	0.34050				.3354	
7	4.00	0.34040					
8	8.00	0.34030				.3350 .1 .5 1 2 5 20 200	
9	15.00	0.34020					
10	30.00	0.34010					

Void Ratio = 1.564	Compression = 42.1 %
$D_0 = 0.33649$ $D_{50} =$	$= 0.33593 D_{100} = 0.33538$
C_v at 76.9 min. = 0.	.00 ft.2/day



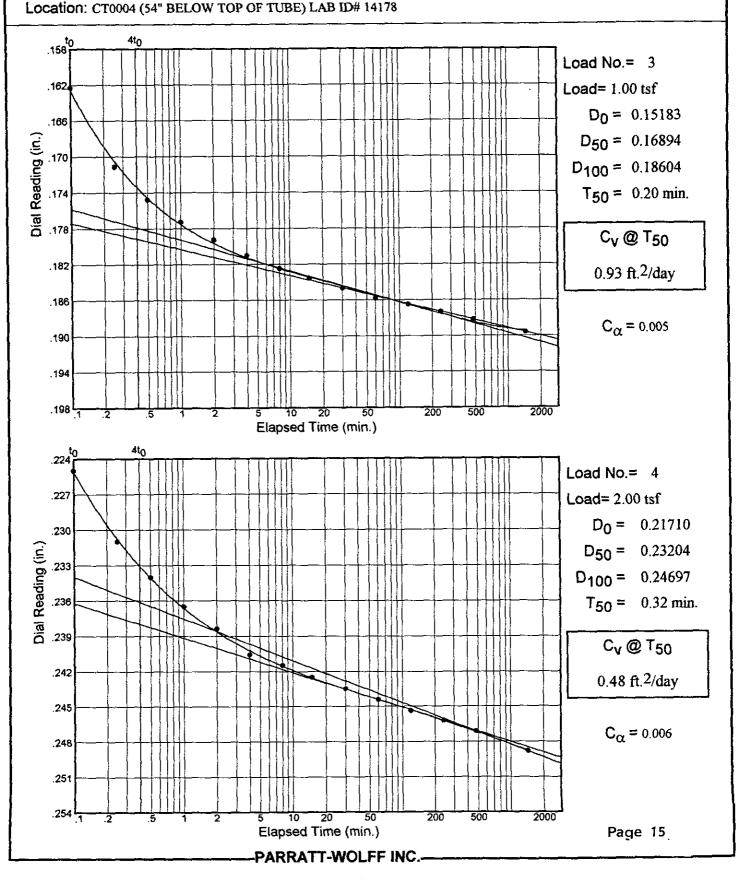


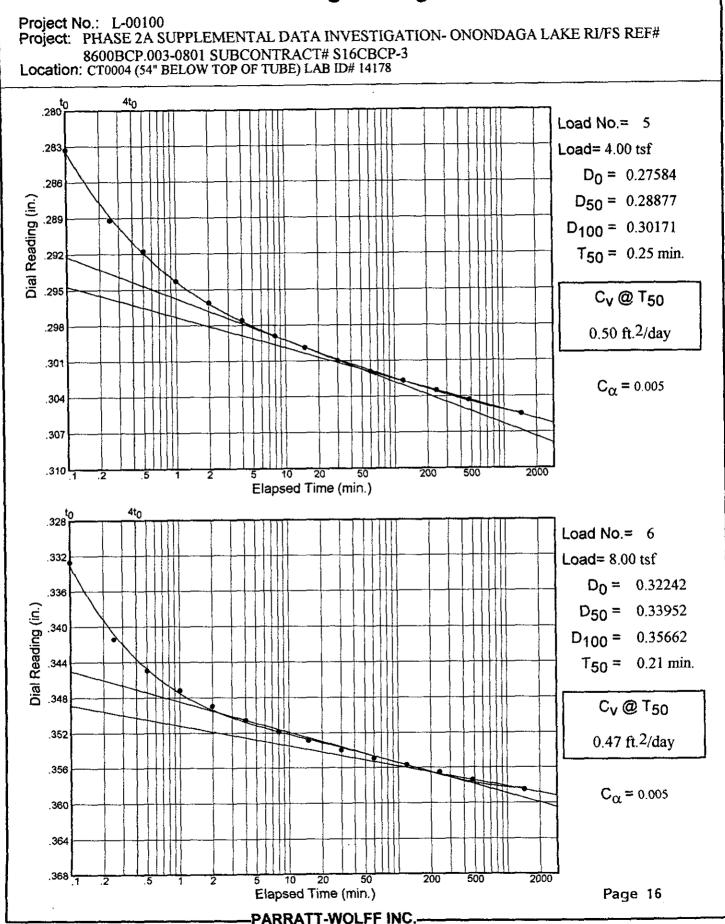


-PARRATT-WOLFF INC.-

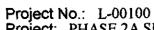
Project No.: L-00100

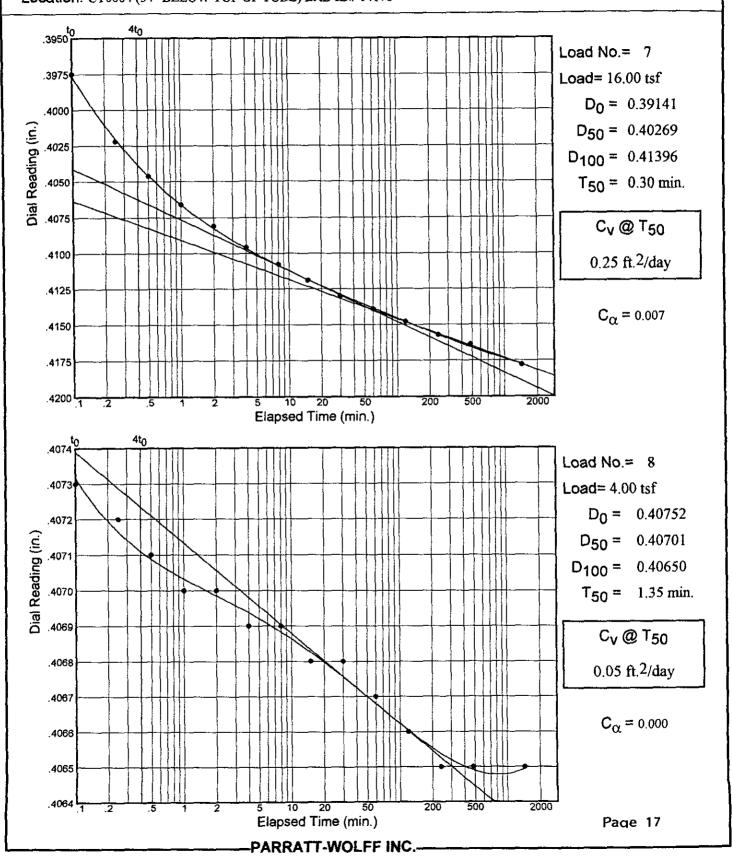
Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3

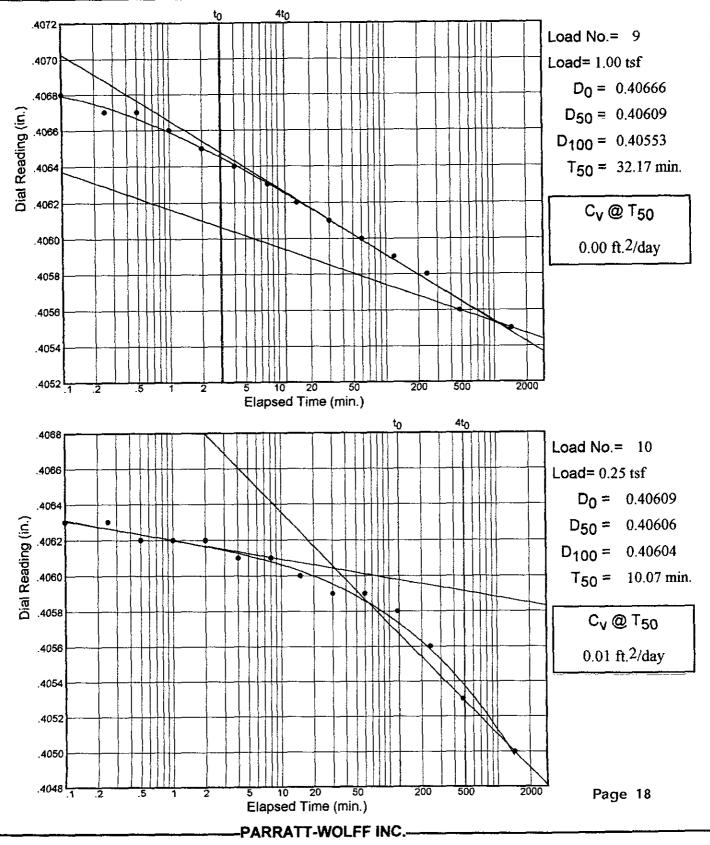












CONSOLIDATION TEST DATA

Client: EXPONENT ENVIRONMENTAL GROUP Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Project Number: L-00100

Sample Data

Source: L-00100 Sample No.: LAB ID# 14178 Elev. or Depth: Sample Length (in./cm.): Location: CT0004 (54" BELOW TOP OF TUBE) LAB ID# 14178 Description: SEDIMENT Liquid Limit: NON-P Plasticity Index: NON-P USCS: ML AASHTO: Figure No.: 2 Testing Remarks:

Test Specimen Data

TOTAL SAMPLE	BEFORE TEST	AFTER TEST
Wet w+t = 152.35 g.	Consolidometer $# = 1$	Wet w+t = 120.83 g.
Dry w+t = 105.04 g .		Dry w+t = 103.45 g.
Tare Wt. = 75.25 g.	Spec. Gravity = 2.02	Tare Wt. = 75.25 g.
Height = . 75 in.	Height = . 75 in.	
Diameter = 2.50 in.	Diameter = 2.50 in.	
Weight = 29.79 g.	Defl. Table = ring #1 (i	nches/tsf)
Moisture = 158.8 %	Ht. Solids = 0.1733 in.	Moisture = 61.6 %
Wet Den. = 30.7 pcf	Dry Wt. = 11.51 g.	Dry Wt . = 28.20 g.*
Dry Den. = 11.9 pcf	Void Ratio = 3.340 Saturation = 96.1 %	Void Ratio = 1.154

* Final dry weight used in calculations

End-of-Load Summary									
Pressure (tsf) start	Final Dial (in.) 0.02630	Machine Defl. (in.)	C _v (ft. ² /day)	cα	Void Ratio 3.340	<pre>% Compression /Swell</pre>			
0.25 0.50	0.08310 0.13340	0.00160 0.00240	0.04	0.003	3.021 2.736	7.3 Comprs. 13.9 Comprs.			
1.00	0.19330	0.00370	0.93	0.005	2.398	21.7 Comprs.			
2.00	0.25390	0.00510	0.48	0.006	2.056	29.6 Comprs.			
4.00	0.31230	0.00680	0.50	0.005	1.729	37.1 Comprs.			
8.00	0.36740	0.00890	0.47	0.005	1.423	44.2 Comprs.			
16.00	0.41780	0.00000	0.25	0.007	1.081	52.1 Comprs.			
4.00	0.41340	0.00690	0.05	0.000	1.146	50.6 Comprs.			
1.00	0.41060	0.00510	0.00		1.152	50.4 Comprs.			
0.25	0.40870	0.00370	0.01		1.154	50.4 Comprs.			

Pressure: 0.25 tsf				TEST REAL	DINGS	Load No. 1	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading		
1	0.00	0.02630	11	60.00	0.07980	-069	
2 3 4	0.10 0.25 0.50	0.06720 0.06830 0.06850	12 13 14	120.00 240.00 480.00	0.08050 0.08110 0.08190	.071 .073 .075 .077	
5 6 7	1.00 2.00 4.00	0.06900 0.06950 0.06970	15	1440.00	0.08310	.077 .079 .081 .083	
8 9 10	4.00 8.00 15.00 30.00	0.07610 0.07750 0.07880				.085 4.1.9.19 1 2 15 1 2 15 1 200 1000 - 1-1	

Pressure: 0.50 tsf			TEST READINGS			Load No. 2
No. 1 2 3 4 5 6 7 8 9 10	Elapsed Time 0.00 0.10 0.25 0.50 1.00 2.00 4.00 8.00 15.00 30.00	Dial Reading 0.08310 0.10300 0.11680 0.11750 0.12070 0.12260 0.12260 0.12480 0.12620 0.12750 0.12860	No. 11 12 13 14 15	Elapsed Time 60.00 120.00 240.00 480.00 1440.00	Dial Reading 0.12930 0.12990 0.13100 0.13210 0.13340	$ \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array}\\ \end{array}\\ \end{array}\\ \begin{array}{c} \end{array}\\ \end{array}$ \left(\begin{array}{c} \end{array}\\ \end{array}\\ \begin{array}{c} \end{array}\\ \end{array} \left(\begin{array}{c} \end{array}\\ \end{array}\\ \left(\begin{array}{c} \end{array}\\ \end{array}\\ \end{array} \left(\begin{array}{c} \end{array} \left(\begin{array}{c} \end{array}\right) \left(\begin{array}{c} \end{array} \left(\begin{array}{c} \end{array}\right) \left(\begin{array}{c} \end{array} \left(\begin{array}{c} \end{array}\right) \left(\begin{array}{c} \end{array}\right) \left(\begin{array}{c} \end{array} \left(\begin{array}{c} \end{array}\right) \left(\begin{array}{c} \end{array} \left(\begin{array}{c} \end{array} \left(\begin{array}{c} \end{array}\right) \left(\begin{array}{c} \end{array} \left(\begin{array}{c} \end{array}) \left(\begin{array}{c} \end{array}) \left(\begin{array}{c} \end{array} \left(\begin{array}{c} \end{array}) \left(\left) \left) \left(\left) \left(\left) \left(\left) \left) \left(\left) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)

Void Ratio = 2.736	Compression = 13.9 %
$D_0 = 0.08150 D_{50}$	= 0.10504 D ₁₀₀ $= 0.12857$
	.70 ft.2/day $C_{\alpha} = 0.004$

Pressure: 1.00 tsf			TEST READINGS			Load No.
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	158 - 158
1	0.00	0.13340	11	60.00	0.18950	
2	0.10	0.16600	12	120.00	0.19020	.170
3	0.25	0.17480	13	240.00	0.19100	
4	0.50	0.17850	14	480.00	0.19190	.102
5	1.00	0.18100	15	1440.00	0.19330	.196
6	2.00	0.18300				.190
7	4.00	0.18470				
8	8.00	0.18620				.1 .512 5 20 200
9	15.00	0.18730				
10	30.00	0.18840				

Void Ratio = 2.398Compression = 21.7 % $D_0 = 0.15183$ $D_{50} = 0.16894$ $D_{100} = 0.18604$ C_v at 0.2 min. = 0.93 ft.2/day $C_{\alpha} = 0.005$

Pressure: 2.00 tsf			TEST READINGS			Load No. 4	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.224 to 4to .227	
1	0.00	0.19330	11	60.00	0.24950	.230	
2	0.10	0.23010	12	120.00	0.25050	.233	
3	0.25	0.23610	13	240.00	0.25130	.239	
4	0.50	0.23910	14	480.00	0.25220	.242	
5	1.00	0.24160	15	1440.00	0.25390	.245	
6	2.00	0.24350				.246	
7	4.00	0.24570				254 1 25 1 2 5 20 200	
8	8.00	0.24660				.1 .51 2 5 200 200	
9	15.00	0.24760					
10	30.00	0.24860					

Void Ratio = 2	.056 Compressi	.on = 29.6 %
$D_0 = 0.21710$	$D_{50} = 0.23204$	$D_{100} = 0.24697$
C_{v} at 0.3 min.	$= 0.48 \text{ ft.}^2/\text{day}$	$c_{\alpha} = 0.006$

Pressure: 4.00 tsf				TEST REAL	DINGS	Load No. 5	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading		
1	0.00	0.25390	11	60.00	0.30870	.286	
2	0.10	0.29010	12	120.00	0.30950		
3	0.25	0.29600	13	240.00	0.31030	.295	
4	0.50	0.29860	14	480.00	0.31110	.298	
5	1.00	0.30110	15	1440.00	0.31230	.301	
6	2.00	0.30290				. 304	
7	4.00	0.30440				310 - 1 - 5 - 1 - 2 - 5 - 20 - 200	
8	8.00	0.30570				.1 .31 2 20 200	
9	15.00	0.30670					
10	30.00	0.30780					

Void Ratio = 1.729Compression = 37.1 % $D_0 = 0.27584$ $D_{50} = 0.28877$ $D_{100} = 0.30171$ C_v at 0.2 min. = 0.50 ft.2/day $C_{\alpha} = 0.005$

Pressure: 8.00 tsf				TEST REAL	DINGS	Load No. 6	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.328 ^t 0 ^{4t} 0 .332	
1	0.00	0.31230	11	60.00	0.36380	. 336	
2	0.10	0.34160	12	120.00	0.36460		
3	0.25	0.35030	13	240.00	0.36540	. 344	
4	0.50	0.35390	14	480.00	0.36630	. 348	
5	1.00	0.35610	15	1440.00	0.36740	.356	
6	2.00	0.35790				.360	
7	4.00	0.35950				.364 .369 .369 .359 .35125 .20 200	
8	8.00	0.36080				.300 .1 .5 1 2 5 20 200	
9	15.00	0.36180					
10	30.00	0.36290					

Void Ratio = 1	.423 Compression	= 44.2 %
$D_0 = 0.32242$	$D_{50} = 0.33952 D_1$	loo = 0.35662
C_v at 0.2 min.		$C_{\alpha} = 0.005$

Pressure: 16.00 tsf			TEST READINGS			Load No.
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.3950 4to .3975
1	0.00	0.36740	11	60.00	0.41390	.4000
2	0.10	0.39750	12	120.00	0.41480	.4025
3	0.25	0.40220	13	240.00	0.41570	
4	0.50	0.40460	14	480.00	0.41640	.4075
5	1.00	0.40660	15	1440.00	0.41780	.4125
6	2.00	0.40810				.4150
7	4.00	0.40960				4200 1 2 5 20 200
8	8.00	0.41080				.1 .5 1 2 5 20 200
9	15.00	0.41190				
10	30.00	0.41300				

Void Ratio = 1.081Compression = 52.1 % $D_0 = 0.39141$ $D_{50} = 0.40269$ $D_{100} = 0.41396$ C_v at 0.3 min. = 0.25 ft.2/day $C_{\alpha} = 0.007$

Pressure: 4.00 tsf			TEST READINGS			Load No. 8	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.4074 0 4to	
1	0.00	0.41780	11	60.00	0.41360	.4072	
2	0.10	0.41420	12	120.00	0.41350	.4071	
3	0.25	0.41410	13	240.00	0.41340		
4	0.50	0.41400	14	480.00	0.41340	.4069	
5	1.00	0.41390	15	1440.00	0.41340	.4067	
6	2.00	0.41390				.4066	
7	4.00	0.41380					
8	8.00	0.41380				.1 .51 2 5 20 200	
9	15.00	0.41370					
10	30.00	0.41370					

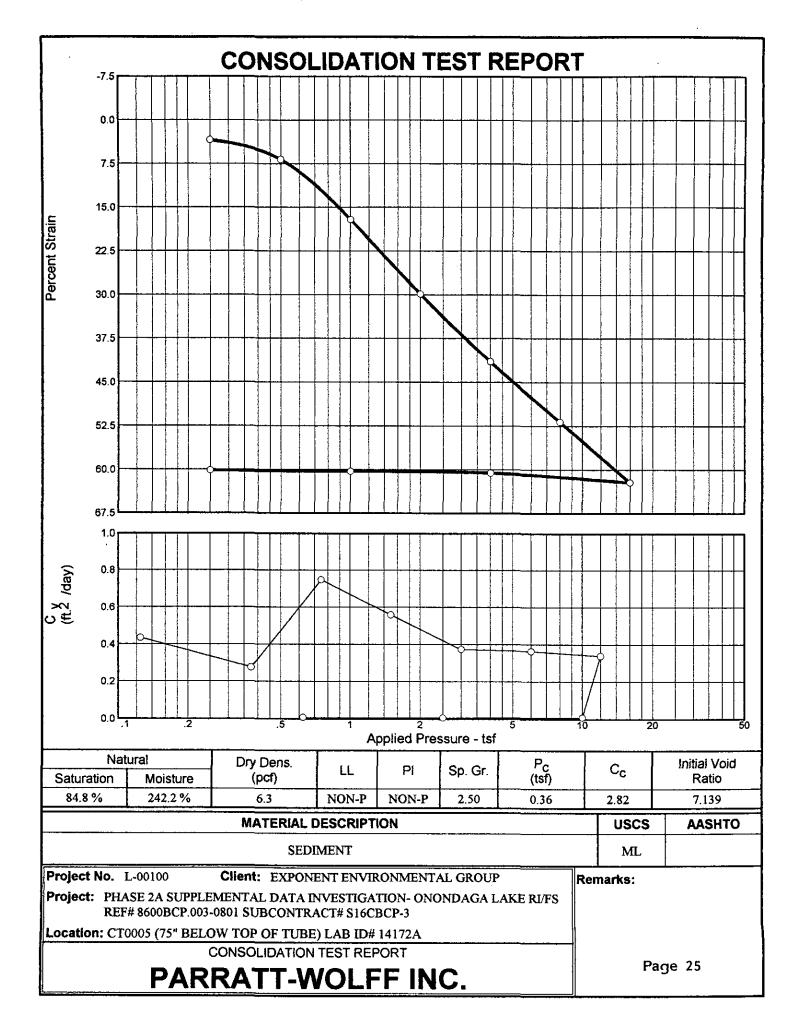
Void Ratio = 1	.146	Compressi	on = 50.6 %
$D_0 = 0.40752$	$D_{50} =$	0.40701	$D_{100} = 0.40650$
C_v at 1.4 min.	= 0.0	5 ft.2/day	$c_{\alpha} = 0.000$

Pressure: 1.00 tsf		TEST READINGS			Load No. 9	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	
1	0.00	0.41340	11	60.00	0.41110	4068
2	0.10	0.41190	12	120.00	0.41100	. 4066
3	0.25	0.41180	13	240.00	0.41090	.4064
4	0.50	0.41180	14	480.00	0.41070	.4060
5	1.00	0.41170	15	1440.00	0.41060	. 4058
6	2.00	0.41160				.4056
7	4.00	0.41150				
8	8.00	0.41140				.4052 .1 .5 1 2 5 20 200
9	15.00	0.41130				
10	30.00	0.41120				

Void Ratio = 1.152 Compression = 50.4 % $D_0 = 0.40666$ $D_{50} = 0.40609$ $D_{100} = 0.40553$ C_v at 32.2 min. = 0.00 ft.2/day

Pressure: 0.25 tsf				TEST REAL	DINGS	Load No. 10
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.4068 .4066
1	0.00	0.41060	11	60.00	0.40960	.4064
2	0.10	0.41000	12	120.00	0.40950	.4062
3	0.25	0.41000	13	240.00	0.40930	.4058
4	0.50	0.40990	14	480.00	0.40900	.4056
5	1.00	0.40990	15	1440.00	0.40870	. 4054
6	2.00	0.40990				.4052
7	4.00	0.40980				4050
8	8.00	0.40980				.4049 .1 .5 1 2 5 20 200
9	15.00	0.40970				
10	30.00	0.40960				

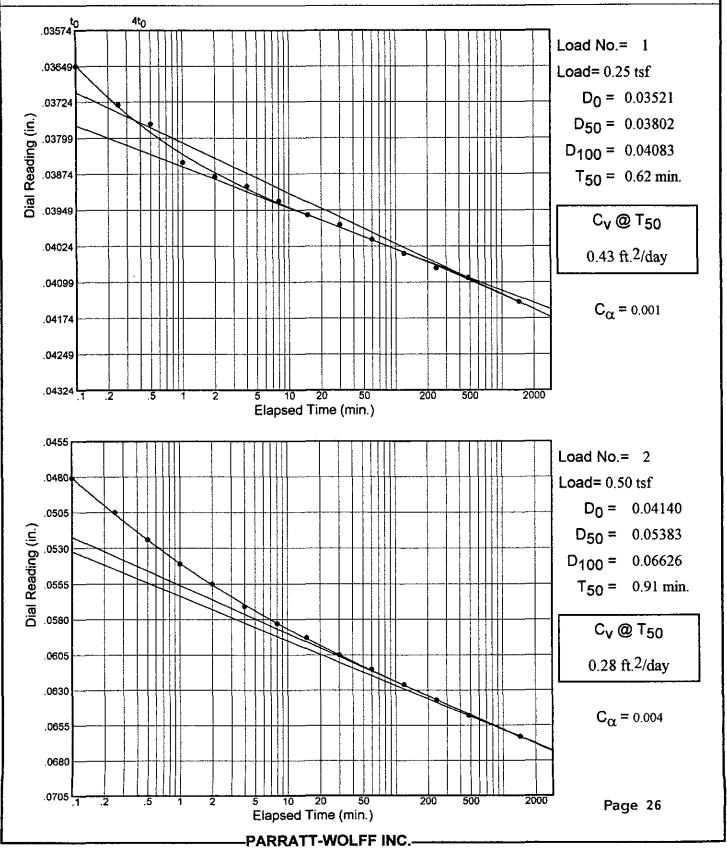
Void Ratio = 1.154	Compression =	50.4 %
$D_0 = 0.40609$ $D_{50} =$	0.40606 D100	= 0.40604
C_v at 10.1 min. = 0.	01 ft.2/day	



Project No.: L-00100

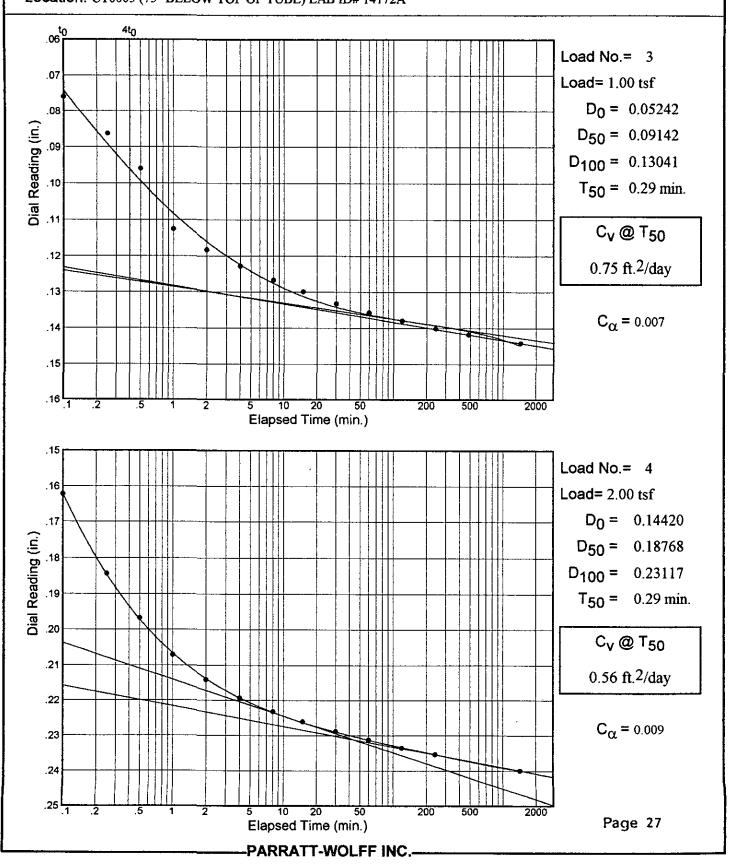
Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3

Location: CT0005 (75" BELOW TOP OF TUBE) LAB ID# 14172A

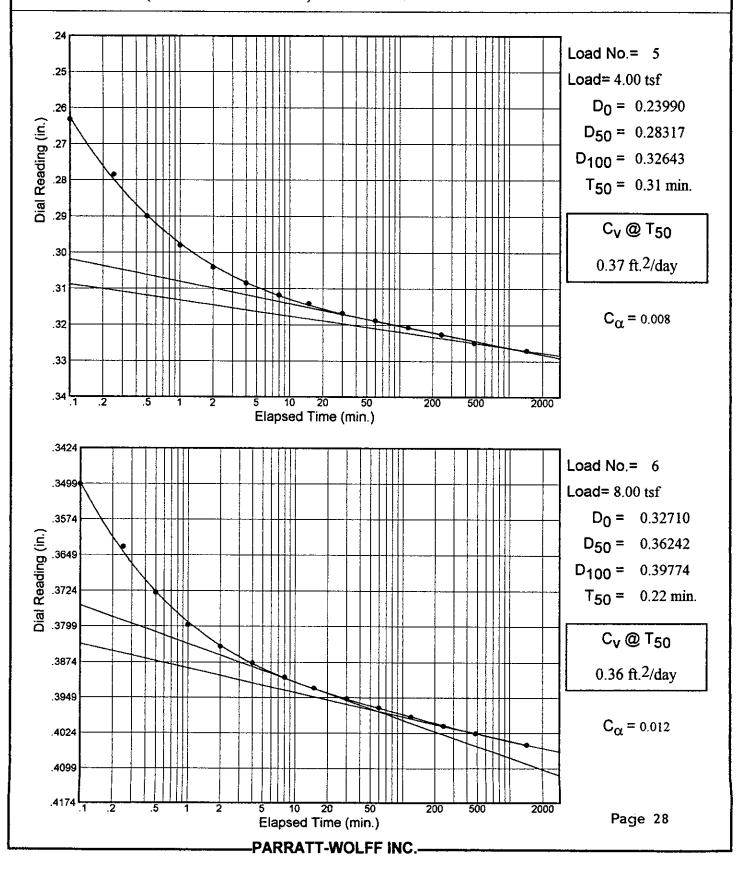


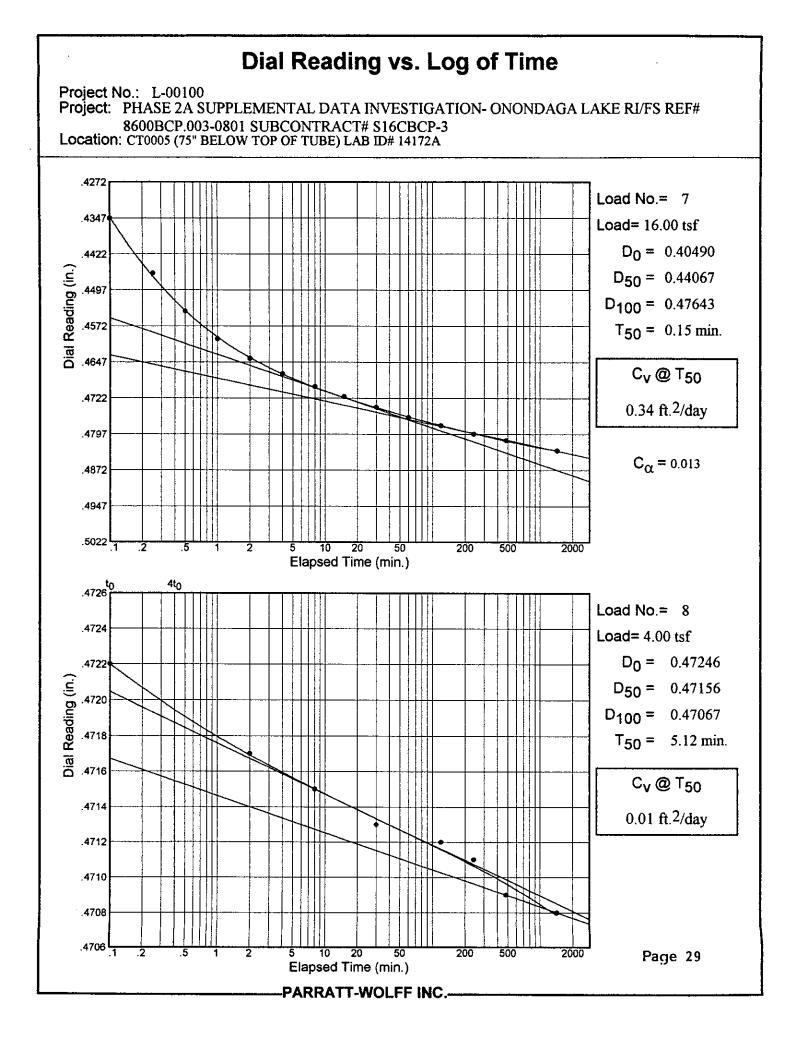
Project No.: L-00100

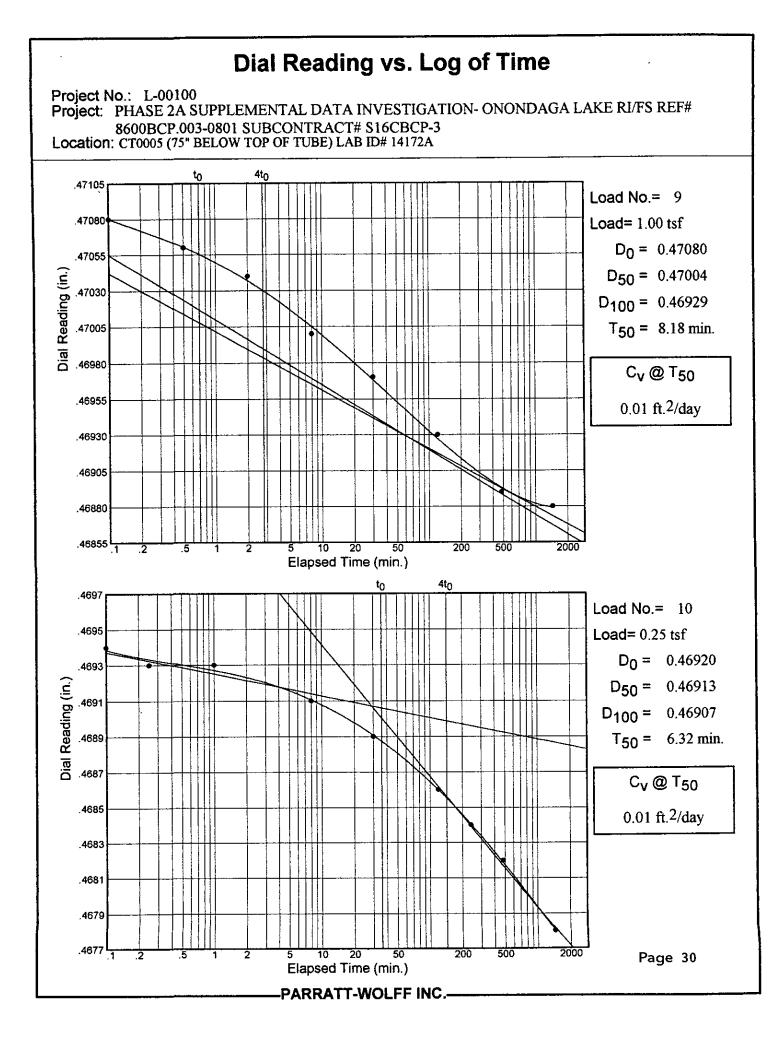
Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Location: CT0005 (75" BELOW TOP OF TUBE) LAB ID# 14172A



Project No.: L-00100 Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Location: CT0005 (75" BELOW TOP OF TUBE) LAB ID# 14172A







CONSOLIDATION TEST DATA

Client: EXPONENT ENVIRONMENTAL GROUP Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Project Number: L-00100

Sample Data

Source: L-00100 Sample No.: LAB ID# 14172A Elev. or Depth: Sample Length (in./cm.): Location: CT0005 (75" BELOW TOP OF TUBE) LAB ID# 14172A Description: SEDIMENT Liquid Limit: NON-P Plasticity Index: NON-P USCS: ML AASHTO: Figure No.: 3 Testing Remarks:

Test Specimen Data

Wet w+t	SAMPLE = 146.70 g. = 96.09 g.	BEFORE TEST Consolidometer # = 1	AFTER TEST Wet w+t = 112.14 g. Dry w+t = 93.80 g.
. Tare Wt. Height Diameter	= 75.19 g. = .75 in. = 2.50 in. = 20.90 g.	Spec. Gravity = 2.50 Height = .75 in. Diameter = 2.50 in. Defl. Table = ring #1 (inc	Tare Wt. = 75.19 g.
Wet Den.	= 242.2 % = 21.5 pcf = 6.3 pcf	Ht. Solids = 0.0924 in. Dry Wt. = 6.11 g. Void Ratio = 7.139 Saturation = 84.8 %	Moisture = 98.6 % Dry Wt. = 18.61 g.* Void Ratio = 2.243

* Final dry weight used in calculations

	End-of-Load Summary									
Pressure (tsf) start	Final Dial (in.) 0.01540	Machine Defl. (in.)	C _v (ft. ² /day)	c_{α}	Void Ratio 7.139	<pre>% Compression /Swell</pre>				
0.25 0.50 1.00 2.00 4.00 8.00 16.00 4.00	0.04300 0.06870 0.14790 0.24500 0.33390 0.41380 0.48310 0.47770	0.00160 0.00240 0.00370 0.00510 0.00680 0.00890 0.00000 0.00690	0.43 0.28 0.75 0.56 0.37 0.36 0.34 0.01	0.001 0.004 0.007 0.009 0.008 0.012 0.013	6.858 6.588 5.745 4.709 3.765 2.923 2.077 2.210	3.5 Comprs. 6.8 Comprs. 17.1 Comprs. 29.9 Comprs. 41.5 Comprs. 51.8 Comprs. 62.2 Comprs. 60.6 Comprs.				
1.00	0.47390 0.47150	0.00510 0.00370	0.01 0.01		2.232 2.243	60.8 Comprs. 60.3 Comprs. 60.2 Comprs.				

Pressure: 0.25 tsf				TEST REAL	DINGS	Load No. 1
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.03574
1	0.00	0.01540	11	60.00	0.04170	.03724
2 3 4 5 6 7 8 9 10	$\begin{array}{c} 0.10\\ 0.25\\ 0.50\\ 1.00\\ 2.00\\ 4.00\\ 8.00\\ 15.00\\ 30.00 \end{array}$	0.03810 0.03890 0.03930 0.04010 0.04040 0.04060 0.04090 0.04120 0.04140	12 13 14 15	120.00 240.00 480.00 1440.00	0.04200 0.04230 0.04250 0.04300	.03799 .03874 .03949 .04024 .04099 .04174 .04249 .04324 .1 .5 1 2 5 20 200

Pressure: 0.50 tsf			TEST REAL	DINGS	Load No. 2	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.0455 .0480
1	0.00	0.04300	11	60.00	0.06390	.0505
2 3	0.10	0.05050 0.05290	12 13	120.00 240.00	0.06500 0.06610	.0530 .0555 .0580
4 5 6	0.50 1.00 2.00	0.05480 0.05650 0.05790	14 15	480.00 1440.00	0.06720 0.06870	.0605 .0630 .0655
7 8	4.00 8.00	0.05950 0.06070				.0680 .0705 .1 .5 1 2 5 20 200
9 10	15.00 30.00	0.06170 0.06290				

Void Ratio = 6.588	Compression = 6.8 %
$D_0 = 0.04140$ $D_{50} =$	$= 0.05383 D_{100} = 0.06626$
C_v at 0.9 min. = 0.2	28 ft. ² /day $C_{\alpha} = 0.004$

Press	sure: 1.00	tsf	TEST READINGS			Load No. 3
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	
1	0.00	0.06870	11	60.00	0.13940	. 09
2	0.10	0.07980	12	120.00	0.14170	.09
3	0.25	0.09000	13	240.00	0.14380	
4	0.50	0.09970	14	480.00	0.14550	
5	1.00	0.11630	15	1440.00	0.14790	
6	2.00	0.12200			0021000	
7	4.00	0.12660				
8	8.00	0.13040				16 1 5 1 2 5 20 200 2000
9	15.00	0.13360				
10	30.00	0.13690				

Void Ratio = 5.745Compression = 17.1 % $D_0 = 0.05242$ $D_{50} = 0.09142$ $D_{100} = 0.13041$ C_v at 0.3 min. = $0.75 \text{ ft.}^2/\text{day}$ $C_{\alpha} = 0.007$

Pressure: 2.00 tsf			TEST READINGS			Load No. 4
No .	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.15
1	0.00	0.14790	11	60.00	0.23630	.16
2	0.10	0.16740	12	120.00	0.23860	
3	0.25	0.18940	13	240.00	0.24050	.19
4	0.50	0.20180	14	1440.00	0.24500	.20
5	1.00	0.21230				.22
6	2.00	0.21930				.23
7	4.00	0.22440				-24
8	8.00	0.22830				.25 .1 .5 1 2 5 20 200 2000
9	15.00	0.23110				
10	30.00	0.23390				

Void Ratio = 4.709	Compression = 29.9 %
$D_0 = 0.14420 D_{50}$	$P = 0.18768 D_{100} = 0.23117$
C_{v} at 0.3 min. = ($c_{\alpha} = 0.009$

Pressure: 4.00 tsf				TEST REAL	DINGS	Load No. 5
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	-24 -25
1	0.00	0.24500	11	60.00	0.32560	.26
2 3	0.10 0.25	0.27000 0.28520	12 13	120.00 240.00	0.32750 0.32950	.27 .28
4	0.23	0.29680	14	480.00	0.33180	.29
5	1.00	0.30490	15	1440.00	0.33390	
6 7	2.00 4.00	0.31090 0.31520				
8 9	8.00 15.00	0.31860 0.32090				.51 .5 1 2 5 20 200 2000
10	30.00	0.32350				

Void Ratio = 3.765Compression = 41.5 % $D_0 = 0.23990$ $D_{50} = 0.28317$ $D_{100} = 0.32643$ C_v at 0.3 min. = 0.37 ft.2/day $C_{\alpha} = 0.008$

Pressure: 8.00 tsf			TEST READINGS			Load No. 6	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	- 3424 - 3499	
1	0.00	0.33390	11	60.00	0.40590	- 3574	
2	0.10	0.35890	12	120.00	0.40790	.3649	
3	0.25	0.37210	13	240.00	0.40980	. 3724	
4	0.50	0.38170	14	480.00	0.41140	.3874	
5	1.00	0.38850	15	1440.00	0.41380	. 3949	
6	2.00	0.39300				.4024	
7	4.00	0.39650				. 4099	
8	8.00	0.39950				-4174 -1 -5 1 2 5 20 200	
9	15.00	0.40180					
10	30.00	0.40400					

Void Ratio = 2	.923 Compressi	.on = 51.8 %
D₀ = 0.32710	D 50 = 0.36242	$P_{100} = 0.39774$
C_v at 0.2 min.	$= 0.36 \text{ ft.}^2/\text{day}$	$C_{\alpha} = 0.012$

Pressure: 16.00 tsf			TEST READINGS				Load No.
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.4272	
1	0.00	0.41380	11	60.00	0.47620	.4422	
2	0.10	0.43470	12	120.00	0.47790	.4497	
3	0.25	0.44620	13	240.00	0.47960	.4572	
4	0.50	0.45410	14	480.00	0.48100	.4722	
5	1.00	0.45990	15	1440.00	0.48310	.4797	
6	2.00	0.46400				. 4872	
7	4.00	0.46710				. 4947	
8	8.00	0.46980				. 5022 .1 .5 1 2 5	20 200
9 10	15.00 30.00	0.47190 0.47410					

Void Ratio = 2.077Compression = 62.2 % $D_0 = 0.40490$ $D_{50} = 0.44067$ $D_{100} = 0.47643$ C_v at 0.2 min. = 0.34 ft.2/day $C_{\alpha} = 0.013$

Pressure: 4.00 tsf

TEST READINGS

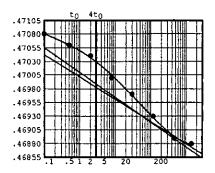
Load No. 8

7

No.	Elapsed Time	Dial Reading	4726
1	0.00	0.48310	
2	0.10	0.47910	
3	2.00	0.47860	.4718
4	8.00	0.47840	.4714
5	30.00	0.47820	.4712
6	120.00	0.47810	
7	240.00	0.47800	.4708
8	480.00	0.47780	.4705.1 .5 1 2 5 20 200
9	1440.00	0.47770	
Waid Patie - 2 210	Com		

Void Ratio = 2.210 Compression = 60.6 % $D_0 = 0.47246$ $D_{50} = 0.47156$ $D_{100} = 0.47067$ C_v at 5.1 min. = 0.01 ft.2/day TEST READINGS

Load No. 9

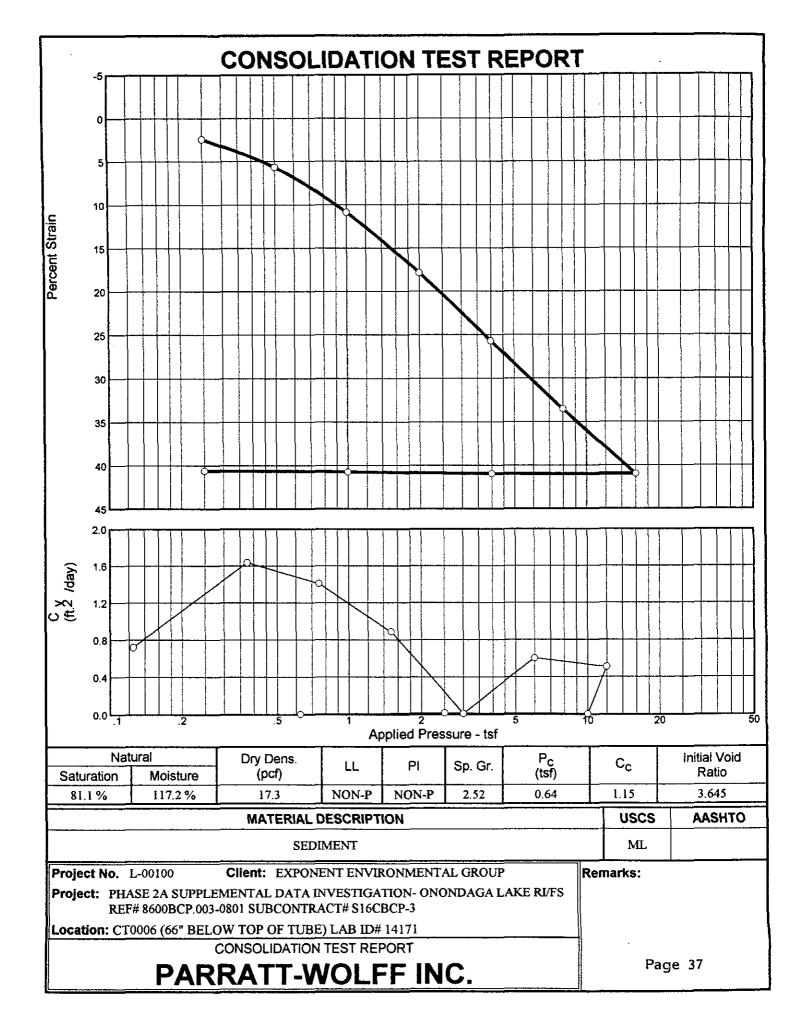


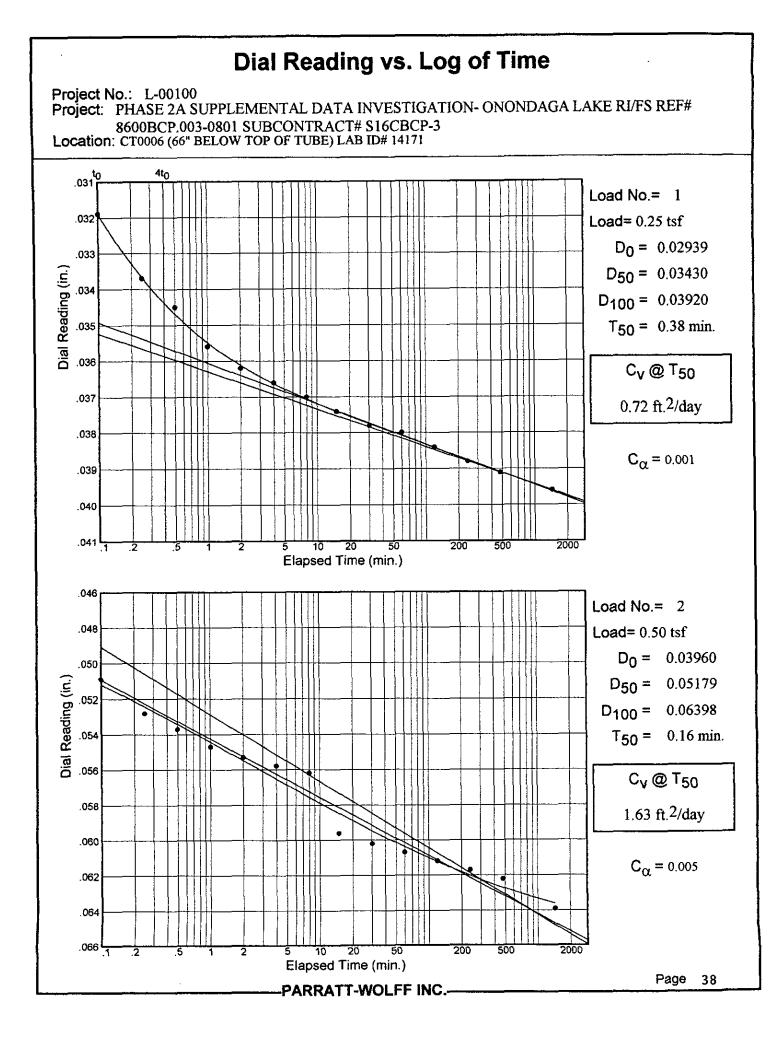
No.	Elapsed Time	Dial Reading
1	0.00	0.47770
2	0.10	0.47590
3	0.50	0.47570
4	2.00	0.47550
5	8.00	0.47510
6	30.00	0.47480
7	120.00	0.47440
8	480.00	0.47400
9	1440.00	0.47390

Void Ratio = 2.232 Compression = 60.3 %D₀ = 0.47080 D₅₀ = 0.47004 D₁₀₀ = 0.46929 C_v at 8.2 min. = 0.01 ft.²/day

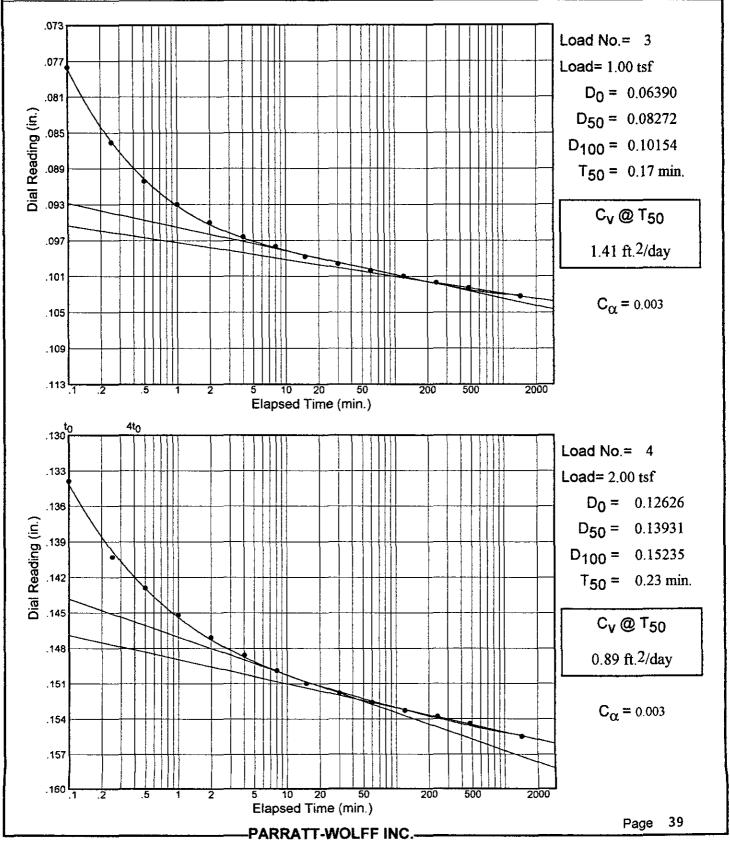
Pressure: 0.25 tsf		TEST READINGS	Load No. 10
No.	Elapsed Time	Dial Reading	.4697
1	0.00	0.47390	. 4693
2	0.10	0.47310	
3	0.25	0.47300	. 4699
4	1.00	0.47300	-4685
5	8.00	0.47280	.4683
6	30.00	0.47260	.4681
7	120.00	0.47230	
8	240.00	0.47210	.46// .1 .5 1 2 5 20 200
9	480.00	0.47190	
10	1440.00	0.47150	

Void Ratio = 2.243	Compression = 60.2 %
$D_0 = 0.46920$ D_{50}	= 0.46913 D₁₀₀ = 0.46907
C_{v} at 6.3 min. = 0	



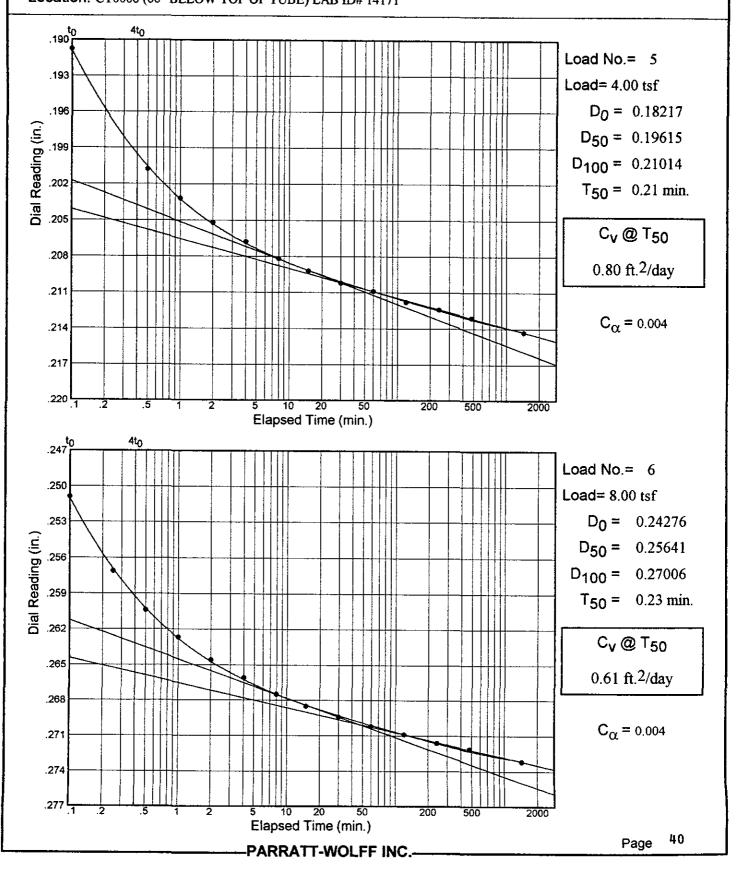


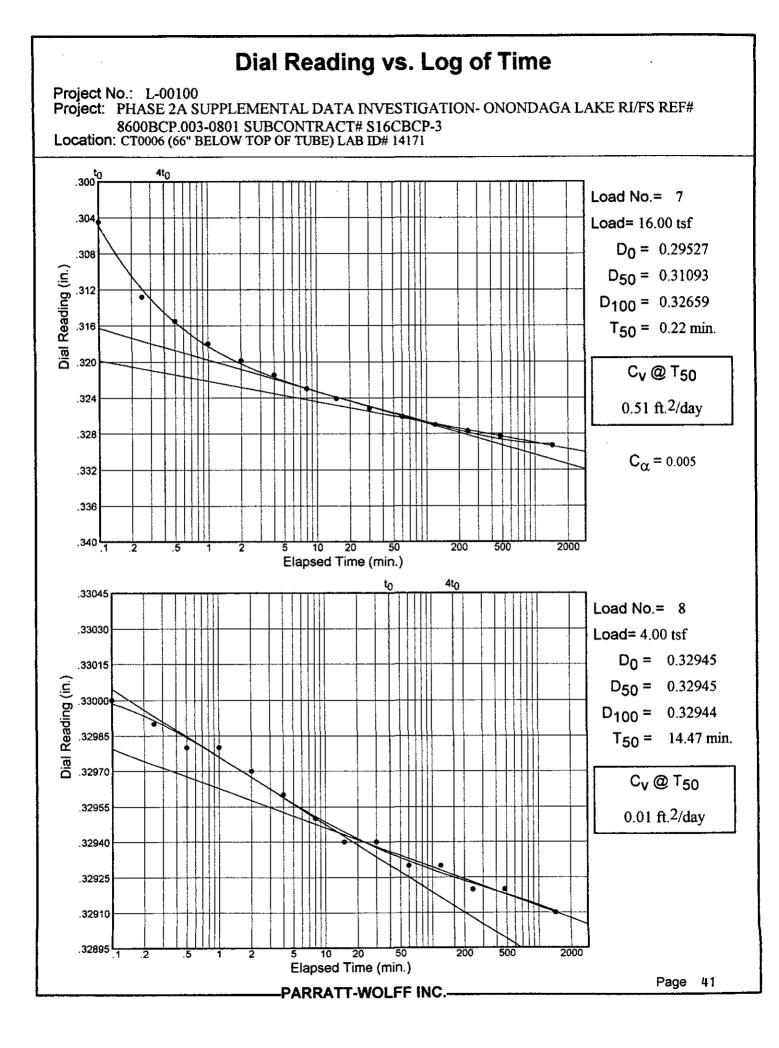
Project No.: L-00100 Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Location: CT0006 (66" BELOW TOP OF TUBE) LAB ID# 14171



Project No.: L-00100

Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Location: CT0006 (66" BELOW TOP OF TUBE) LAB ID# 14171





Project No.: L-00100

Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Location: CT0006 (66" BELOW TOP OF TUBE) LAB ID# 14171

4t₀ to .3293 Load No.= 9 .3291 Load = 1.00 tsf $D_0 = 0.32904$.3289 Dial Reading (in.) $D_{50} = 0.32845$.3287 $D_{100} = 0.32785$ $T_{50} = 6.15 \text{ min.}$.3285 .3283 C_v @ T₅₀ .3281 0.02 ft.2/day .3279 .3277 .3275 .3273 20 200 500 2000 5 Elapsed Time (min.) 4t₀ to .3284 Load No.= 10 .3282 Load= 0.25 tsf $D_0 = 0.32778$.3280 Dial Reading (in.) D₅₀ = 0.32758 .3278 $D_{100} = 0.32738$ $T_{50} = 32.48 \text{ min.}$.3276 .3274 C_v@T₅₀ .3272 0.00 ft.2/day .3270 .3268 .3266 .3264 200 20 500 2000 50 10 Elapsed Time (min.) Page 42 PARRATT-WOLFF INC.

CONSOLIDATION TEST DATA

Client: EXPONENT ENVIRONMENTAL GROUP Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Project Number: L-00100

Sample Data

Source: L-00100 Sample No.: LAB ID# 14171 Elev. or Depth: Sample Length (in./cm.): Location: CT0006 (66" BELOW TOP OF TUBE) LAB ID# 14171 Description: SEDIMENT Liquid Limit: NON-P Plasticity Index: NON-P USCS: ML AASHTO: Figure No.: Testing Remarks:

Test Specimen Data

Wet w+t =	AMPLE = 153.87 g. = 111.19 g.	BEFORE TEST Consolidometer # = 2	AFTER TEST Wet w+t = 128.46 g. Dry w+t = 107.60 g.
Tare Wt. = Height = Diameter =	74.78 g. 75 in. 2.50 in. 36.41 g.	Spec. Gravity = 2.52 Height = .75 in. Diameter = 2.50 in. Defl. Table = ring #2 (inc	Tare Wt. = 74.78 g.
	<pre>117.2 % 37.6 pcf 17.3 pcf</pre>	Ht. Solids = 0.1619 in. Dry Wt. = 16.76 g. Void Ratio = 3.645 Saturation = 81.1 %	Moisture = 63.6 % Dry Wt. = 32.82 g.* Void Ratio = 1.759

* Final dry weight used in calculations

•
2.5 Comprs. 5.7 Comprs. 10.9 Comprs. 17.9 Comprs. 25.7 Comprs. 33.5 Comprs. 41.0 Comprs.
1 0 5 1 1 8 5 2 8 2 3 3 9

$C_c = 1.15$ $P_c = 0.64$ tsf $C_r = 0.01$

Pressure: 0.25 tsf				TEST REAL	DINGS	Load No. 1	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.031 0 4to	
1	0.00	0.02120	11	60.00	0.03960	.033	
2 3	0.10 0.25	0.03350 0.03530	12 13	120.00 240.00	0.04000 0.04040	.034 .035 .036	
4	0.50	0.03610	14	480.00	0.04070	.037	
5 6 7 8 9 10	1.00 2.00 4.00 8.00 15.00 30.00	0.03720 0.03780 0.03820 0.03860 0.03900 0.03940	15	1440.00	0.04120	$ \begin{array}{c} 0.38 \\ 0.39 \\ 0.40 \\ 0.41 \\ 0.41 \\ 0.5 \\ 1 \\ 2 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$	

Void Ratio = 3.531Compression = 2.5 % $D_0 = 0.02939$ $D_{50} = 0.03430$ $D_{100} = 0.03920$ C_v at 0.4 min. = 0.72 ft.2/day $C_{\alpha} = 0.001$

Pressure: 0.50 tsf				TEST REAL	DINGS	Load No. 2
No .	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.046 .048
1	0.00	0.04120	11	60.00	0.06330	.048
2	0.10	0.05350	12	120.00	0.06380	. 052
3	0.25	0.05540	13	240.00	0.06430	.054
4	0.50	0.05630	14	480.00	0.06480	.056
5	1.00	0.05730	15	1440.00	0.06650	.060
6	2.00	0.05790				.062
7	4.00	0.05840				
8	8.00	0.05880				.066 - 1 - 51 - 2 - 5 - 20 - 200
9	15.00	0.06220				
10	30.00	0.06280				

Void Ratio = 3	.381 Compress :	ion = 5.7 %
D₀ = 0.03960	D₅₀ = 0.05179	$D_{100} = 0.06398$
C_v at 0.2 min.	=1.63 ft. ² /da	$c_{\alpha} = 0.005$

Pressure: 1.00 tsf			TEST READINGS			Load No. 3
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	
1	0.00	0.06650	11	60.00	0.10420	.081
2	0.10	0.08150	12	120.00	0.10480	.085 .089
3	0.25	0.08990	13	240.00	0.10550	.093
4	0.50	0.09420	14	480.00	0.10610	.097
5	1.00	0.09680	15	1440.00	0,10700	
6 7	$2.00 \\ 4.00$	0.09880 0.10040				
8 9	8.00 15.00	0.10150 0.10260				
10	30.00	0.10340				

Pressure: 2.00 tsf			TEST READINGS			Load No. 4	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.130 4to	
1	0.00	0.10700	11	60.00	0.15820	.136	
2	0.10	0.13950	12	120.00	0.15890		
3	0.25	0.14590	13	240.00	0.15940		
4	0.50	0.14850	14	480.00	0.16000	.145	
5	1.00	0.15080	15	1440.00	0.16110	.151	
6	2.00	0.15270					
7	4.00	0.15420				160	
8	8.00	0.15550				.1.5 1 2 5 20 200	
9	15.00	0.15660					
10	30.00	0.15740					

Void Ratio = 2.3	815 Compression = 17.9 %
$D_0 = 0.12626$ 1	$D_{50} = 0.13931$ $D_{100} = 0.15235$
	= 0.89 ft.2/day C_{α} = 0.003

Pressure: 4.00 tsf			TEST READINGS			Load No. 5	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.190 4to	
1	0.00	0.16110	11	120.00	0.21940	.196	
2	0.10	0.19840	12	240.00	0.22000	.199	
3	0.50	0.20840	13	480.00	0.22070	.205	
4	1.00	0.21080	14	1440.00	0.22190	.208	
5	2.00	0.21280					
6	4.00	0.21440				-214	
7	8.00	0.21580					
8	15.00	0.21680				.220 .1 .5 1 2 5 20 200	
9	30.00	0.21780					
10	60.00	0.21850					

Pressure: 8.00 tsf			TEST READINGS			Load No. 6	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading		
1	0.00	0.22190	11	60.00	0.28020	.253	
2	0.10	0.26090	12	120.00	0.28090	.259	
3	0.25	0.26710	13	240.00	0.28160		
4	0.50	0.27040	14	480.00	0.28210	.265	
5	1.00	0.27270	15	1440.00	0,28320	.268	
6	2.00	0.27460				.271	
7	4.00	0.27610					
8	8.00	0.27750				.2// .1 .5 1 2 5 20 200	
9	15.00	0.27850					
10	30.00	0.27940					

Void Ratio = 2.0	088 Compression = 33.5 %
$D_0 = 0.24276$	$D_{50} = 0.25641$ $D_{100} = 0.27006$
	= 0.61 ft. ² /day $C_{\alpha} = 0.004$

Pressure: 16.00 tsf				TEST REAL	DINGS	Load No.
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	300^{10} $4t_0$ 304 304
1	0.00	0.28320	11	60.00	0.33900	. 308
2	0.10	0.31740	12	120.00	0.33990	. 312
3	0.25	0.32570	13	240.00	0.34060	.316
4	0.50	0.32840	14	480.00	0.34120	. 324
5	1.00	0.33090	15	1440.00	0.34220	.328
6	2.00	0.33280				.332
7	4.00	0.33440				
8	8.00	0.33590				.340 $.1$ $.5$ 1 2 5 20 200
9	15.00	0.33700				
10	30.00	0.33810				

Void Ratio = 1.742Compression = 41.0 % $D_0 = 0.29527$ $D_{50} = 0.31093$ $D_{100} = 0.32659$ C_v at 0.2 min. = 0.51 ft.2/day $C_{\alpha} = 0.005$

Pressure: 4.00 tsf			TEST READINGS			Load No. 8	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading		
1	0.00	0.34220	11	60.00	0.33720	. 33015	
2	0.10	0.33790	12	120.00	0.33720	. 33000	
3	0.25	0.33780	13	240.00	0.33710	.32985	
4	0.50	0.33770	14	480.00	0.33710	.32955	
5	1.00	0.33770	15	1440.00	0.33700	. 32940	
6	2.00	0.33760				.32925	
7	4.00	0.33750				.32910	
8	8.00	0.33740				.32633 .1 .5 1 2 5 20 200	
9	15.00	0.33730					
10	30.00	0.33730					

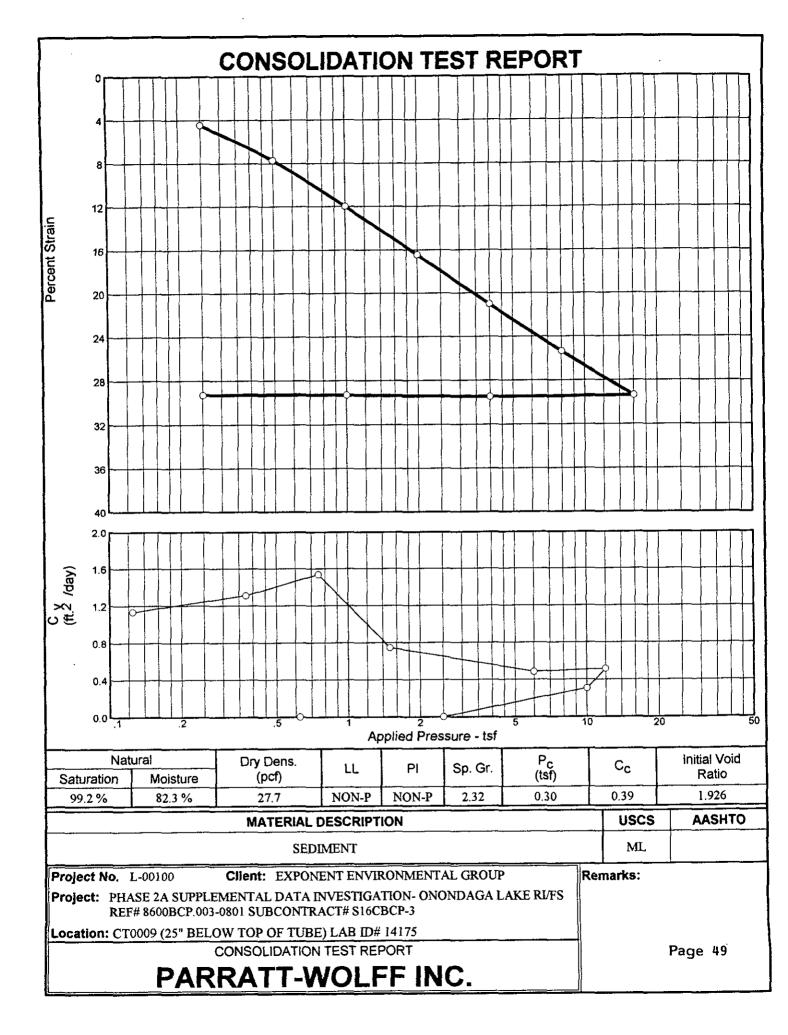
Void Ratio = 1.743	Compression = 40.9 %
$D_0 = 0.32945 D_{50}$	= 0.32945 D ₁₀₀ $= 0.32944$
C_{v} at 14.5 min. = (0.01 ft.2/day

Pressure: 1.00 tsf			TEST READINGS			Load No.	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	13293 t_0 $4t_0$ 13291 1000	
1	0.00	0.33700	11	60.00	0.33370	. 3289 MAN	
2	0.10	0.33470	12	120.00	0.33350	.3207	
3	0.25	0.33460	13	240.00	0.33340	.3283	
4	0.50	0.33460	14	480.00	0.33330	.3201	
5	1.00	0.33440	15	1440.00	0.33310		
6	2.00	0.33430				.3277	
7	4.00	0.33420				3273	
8	8.00	0.33410				.1 .512 5 20 200	
9	15.00	0.33400					
10	30.00	0.33390					

Void Ratio = 1.753 Compression = 40.7 % $D_0 = 0.32904$ $D_{50} = 0.32845$ $D_{100} = 0.32785$ C_v at 6.2 min. = 0.02 ft.²/day

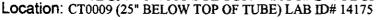
Pressure: 0.25 tsf				TEST REAL	DINGS	Load No. 10	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading		
1	0.00	0.33310	11	60.00	0.33150	. 3290	
2	0.10	0.33210	12	120.00	0.33130	. 3278	
3	0.25	0.33210	13	240.00	0.33120	.3274	
4	0.50	0.33200	14	480.00	0.33100	.3272	
5	1.00	0.33190	15	1440.00	0.33050	. 3270	
6	2.00	0.33190				.3268	
7	4.00	0.33190				3254 1 512 5 20 200	
8	8.00	0.33170				.1 .51 2 5 20 200	
9	15.00	0.33170					
10	30.00	0.33160					

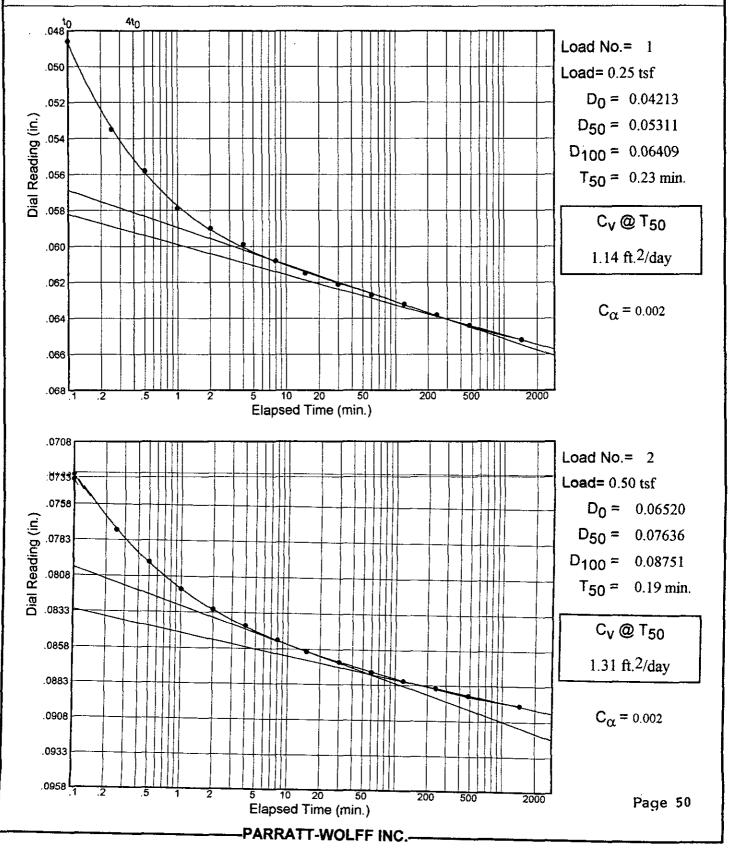
Void Ratio = 1.759	Compression = 40.6 %
$D_0 = 0.32778 D_{50}$	= 0.32758 D ₁₀₀ $= 0.32738$
C_{v} at 32.5 min. = 0).00 ft.2/day

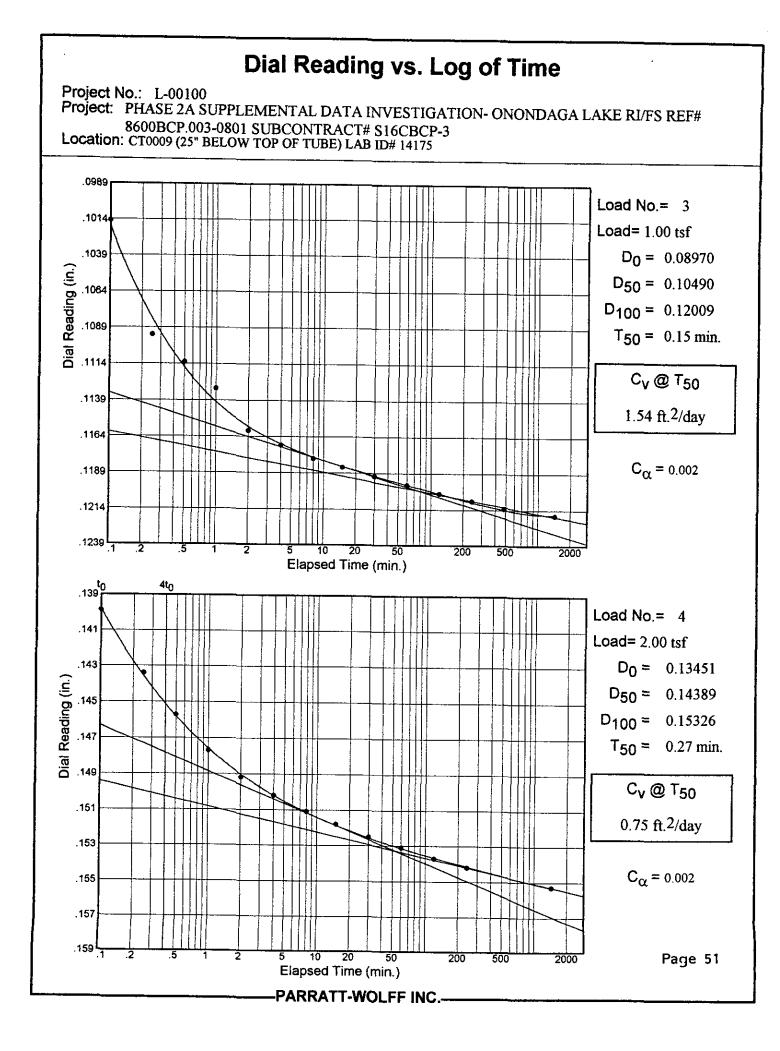


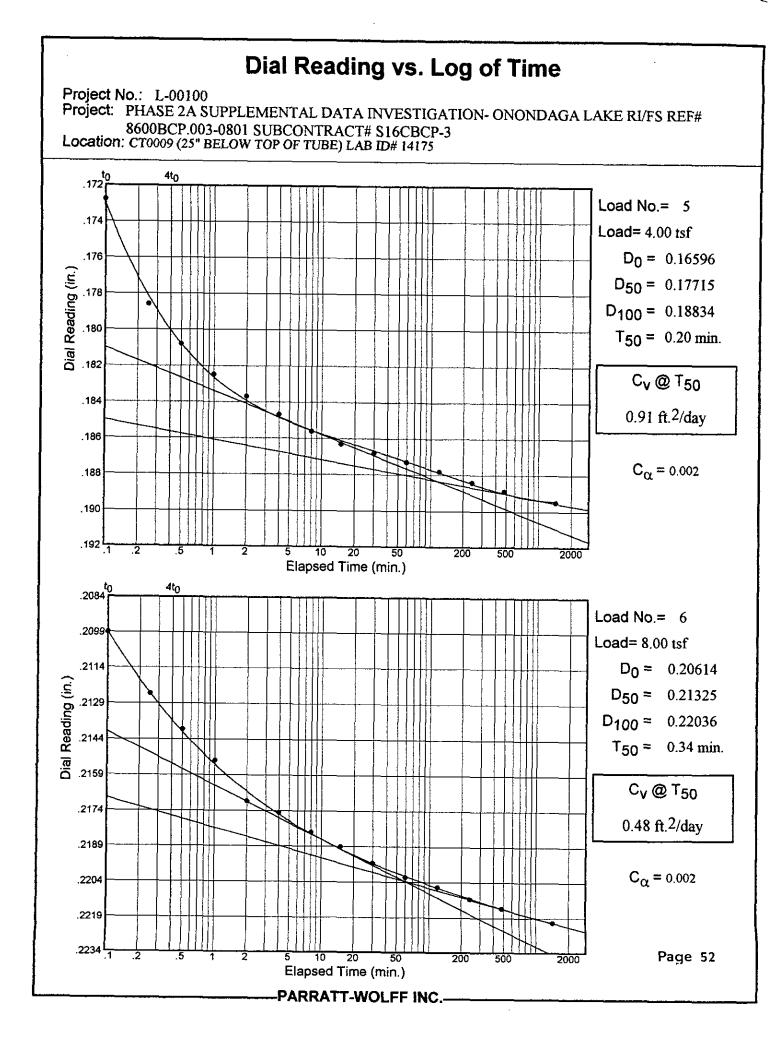
Project No.: L-00100

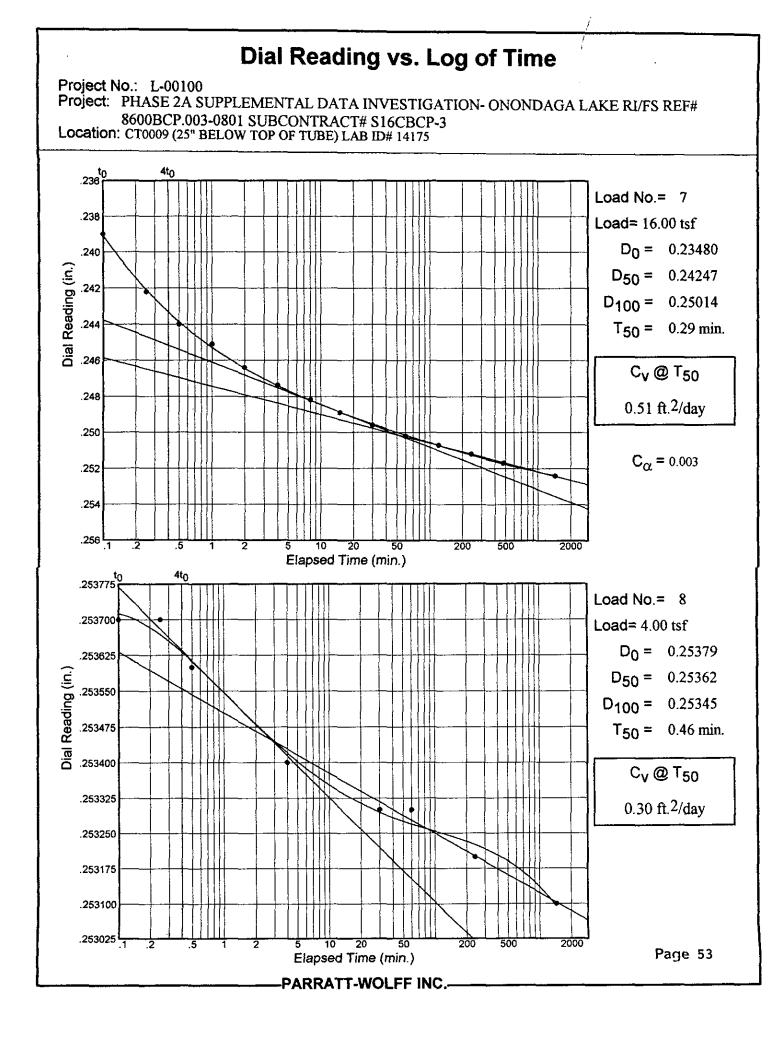
Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3

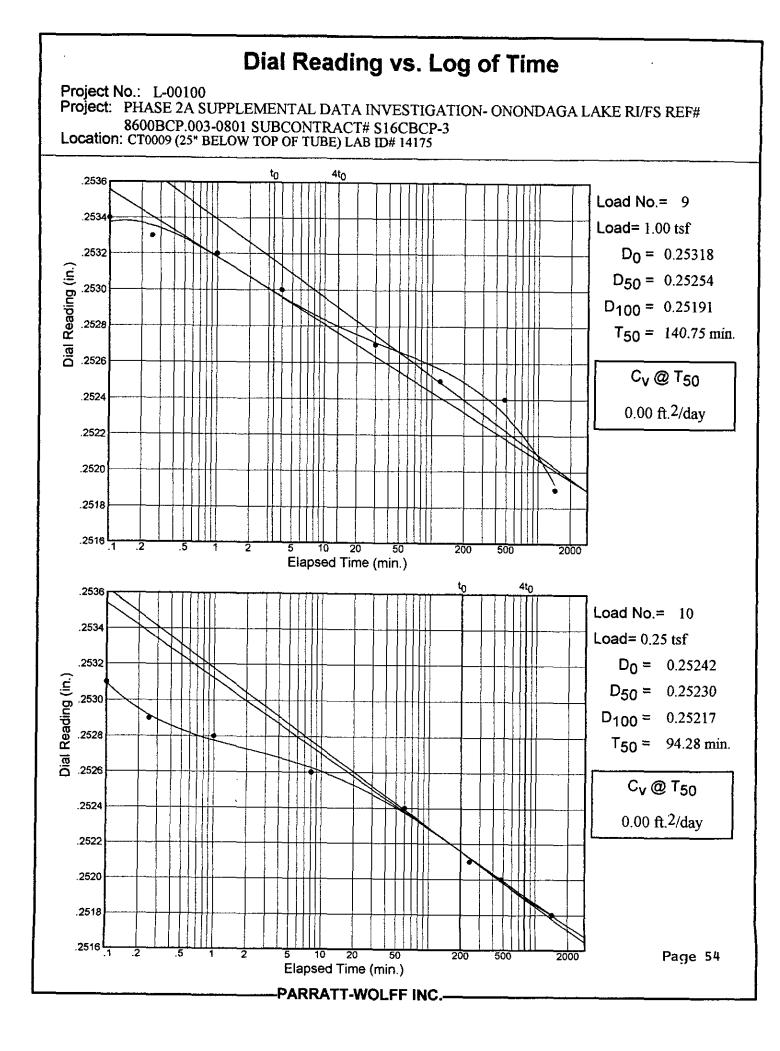












CONSOLIDATION TEST DATA

Client: EXPONENT ENVIRONMENTAL GROUP Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Project Number: L-00100

Sample Data

Source: L-00100 Sample No.: LAB ID# 14175 Elev. or Depth: Sample Length (in./cm.): Location: CT0009 (25" BELOW TOP OF TUBE) LAB ID# 14175 Description: SEDIMENT Liquid Limit: NON-P USCS: ML Plasticity Index: NON-P Figure No.: 5 Testing Remarks:

Test Specimen Data

TOTAL SAMPLE		BEFORE TEST	AFTER TEST					
Wet w+t	= 163.71 g.	Consolidometer # = 2	Wet w+t = 143.90 g.					
Dry w+t	= 123.52 g.		Dry w+t = 122.65 g.					
Tare Wt.	= 74.68 g.	Spec. Gravity = 2.32	Tare Wt. = 74.68 g.					
Height	= .75 in.	Height = .75 in.						
Diameter	= 2.50 in.	Diameter = 2.50 in.						
Weight	= 48.84 g.	Defl. Table = ring #2 (inches/tsf)						
Wet Den.	= 82.3 % = 50.4 pcf = 27.7 pcf	Ht. Solids = 0.2570 in. Dry Wt. = 26.79 g. Void Ratio = 1.926 Saturation = 99.2 %	Moisture = 44.3 % Dry Wt. = 47.97 g.* Void Ratio = 1.069					

* Final dry weight used in calculations

End-of-Load Summary									
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C _v (ft. ² /day)	c_{α}	Void Ratio 1,926	<pre>% Compression</pre>			
start	0.03160	0 001 00	7 7 /	0.002	1.920	4.5 Comprs.			
0.25	0.06680	0.00160	1.14			7.7 Comprs.			
0.50	0.09230	0.00260	1.31	0.002	1.700	-			
1.00	0.12560	0.00380	1.54	0.002	1.575	12.0 Comprs.			
2.00	0.16090	0.00560	0.75	0.002	1.444	16.5 Comprs.			
4.00	0.19710	0.00760	0.91	0.002	1.311	21.0 Comprs.			
8.00	0.23210	0.01000	0.48	0.002	1.184	25.3 Comprs.			
16.00	0.26530	0.01290	0.51	0.003	1.067	29.4 Comprs.			
4.00	0.26100	0.00790	0.30		1.064	29.5 Comprs.			
1.00	0.25760	0.00570	0.00		1.069	29.3 Comprs.			
0.25	0.25580	0.00400	0.00		1.069	29.3 Comprs.			

$C_c = 0.39$ $P_c = 0.30$ tsf $C_r = 0.01$

Pressure: 0.25 tsf				TEST READINGS		Load No. 1	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.048 ⁶ 0 4 ⁶ 0 .050 +	
1	0.00	0.03160	11	60.00	0.06430		
2 3 4 5 6 7 8	0.10 0.25 0.50 1.00 2.00 4.00 8.00	0.05020 0.05510 0.05740 0.05950 0.06060 0.06150 0.06240	12 13 14 15	$120.00 \\ 240.00 \\ 480.00 \\ 1440.00$	0.06480 0.06540 0.06600 0.06680	.054 .056 .059 .060 .062 .064 .068 .1 .5 1 2 5 20 200	
9 10	$15.00 \\ 30.00$	0.06310 0.06370					

No. Elapsed Dial No. Elapsed Dial .0708 Time Reading Time Reading 0.0733 .0708 .0733 1 0.00 0.06680 11 60.00 0.09000 .0768 2 0.10 0.07600 12 120.00 0.09060 .0763 3 0.25 0.08020 13 240.00 0.09110 .0808 4 0.50 0.08240 14 480.00 0.09160 .0883 5 1.00 0.08430 15 1440.00 0.09230 .0883 6 2.00 0.08570 .0908 .0933 .0933 .0933 7 4.00 0.08680 .0933 .0933 .0933 .0933	Press	sure: 0.50	re: 0.50 tsf	TEST READINGS			Load No. 2
2 0.10 0.07600 12 120.00 0.09060 .0783 3 0.25 0.08020 13 240.00 0.09110 .0808 4 0.50 0.08240 14 480.00 0.09160 .0858 5 1.00 0.08430 15 1440.00 0.09230 .0883 6 2.00 0.08570 .0933 .0933 .0933	No.	-		No.	-		
2 0.10 0.07600 12 120.00 0.09060 .0806 3 0.25 0.08020 13 240.00 0.09110 .0808 4 0.50 0.08240 14 480.00 0.09160 .0808 5 1.00 0.08430 15 1440.00 0.09230 .0808 6 2.00 0.08570 .09060 .0933 .0933 .0933	1	0.00	0.00 0.06680	11	60.00	0.09000	
4 0.50 0.08240 14 480.00 0.09160 .0858 5 1.00 0.08430 15 1440.00 0.09230 .0883 6 2.00 0.08570 .0933 .0933 .0933			•				8080.
6 2.00 0.08570 7 4.00 0.08680	4	0.50	0.50 0.08240	14	480.00	0.09160	.0858
				15	1440.00	0.09230	.0908
8 8.00 0.08780	7 8	4.00 8.00					.0958
9 15.00 0.08860 10 30.00 0.08930							

Void Ratio = 1.	.700 Compressi	on = 7.7 %
$D_0 = 0.06520$	$D_{50} = 0.07636$	D₁₀₀ = 0.08751
	= 1.31 ft.2/day	

Pressure: 1.00 tsf			TEST READINGS			Load No. 3	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading		
1	0.00	0.09230	11	60.00	0.12350		
2	0.10	0.10530	12	120.00	0.12410	.1064	
3	0.25	0.11320	13	240.00	0.12460	.1114	
4	0.50	0.11510	14	480.00	0.12510	.1139	
5	1.00	0.11690	15	1440.00	0.12560	.1164	
6	2.00	0.11980				.1189	
7	4.00	0.12080					
8	8.00	0.12170				1 .51 2 5 20 200	
9	15.00	0.12230					
10	30.00	0.12290					

Pressure: 2.00 tsf			TEST READINGS		DINGS	Load No. 4	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	$139^{t_0}_{t_1}$	
1	0.00	0.12560	11	60.00	0.15870		
2	0.10	0.14550	12	120.00	0.15930		
3 4	0.25 0.50	0.14900 0.15130	13 14	240.00 1440.00	0.15980 0.16090	.149	
5	1.00	0.15330		110000	0720030	.153	
6 7	2.00 4.00	0.15480 0.15580					
8	4.00	0.15670				$.159 \frac{111100}{.1} \frac{512}{.512} \frac{520}{.200} \frac{200}{.200}$	
9	15.00	0.15740					
10	30.00	0.15810					

Void Ratio = 1 .	444 Compression = 16.5 %
$D_0 = 0.13451$	$D_{50} = 0.14389$ $D_{100} = 0.15326$
C_v at 0.3 min.	= 0.75 ft.2/day C_{α} = 0.002

Pressure: 4.00 tsf			TEST READINGS		DINGS	Load No. 5
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.172 4to .174
1	0.00	0.16090	11	60.00	0.19490	
2	0.10	0.18040	12	120.00	0.19540	.178
3	0.25	0.18620	13	240.00	0.19600	.182
4	0.50	0.18840	14	480.00	0.19650	.164
5	1.00	0.19010	15	1440.00	0.19710	.106
6	2.00	0.19130				.188
7	4.00	0.19230				
8	8.00	0.19320				.192 .1 .5 1 2 5 20 200
9	15.00	0.19390				
10	30.00	0.19440				

Void Ratio = 1.311Compression = 21.0 % $D_0 = 0.16596$ $D_{50} = 0.17715$ $D_{100} = 0.18834$ C_v at 0.2 min. = 0.91 ft.2/day $C_{\alpha} = 0.002$

Pressure: 8.00 tsf				TEST REAL	DINGS	Load No. 6
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.2084 4t0 .2099
1	0.00	0.1971Õ	11	60.00	0.23020	.2114
2	0.10	0.21990	12	120.00	0.23060	.2129
3	0.25	0.22250	13	240.00	0.23110	.2144
4	0.50	0.22400	14	480.00	0.23150	.2174
5	1.00	0.22530	15	1440.00	0.23210	.2189
6	2.00	0.22700				.2204
7	4.00	0.22750				
8	8.00	0.22830				.2234 .1 .5 1 2 5 20 200
9	15.00	0.22890				
10	30.00	0.22960				

Void Ratio = 1 .	.184 Compression =	: 25.3 %
$D_0 = 0.20614$	D ₅₀ = 0.21325 D ₁₀	0 = 0.22036
	$= 0.48 \text{ ft.}^2/\text{day}$	

Pressure: 16.00 tsf			TEST READINGS		DINGS	Load No. 7
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.236 4t ₀ .238
1	0.00	0.23210	11	60.00	0.26310	-240
2	0.10	0.25190	12	120.00	0.26360	.242
3	0.25	0.25510	13	240.00	0.26410	.246
4	0.50	0.25690	14	480.00	0.26460	-248
5	1.00	0.25800	15	1440.00	0.26530	.250
6	2.00	0.25930				.252
7	4.00	0.26030				.254
8	8.00	0.26110				.1 .5 1 2 5 20 200
9	15.00	0.26180				
10	30.00	0.26250				

Pressure: 4.00 tsf

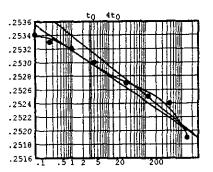
TEST READINGS

Load No. 8

No.	Elapsed Time	Dial Reading	.253775 ^t 0 ^{4t} 0 .253700
1	0.00	0.26530	-253625
- 2	0.10	0.26160	.253550
3	0.25	0.26160	.253475
4	0.50	0.26150	.253400
5	4.00	0.26130	.253250
6	30.00	0.26120	.253175
7	60.00	0.26120	-253100
8	240.00	0.26110	.253025 <u>.1 .5 1 2 5 20 200</u>
9	1440.00	0.26100	

TEST READINGS

Load No. 9

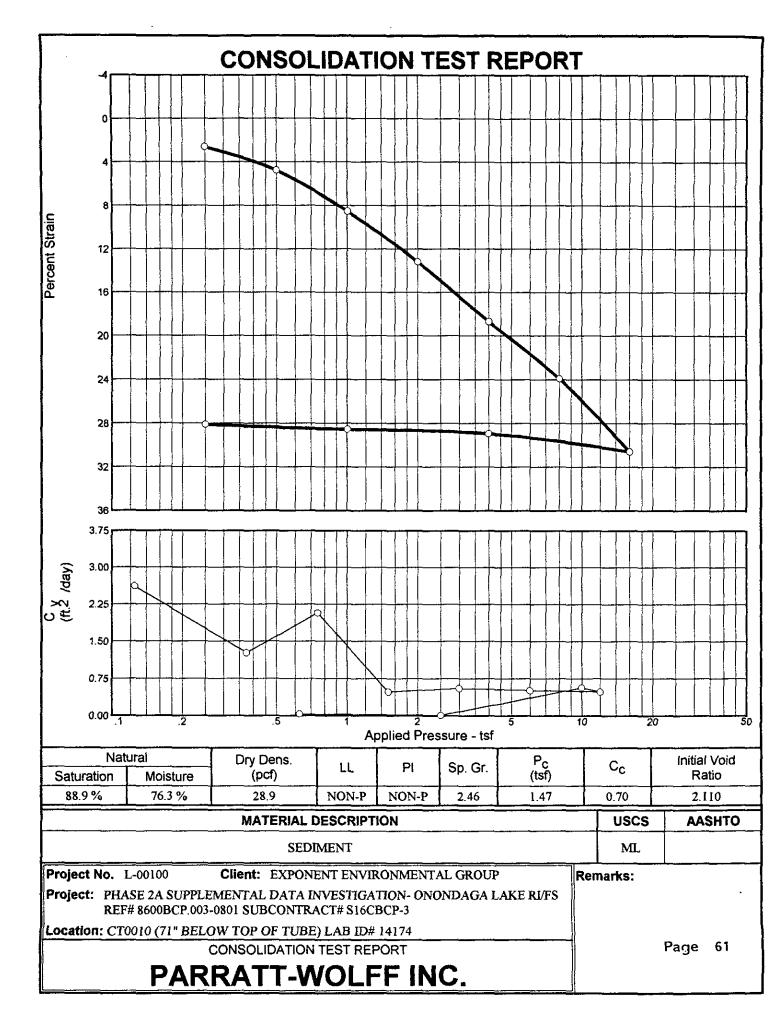


No.	Elapsed Time	Dial Reading
1 2 3 4	0.00 0.10 0.25 1.00	0.26100 0.25910 0.25900 0.25890
1 5 6 7 8 9	4.00 30.00 120.00 480.00 1440.00	0.25850 0.25870 0.25840 0.25820 0.25810 0.25760

Void Ratio = 1.069 Compression = 29.3 % $D_0 = 0.25318$ $D_{50} = 0.25254$ $D_{100} = 0.25191$ C_v at 140.8 min. = 0.00 ft.²/day

Pressure: 0.25 tsf		TEST READINGS	Load No. 10
No.	Elapsed Time	Dial Reading	
1	0.00	0.25760	.2532
2	0.10	0.25710	
3	0.25	0.25690	.2528
4	1.00	0.25680	.2524
5	8.00	0.25660	.2522
6	60.00	0.25640	.2520
7	240.00	0.25610	.2516
8	480.00	0.25600	.2510 .1 .5 1 2 5 20 200
9	1440.00	0.25580	

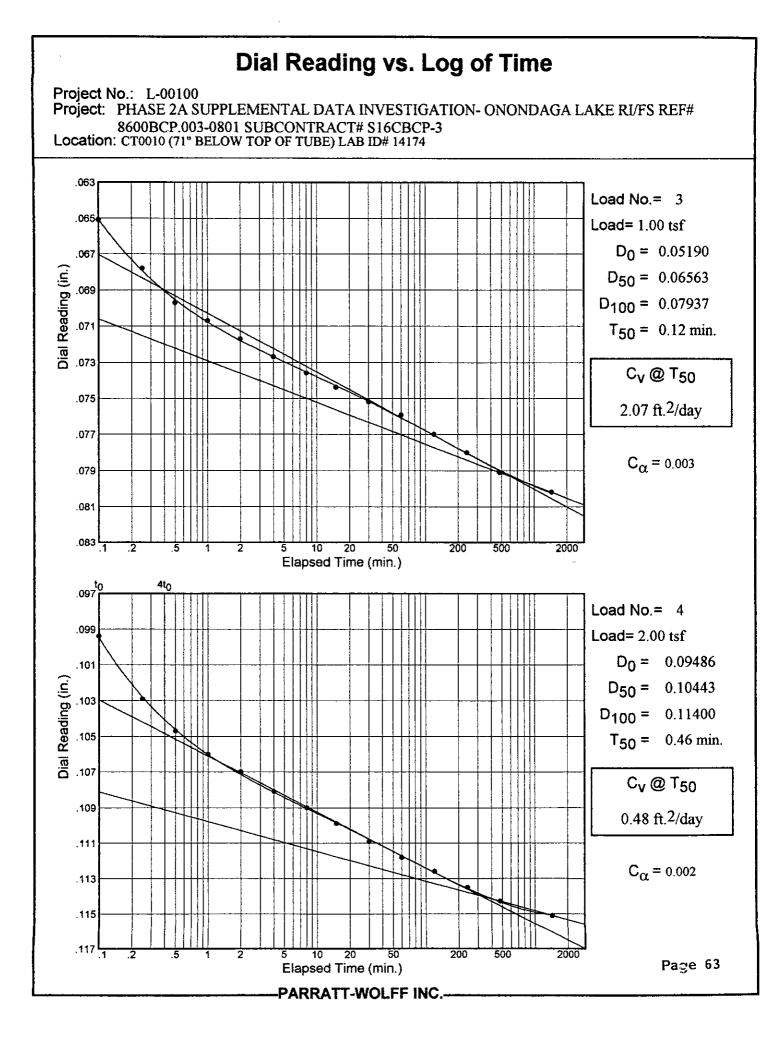
Void Ratio = 1.069 Compression = 29.3 % D₀ = 0.25242 D₅₀ = 0.25230 D₁₀₀ = 0.25217 C_v at 94.3 min. = 0.00 ft.2/day



Dial Reading vs. Log of Time

Project No.: L-00100 Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Location: CT0010 (71" BELOW TOP OF TUBE) LAB ID# 14174 .0237 Load No.= 1 .0252 Load = 0.25 tsf $D_0 = 0.01590$.0267 Dial Reading (in.) 0282 0297 0312 $D_{50} = 0.02529$ $D_{100} = 0.03469$ $T_{50} = 0.10 \text{ min.}$ C_v@T₅₀ .0327 2.61 ft.2/day .0342 $C_{\alpha} = 0.004$.0357 .0372 .0387 20 200 2 500 2000 50 Elapsed Time (min.) .04085 Load No.= 2 .04210 Load= 0.50 tsf $D_0 = 0.03570$.04335 Dial Reading (in.) $D_{50} = 0.04308$.04460 $D_{100} = 0.05046$.04585 $T_{50} = 0.20 \text{ min.}$.04710 C_v@T₅₀ .04835 1.27 ft.²/day .04960 $C_{\alpha} = 0.004$.05085 .05210 .05335 L 200 10 20 50 500 2000 Page 62 Elapsed Time (min.)

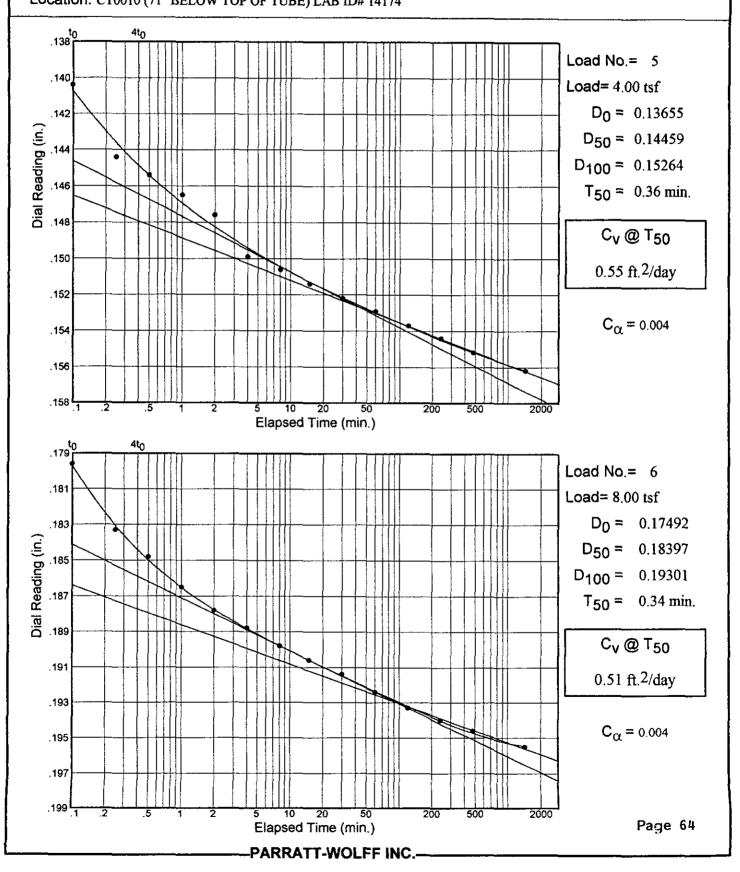
PARRATT-WOLFF INC.

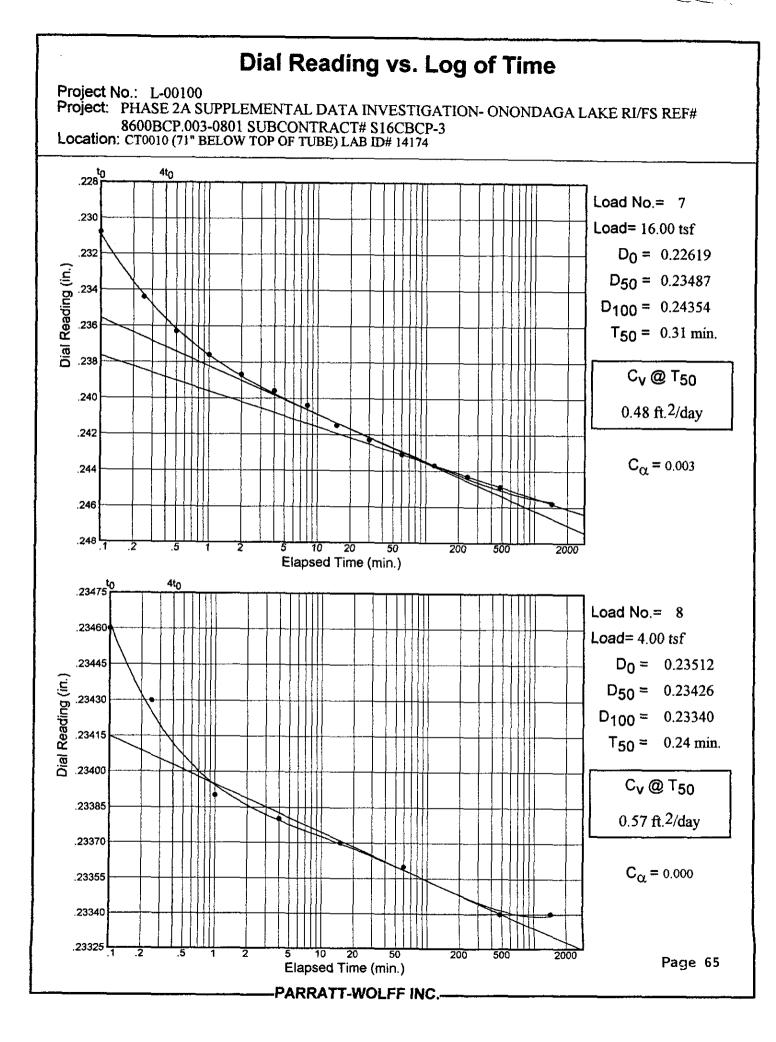


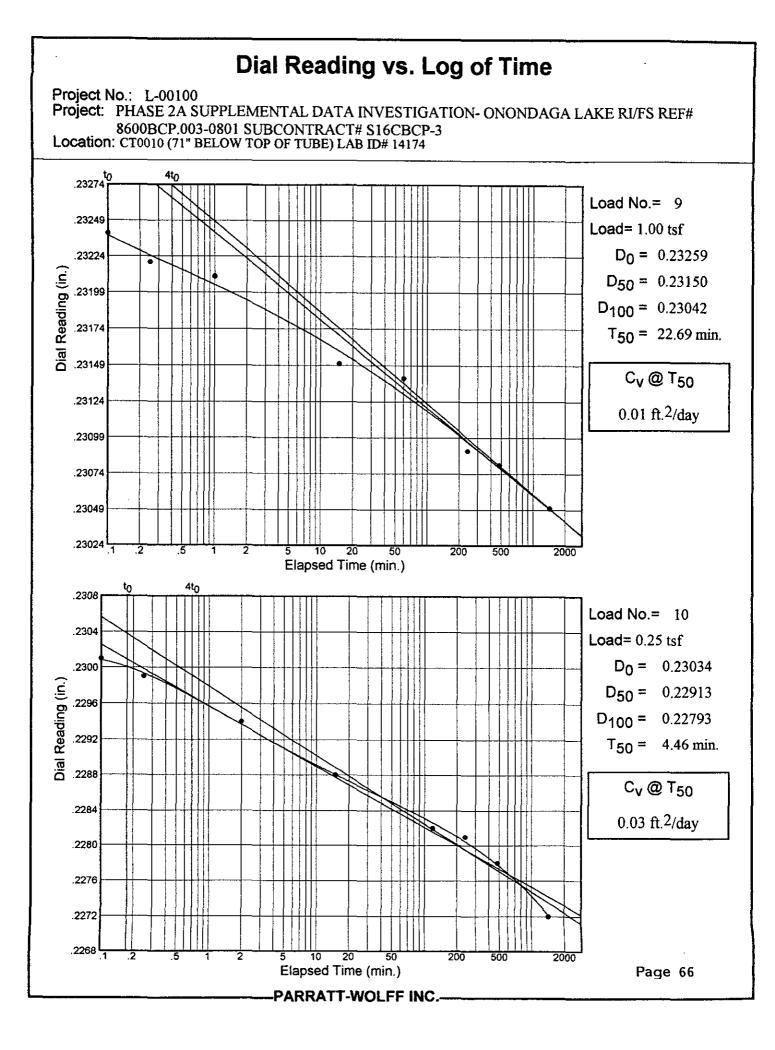
Dial Reading vs. Log of Time

Project No.: L-00100

Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Location: CT0010 (71" BELOW TOP OF TUBE) LAB ID# 14174







CONSOLIDATION TEST DATA

Client: EXPONENT ENVIRONMENTAL GROUP Project: PHASE 2A SUPPLEMENTAL DATA INVESTIGATION- ONONDAGA LAKE RI/FS REF# 8600BCP.003-0801 SUBCONTRACT# S16CBCP-3 Project Number: L-00100

Sample Data

Source: L-00100 Sample No.: LAB ID# 14174 Elev. or Depth: Sample Length (in./cm.): Location: CT0010 (71" BELOW TOP OF TUBE) LAB ID# 14174 Description: SEDIMENT Liquid Limit: NON-P USCS: ML Plasticity Index: NON-P USCS: ML Figure No.: 6 Testing Remarks:

Test Specimen Data

TOTAL	ŞA	MPLE	BEFORE TEST	AFTER TEST
Wet w+t	=	162.30 g.	Consolidometer $# = 1$	Wet $w+t = 145.40 g$.
Dry w+t	æ	124.62 g.		Dry w+t = 123.15 g.
-		75.23 g.	Spec. Gravity = 2.46	Tare Wt. = 75.23 g.
Height	*	.75 in.	Height = . 75 in.	
Diameter	*	2.50 in.	Diameter = 2.50 in.	
Weight	≈	49.39 g.	Defl. Table = ring #1 (i	nches/tsf)
Moisture	*=	76.3 %	Ht. Solids = 0.2418 in.	Moisture = 46.4 %
Wet Den.	=	50.9 pcf	Dry Wt. = 28.02 g.	Dry Wt. = 47.92 g.*
Dry Den.	=	28.9 pcf	Void Ratio = 2.110 Saturation = 88.9 %	Void Ratio = 1.236

* Final dry weight used in calculations

End-of-Load Summary							
Pressure (tsf)	Final Dial (in.)	Machine Defl. (in.)	C _v (ft. ² /day)	c_{α}	Void Ratio	<pre>% Compression /Swell</pre>	
start	0.01590				2.110		
0.25	0.03730	0.00160	2.61	0.004	2.028	2.6 Comprs.	
0.50	0.05430	0.00240	1.27	0.004	1.961	4.8 Comprs.	
1.00	0.08390	0.00370	2.07	0.003	1.844	8.6 Comprs.	
2.00	0.12020	0.00510	0.48	0.002	1.700	13.2 Comprs.	
4.00	0.16300	0.00680	0.55	0.004	1.530	18.7 Comprs.	
8.00	0.20440	0.00890	0.51	0.004	1.367	23.9 Comprs.	
16.00	0.24580	0.00000	0.48	0.003	1.159	30.6 Comprs.	
4.00	0.24030	0.00690	0.57	0.000	1.211	28.9 Comprs.	
1.00	0.23560	0.00510	0.01		1.223	28.5 Comprs.	
0.25	0.23090	0.00370	0.03		1.236	28.1 Comprs.	

Pressure: 0.25 tsf			, , .	TEST REAL	DINGS	Load No. 1	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.0237 .0252	
1	0.00	0.01590	11	60.00	0.03430	.0267	
2 3	0.10 0.25	0.02690 0.02850	12 13	120.00 240.00	0.03480 0.03560	.0282 .0297 .0312	
4	0.50	0.02940	14	480.00	0.03630	.0327	
5 6 7 8 9 10	1.00 2.00 4.00 8.00 15.00 30.00	0.03070 0.03180 0.03230 0.03290 0.03340 0.03390	15	1440.00	0.03730	.0342 .0357 .0372 .0387 .1 .5 1 2 5 20 200	

Void Ratio = 2.028Compression = 2.6 % $D_0 = 0.01590$ $D_{50} = 0.02529$ $D_{100} = 0.03469$ C_v at 0.1 min. = 2.61 ft.2/day $C_{\alpha} = 0.004$

Pressure: 0.50 tsf				TEST REAL	DINGS	Load No. 2
No.	Elapsed Time 0.00	Dial Reading 0.03730	No. 11	Elapsed Time 60.00	Dial Reading 0.05130	.04085 .04210 .04335
2 3 4 5 6 7 8 9 10	$\begin{array}{c} 0.10\\ 0.25\\ 0.50\\ 1.00\\ 2.00\\ 4.00\\ 8.00\\ 15.00\\ 30.00 \end{array}$	0.04450 0.04580 0.04680 0.04730 0.04790 0.04790 0.04940 0.05010 0.05070	12 13 14 15	120.00 240.00 480.00 1440.00	0.05170 0.05230 0.05290 0.05430	.04460 .04595 .04710 .04935 .04960 .05085 .05210 .05335 .1 .5 1 2 5 20 200

Void Ratio = 1.961	Compression = 4.8 %
D ₀ = 0.03570 D ₅₀	= 0.04308 D ₁₀₀ $= 0.05046$
C_{v} at 0.2 min. = 1.	.27 ft. ² /day $C_{\alpha} = 0.004$

Pres	sure: 1.00	tsf		TEST REAL		
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.063
1	0.00	0.05430	11	60.00	0.07960	.067
2	0.10	0.06880	12	120.00	0.08070	.069
3	0.25	0.07150	13	240.00	0.08170	.071
4	0.50	0.07340	14	480.00	0.08280	.075
5	1.00	0.07440	15	1440.00	0.08390	.077
6	2.00	0.07540				.079
7	4.00	0.07640				.061
8	8.00	0.07730				.083 .1 .5 1 2
9	15.00	0.07810				
10	30.00	0.07890				

Void Ratio = 1.844Compression = 8.6 % $D_0 = 0.05190$ $D_{50} = 0.06563$ $D_{100} = 0.07937$ C_v at 0.1 min. = 2.07 ft.2/day $C_{\alpha} = 0.003$

Pressure: 2.00 tsf				TEST REAL	DINGS	Load No.	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading		
1	0.00	0.08390	11	60.00	0.11690	.101	
2	0.10	0.10450	12	120.00	0.11770		
3	0.25	0.10800	13	240.00	0.11860	.105	
4	0.50	0.10980	14	480.00	0.11940	.107	
5	1.00	0.11110	15	1440.00	0.12020		
6	2.00	0.11210				.113	
7	4.00	0.11320					
8	8.00	0.11410				$\frac{117}{.1}$ $\frac{1}{.5}$ $\frac{1}{2}$ $\frac{5}{20}$ $\frac{200}{200}$	
9	15.00	0.11500					
10	30.00	0.11600					

Void Ratio = 1	.700	Compression = 13.2 %
D₀ = 0.09486	D50 =	= 0.10443 D ₁₀₀ $= 0.11400$
C_v at 0.5 min.	= Ŏ.	48 ft.2/day $C_{\alpha} = 0.002$

Load No. 3

Pressure: 4.00 tsf				TEST REAL	DINGS	Load No. 5	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.139 .140	
1	0.00	0.12020	11	60.00	0.15970	.142	
2	0.10	0.14720	12	120.00	0.16050		
3	0.25	0.15120	13	240.00	0.16120	-146	
4	0.50	0.15220	14	480.00	0.16200	.150	
5	1.00	0.15330	15	1440.00	0.16300	.152	
6	2.00	0.15440				.154	
7	4.00	0.15670					
8	8.00	0.15740				.138 .1 .5 1 2 5 20 200	
9	15.00	0.15820					
10	30.00	0.15900					

Void Ratio = 1.530Compression = 18.7 % $D_0 = 0.13655$ $D_{50} = 0.14459$ $D_{100} = 0.15264$ C_v at 0.4 min. = 0.55 ft.2/day $C_{\alpha} = 0.004$

Pressure: 8.00 tsf				TEST REAL	DINGS	Load No.	
No.	Elapsed Time	Dial Reading	No.	Elapsed Time	Dial Reading	.179 4 0 .181	
1	0.00	0.16300	11	60.00	0.20130	.103	
2	0.10	0.18850	12	120.00	0.20220		
3	0.25	0.19220	13	240.00	0.20290	.187	
4	0.50	0.19370	14	480.00	0.20350	.191	
5	1.00	0.19540	15	1440.00	0.20440	.193	
6	2.00	0.19670				.195	
7	4.00	0.19770				.197 .199 $.192$ $.192$ $.125$ $.20$ $.200$	
8	8.00	0.19870				$.199 \frac{1}{.1} \cdot 5 \cdot 1 \cdot 2 \cdot 5 \cdot 20 \cdot 200$	
9	15.00	0.19950					
10	30.00	0.20030					

Void Ratio = 1	.367 Compressi	.on = 23.9 %
D₀ = 0.17492	D₅₀ = 0.18397	D₁₀₀ = 0.19301
C_v at 0.3 min.	$= 0.51 \text{ ft.}^2/\text{day}$	$c_{\alpha} = 0.004$

Pressure: 16.00 tsf			TEST REAL	DINGS	Load No.		
No.	Elapsed Time	Dial Reading	No .	Elapsed Time	Dial Reading		
1	0.00	0.20440	11	60.00	0.24310	.232	
2	0.10	0.23080	12	120.00	0.24370	.234	
3	0.25	0.23440	13	240.00	0.24430	.236	
4	0.50	0.23630	14	480.00	0.24490	.240	
5	1.00	0.23760	15	1440.00	0.24580	.242	
6	2.00	0.23870				.244	
7	4.00	0.23960				246	
8	8.00	0.24040				·246 .1 .5 1 2 5 20 200	
9	15.00	0.24150					
10	30.00	0.24230					

Void Ratio = 1.159 Compression = 30.6 % $D_0 = 0.22619$ $D_{50} = 0.23487$ $D_{100} = 0.24354$ C_v at 0.3 min. = 0.48 ft.2/day $C_{\alpha} = 0.003$

Pressure: 4.00 tsf		TEST READINGS	Load No. 8
No.	Elapsed Time	Dial Reading	.23475 ^{to} 4to .23460
1	0.00	0.24580	.23445
2	0.10	0.24150	.23430
3	0.25	0.24120	.23415
4	1.00	0.24080	.23385
5	4.00	0.24070	.23370
6	15.00	0.24060	.23355
7	60.00	0.24050	.23340
8	480.00	0.24030	.23325 .1 .5 1 2 5 20 200
9	1440.00	0.24030	

Void Ratio = 1	.211 Compress:	ion = 28.9 %
$D_0 = 0.23512$	$D_{50} = 0.23426$	D₁₀₀ = 0.23340
		$c_{\alpha} = 0.000$

TEST READINGS

to	4t ₀
.23274	
.23249	
.23224	
.23199	
.23174	
.23149	╞┼┼╢╢╢╌╌┝┤╎╢╢╢╺┑╲┪╝╢╴┟╎╢╢╢╴┼╽
.23124	<u>┤┤┧╢╢╴┤┤╎╢╢╴┤┤┤</u> ╢╢ ╸┤ ┨
.23099	
.23074	<mark>┊┊┊╷╽╢╢╶╶┟╶┊╎╿╢┥╴┞╶╽┊╢╽╢</mark> ╴╴ <mark>╴╷╴</mark> ┝
.23049	╎┼┼╎╢╬╴┼╎┾┿╫╢╴┼╌┼┼╢╢╸┼┾┼╢╢ ┍╸ ┤
.23024 L	$1 \\ 1 \\ 5 \\ 1 \\ 2 \\ 5 \\ 2 \\ 5 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2$

No.	Elapsed Time	Dial Reading
1 2 3 4	0.00 0.10 0.25 1.00	0.24030 0.23750 0.23730 0.23720
- 5 6 7 8 9	$ 15.00 \\ 60.00 \\ 240.00 \\ 480.00 \\ 1440.00 $	0.23660 0.23650 0.23600 0.23590 0.23560

Void Ratio = 1.223 Compression = 28.5 % $D_0 = 0.23259$ $D_{50} = 0.23150$ $D_{100} = 0.23042$ C_v at 22.7 min. = 0.01 ft.2/day

Pressure: 0.25 tsf		TEST READINGS	Load No. 10
No.	Elapsed Time	Dial Reading	
1	0.00	0.23560	.2300
2	0.10	0.23380	.2296
3	0.25	0.23360	.2288
4	2.00	0.23310	.2284
5	15.00	0.23250	.2280
6	120.00	0.23190	
7	240.00	0.23180	
8	480.00	0.23150	.1 .31 2 5 20 200
9	1440.00	0.23090	

Void Ratio = 1.236 Compression = 28.1 % $D_0 = 0.23034$ $D_{50} = 0.22913$ $D_{100} = 0.22793$ C_v at 4.5 min. = 0.03 ft.2/day



L-00100 Laboratory Testing Subcontract No. S16CBCP-3 Reference No. 8600BCP.003-0801 Phase 2A Supplemental Data Investigation Onondaga Lake RI/FS

NATURAL MOISTURE CONTENT <u>ASTM_D2216</u>

Sample	Depth (From Top of Tube)	Lab <u>I.D. #</u>	Moisture Content as a Percent of Dry Weight
CT-0001	54" ±	14176	72.8
CT-0002	60" ±	14177	157.8
CT-0003	67" ±	14170	139.8
CT-0004	54" ±	14178	141.2
CT-0005	14" ±	14172	135.2
CT-0005	75" ±	14172A	241.3
CT-0006	66" ±	14171	118.2
CT-0009	25" ±	14175	90.6
CT-0010	71" ±	14174	74.3

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L-00100 Laboratory Testing Subcontract No. S16CBCP-3 Reference No. 8600BCP.003-0801 Phase 2A Supplemental Data Investigation Onondaga Lake RI/FS

DESCRIPTION AND IDENTIFICATION OF SOILS (VISUAL-MANUAL) <u>ASTM D2488</u>

<u>Sample</u> CT-0001	Depth <u>(From Top of Tube)</u> 54" ±	Lab <u>I.D. #</u> 14176	<u>Group Symbol</u> OL
CT-0002	60" ±	14177	OL
CT-0003	67" ±	14170	ML
CT-0004	54" ±	14178	ML
CT-0005	14" ±	14172	OL
CT-0005	75" ±	14172A	ML
CT-0006	66" ±	14171	ML
CT-0009	25" ±	14175	ML
CT-0010	71" ±	14174	ML

SIEVE ANALYSIS OF SOIL / AGGREGATE

PROJECT TITLE Laboratory Testing - Subcontract No. S16CBCP-3

Reference No. 8600BCP.003-0801

Phase 2 A Supplemental Data

Data Investigation

Onondaga lake RI/FS

PROJECT # L-00100

TEST METHOD ASTM D422 & D1140

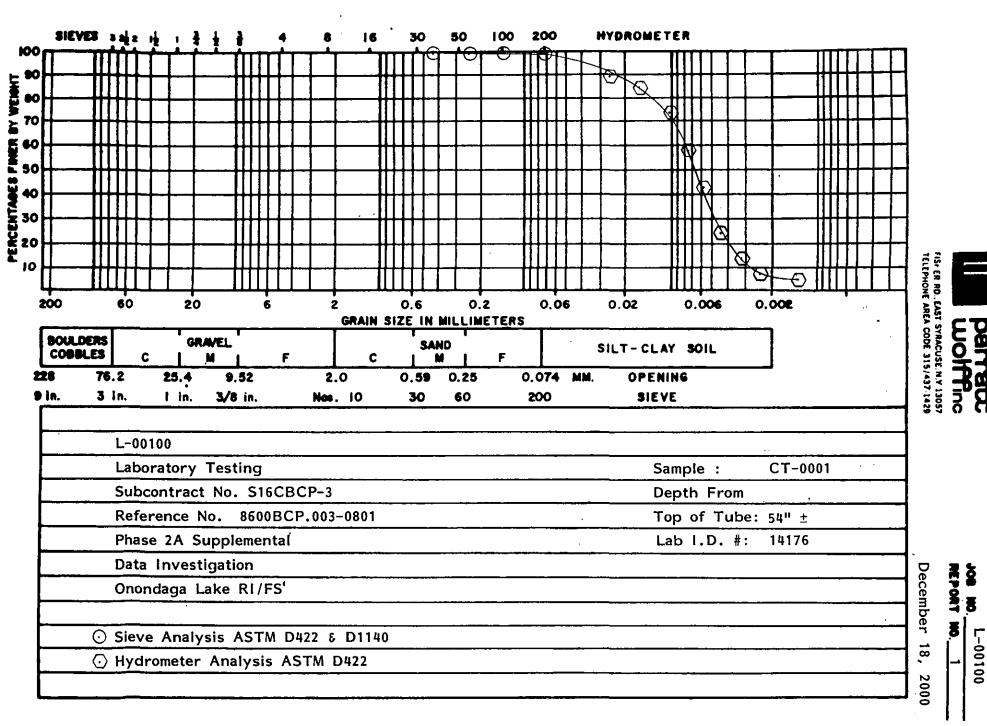
<u></u>				Sieve Size - Percent I					Passin	g Sieve	;				
Sample	Depth (From top of tube)	Lab I.D. #'s	1/2"	3/8"	1/4"	#4	#10	#30	#40	#60	#100	#200			
CT-0001	54" ±	14176							100	9.9	99.8	99.5			
CT-0002	60" ±	14177				100	99.7	99.0	98.8	98.4	98.0	97.1			<u> </u>
CT-0003	67" ±	14170				100	99.9	99.7	99.6	99.3	99.0	98.2	i .		L
CT-0004	54" ±	14178					100	99.9	99.9	99.9	9 9.8	99.7			L
CT-0005	14" ±	14172				100	99.9	99.5	99.4	99.1	98.6	96.1			
CT-0005	75" ±	14172A				100	99.9	99.7	99.6	99.5	99.3	98.9		. <u></u>	
CT-0006	66" ±	14171			100	99.7	99.2	98.3	98.0	97.2	96.3	95.0			
CT-0009	25" ±	14175	100	99.9	99.9	99.9	99.6	98.8	98.5	98.0	97.5	96.5			
CT-0010	71" ±	14174	100	99.9	99.9	99.8	99.4	94.5	90.9	79.4	66.5	50.3			
Sample mass, a	is received, meets m	inimum requirem	ents of te	est meth	od:	Yes	Х	No		_	Prewas	hed:	<u> </u>	No	
Remarks:					-		-			_	Perform	ned By:	DW, CP	, BD	
										_	Checke	d By:	V.J. The	oma _	

REPORT #

REPORT DATE

December 18, 2000

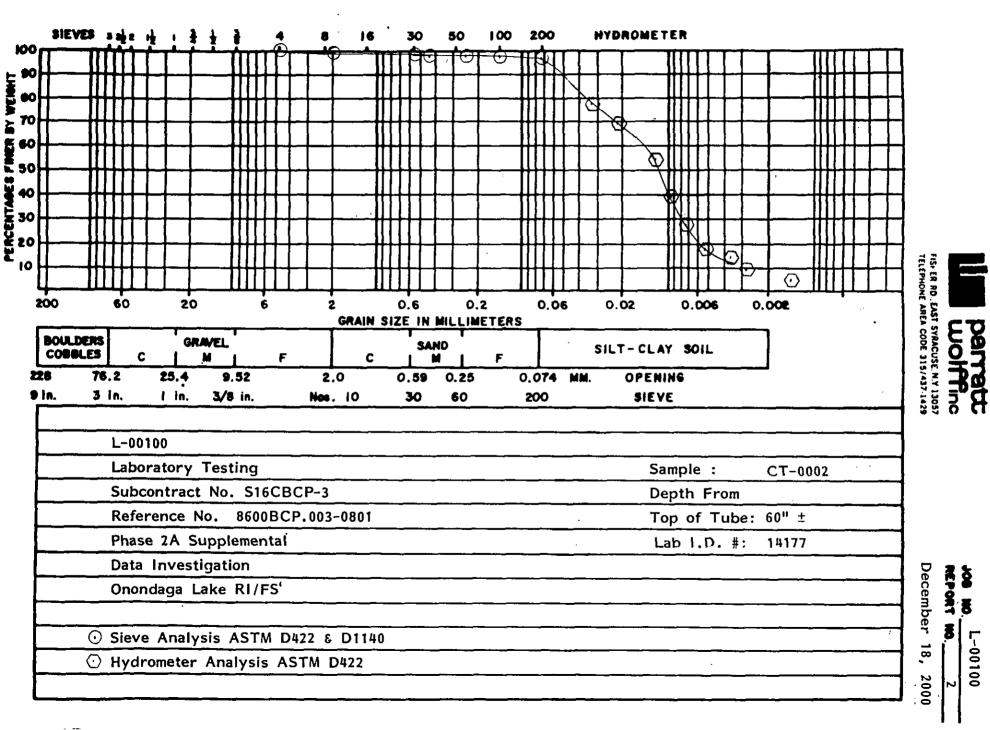
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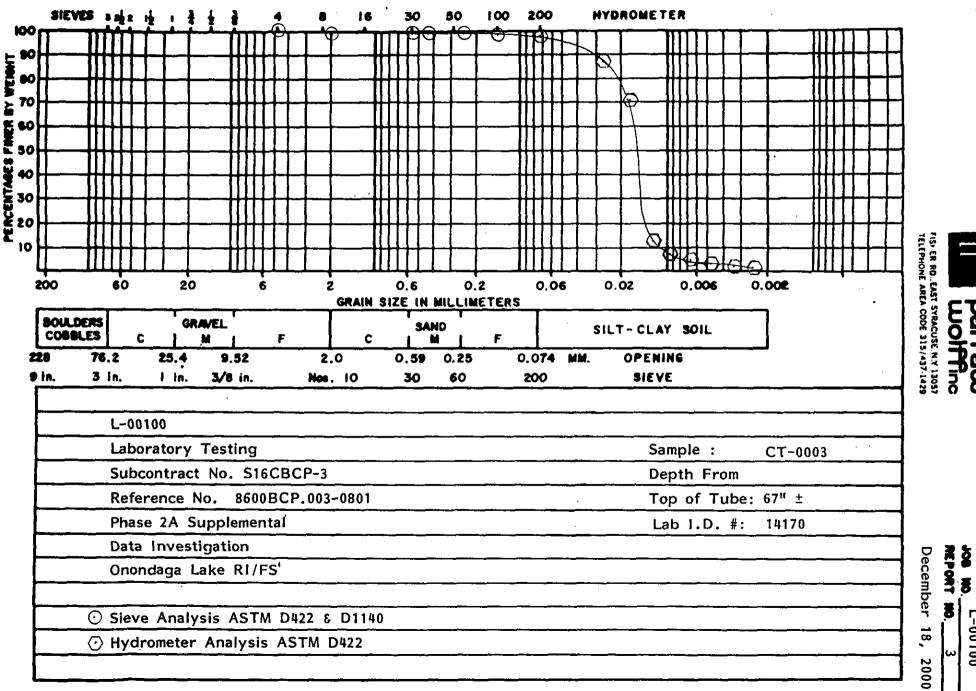
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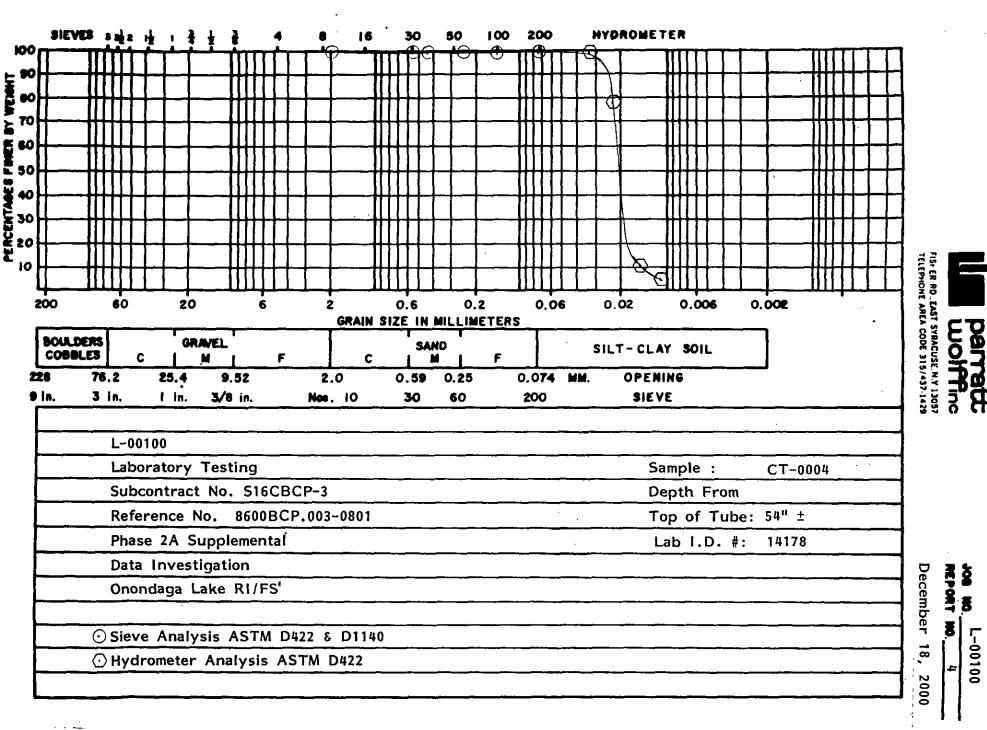
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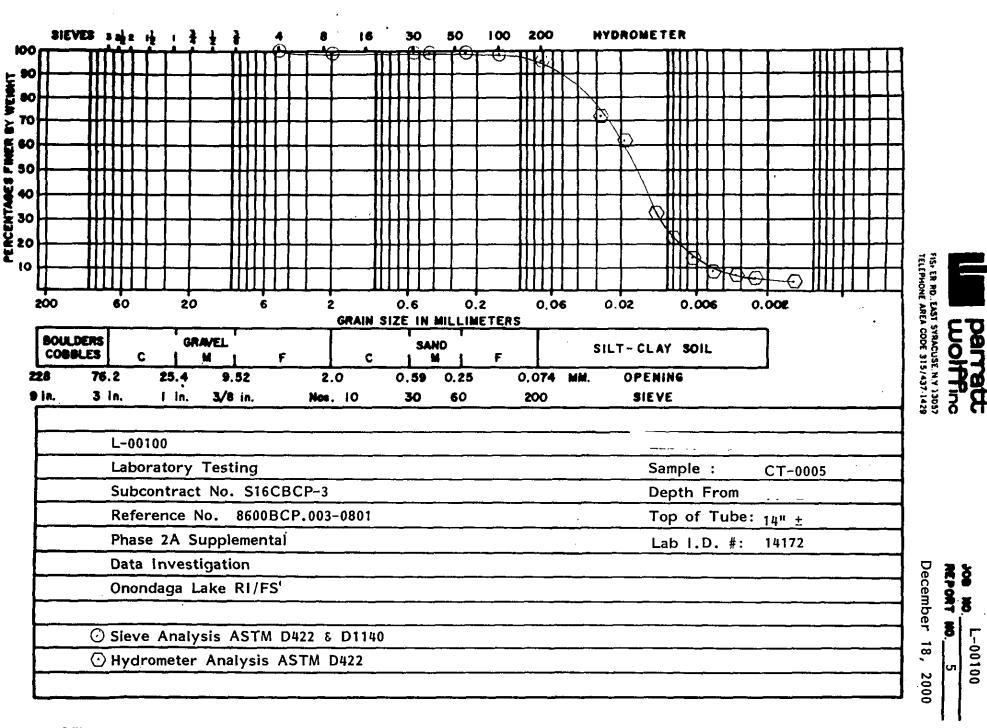
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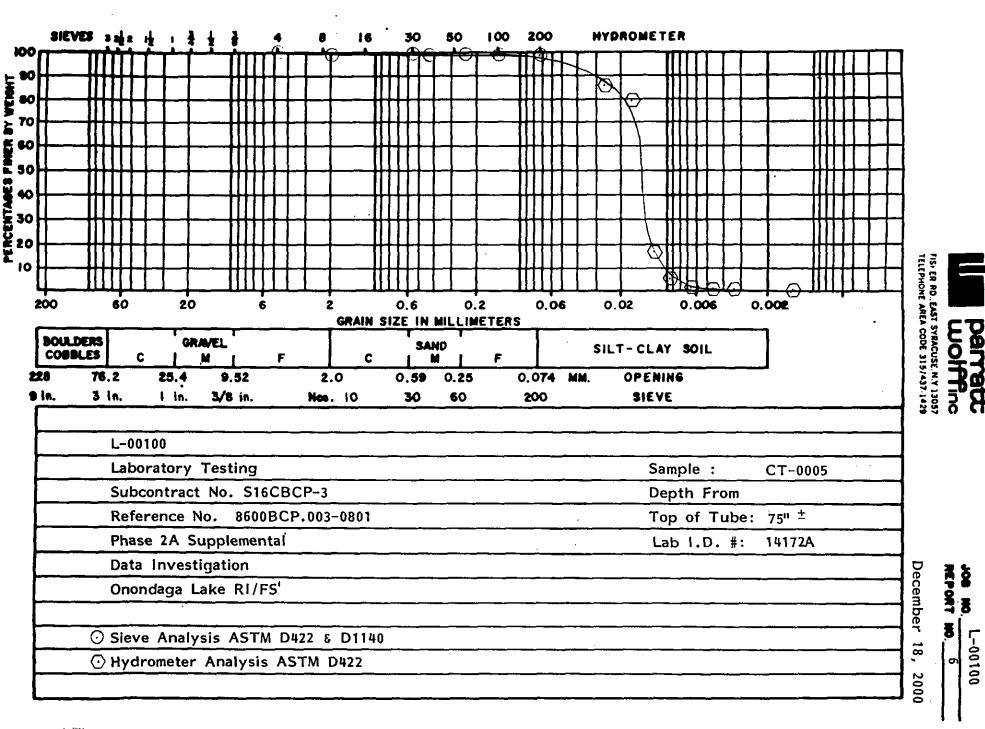
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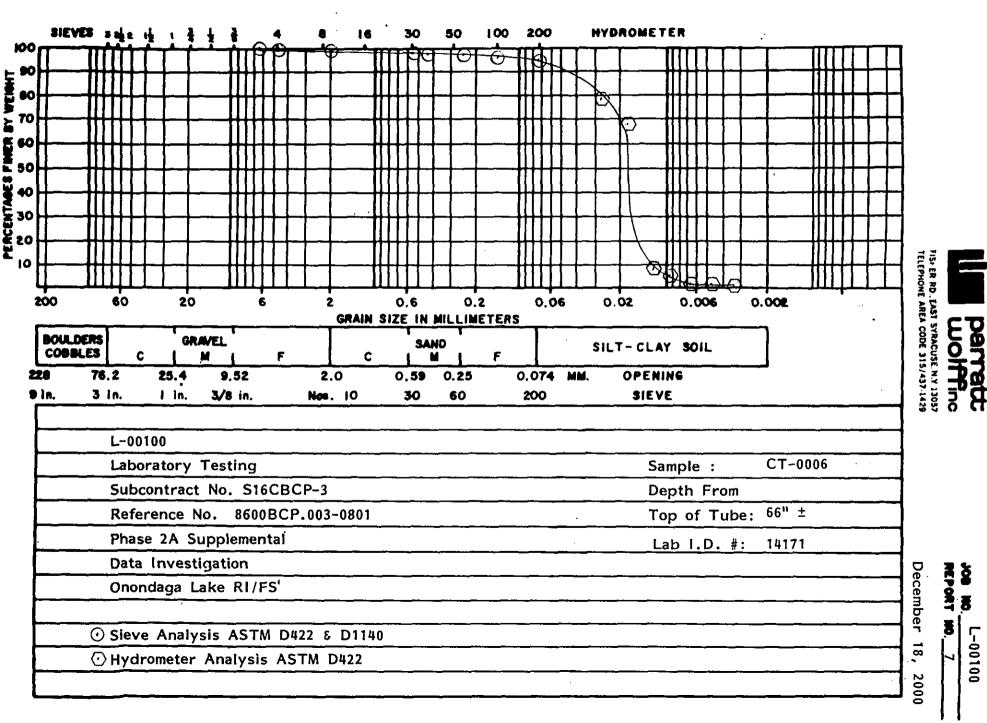
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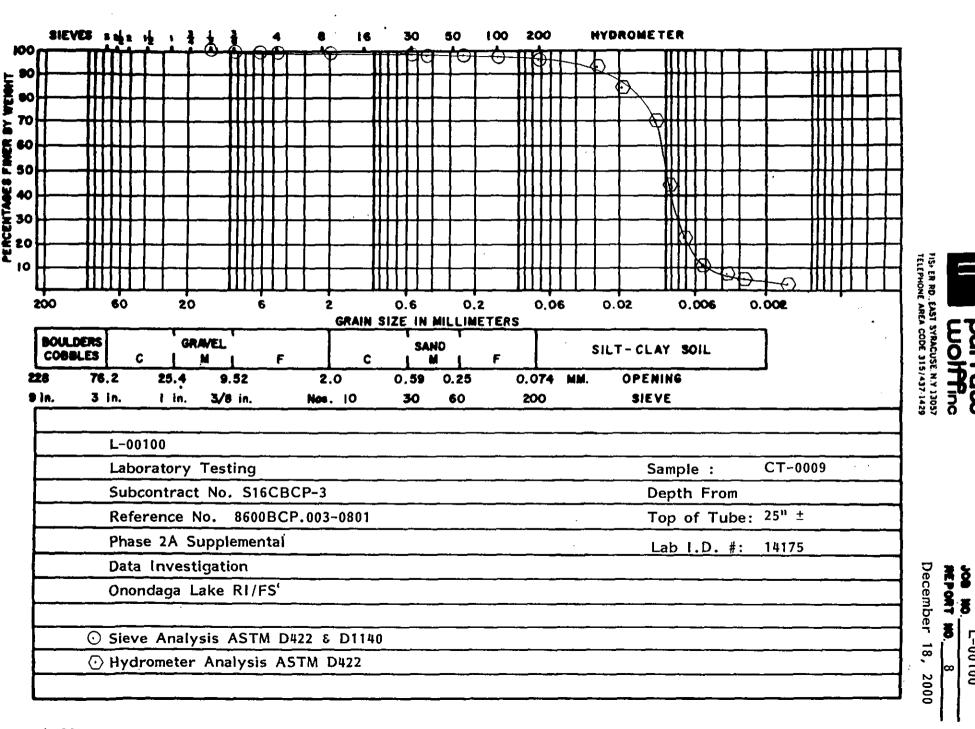


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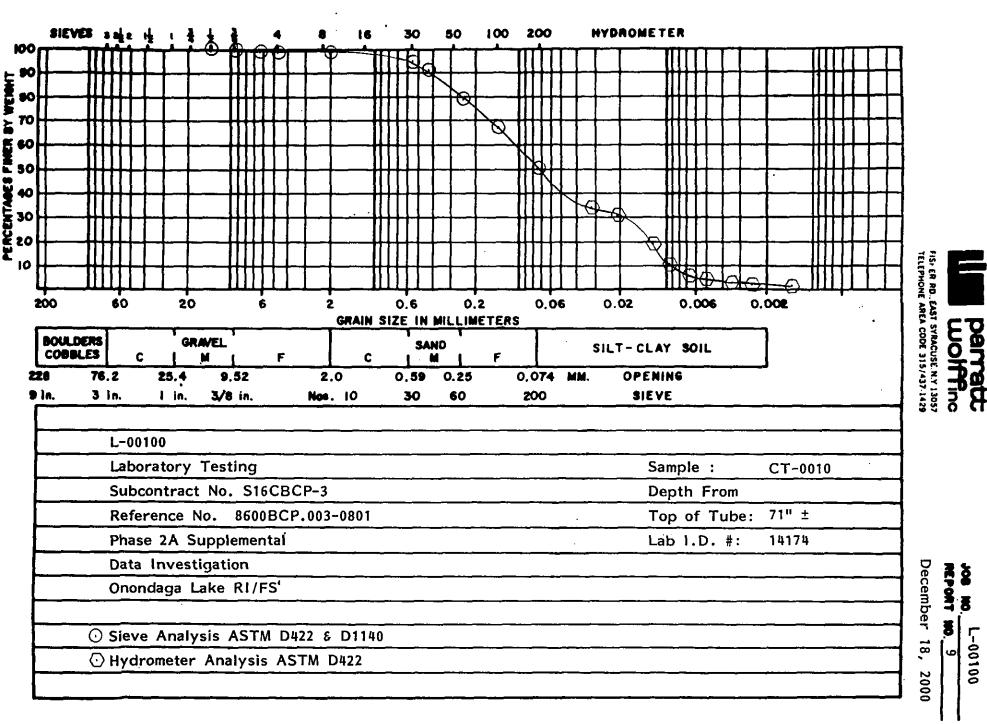
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December 18, 2000

L-00100 Laboratory Testing Subcontract No. S16CBCP-3 Reference No. 8600BCP.003-0801 Phase 2A Supplemental Data Investigation Onondaga Lake RI/FS

ATTERBERG LIMITS ASTM D4318

Sample #	Depth (From top of Tube)	Lab <u>I.D. #</u>	Plastic <u>Limit</u>	Liquid <u>Limit</u>	Plasticity <u>Index</u>
CT-0001	54" ±	14176	Non-Plastic		
CT-0002	60" ±	14177	Non-Plastic		
CT-0003	67" ±	14170	Non-Plastic		
CT-0004	54" ±	14178	Non-Plastic		
CT-0005	14" ±	14172	Non-Plastic		
CT-0005	75" ±	14172A	Non-Plastic		
CT-0006	66" ±	14171	Non-Plastic		
CT-0009	25" ±	14175	Non-Plastic		
CT-0010	71" ±	14174	Non-Plastic		



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L-00100 Laboratory Testing Subcontract No. S16CBCP-3 Reference No. 8600BCP.003-0801 Phase 2A Supplemental Data Investigation Onondaga Lake RI/FS

SPECIFIC GRAVITY OF SOILS
ASTM D854

Sample	Depth (From Top of Tube)	Lab <u>I.D. #</u>	Specific Gravity of Solids (G)
CT-0001	54" ±	14176	2.63
CT-0002	60" ±	14177	2.21
CT-0003	67" ±	14170	2.56
CT-0004	54" ±	14178	2.02
CT-0005	14" ±	14172	2.54
CT-0005	75" ±	14172A	2.50
CT-0006	66" ±	14171	2.52
CT-0009	25" ±	14175	2.32
CT-0010	71" ±	14174	2.46

-- LABORATORY ANALYSIS REPORT --

P-W Laboratories P.O. Box 56, 5879 Fisher Road East Syracuse, NY 13057 Attn: Donald Blasland Phone: (315) 437-1429 FAX: (315) 437-1770

Project No.: L-00100 Authorization:	LSL Project No.: 0007980 Report Date: 9/29/00			
Sample ID: CT-0002 Lab ID# 1477				
Source: Exponent-Onondaga Lake	LSL Sample ID: 0007980-001 Date Sampled: 8/1/2000			
Sample Matrix: SHW, as received				
Parameter(s)	Results	Units	Analysis Date Comment	
Carbonate on Ignition				
Total Carbonate	17	%	9/25/2000	
Sample ID: CT-0005(14") Lab ID# 14172				
Source: Exponent-Onondaga Lake	LSL Sample ID: 0007980-002			
Sample Matrix: SHW,as received	Date Sampled: 7/31/2000			
Parameter(s)	Results	Units	Analysis Date Comment	
Carbonate on Ignition				
Total Carbonate	32	%	9/25/2000	
Sample ID: CT-0005(75") Lab ID# 14172				
Source: Exponent-Onondaga Lake	LSL Sample ID: 0007980-003			
Sample Matrix: SHW,as received	Date Sampled: 7/31/2000			
Parameter(s)	Results	Units	Analysis Date Comment	
Carbonate on Ignition				
Total Carbonate	30	%	9/25/2000	
Sample ID: CT-0009 Lab ID# 14175				
Source: Exponent-Onondaga Lake	LSL Sample ID: 0007980-004			
Sample Matrix: SHW, as received	Date Sampled: 7/31/2000			
- Parameter(s)	Results	Units	Analysis Date Comment	
Carbonate on Ignition				
Total Carbonate	33	%	9/25/2000	

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-- REVISED LABORATORY ANALYSIS REPORT --

Parratt-Wolff, Inc. Fisher Road East Syracuse, NY 13057 Attn: Don Blasland Phone: (315) 437-1429 FAX: (315) 437-1770

	LSL Project No.: 0007218				
Project No.: Exponent	Revised Report Date: 9/22/2000 Original Report Date: 9/6/00				
Authorization:					
Sample ID: CT-0001 Lab ID # 14176					
Source: Onondaga Lake		LSL Samp	le ID: 0007218-00	1	
Sample Matrix: SHW, as received		Date Sampled: 8/1/2000			
Analytical Method					
Parameter(s)	Results	Units	Analysis Date	Comment	
Carbonate on Ignition*					
Total Carbonate	35	%	8/29/2000		
*Analysis done on a dry weight basis.					
Sample ID: CT-0004 Lab ID # 14178					
Source: Onondaga Lake	LSL Sample ID: 0007218-002				
Sample Matrix: SHW, as received	Date Sampled: 8/1/2000				
Analytical Method					
Parameter(s)	Results	Units	Analysis Date	Comment	
Carbonate on Ignition					
Total Carbonate	32	%	8/29/2000	<u> </u>	
Sample ID: CT-0006 Lab ID # 14171					
Source: Onondaga Lake	LSL Sample ID: 0007218-003				
Sample Matrix: SHW, as received	Date Sampled: 7/31/2000				
Analytical Method					
Parameter(s)	Results	Units	Analysis Date	Comment	
Carbonate on Ignition					
Total Carbonate	35	%	8/29/2000		
Sample ID: CT-0003 Lab ID # 14170					
Source: Onondaga Lake	LSL Sample ID: 0007218-004				
Sample Matrix: SHW, as received	Date Sampled: 7/31/2000				
Analytical Method					
Parameter(s)	Results	Units	Analysis Date	Comment	
Carbonate on Ignition					
Total Carbonate	34	% 8/29/2000			

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-- REVISED LABORATORY ANALYSIS REPORT --

Parratt-Wolff, Inc. Fisher Road East Syracuse, NY 13057 Attn: Don Blasland Phone: (315) 437-1429 FAX: (315) 437-1770

Project No.: Exponent Authorization:	LSL Project No.: 0007218 Revised Report Date: 9/22/2000 Original Report Date: 9/6/00			
Sample ID: CT-00010 Lab ID # 14174				
Source: Onondaga Lake	LSL Sample ID: 0007218-005 Date Sampled: 7/31/2000			
Sample Matrix: SHW, as received				
Analytical Method				
Parameter(s)	Results	Units	Analysis Date	Comment
Carbonate on Ignition				
Total Carbonate	23	%	8/31/2000	

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