Attachment A-1

Predesign Investigation

Continental Steel Superfund Site Contract 3—Geological and Geophysical (Markland Avenue Quarry Sediment) Investigations

PREPARED FOR: USEPA

PREPARED BY: CH2M HILL

DATE: October 11, 2001

Introduction

This memorandum serves to document activities associated with the Contract 3—Geological (Markland Avenue Quarry Sediment) Investigations of the Continental Steel Superfund Site (CSSS) remedial design (RD) project, Work Assignment # 122-RDRD-05BW. Related field activities have been conducted in the Markland Avenue Quarry. The quarry is located on land formerly owned by Continental Steel that was used as a storage and disposal area for the facility. Sediment sampling work in the quarry area was initiated on August 20, 2001 and was completed on August 23, 2001. Geophysical work was initiated and completed on November 13, 2001.

This memorandum includes the following:

- Personnel involved with associated field activities and the corresponding time frame in which each individual performed work
- Descriptions of specific field activities performed
- Deviations to the *Quality Assurance Project Plan, Continental Steel Superfund Site* (May 2001; QAPP)
- Unusual circumstances encountered during fieldwork and other significant events
- Figures identifying field work areas
- A summary table based on field notes
- The geophysical subcontractor investigation report

Personnel

Field personnel associated with Contract 3—Geological Investigations are listed in Table 1.

TABLE 1
Contract 3 Markland Avenue Quarry Investigation Personnel
Continental Steel Superfund Site

Staff	Staff Role	Duration
Dan Plomb/CH2M HILL	Site Manager, observer	August 20 through August 21, 2001
Dave Shekoski/CH2M HILL	Sample & Analytical Manager; observer	August 22 through August 23, 2001
Alan Wells/CH2M HILL	Field Team Leader; observer	November 13, 2001
Commercial Diving Services (CDS)	Diving subcontractor	August 20 through August 23, 2001
Imaging Subsurface Inc. with Hibbard Marine Inc.	Geophysical subcontractor	November 13, 2001

Investigation Activities

The objectives of the field investigation activities were to:

- Determine if specific treatment requirements exist for the quarry sediment
- Determine the volume requirements of a RCRA cell within the Corrective Action Management Unit (CAMU) for the sediments excavated from the quarry
- Determine the sediment dewatering characteristics

The scope of field activities included sediment sampling and laboratory analysis, qualitative sediment dewatering testing, and a sub-bottom profiling geophysical investigation.

Due to the specialized skills and equipment needed to support the sediment sampling, Commercial Diving Services (CDS) of Louisville, KY, was contracted to perform the sediment characterization of the quarry. CDS provided a three man crew; a large, flat bottom motorized plate-aluminum boat; diving apparatus; a depth sounder; and underwater video equipment.

Videotaping Underwater Structures

CDS arrived onsite on August 20, 2001. Prior to commencing work, a safety meeting concerning the known chemical and physical hazards of the quarry was held with CDS personnel. After the boat was launched from the ramp on the southern end of the pond, the bottom was sounded with a depth finder to determine the depth of the quarry and to identify any unusual features that might require further investigation.

Using an underwater video camera, on August 20-21, 2001 a single diver and a two-person boat crew videotaped the bottom profile to document the features and conditions of the quarry bottom. Three paths running the length of the longest sides of the quarry were selected for videotaping. The first path, documented in "Video No. 1," runs parallel to the northern edge of the pond in a relatively straight line immediately south of Harrison Street.

The second path, documented in "Video No. 2," runs parallel to the eastern edge of the pond and is positioned at about a 45° angle toward the northeast. The third path, documented in "Video No. 3," runs parallel to Brandon Street and covers the western edge of the pond. The video path locations are shown on Figure 1.

Collection of Sediment Samples for Chemical Analysis

In order to determine whether treatment of excavated sediment needed to be performed, nine locations for sediment sample collection were chosen. Because of imposed diving limitations at the water depths encountered in the quarry pond, only one-third of the samples could be collected daily. The quarry, which is roughly triangle-shaped, was divided into three areas, each located near one of the three 'corners.' One of the three areas was completed per day.

The samples for chemical analysis were collected by driving a Lexan core tube through the depth of the sediment, then capping each end to prevent loss of material during surface retrieval and subsequent handling. The cores were retrieved immediately after sampling and labeled for identification. Three samples were collected from each of the three areas.

The first area, which covered about 150 square feet of the northwest section of the pond, was sampled on August 21, 2001. The second area, which covered about 150 square feet of the northeast corner of the quarry, was sampled on August 22, 2001. The third area, which covered about a 100 square foot area of the southwest corner north of the boat ramp, was sampled on August 23, 2001.

Locations of sediment samples for chemical analyses are shown on Figure 2. The sample dates, times, methods, analyses, and comments are summarized in Table 2.

Deviations

For chemical characterization, three sediment samples were to be collected per boring for nine locations. Nine borings were completed; however, due to volume limitations, a single chemical sample was taken from each boring.

The nine sampling locations do not match the locations that appear on the original QAPP figure. The original locations were chosen to provide spatial coverage to capture differences in sediment; however, actual locations were chosen based on diver observations, careful weighing of the benefits against the risks to the diver, and the maximum time the diver could remain at the depths found in the quarry. Although the locations varied from the plan, the samples were representative of the sediment in each area. The objectives were met with the optimum use of staff and budget, and risks to diving personnel were minimized.

Sediment Sample Collection for SPLP and Dewatering Parameters

The diver collected sediment for SPLP (synthetic precipitation leaching procedure) analysis and dewatering parameters in new, clean 5-gallon buckets. Two buckets were collected from each of the three areas at the same time and location as the collection of third Lexan core sample. The buckets were sealed with lids prior to being brought to the surface. The buckets were color-coded to aid in identification, and they were labeled onshore.

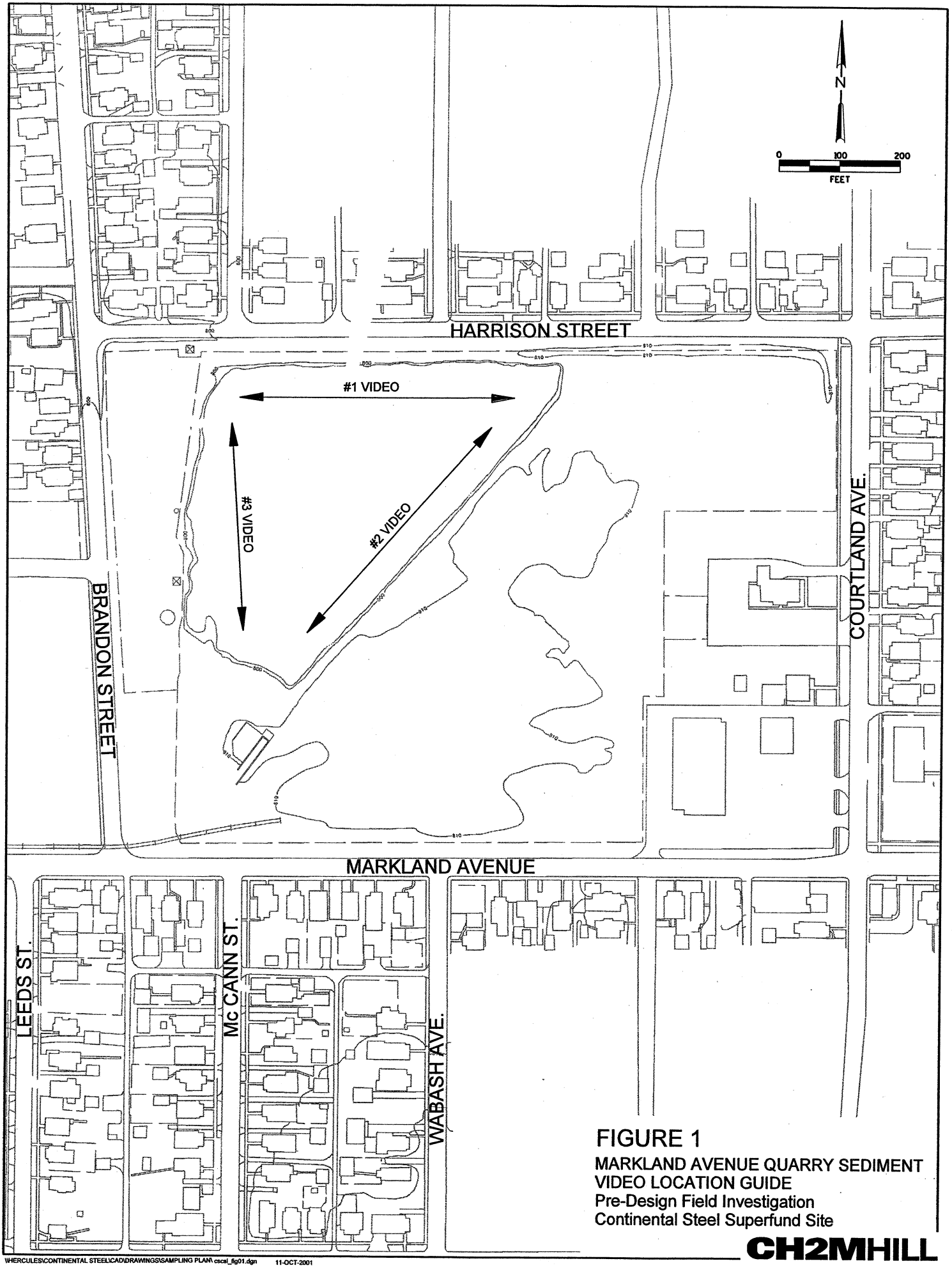

FIGURE 1

MARKLAND AVENUE QUARRY SEDIMENT
VIDEO LOCATION GUIDE
Pre-Design Field Investigation
Continental Steel Superfund Site

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\\HERCULES\CONTINENTAL STEEL\CAD\DRAWINGS\SAMPLING PLAN\ cscsl_fig01.dgn 11-OCT-2001

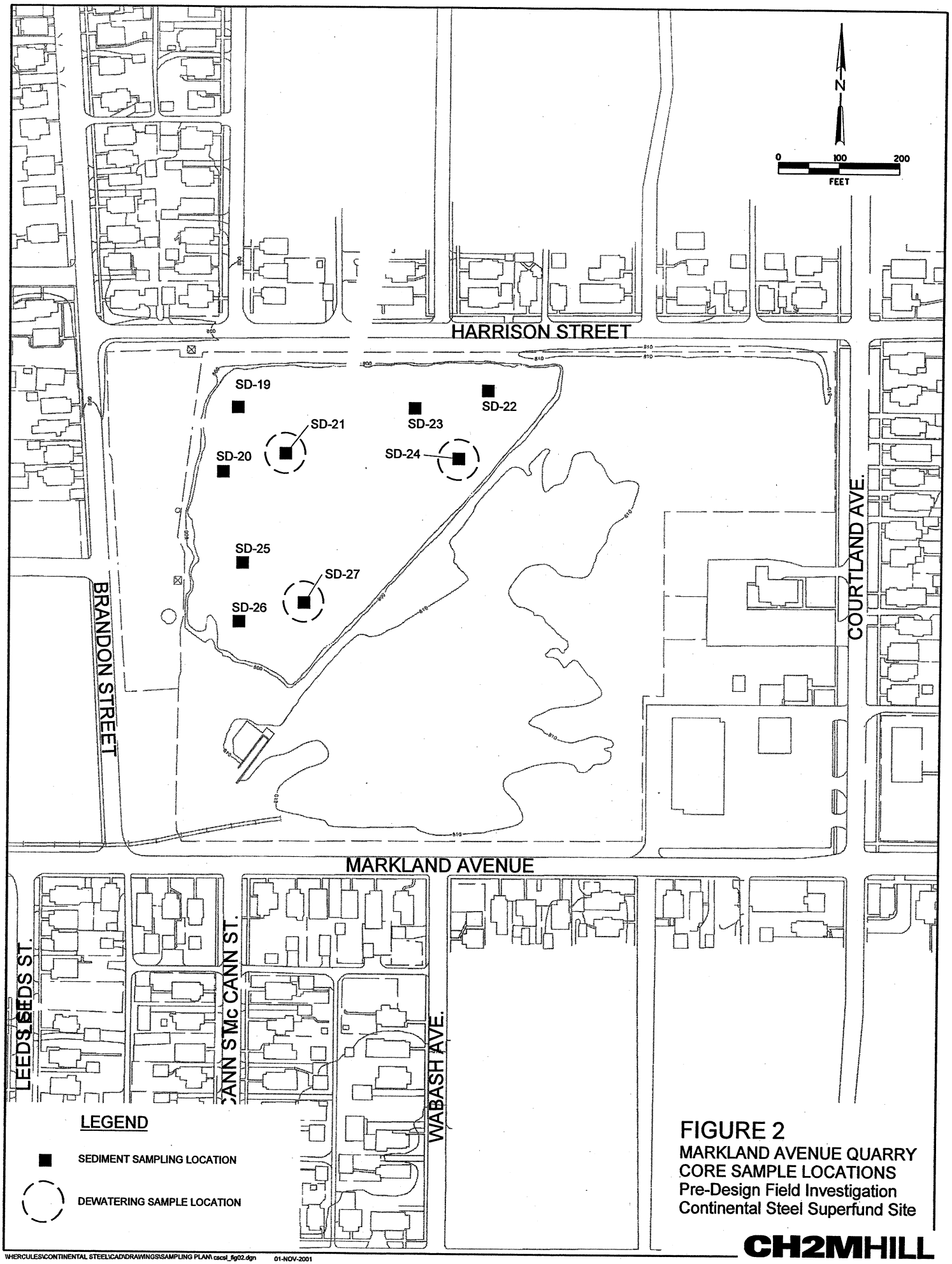

FIGURE 2
MARKLAND AVENUE QUARRY
CORE SAMPLE LOCATIONS
Pre-Design Field Investigation
Continental Steel Superfund Site

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TABLE 2
Markland Avenue Quarry Sediment Samples
Pre-Design Field Investigation
Continental Steel Superfund Site

Location Identifier	Date	Method	Analyses							Comments
			VOCs	PAHs	PCBs	Arsenic	Lead	SPLP	Qualitative Field Dewatering	
SD-19	08/21/2001	Lexan Core	X	X	X	X	X			Northwest section of pond, location marked with a bouy, sediment thickness is 48".
SD-20	08/21/2001	Lexan Core	X	X	X	X	X			Northwest section of pond.
SD-21	08/21/2001	Lexan Core & (2) 5-gallon buckets	X	X	X	X	X	X	X	Northwest section of pond; sample for dewatering and SPLP analysis collected.
SD-22	08/22/2001	Lexan Core	X	X	X	X	X			Northeast section of pond, northeast corner.
SD-23	08/22/2001	Lexan Core	X	X	X	X	X			Northeast section of pond.
SD-24	08/22/2001	Lexan Core & (2) 5-gallon buckets	X	X	X	X	X	X	X	Northeast section of pond, sample for dewatering and SPLP analysis collected.
SD-25	08/23/2001	Lexan Core	X	X	X	X	X			Southwest section of pond.
SD-26	08/23/2001	Lexan Core	X	X	X	X	X			Southwest section of pond.
SD-27	08/23/2001	Lexan Core & (2) 5-gallon buckets	X	X	X	X	X	X	X	Southwest section of pond, sample for dewatering and SPLP analysis collected, location marked with a bouy, sediment thickness is 13".

Notes:

a. "bgs" represents "below ground surface".

b. "VOCs" represents "Volatile Organic Compounds".

c. "PAH" represents "Polynuclear Aromatic Hydrocarbons".

d. "PCBs" represents "Polychlorinated Biphenyls".

e. "SPLP" represents "Synthetic Precipitation Leaching Procedure".

f. SPLP analysis completed for VOCs, PAHs, PCBs, arsenic and lead.

g. Refer to *Quality Assurance Project Plan, Continental Steel Superfund Site* (May 2001) for specific analytical test methods used.

h. VOC, PAH, PCB and metals analyses completed by USEPA's Contract Laboratory Program.

i. SPLP analyses completed by USEPA's Region V Central Regional Laboratory.

SPLP samples from each location were composited from both buckets. The buckets were then re-sealed and stored for the dewatering procedure.

Deviations

For SPLP and dewatering samples, three sediment samples were to be composited from nine borings, or one from each of the three locations. This approach was found to be logistically impractical; therefore, a single sample for SPLP and dewatering parameters was collected at the third boring location from each of the three areas. This approach was used because the sediment in each area displayed homogeneity (later confirmed by visual comparison of the core and bucket samples). It would have also been quite difficult for the diver to transport and maneuver two 5-gallon buckets over the sample area while at the quarry bottom, and the maximum time limit that the diver could spend on the bottom had to be strictly observed.

The plan originally called for the collection of up to nine samples for toxicity characteristic leaching procedure (TCLP) and SPLP analyses. This approach was abandoned because of insufficient sediment recovery in the cores to satisfy TCLP and SPLP volume requirements. In addition, the Region 5 Central Regional Laboratory, which was scheduled to perform the TCLP and SPLP work, had significant capacity limitations that resulted in a reduction in the number of samples that could be submitted. For these reasons, the TCLP analysis were deleted, and the quantity of SPLP samples was reduced from nine to three.

Dewatering Sediment Sample Collection and Testing

A total of three sediment samples were collected for qualitative dewatering testing (Figure 1; Tables 2 and 3). Dewatering test results will be used to evaluate the post-excavation sediment handling requirements.

Deviations

The QAPP field dewatering standard operating procedure (SOP) indicated that the tests would be completed by means of dewatering boxes with a limited number of sediment admixtures. However, the concept of using geotubes for sediment dewatering was developed before any of the dewatering testing had been completed, so the field test procedure was modified to reflect this potential dewatering alternative. The modified test procedure consisted of:

1. Hanging bags constructed of geotube material. These bags measured approximately 28 inches wide by 34 inches long. Two different bag meshes were used; bags of a coarser-mesh were black and bags of a finer-mesh were white. Four hanging loops were attached at each of the four corners of each bag top. The bags were hung to allow for gravity drainage and capture of the drained water.

2. Mixing 5 gallons of sediment with 5 gallons of water. Potable water from the City of Kokomo distribution system was used to augment the amount of water present in the sediment samples.

3. Pouring the sediment-water mixture into the bags.

TABLE 3
Dewatering Sample Test Summary
Pre-Design Field Investigation
Continental Steel Superfund Site

Dewatering Sample Identifier	Core Location Identifier	Date		Start Time (24 Hour)	Stop Time (24 Hour)	Elapsed Time (Hrs:Mins)	Drain Water Analyses				Comment
		Start	Stop				VOCs	PCBs	PAHs	Metals	
Coarse-Mesh (Black) Bag Tests											
DS-1	SD-21	08/29/2001	08/30/2001	8:13	9:00	24:47	X	X	X	X	Blackish globules on sediment. Drain water brown and cloudy; fine flecks of oil-like substance on water surface. Drain water sample identifier: CS3-DS001-02.
DS-2	SD-24	08/30/2001	08/30/2001	14:05	21:30	7:25	X	X	X	X	Blackish globules on sediment. Drain water clear to slightly gray; some sheen. Drain water sample identifier: CS3-DS002-02.
DS-3	SD-27	08/30/2001	08/31/2001	13:40	6:00	16:20	X	X	X	X	Drain water grayish-green and clear to cloudy; some sheen. Drain water sample identifier: CS3-DS003-02.
Fine-Mesh (White) Bag Tests											
DS-1	SD-21	08/28/2001	08/29/2001	14:08	19:20	29:12	X	X	X	X	Blackish globules on sediment. Drain water brown and cloudy; fine flecks of oil-like substance on water surface. Drain water sample identifier: CS3-DS001-01 and CS3-DS001R-01.
DS-2	SD-24	08/30/2001	08/30/2001	13:50	21:00	7:10					Blackish globules on sediment. Drain water clear to slightly gray; some sheen.
DS-3	SD-27	08/30/2001	08/31/2001	13:40	11:00	21:20	X	X	X	X	Drain water grayish-green and clear to cloudy; some sheen. Drain water sample identifier: CS3-DS003-01.

Notes:
a. VOCs (Volatile Organic Compounds), Polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), and metals analyses completed by USEPA's Contract Laboratory Program.
b. The qualitative field dewatering tests were performed in the field by CH2M HILL personnel.
c. The Coarse-mesh geotube bag material was black and the Fine-mesh bag material was white in color.
d. Drain water analyses completed by USEPA's Contract Laboratory Program.

Attachment A-1a
Sub-bottom Profiling Results
Continental Steel Superfund Site
Contract 3—Geological and Geophysical Investigations

iSi

IMAGING SUBSURFACE, INC.

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January 15, 2002
Project No. 01-963

Mr. Dan Plomb
CH2M Hill
135 South 84th Street, Suite 325
Milwaukee, WI 53214

Subject: Sub Bottom Profiling of Sediments – Continental Steel, Kokomo, Indiana

Dear Mr. Plomb:

Imaging Subsurface, Inc. (ISI) appreciates the opportunity to perform a sonar survey at the subject project site. The survey was performed in accordance with our proposal dated May 25th, 2001. The objective of the survey was to estimate the sediment thickness at the bottom of the lake formed within the Markland Quarry.

SITE CONDITIONS:

The Markland Quarry is located at the southeast corner of S. Brandon Street and Harrison Street, immediately north of Markland Avenue. The quarry has been filled with water with depth ranging from a few feet close to the eastern end to over 40 feet in the middle of the quarry. A docking way was available to launch boats for investigation and sampling activities. A representative from CH2M and Hill provided the access and site information prior to commencement of the current investigation. All work was performed in accordance with the guidance from the CH2M and Hill representative.

EQUIPMENT AND METHOD:

The sub bottom profiling system used by ISI utilized a "bubble pulser" source that was towed by a small "jet" boat. A hydrophone array was towed by the same boat to receive the acoustic returns. An onboard computer controlled the system and processed the received data via Triton/Elics seismic program. The boat followed an overlapping loop paths opposed to more conventional individual profile runs. This method was used since it became obvious during actual operations that over sampling would be a necessity. Once the data was collected, a brief review was conducted ashore.

A sub bottom acoustic profiling survey was conducted on November 13th, 2001. The purpose of the survey was the determination of sediment levels in the bottom of the quarry. The depth of water averaged 49.0' over an undulating bottom. The bottom sediment and underlying rock provided consistent data although multipathing was a severe limitation. The high multi path

environment was a function of the small volume of water relative to the energy and frequency required to penetrate the bottom. The near vertical walls contributed to the multi path levels. The data that was obtained was able to be post processed successfully by isolating small groups and correcting each group individually.

The sediment levels were constructed by using approximately 100 hand picked points to verify the data. These points were applied to a model plane and deviations were applied. The information resulted in an estimated sediment volume of some 7,500 cubic yards. The specific totals can be found on the data point spreadsheet on the right side of the page. The track and area data was controlled by integrated DGPS data and the use of an aerial photo.

RESULTS AND CONCLUSIONS:

The general site layout and site location map is provided in **Figure 1** provided by CH2M and Hill representative. An aerial photograph of the site is provided in **Figure 2**.

Figure 3 shows the exact DGPS track of the array as an offset of the actual DGPS position in the boat. The control points (triangle symbol) at Location 1 and Location 9 were furnished by CH2M and Hill representative. Their GPS locations were taken from the buoy locations that were in the water at the time of the survey. The data points (diamond symbol) represent the hand picked control points taken during post processing.

Representative raw data collected at the site and stored in the data logger is presented in **Figure 4**. A mathematical model of the sediment depths as differences from the average plane is presented in **Figure 5**. The reference plane for the graph is in longitude/latitude while depth of sediment is in inches.

Thickness of sediments at all the computation points is presented in **Figure 6** which is spread over two sheets.

Based on the lake bottom profiling survey, ISI estimates that the average thickness of the sediments is 24.3 in and varies from 13.3 in to 38.4 in. Assuming an average area of the lake bottom to be 100,000 ft^2, the total volume of sediments is estimated to be 7,500 yd^3.

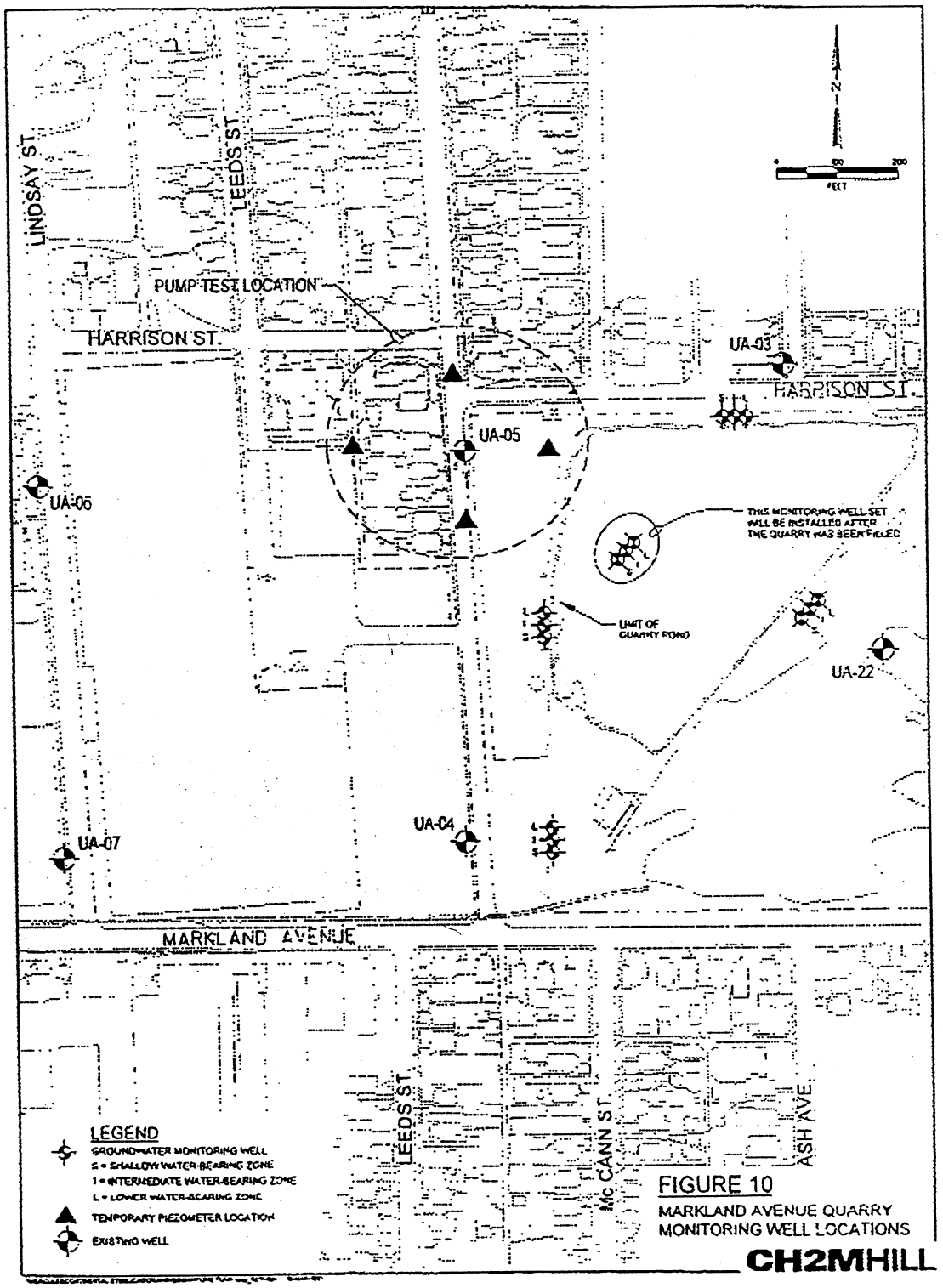
ISI highly appreciates the opportunity to provide the geophysical surveying services to you. If you have any questions, please call me at **(248)-426-8900**.

Thank you.

Yours sincerely
IMAGING SUBSURFACE, INC.

Rakesh S

Rakesh Sarman, Ph.D., C.P.G.
Technical Director



SITE PLAN MAP MARKLAND AVENUE QUARRY KOKOMO, INDIANA	FIGURE 1 PROJECT NUMBER 01 - 963 PREPARED FOR	Sheet 1 Of	IMAGING SUBSURFACE, INCORPORATED

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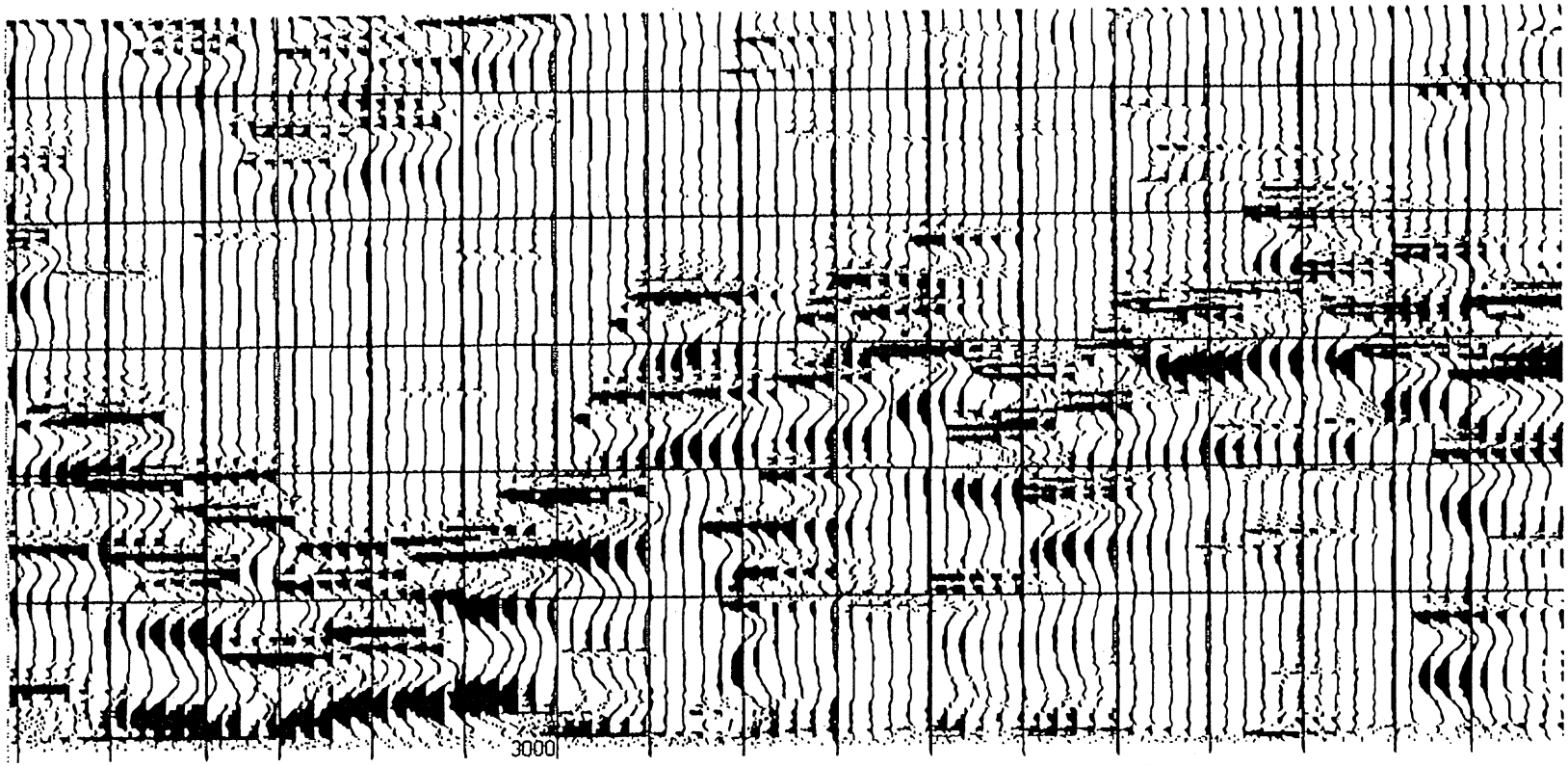
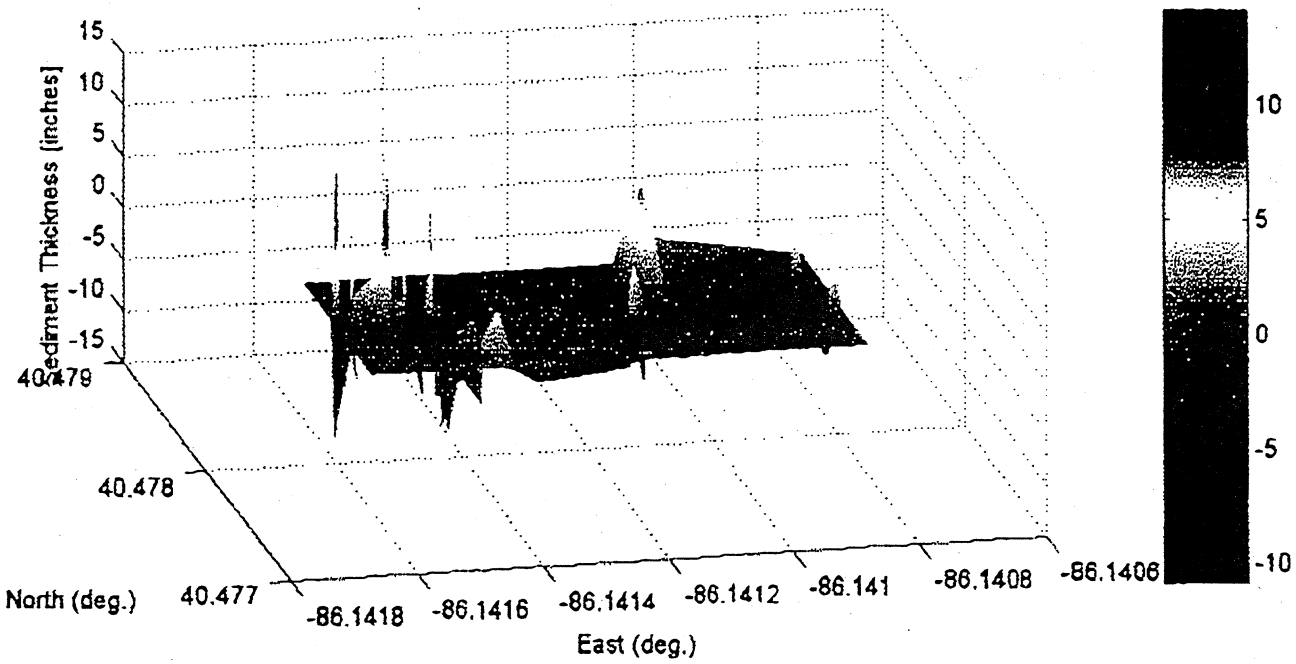


REPRESENTATIVE RAW DATA MARKLAND AVENUE QUARRY KOKOMO, INDIANA KE BOTTOM PROFILING SURVEY	FIGURE 4 PROJECT NUMBER 01 - 963 PREPARED FOR CH2M HILL, INC. MILWAUKEE, WISCONSIN	Sheet 1 Of 1	IMAGING SUBSURFACE, INCORPORATED GEOTECHNICAL INVESTIGATIONS • CONSTRUCTION INSPECTION ENVIRONMENTAL SAMPLING • GEOPHYSICAL SURVEYING • MATERTIAL TESTING

Fig. 2



SEDIMENT DEPTH PROFILE MARKLAND AVENUE QUARRY KOKOMO, INDIANA	FIGURE 5 PROJECT NUMBER 01 - 963 PREPARED FOR CH2M HILL, INC	Sheet 1 Of 1	IMAGING SUBSURFACE, INCORPORATED GEOTECHNICAL INVESTIGATIONS ▲ CONSTRUCTION INSPECTION

Imaging Subsurface, Inc.

GPS Waypoint Latitude NAD 83	Longitude			Data Name	Water Column (ft)	Sediment depth (in)
40d28m39.127s	86d8m28.311s	40.47753528	86.1411975	Location 9	48	13
40d28m42.789s	86d8m28.310s	40.47854694	86.14119722	Location 1	53	48

Path 1|2	Point #	Penetration (ms)	Sediment (in)	West	North
2	20	0.7	20.7	86.1416101	40.47767723
2	40	0.8	23.6	86.14161458	40.47771968
2	50	0.75	22.2	86.1416124	40.47774058
2	100	0.5	14.8	86.14161993	40.47785572
2	105	0.45	13.3	86.1416212	40.47786747
2	2204	0.9	26.6	86.14161697	40.47791715
2	2250	1.2	35.4	86.14161323	40.47791343
2	2260	1.3	38.4	86.14161242	40.47791263
2	2300	0.7	20.7	86.14160917	40.47790942
2	2310	0.8	23.6	86.14160835	40.47790862
2	2345	0.8	23.6	86.1416055	40.4779058
2	2360	0.75	22.2	86.14160428	40.47790458
2	2416	0.6	17.7	86.14159972	40.47790007
2	2525	0.8	23.6	86.14159087	40.4778913
2	2532	1.1	32.5	86.14159028	40.47789073
2	2540	1	29.5	86.14158963	40.47789008
2	2550	0.75	22.2	86.14158883	40.47788928
2	2555	0.9	26.6	86.14158842	40.47788888
2	3020	1	29.5	86.1415508	40.47785143
2	3030	0.8	23.6	86.14154978	40.47785063
2	3035	0.8	23.6	86.14154938	40.47785023
2	3050	1.1	32.5	86.14154817	40.47784902
2	3060	0.9	26.6	86.14154735	40.47784822
2	3076	1.2	35.4	86.14154613	40.47784702
2	3115	1.1	32.5	86.14154288	40.47784378
2	3125	1.3	38.4	86.14154207	40.47784298
2	3200	1	29.5	86.14153597	40.47783695
2	3210	0.75	22.2	86.14153515	40.47783613
2	3240	0.8	23.6	86.14153272	40.47783373
2	3270	0.8	23.6	86.14153027	40.47783132
2	3275	0.8	23.6	86.14152987	40.4778309
2	3285	1	29.5	86.14152905	40.4778301
2	3290	0.9	26.6	86.14152865	40.4778297
2	3390	0.9	26.6	86.14152052	40.47782165
2	3400	0.7	20.7	86.1415197	40.47782085
2	3410	0.8	23.6	86.14151888	40.47782003
2	3420	1	29.5	86.14151807	40.47781923
2	3425	0.9	26.6	86.14151767	40.47781883
2	3440	1.1	32.5	86.14151645	40.47781762
2	3450	0.7	20.7	86.14151563	40.47781682
2	3460	0.75	22.2	86.14151482	40.47781602
2	3480	0.8	23.6	86.1415132	40.4778144
2	3745	0.6	17.7	86.14149163	40.47779307
2	3756	0.7	20.7	86.14149083	40.47779225
2	3765	0.7	20.7	86.14149002	40.47779145
2	3790	0.9	26.6	86.14148798	40.47778943
2	3800	0.9	26.6	86.14148717	40.47778863
2	3805	0.8	23.6	86.14148677	40.47778823
2	3815	0.7	20.7	86.14148595	40.47778743
2	3820	0.9	26.6	86.14148553	40.47778702

Area of Lake	100,000	ft^2
Average Sediment	24.3	in.
Volume Estimate	202,536	ft^3
	7,501	Cubic Yards
Sediment		
Max	38.4	in.
Min	13.3	in.
Diff	25.1	in.
West		
Max	86.1416212	Degrees West
Min	86.14082575	Degrees West
North		
Max	40.47825963	Degrees North
Min	40.4773995	Degrees North

SEDIMENT THICKNESS DATA MARKLAND AVENUE QUARRY KOKOMO, INDIANA	FIG.-6	Sheet	IMAGING SUBSURFACE, INCORPORATED
	PROJECT NUMBER 01-963	1 Of 2	
LAKE BOTTOM PROFILING SURVEY	PREPARED FOR CH2M HILL, INC. MILWAUKEE, WISCONSIN		GEOTECHNICAL INVESTIGATIONS • CONSTRUCTION INSPECTION ENVIRONMENTAL SAMPLING • GEOPHYSICAL SURVEYING • MATERIAL TESTING

2	3885	1	29.5	86.14148025	40.47778178
2	3890	1.1	32.5	86.14147985	40.47778138
2	3900	1.2	35.4	86.14147903	40.47778056
2	3930	0.7	20.7	86.1414766	40.47777817
2	3955	0.75	22.2	86.14147457	40.47777615
2	3960	0.7	20.7	86.14147415	40.47777575
2	3965	0.8	23.6	86.14147375	40.47777535
2	3970	0.6	17.7	86.14147335	40.47777495
2	3975	0.7	20.7	86.14147293	40.47777455
2	3985	0.9	26.6	86.14147212	40.47777373
2	3990	0.6	17.7	86.14147172	40.47777333
2	4000	0.7	20.7	86.1414709	40.47777253
2	4015	0.8	23.6	86.14146968	40.47777132
2	4035	0.9	26.6	86.14146805	40.47776972
2	4045	0.6	17.7	86.14146725	40.4777689
2	4230	0.7	20.7	86.14140092	40.4777449
2	4250	0.75	22.2	86.141412	40.47770467
2	4290	0.9	26.6	86.1414336	40.47761642
2	4330	0.7	20.7	86.14147927	40.47753947
2	4340	0.6	17.7	86.14140508	40.4775201
2	4365	0.7	20.7	86.14149908	40.4774883
2	4375	0.6	17.7	86.1414942	40.47744862
2	4390	0.8	23.6	86.14147945	40.47741745
2	4400	0.7	20.7	86.14144687	40.4773995
2	4410	0.9	26.6	96.14144438	40.47742632
2	4420	1	29.5	86.14141922	40.47741813
2	4430	0.8	23.6	86.14139122	40.4774161
2	4445	0.75	22.2	86.14135238	40.47742188
2	4580	0.7	20.7	86.14118928	40.47764387
2	4590	0.8	23.6	86.14118043	40.47766788
2	4600	1	29.5	86.14116963	40.4776896
2	4620	1	29.5	86.1411627	40.47773643
2	4650	0.6	17.7	86.14113855	40.47780663
2	4660	0.7	20.7	86.14114447	40.4778321
2	4810	1.1	32.5	86.14109325	40.4781885
2	4820	1	29.5	86.14109328	40.47821108
2	4830	0.8	23.6	86.14108788	40.4782345
2	4840	0.9	26.6	86.14108133	40.47825963
2	5190	0.7	20.7	86.14083477	40.47808177
2	5200	0.7	20.7	96.14084578	40.47806195
2	5210	0.6	17.7	86.1408563	40.47804125
2	5225	1	29.5	86.14086798	40.47800652
2	5240	0.6	17.7	86.14087577	40.4779739
2	5250	0.7	20.7	86.1408842	40.47795372
2	5690	0.8	23.6	86.14087248	40.47763585
2	5700	0.7	20.7	86.1408856	40.47765955
2	5210	0.7	20.7	86.1408563	40.47804125
2	5225	1	29.5	86.14086798	40.47800652
2	5240	0.6	17.7	86.14087577	40.4779739
2	5250	0.7	20.7	86.1408842	40.47795372
2	5690	0.8	23.6	86.14087248	40.47763585
2	5700	0.7	20.7	86.1408856	40.47765955
2	5710	0.7	20.7	86.14085465	40.47767655
2	5720	0.9	26.6	86.14085298	40.47770205
2	5730	1	29.5	86.14083865	40.47772147
2	5740	0.9	26.6	86.14083165	40.47774227
2	5755	0.8	23.6	86.14082575	40.47777675

SEDIMENT THICKNESS DATA MARKLAND AVENUE QUARRY KOKOMO, INDIANA	FIG.-6 PROJECT NUMBER 01-963	Sheet 2 Of 2	IMAGING SUBSURFACE, INCORPORATED
LAKE BOTTOM PROFILING SURVEY	PREPARED FOR CH2M HILL, INC. MILWAUKEE, WISCONSIN		GEOTECHNICAL INVESTIGATIONS • CONSTRUCTION INSPECTION ENVIRONMENTAL SAMPLING • GEOPHYSICAL SURVEYING • MATERIAL TESTING

Attachment A-2

Analytical Data