

APPENDIX 5.8-B

**MARINE SEDIMENT SAMPLING PROGRAM
MELFORD MARINE TERMINAL
MELFORD, NOVA SCOTIA
FINAL REPORT**



**MARINE SEDIMENT SAMPLING PROGRAM
MELFORD MARINE TERMINAL
MELFORD, NOVA SCOTIA**

FINAL REPORT

Submitted to:

Melford Marine Terminal Inc.
Melford, Nova Scotia

Submitted by:

AMEC Earth & Environmental,
A division of AMEC Americas Limited
Saint John, New Brunswick

September 2007
TV71002

Introduction

AMEC Earth & Environmental, a division of AMEC Americas Limited (AMEC), is pleased to provide Melford International Terminal Inc. the findings of a marine sediment sampling program (MSSP) undertaken at Melford, Guysborough County, Nova Scotia (NS). The purpose of this program was to characterize the sediment to determine acceptable disposal options for the marine sediment intended to be dredged.

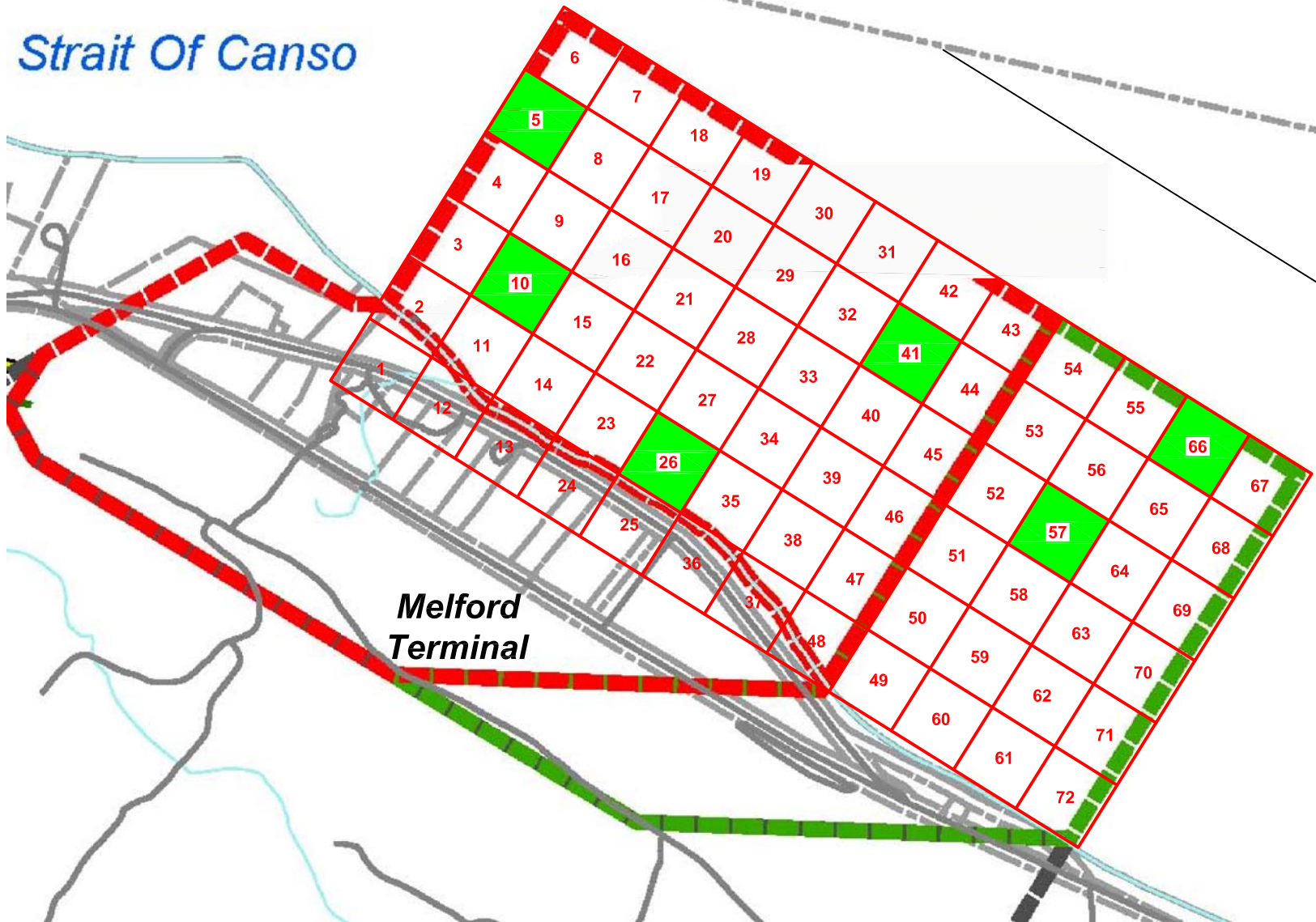
Scope and Methodology

The sediment samples were collected on July 25, 2007 at Melford, Guysborough County, NS. A total of six marine sediment samples were collected within the footprint of the proposed project area at randomly selected sampling locations provided by AMEC. This scope and methodology was based on preliminary data collection purposes only and may or may not satisfy the scope of the actual project at this time.

The selection of sample stations followed guidance provided in the Environmental Protection Series: *Users Guide to the Application Form for Ocean Disposal* (Report EPS 1/MA/1 December 1995), where a random approach was implemented for the location of sampling stations within the proposed dredging area. The unstratified area was divided into square blocks where at least five times as many blocks as the number of stations required were used. In this case 72 blocks were used to delineate the footprint. A random number generator software program was then used to derive the six sampling locations within the footprint. A figure indicating those sample locations was generated and provided to the divers for implementation.

A Garmin eTrex Legend® Global Positioning System (GPS) was used to georeference the sampling locations. The coordinates were recorded by the GPS unit and are listed in Table 1 as latitude and longitude (ddmmss.s) (Datum: NAD 83).

Strait Of Canso



NAD83 [decimal degrees]		
ID #	Longitude	Latitude
5	-61.2948	45.5368
10	-61.2952	45.5344
26	-61.2922	45.5318
41	-61.2871	45.5333
57	-61.2840	45.5306
66	-61.2811	45.5319



INDEX MAP

LEGEND:
NOTES:

SCALE: 1:10,000

DATE: July 18, 2007
DRAWN BY: DET
PROJECT No.: TE
FILE NAME: Melford Benthics.dwg

MELFORD TERMINAL

FIGURE 1
MARINE SEDIMENT AND
BENTHIC INVERTEBRATE
SAMPLING LOCATIONS

Table 1 *Marine Sediment Sampling Program Coordinates at Melford, Guysborough County, NS*

Sample Station ID	Latitude	Longitude
Melford 5	N 45° 32.111	w 61° 17.734
Melford 10	N 45° 32.064	W 61° 17.712
Melford 26	N 45° 31.908	W 61° 17.532
Melford 41	N 45° 31.941	W 61° 17.275
Melford 57	N 45° 31.817	W 61° 17.054
Melford 66	N 45° 31.865	W 61° 16.922

The sample collection, preparation, and analyses were conducted in accordance with Environment Canada's publication *Guidance Document on Collection and Preparation of Sediments for Physicochemical Characterization and Biological Testing, December 1994*. Connors Diving Services Ltd was retained to collect the sediment samples. Diving services were conducted in accordance with the Canadian Standards Association (CSA) Standard Z-275.2/92 *Occupational Safety Code for Diving Operations* and guidelines defined by provincial Occupational Health and Safety Standards.

The samples were collected by the divers using laboratory-provided sample bottles to penetrate the substrate, as much as was practical, such that the upper 5cm of the sediment column was collected. As per laboratory protocol, two 500 ml jars of sediment were collected per station. Following sample collection, the samples were placed in a cooler with ice and hand delivered to Maxxam Analytics Inc. (Maxxam), an accredited laboratory with the Canadian Standards Association, in Bedford, NS for select chemical analyses.

The sediment samples were analyzed for metals including tin, mercury, hexavalent chromium, and low level selenium; polycyclic aromatic hydrocarbons (PAHs); polychlorinated biphenyls (PCBs); benzene, toluene, ethylbenzene, and xylene (BTEX); total petroleum hydrocarbons (TPHs); total inorganic carbon (TIC) and total organic carbon (TOC); total dichloro-diphenyl-trichloroethane (DDT); and grain size.

The marine sediment sample results (six in total) were compared to both CEPA Ocean Disposal Guidelines for the Atlantic Region and CCME Marine Sediment Probable Effects Levels (PELs) as well as the CCME *Soil Quality Guidelines* (SQGs) for the Protection of Environment and Human Health in agricultural, residential/parkland, and commercial/industrial applications and the Atlantic RBCA Version 2.0 *Tier 1 Risk-Based Screening Levels* (RBSLs).

Marine Sediment Sampling Analytical Results

The analytical results of the six marine sediment samples obtained at Melford are summarized in Tables 2 to 4, and discussed below. For the metals results, only those parameters for which there are established regulatory guidelines are included in the table. The complete set of analytical results, including laboratory QA/QC and Certificates of Analyses for all parameters tested, are provided in Attachment A.

Table 2 Analytical Results of the Sediment Samples Collected at Melford, Guysborough County, NS

Parameter	Units	Sample Identification and Date						CEPA Ocean Disposal Guidelines- Atlantic Region	CCME Marine Sediment Probable Effects Levels	CCME Soil Quality Guidelines, Rev. 2003		
		Melford 5	Melford 10	Melford 26	Melford 41	Melford 57	Melford 66			Agricultural	Residential/ Parkland	Commercial/ Industrial
		July 25, 2007										
Polycyclic Aromatic Hydrocarbons (PAH) Results:												
1-Methylnaphthalene	mg/kg	<0.05	0.01	<0.05	0.01	0.01	0.01	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.010	0.010	0.008	0.018	0.015	0.018	-	-	-	-	-
Acenaphthene	mg/kg	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	0.0889	-	-	-
Acenaphthylene	mg/kg	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	0.128	-	-	-
Anthracene	mg/kg	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	-	0.245	-	-	-
Benzo(a)anthracene	mg/kg	0.010	<0.005	<0.005	0.020	0.010	0.011	-	0.693	0.1	1	10
Benzo(a)pyrene	mg/kg	0.009	<0.005	<0.005	0.014	<0.005	0.010	-	0.763	0.1	0.7	0.7
Benzo(b)fluoranthene	mg/kg	0.012	<0.005	<0.005	0.022	0.012	0.016	-	-	0.1	1	10
Benzo(g,h,i)perylene	mg/kg	<0.005	<0.005	<0.005	0.015	0.009	0.012	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.012	<0.005	<0.005	0.022	0.012	0.016	-	-	0.1	1	10
Chrysene	mg/kg	0.012	<0.005	<0.005	0.019	0.011	0.012	-	0.846	-	-	-
Dibenzo(a,h)anthracene	mg/kg	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	0.135	0.1	1	10
Fluoranthene	mg/kg	0.026	0.013	0.011	0.050	0.025	0.034	-	1.494	-	-	-
Fluorene	mg/kg	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	0.144	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.006	<0.005	<0.005	0.013	<0.005	0.010	-	-	-	1	10
Naphthalene	mg/kg	0.014	0.014	0.011	0.021	0.020	0.021	-	0.391	0.1	0.6	22
Benzyene	mg/kg	0.010	<0.005	<0.005	0.021	0.012	0.016	-	-	-	-	-
Phenanthrene	mg/kg	0.013	0.008	0.009	0.029	0.015	0.018	-	0.544	0.1	5	50
Pyrene	mg/kg	0.019	0.010	0.010	0.037	0.019	0.024	-	1.398	0.1	10	100
Total PAH	mg/kg	0.153	0.063	0.049	0.321	0.196	0.231	2.5	-	-	-	-
Polychlorinated Biphenyl (PCB) Results												
PCB Concentration	mg/kg	0.06	0.04	<0.01	0.13	0.11	0.19	0.1	0.189	0.5	1.3	33
Dichloro-Diphenyl-Trichloroethane (DDT) Results												
2,4'-DDD + 4,4'-DDD	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-
2,4'-DDE + 4,4'-DDE	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-
2,4'-DDT + 4,4'-DDT	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	0.7	0.7	12
Grain Size Results												
<PFI -4.0 (16.00 mm)	%	100.0	100.0	100.0	100.0	100.0	100.0	-	-	-	-	-
<PFI -3.0 (8.00 mm)	%	100.0	100.0	100.0	100.0	100.0	100.0	-	-	-	-	-
<PFI -2.0 (4.00 mm)	%	100.0	100.0	100.0	100.0	100.0	100.0	-	-	-	-	-
<PFI -1.0 (2.00 mm)	%	62.0	58.0	38.0	76.0	88.0	76.0	-	-	-	-	-
<PFI 0.0 (1.00 mm)	%	56.0	51.0	32.0	72.0	81.0	72.0	-	-	-	-	-
<PFI +1.0 (0.50 mm)	%	48.0	44.0	27.0	68.0	75.0	68.0	-	-	-	-	-
<PFI +2.0 (0.25 mm)	%	34.0	31.0	20.0	64.0	64.0	63.0	-	-	-	-	-
<PFI +3.0 (0.125 mm)	%	29.0	21.0	15.0	60.0	59.0	60.0	-	-	-	-	-
<PFI +4.0 (0.0625 mm)	%	24.0	14.0	8.1	57.0	51.0	55.0	-	-	-	-	-
<PFI +5.0 (0.031 mm)	%	21.0	11.0	5.7	50.0	44.0	40.0	-	-	-	-	-
<PFI +6.0 (0.0156 mm)	%	17.0	8.2	4.5	41.0	36.0	53.0	-	-	-	-	-
<PFI +7.0 (0.0078 mm)	%	12.0	6.4	3.6	30.0	25.0	31.0	-	-	-	-	-
<PFI +8.0 (0.0039 mm)	%	10.0	5.6	3.3	25.0	22.0	25.0	-	-	-	-	-
<PFI +9.0 (0.002 mm)	%	6.5	4.6	2.7	17.0	15.0	12.0	-	-	-	-	-
Gravel	%	38.0	42.0	62.0	24.0	12.0	24.0	-	-	-	-	-
Sand	%	38.0	45.0	29.0	20.0	36.0	21.0	-	-	-	-	-
Silt	%	14.0	8.0	4.8	32.0	29.0	30.0	-	-	-	-	-
Clay	%	10.0	5.6	3.3	25.0	22.0	25.0	-	-	-	-	-
Other												
Moisture	%	30	24	20	48	42	46	-	-	-	-	-

¹denotes Canadian Environmental Quality Guidelines, revised 2003

²denotes unidentified (possibly halogenated) compounds detected.

Yellow shaded values indicate CEPA Ocean Disposal Guidelines - Atlantic Region exceedances.

Bold Values indicate CCME Marine Sediment Probable Effects Level exceedances.

Left justified values indicate CCME Soil Quality Guidelines for Agricultural Application exceedances.

Underlined values indicate CCME Soil Quality Guidelines for Residential/Parkland Application exceedances.

Interrupted boxed values indicate CCME Soil Quality Guidelines for Commercial/Industrial Application exceedances.

Table 3 Metal Concentrations in the Sediment Samples Collected at Melford, Guysborough County, NS

Parameter	Units	Sample Identification and Date						CEPA Ocean Disposal Guidelines- Atlantic Region	CCME Marine Sediment Probable Effects Levels	CCME Soil Quality Guidelines, Rev. 2003 ¹		
		Melford 5 A&B	Melford 10 A&B	Melford 26 A&B	Melford 41 A&B	Melford 57 A&B	Melford 66 A&B			Agricultural	Residential/ Parkland	Commercial/ Industrial
		July 25, 2007										
Antimony	mg/kg	<2	<2	<2	<2	<2	<2	-	-	20	20	40
Arsenic	mg/kg	5	4	3	5	7	8	-	41.6	12	12	12
Barium	mg/kg	67	56	49	85	98	90	-	-	750	500	2000
Beryllium	mg/kg	<2	<2	<2	<2	<2	<2	-	-	4	4	8
Cadmium	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.6	4.2	1.4	10	22
Chromium +6	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	0.4	0.4	1.4
Chromium (Total)	mg/kg	14	11	9	16	15	17	-	160	64	64	87
Cobalt	mg/kg	7	6	5	8	8	9	-	-	40	50	300
Copper	mg/kg	8	6	8	12	11	14	81*	108	63	63	91
Lead	mg/kg	17.0	13.0	9.9	23.0	19.0	24.0	66*	112	70	140	260 600
Mercury	mg/kg	0.02	0.01	0.01	0.03	0.02	0.03	0.75	0.7	6.6	6.6	24 50
Molybdenum	mg/kg	<2	<2	<2	<2	<2	<2	-	-	5	10	40
Nickel	mg/kg	17	14	13	20	19	22	-	-	50	50	50
Selenium	mg/kg	<1	<1	1	<1	<1	<1	-	-	1	1	3.9
Silver	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	20	20	40
Thallium	mg/kg	<0.1	<0.1	<0.1	0.1	0.1	<0.1	-	-	1	1	1
Tin	mg/kg	2	<2	<2	<2	<2	<2	-	-	5	50	300
Vanadium	mg/kg	22	15	12	28	25	29	-	-	130	130	130
Zinc	mg/kg	58	48	40	68	67	77	160*	271	200	200	360

¹ denotes Canadian Environmental Quality Guidelines, revised 2003

Left justified values indicate CCME Soil Quality Guidelines for Agricultural Application exceedances.

Underlined values indicate CCME Soil Quality Guidelines for Residential/Parkland Application exceedances.

Interrupted boxed values indicate CCME Soil Quality Guidelines for Commercial/Industrial Application exceedances.

Table 4 BTEX/TPH Concentrations in the Sediment Samples Collected at Melford, Guysborough County, NS

Results Table for BTEX Compounds (mg/kg)

Sample Identification	Date	Benzene	Toluene	Ethylbenzene	Xylene (Total)
Melford 5 A&B	July 25, 2007	<0.003	<0.03	<0.01	<0.05
Melford 10 A&B		<0.003	<0.03	<0.01	<0.05
Melford 26 A&B		<0.003	<0.03	<0.01	<0.05
Melford 41 A&B		<0.003	<0.03	<0.01	<0.05
Melford 57 A&B		<0.003	<0.03	<0.01	<0.05
Melford 66 A&B		<0.003	<0.03	<0.01	<0.05

Results Table for Individual TPH Carbon Segments (mg/kg)

Sample Identification	C ₆ -C ₁₀	C ₁₀ -C ₂₁	C ₂₁ -C ₃₂	Modified TPH*	TPH Resemblance
Melford 5 A&B	<3	<15	76	76	Possible lube oil fraction
Melford 10 A&B	<3	<15	36	36	Possible lube oil fraction
Melford 26 A&B	<3	<15	28	28	No resemblance to petroleum products
Melford 41 A&B	<3	60	240	300	No resemblance to petroleum products in fuel oil range. Lube oil fraction
Melford 57 A&B	<3	31	120	150	No resemblance to petroleum products in fuel oil range. Lube oil fraction
Melford 66 A&B	<3	47	200	250	No resemblance to petroleum products in fuel oil range. Lube oil fraction

Atlantic RBCA Version 2.0 and CCME SQGs (2004) for Comparison with the Above Analytical Results (mg/kg)

Atlantic RBCA Tier I Risk-Based Screening Levels**			Benzene	Toluene	Ethylbenzene	Xylenes	Gasoline	Diesel #2	#6 Oil
Residential	Potable	Coarse-grained	0.03	0.38	0.08	11	39	140	690
		Fine-grained	0.01	0.08	0.02	2.3	140	220	970
	Non-Potable	Coarse-grained	0.16	14	58	17	39	140	690
		Fine-grained	1.5	120	430	160	330	4,400	8,300
Commercial	Potable	Coarse-grained	0.03	0.38	0.08	11	450	7,400	10,000
		Fine-grained	0.01	0.08	0.02	2.3	520	840	4,700
	Non-Potable	Coarse-grained	1.8	160	430	200	450	7,400	10,000
		Fine-grained	11	680	430	650	10,000	7,700	10,000
CCME SQGs for Surface Soils***									
Agricultural	Coarse-grained	0.03 ¹ (0.0095 ²)	0.37	0.082	11.0	-	-	-	
	Fine-grained	0.0068 ^{1,2}	0.08	0.018	2.4	-	-	-	
Residential/Parkland	Coarse-grained	0.03 ¹ (0.0095 ²)	0.37	0.082	11.0	-	-	-	
	Fine-grained	0.0068 ^{1,2}	0.08	0.018	2.4	-	-	-	
Commercial	Coarse-grained	0.03 ^{1,2}	0.37	0.082	11.0	-	-	-	
	Fine-grained	0.0068 ^{1,2}	0.08	0.018	2.4	-	-	-	
Industrial	Coarse-grained	0.03 ^{1,2}	0.37	0.082	11.0	-	-	-	
	Fine-grained	0.0068 ^{1,2}	0.08	0.018	2.4	-	-	-	
Reporting Limits (Maxxam)			0.03	0.03	0.03	0.05	3	15	15

**Atlantic RBCA Version 2.0 Reference Document for Petroleum Impacted Sites (2003).

***A Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines. Report CCME-EPC-101E, March 1997 with updates to 2004.

"-" denotes no guideline available.

¹ denotes guideline value based on "10⁶ Incremental Risk".

² denotes guideline value based on "10⁵ Incremental Risk".

- **PAH Concentrations**

The CCME SQGs for PAHs in agricultural, residential/parkland, and commercial/industrial applications do not provide a total PAH limit but stipulate guideline values for individual PAH compounds. Total PAH levels are regulated at a value of less than or equal to 2.5 mg/kg under CEPA in order to meet ocean disposal criteria. The CCME PELs for the protection of marine aquatic life do not provide a total PAH limit, but stipulate guideline values for individual PAH compounds. The analytical results of the samples collected showed no exceedances of any reported guidelines.

PAH RESULTS

- 6 samples collected.
- No reported guideline exceedances

- **PCB Concentrations**

The CCME SQGs for PCBs in agricultural, residential/parkland, and industrial/commercial applications are 0.5, 1.3, and 33.0 mg/kg, respectively. PCBs were detected in 3 of the collected samples, however, there were no exceedances of the above-mentioned guidelines (Table 2). Total PCB values are regulated at a value of less than or equal to 0.1 mg/kg under CEPA in order to meet ocean disposal criteria. The CCME PEL for PCB is regulated at a value of less than or equal to 0.189 mg/kg. Three samples (Melford 41, Melford 57, and Melford 66) exceeded the CEPA guideline and one sample (Melford 66) exceeded the CCME PELs.

PCB RESULTS

- 6 samples collected
- No exceedances of the CCME SQGs for any application.
- 3 samples exceedances for CEPA guidelines.
- 1 sample exceedance for CCME PELs.

- **Dichloro-Diphenyl-Trichloroethane (DDT) Concentrations**

The CCME SQGs for total DDT in agricultural, residential/parkland, and commercial/industrial applications are 0.7 mg/kg, 0.7 mg/kg, and 12 mg/kg, respectively. DDT was not detected in any of the samples collected at Melford, hence there were no exceedances of the above-mentioned guidelines (Table 2).

DDT RESULTS

- 6 samples collected.
- No reported guideline exceedances of CCME SQGs for agricultural, residential/parkland or commercial/industrial applications.

- **Metal Concentrations**

Samples collected from the proposed dredging site were tested for metals and the analytical results were compared to the CCME SQGs for agricultural, residential/parkland, and commercial/industrial applications for individual metals. The regulated values for metals under the CEPA guidelines for ocean disposal of dredged sediments include

METAL RESULTS

- 6 samples collected.
- No samples reported exceedances of the CCME SQGs for any application.
- No sample exceedances of CEPA guidelines or former EC Interim Rejection Limit guidelines.

cadmium at 0.6 mg/kg and mercury at 0.75 mg/kg.

The former Environment Canada (EC) Interim

Rejection Limits for copper, lead, and zinc are 81 mg/kg, 66 mg/kg, and 160 mg/kg, respectively. No samples collected showed exceedances of any reported guideline (Table 3).

- **Petroleum Hydrocarbons**

BTEX was not detected in any of the samples but TPHs were detected in all six of the samples. These levels were not in exceedance of the referenced CCME SQGs and Atlantic RBCA Tier 1 RBSLs (Table 4).

BTEX/TPH RESULTS

- 6 samples collected.
- No reported guideline exceedances of CCME SQGs and Atlantic RBCA Tier 1 RBSLs.

- **Sediment Grain Size**

The laboratory-determined grain size distribution of the sediment samples collected at the proposed dredging area showed samples Melford 5, 10 and 26 to be predominantly gravel (38-62%) and sand (29.0-45.0%) with lesser amounts of silt (4.8-14.0%), and clay (3.3-10.0%). Samples Melford 41 and 66 were predominantly silt (29.0-32.0%) and clay (25.0%) with lesser amounts of gravel (24%) and sand (20-21%). Sample Melford 57 was predominantly sand (36.0%) and silt (29%) with lesser amounts of clay (22%) and gravel (12%) (Table 2).

Quality Assurance/Quality Control

Samples were hand delivered to the laboratory by Connors Diving Services Ltd after being relinquished by AMEC employees following program completion. All samples collected were tagged on site and marked with a waterproof marker with the date, sample site identifier, and sample number. The samples were placed upright on ice inside a cooler for safe storage and transport. Duplicate samples were collected to safeguard against loss or damage during transport, and were stored and refrigerated until the analytical results were received.

As per AMEC's internal review policy, a project reviewer (Mr. Bruce Moore, B.Sc.) was established for review of this project. This individual reviewed this report prior to its release. The limitations of this document are provided in Attachment B.

Summary

The analytical results of the six samples indicate that three samples (Melford 41, 57, and 66) of the sediment do not meet the criteria for CEPA Ocean Disposal Guidelines for the Atlantic Region for PCB's and one sample (Melford 99) exceeds the criteria for CCME PELs.

- PCB's: Exceedances of the CEPA Ocean Disposal Guidelines (Atlantic Region) for samples Melford 41, 57, and 66 and CCME PELs for sample Melford 66.

Water Quality Summary

To aid in the establishment of background water quality of the construction area of the Melford project area a water quality sampling program was carried out on July 25, 2007 (Figure 2).

A YSI 600 Multi-Probe Data Logger was used to measure physical and chemical water quality data at the six sampling sites for sediment samples. GPS coordinates were taken at each of the sampling sites as well as temperature, salinity, dissolved oxygen (DO), and pH. These parameters were taken and recorded at 1 m increments from the surface of the water to the ocean floor.

The following points summarize the ranges of the parameters that were tested:

- Temperature values ranged from 19.02 – 21.07 °C at the surface to 3.54 – 9.70 °C at the ocean floor.
- Salinity values ranged from 26.81 – 27.77 ppt at the surface to 29.29 – 30.21 pptL at the ocean floor.
- DO (%) values ranged from 48.2 – 61.4 % at the surface to 38.2 – 45.7 % at the ocean floor.
- DO (mg/L) values ranged from 3.73 – 4.83 mg/L at the surface to 4.08 – 4.37 mg/L at the ocean floor.
- pH values ranged from 8.15 – 8.22 at the surface to 8.13 – 8.30 at the ocean floor.
- Conductivity values ranged from 41.82 – 43.82 at the surface to 45.40 – 47.69 at the ocean floor.

Table 5 Water Quality Parameters Collected at Melford, Guysborough County, NS

Station 5 – Latitude, Longitude Coordinates: N 45° 32.111, W 61° 17.734						
Depth (m)	Temp (°C)	Cond (mS)	Salinity (ppt)	DO (%)	DO (mg/L)	pH
Surface	20.78	42.72	27.49	61.4	4.83	8.15
1	18.34	43.04	27.77	60.1	4.89	8.16
2	17.86	43.30	27.92	62.1	4.99	8.16
3	16.83	43.76	28.27	61.3	5.00	8.18
4	15.07	44.63	28.84	57.4	4.88	8.19
5	12.35	44.95	29.06	54.6	4.87	8.21
6	9.19	45.76	29.49	49.8	4.74	8.21
7	7.24	46.22	29.64	47.1	4.68	8.23
8	6.15	46.64	29.82	44.4	4.70	8.22
9	5.85	46.73	29.85	43.9	4.55	8.22
10	5.62	46.84	29.90	42.9	4.42	8.23
11	5.32	46.91	29.92	43.3	4.57	8.22
12	5.11	47.01	29.95	43.1	4.35	8.23
13	5.01	47.09	29.99	41.4	4.33	8.23
14	4.90	47.11	29.99	40.8	4.28	8.23
15	4.75	47.15	30.00	40.6	4.27	8.23
Station 10 – Latitude, Longitude Coordinates: N 45° 32.064, W 61° 17.712						
Depth (m)	Temp (°C)	Cond (mS)	Salinity (ppt)	DO (%)	DO (mg/L)	pH
Surface	19.02	42.83	27.75	48.6	3.82	8.20
1	18.30	42.97	27.69	48.5	3.87	8.21
2	17.84	43.19	27.89	47.7	3.85	8.22
3	17.51	43.37	28.02	50.1	4.05	8.22
4	14.36	44.75	28.92	47.3	4.10	8.22
5	14.38	45.00	29.04	45.4	4.06	8.23
6	7.53	46.06	29.53	42.0	4.13	8.26
7	6.91	46.43	29.77	41.0	4.14	8.23
8	6.34	46.55	29.79	40.1	4.14	8.27
9	5.78	46.75	29.86	40.6	4.06	8.26
10	5.59	46.87	29.90	38.9	4.12	8.26
11	5.38	46.97	29.96	39.4	4.11	8.26
12	5.19	46.98	29.97	39.0	4.06	8.25
13	5.09	47.07	29.99	39.1	4.02	8.25
14	4.71	47.17	29.98	38.2	4.08	8.13
Station 26 – Latitude, Longitude Coordinates: N 45° 31.908, W 61° 17.532						
Depth (m)	Temp (°C)	Cond (mS)	Salinity (ppt)	DO (%)	DO (mg/L)	pH
Surface	21.07	41.82	26.81	53.2	4.03	8.22
1	19.32	42.82	27.63	51.9	4.07	8.21
2	18.58	42.86	27.71	52.0	4.12	8.23
3	17.52	43.41	28.07	51.3	4.10	8.23
4	14.11	44.90	29.03	47.6	4.34	8.24
5	9.70	45.40	29.29	45.7	4.34	8.30

Station 41 – Latitude, Longitude Coordinates: N 45° 31.941, W 61° 17.275						
Depth (m)	Temp (°C)	Cond (mS)	Salinity (ppt)	DO (%)	DO (mg/L)	pH
Surface	20.05	41.93	27.68	48.4	3.76	8.18
1	19.21	42.99	27.74	50.1	3.94	8.20
2	17.71	43.54	28.12	49.5	3.99	8.22
3	15.20	45.59	28.89	48.2	4.07	8.22
4	12.24	45.13	29.22	44.3	4.24	8.23
5	9.32	46.08	29.68	41.6	4.21	8.24
6	7.26	46.30	29.70	43.2	4.23	8.26
7	6.39	46.47	29.74	40.9	4.25	8.25
8	6.00	46.72	29.86	40.5	4.22	8.27
9	5.63	46.84	29.90	40.0	4.13	8.27
10	5.31	46.96	29.94	40.0	4.19	8.25
11	5.09	47.02	29.97	40.5	4.23	8.24
12	4.77	47.18	30.02	39.8	4.12	8.24
13	4.50	47.26	30.05	39.7	4.20	8.24
14	4.44	47.32	30.08	39.3	4.17	8.24
15	4.18	47.41	30.09	39.3	4.37	8.25
Station 57 – Latitude, Longitude Coordinates: N 45° 31.817, W 61° 17.054						
Depth (m)	Temp (°C)	Cond (mS)	Salinity (ppt)	DO (%)	DO (mg/L)	pH
Surface	21.03	42.99	27.72	48.2	3.73	8.17
1	20.32	42.54	27.70	49.7	3.68	8.19
2	18.28	43.22	27.93	49.2	3.92	8.21
3	16.41	44.24	28.63	47.5	3.87	8.22
4	13.37	44.86	29.00	43.4	3.82	8.23
5	10.29	45.73	29.46	38.9	3.91	8.24
6	7.87	45.88	29.44	37.2	3.91	8.25
7	6.77	46.27	29.64	39.1	3.99	8.26
8	6.07	46.59	29.77	39.5	4.03	8.26
9	5.72	46.72	29.82	41.3	4.11	8.26
10	5.14	47.00	29.94	39.9	4.16	8.25
11	4.71	47.12	29.97	38.3	4.06	8.23
12	4.50	47.22	30.04	37.5	4.03	8.24
13	4.32	47.27	30.03	38.7	4.13	8.25
14	4.13	47.39	30.09	39.1	4.17	8.25
Station 66 – Latitude, Longitude Coordinates: N 45° 31.865, W 61° 16.922						
Depth (m)	Temp (°C)	Cond (mS)	Salinity (ppt)	DO (%)	DO (mg/L)	pH
Surface	20.77	43.82	27.77	49.9	3.80	8.18
1	19.14	43.40	28.97	51.2	3.68	8.19
2	17.88	43.44	28.11	50.2	3.96	8.22
3	15.22	44.59	28.88	47.9	4.01	8.22
4	13.64	45.05	29.11	49.6	3.89	8.23
5	10.41	45.69	29.40	41.3	4.01	8.24
6	7.71	45.92	29.43	42.1	4.19	8.25
7	6.37	46.43	29.69	40.6	4.25	8.26
8	6.09	46.61	29.78	41.7	4.27	8.27
9	5.49	46.86	29.89	41.2	4.28	8.26
10	5.34	46.79	29.84	43.0	4.17	8.25
11	4.83	47.80	29.98	40.3	4.29	8.25
12	4.56	47.19	30.00	40.5	4.29	8.23
13	4.38	47.29	30.05	40.4	4.29	8.25
14	4.35	47.31	30.07	40.0	4.37	8.25
15	4.00	47.49	30.13	40.4	4.32	8.24
16	3.66	47.57	30.15	39.4	4.27	8.22
17	3.60	47.64	30.19	39.0	4.21	8.22
18	3.54	47.69	30.21	39.4	4.21	8.23

Closing

AMEC appreciates the opportunity to provide services to your organization. Please do not hesitate to call if you have any questions regarding this, or any other matter.

Prepared by:

A handwritten signature in black ink that reads "Evan Morris".

Evan Morris, BET.

Lead Technical Support, Environmental Sciences

Reviewed by:

A handwritten signature in black ink that reads "Bruce Moore".

Bruce Moore, B.Sc.

Marine Biologist, Environmental Services

cc: Fred Meth, (Project Manager), AMEC

Attachments

ATTACHMENT A
QA/QC and Laboratory Certificates of Analyses

Your Project #: TV71002
Site: MELFORD
Your C.O.C. #: B 23265

Attention: Bruce Moore
AMEC Earth and Environmental
580 Main St/ Suite 110
Hilyard Place Building B
Saint John, NB
E2K 1J5

Report Date: 2007/08/03

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A778417
Received: 2007/07/26, 17:28

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture	6	N/A	2007/07/28	ATL SOP 00001 R2	MOE Handbook 1983
PCB/DDT in Soil by GC-ECD	6	2007/07/30	2007/08/03	ATL SOP 00106 R2	Based EPA8082

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

TROY MACKAY, Project Manager
Email: troy.mackay.reports@maxxamanalytics.com
Phone# (902) 420-0203

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A778417
Report Date: 2007/08/03

AMEC Earth and Environmental
Client Project #: TV71002
Project name: MELFORD
Sampler Initials:

RESULTS OF ANALYSES OF SOIL

Maxxam ID		T71547	T71548	T71549	T71550	T71551		
Sampling Date		2007/07/25	2007/07/25	2007/07/25	2007/07/25	2007/07/25		
COC Number		B 23265	B 23265	B 23265	B 23265	B 23265		
	Units	5 A&B	10 A&B	26 A&B	41 A&B	57 A&B	RDL	QC Batch

INORGANICS								
Moisture	%	30	24	20	48	42	1	1313306

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		T71552		
Sampling Date		2007/07/25		
COC Number		B 23265		
	Units	66 A&B	RDL	QC Batch

INORGANICS				
Moisture	%	46	1	1313306

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A778417
Report Date: 2007/08/03

AMEC Earth and Environmental
Client Project #: TV71002
Project name: MELFORD
Sampler Initials:

PCB'S AND DDT BY GC-ECD (SOIL)

Maxxam ID		T71547	T71548	T71549	T71550		
Sampling Date		2007/07/25	2007/07/25	2007/07/25	2007/07/25		
COC Number		B 23265	B 23265	B 23265	B 23265		
	Units	5 A&B	10 A&B	26 A&B	41 A&B	RDL	QC Batch

PCBs							
o,p-DDD	mg/kg	ND	ND	ND	ND	0.01	1315236
p,p-DDD	mg/kg	ND	ND	ND	ND	0.01	1315236
o,p-DDE	mg/kg	ND	ND	ND	ND	0.01	1315236
p,p-DDE	mg/kg	ND	ND	ND	ND	0.01	1315236
o,p-DDT	mg/kg	ND	ND	ND	ND	0.01	1315236
p,p-DDT	mg/kg	ND	ND	ND	ND	0.01	1315236
Total PCB	mg/kg	0.06	0.04	ND	0.13	0.01	1315236
Surrogate Recovery (%)							
2,4,5,6-Tetrachloro-m-xylene	%	73 (1)	72 (1)	82	82 (1)		1315236
Decachlorobiphenyl	%	82	84	92	91		1315236
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch (1) Aroclor 1260.							

Maxxam ID		T71551	T71552	T71552		
Sampling Date		2007/07/25	2007/07/25	2007/07/25		
COC Number		B 23265	B 23265	B 23265		
	Units	57 A&B	66 A&B	66 A&B Lab-Dup	RDL	QC Batch

PCBs						
o,p-DDD	mg/kg	ND	ND	ND	0.01	1315236
p,p-DDD	mg/kg	ND	ND	ND	0.01	1315236
o,p-DDE	mg/kg	ND	ND	ND	0.01	1315236
p,p-DDE	mg/kg	ND	ND	ND	0.01	1315236
o,p-DDT	mg/kg	ND	ND	ND	0.01	1315236
p,p-DDT	mg/kg	ND	ND	ND	0.01	1315236
Total PCB	mg/kg	0.11	0.19	0.24	0.01	1315236
Surrogate Recovery (%)						
2,4,5,6-Tetrachloro-m-xylene	%	87 (1)	98 (1)	110 (1)		1315236
Decachlorobiphenyl	%	100	108	127		1315236
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch (1) Aroclor 1260.						

Maxxam Job #: A778417
Report Date: 2007/08/03

AMEC Earth and Environmental
Client Project #: TV71002
Project name: MELFORD
Sampler Initials:

GENERAL COMMENTS

Results relate only to the items tested.

AMEC Earth and Environmental
Attention: Bruce Moore
Client Project #: TV71002
P.O. #:
Project name: MELFORD

Quality Assurance Report
Maxxam Job Number: DA778417

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits		
1315236 RST	MATRIX SPIKE [T71552-01]	2,4,5,6-Tetrachloro-m-xylene	2007/08/03		83	%	70 - 130		
		Decachlorobiphenyl	2007/08/03		98	%	70 - 130		
		o,p-DDD	2007/08/03		95	%	N/A		
		p,p-DDD	2007/08/03		85	%	N/A		
		o,p-DDE	2007/08/03		101	%	N/A		
		p,p-DDE	2007/08/03		101	%	N/A		
		o,p-DDT	2007/08/03		110	%	N/A		
		p,p-DDT	2007/08/03		118	%	N/A		
		Total PCB	2007/08/03		128	%	N/A		
		Spiked Blank	2,4,5,6-Tetrachloro-m-xylene	2007/08/03		78	%	70 - 130	
			Decachlorobiphenyl	2007/08/03		83	%	70 - 130	
			o,p-DDD	2007/08/03		90	%	N/A	
	p,p-DDD		2007/08/03		92	%	N/A		
	o,p-DDE		2007/08/03		93	%	N/A		
	p,p-DDE		2007/08/03		89	%	N/A		
	o,p-DDT		2007/08/03		79	%	N/A		
	p,p-DDT		2007/08/03		86	%	N/A		
	Total PCB		2007/08/03		100	%	70 - 130		
	Method Blank		2,4,5,6-Tetrachloro-m-xylene	2007/08/03		90	%	70 - 130	
		Decachlorobiphenyl	2007/08/03		96	%	70 - 130		
		o,p-DDD	2007/08/03	ND, RDL=0.01			mg/kg		
		p,p-DDD	2007/08/03	ND, RDL=0.01			mg/kg		
		o,p-DDE	2007/08/03	ND, RDL=0.01			mg/kg		
		p,p-DDE	2007/08/03	ND, RDL=0.01			mg/kg		
		o,p-DDT	2007/08/03	ND, RDL=0.01			mg/kg		
		p,p-DDT	2007/08/03	ND, RDL=0.01			mg/kg		
		Total PCB	2007/08/03	ND, RDL=0.01			mg/kg		
		RPD [T71552-01]	o,p-DDD	2007/08/03	NC			%	50
			p,p-DDD	2007/08/03	NC			%	50
	o,p-DDE		2007/08/03	NC			%	50	
	p,p-DDE		2007/08/03	NC			%	50	
	o,p-DDT		2007/08/03	NC			%	50	
	p,p-DDT		2007/08/03	NC			%	50	
Total PCB	2007/08/03		25.3			%	50		

ND = Not detected
N/A = Not Applicable
NC = Non-calculable
RPD = Relative Percent Difference
SPIKE = Fortified sample

Your Project #: TV71002
Site: MELFORD
Your C.O.C. #: B 23265

Attention: Bruce Moore
AMEC Earth and Environmental
580 Main St/ Suite 110
Hilyard Place Building B
Saint John, NB
E2K 1J5

Report Date: 2007/08/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A778419
Received: 2007/07/26, 17:28

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Chromium (VI) in Soil \emptyset	6	2007/08/02	2007/08/02	Ont SOP 0104	EPA 7196
TEH in Soil (PIRI)	6	2007/08/01	2007/08/02	ATL SOP 00111 R2	Based on Atl. PIRI
Mercury (CVAA)	3	N/A	2007/08/07	ATL SOP 00026 R2	Based on EPA245.5
Mercury (CVAA)	3	N/A	2007/08/08	ATL SOP 00026 R2	Based on EPA245.5
Metals Solid Avail. MS - Low Level Se	6	N/A	2007/07/30	ATL SOP 00024 R3	Based on EPA6020A
Metals Solid Avail. MS - HCl/nitric	6	N/A	2007/07/30	ATL SOP 00024 R3	Based on EPA6020A
Moisture	6	N/A	2007/07/28	ATL SOP 00001 R2	MOE Handbook 1983
MOISTURE \emptyset	6	N/A	2007/08/01	Ont SOP-0114	MOE HANDBOOK(1983)
PAH in sediment by GC/MS (Low Level)	6	2007/07/30	2007/08/02	ATL SOP 00102 R2	based on EPA8270C
VPH in Soil (PIRI)	6	2007/08/01	2007/08/02	ATL SOP 00117 R2/00119 R3	Based on Atl. PIRI
ModTPH (T1) Calc. for Soil \emptyset	6	2007/07/27	2007/08/02		Based on Atl. PIRI

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) This test was performed by Maxxam Analytics Mississauga
- (2) SCC/CAEAL

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

TROY MACKAY, Project Manager
Email: troy.mackay.reports@maxxamanalytics.com
Phone# (902) 420-0203

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section

Your Project #: TV71002
Site: MELFORD
Your C.O.C. #: B 23265

Attention: Bruce Moore

AMEC Earth and Environmental
580 Main St/ Suite 110
Hilyard Place Building B
Saint John, NB
E2K 1J5

Report Date: 2007/08/08

CERTIFICATE OF ANALYSIS

-2-

5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

Total cover pages: 2

Page 2 of 16

Maxxam Job #: A778419
Report Date: 2007/08/08

AMEC Earth and Environmental
Client Project #: TV71002
Project name: MELFORD
Sampler Initials:

RESULTS OF ANALYSES OF SOIL

Maxxam ID		T71554	T71555	T71575	T71587	T71588		
Sampling Date		2007/07/25	2007/07/25	2007/07/25	2007/07/25	2007/07/25		
COC Number		B 23265	B 23265	B 23265	B 23265	B 23265		
	Units	5 A&B	10 A&B	26 A&B	41 A&B	57 A&B	RDL	QC Batch

INORGANICS								
Moisture	%	29	25	21	48	41	1	1313306

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		T71589		
Sampling Date		2007/07/25		
COC Number		B 23265		
	Units	66 A&B	RDL	QC Batch

INORGANICS				
Moisture	%	46	1	1313306

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A778419
Report Date: 2007/08/08

AMEC Earth and Environmental
Client Project #: TV71002
Project name: MELFORD
Sampler Initials:

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		T71554	T71555	T71575	T71587		
Sampling Date		2007/07/25	2007/07/25	2007/07/25	2007/07/25		
COC Number		B 23265	B 23265	B 23265	B 23265		
	Units	5 A&B	10 A&B	26 A&B	41 A&B	RDL	QC Batch

TPH COMPOUNDS							
Benzene	mg/kg	ND	ND	ND	ND	0.03	1317646
Toluene	mg/kg	ND	ND	ND	ND	0.03	1317646
Ethylbenzene	mg/kg	ND	ND	ND	ND	0.03	1317646
Xylene (Total)	mg/kg	ND	ND	ND	ND	0.05	1317646
C6 - C10 (less BTEX)	mg/kg	ND	ND	ND	ND	3	1317646
>C10-C21 Hydrocarbons	mg/kg	ND	ND	ND	60	15	1317646
>C21-<C32 Hydrocarbons	mg/kg	76	36	28	240	15	1317646
Modified TPH (Tier1)	mg/kg	76	36	28	300	20	1313170
Surrogate Recovery (%)							
Isobutylbenzene - Extractable	%	103	100	101	96		1317646
Isobutylbenzene - Volatile	%	100	84	97	111		1317646
n-Dotriacontane - Extractable	%	97 (1)	104 (1)	103 (2)	98 (3)		1317646

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Possible lube oil fraction.
(2) No resemblance to petroleum products.
(3) No resemblance to petroleum products in fuel oil range. Lube oil fraction.

Maxxam Job #: A778419
Report Date: 2007/08/08

AMEC Earth and Environmental
Client Project #: TV71002
Project name: MELFORD
Sampler Initials:

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		T71588	T71589	T71589		
Sampling Date		2007/07/25	2007/07/25	2007/07/25		
COC Number		B 23265	B 23265	B 23265		
	Units	57 A&B	66 A&B	66 A&B Lab-Dup	RDL	QC Batch

TPH COMPOUNDS						
Benzene	mg/kg	ND	ND	ND	0.03	1317646
Toluene	mg/kg	ND	ND	ND	0.03	1317646
Ethylbenzene	mg/kg	ND	ND	ND	0.03	1317646
Xylene (Total)	mg/kg	ND	ND	ND	0.05	1317646
C6 - C10 (less BTEX)	mg/kg	ND	ND	ND	3	1317646
>C10-C21 Hydrocarbons	mg/kg	31	47		15	1317464
>C21-<C32 Hydrocarbons	mg/kg	120	200		15	1317464
Modified TPH (Tier1)	mg/kg	150	250		20	1313170
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	103	101			1317464
Isobutylbenzene - Volatile	%	101	112	109		1317646
n-Dotriacontane - Extractable	%	93 (1)	107 (1)			1317464

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) No resemblance to petroleum products in fuel oil range. Lube oil fraction.

Maxxam Job #: A778419
Report Date: 2007/08/08

AMEC Earth and Environmental
Client Project #: TV71002
Project name: MELFORD
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		T71554	T71555	T71575		
Sampling Date		2007/07/25	2007/07/25	2007/07/25		
COC Number		B 23265	B 23265	B 23265		
	Units	5 A&B	10 A&B	26 A&B	RDL	QC Batch

METALS						
Chromium (VI)	ug/g	ND	ND	ND	0.05	1318732
ELEMENTS						
Mercury (Hg)	mg/kg	0.02	0.01	0.01	0.01	1322752
Elements (ICP-MS)						
Available Aluminum (Al)	mg/kg	8000	6700	6400	10	1315688
Available Antimony (Sb)	mg/kg	ND	ND	ND	2	1315688
Available Arsenic (As)	mg/kg	5	4	3	2	1315688
Available Barium (Ba)	mg/kg	67	56	49	5	1315688
Available Beryllium (Be)	mg/kg	ND	ND	ND	2	1315688
Available Boron (B)	mg/kg	14	9	10	5	1315688
Available Cadmium (Cd)	mg/kg	ND	ND	ND	0.3	1315688
Available Chromium (Cr)	mg/kg	14	11	9	2	1315688
Available Cobalt (Co)	mg/kg	7	6	5	1	1315688
Available Copper (Cu)	mg/kg	8	6	8	2	1315688
Available Iron (Fe)	mg/kg	15000	12000	13000	50	1315688
Available Lead (Pb)	mg/kg	17	13	9.9	0.5	1315688
Available Manganese (Mn)	mg/kg	260	220	160	2	1315688
Available Molybdenum (Mo)	mg/kg	ND	ND	ND	2	1315688
Available Nickel (Ni)	mg/kg	17	14	13	2	1315688
Available Selenium (Se)	mg/kg	ND	ND	1	1	1315688
Available Silver (Ag)	mg/kg	ND	ND	ND	0.5	1315688
Available Strontium (Sr)	mg/kg	34	18	12	5	1315688
Available Thallium (Tl)	mg/kg	ND	ND	ND	0.1	1315688
Available Tin (Sn)	mg/kg	2	ND	ND	2	1315682
Available Uranium (U)	mg/kg	0.7	0.7	0.6	0.1	1315688
Available Vanadium (V)	mg/kg	22	15	12	2	1315688
Available Zinc (Zn)	mg/kg	58	48	40	5	1315688
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: A778419
Report Date: 2007/08/08

AMEC Earth and Environmental
Client Project #: TV71002
Project name: MELFORD
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		T71587	T71587	T71588	T71589		
Sampling Date		2007/07/25	2007/07/25	2007/07/25	2007/07/25		
COC Number		B 23265	B 23265	B 23265	B 23265		
	Units	41 A&B	41 A&B Lab-Dup	57 A&B	66 A&B	RDL	QC Batch

METALS							
Chromium (VI)	ug/g	ND		ND	ND	0.05	1318732
ELEMENTS							
Mercury (Hg)	mg/kg	0.03	0.03	0.02	0.03	0.01	1323256
Elements (ICP-MS)							
Available Aluminum (Al)	mg/kg	9100		8500	9200	10	1315688
Available Antimony (Sb)	mg/kg	ND		ND	ND	2	1315688
Available Arsenic (As)	mg/kg	5		7	8	2	1315688
Available Barium (Ba)	mg/kg	85		98	90	5	1315688
Available Beryllium (Be)	mg/kg	ND		ND	ND	2	1315688
Available Boron (B)	mg/kg	16		13	17	5	1315688
Available Cadmium (Cd)	mg/kg	ND		ND	ND	0.3	1315688
Available Chromium (Cr)	mg/kg	16		15	17	2	1315688
Available Cobalt (Co)	mg/kg	8		8	9	1	1315688
Available Copper (Cu)	mg/kg	12		11	14	2	1315688
Available Iron (Fe)	mg/kg	16000		16000	17000	50	1315688
Available Lead (Pb)	mg/kg	23		19	24	0.5	1315688
Available Manganese (Mn)	mg/kg	230		290	290	2	1315688
Available Molybdenum (Mo)	mg/kg	ND		ND	ND	2	1315688
Available Nickel (Ni)	mg/kg	20		19	22	2	1315688
Available Selenium (Se)	mg/kg	ND		ND	ND	1	1315688
Available Silver (Ag)	mg/kg	ND		ND	ND	0.5	1315688
Available Strontium (Sr)	mg/kg	24		42	95	5	1315688
Available Thallium (Tl)	mg/kg	0.1		0.1	ND	0.1	1315688
Available Tin (Sn)	mg/kg	ND		ND	ND	2	1315682
Available Uranium (U)	mg/kg	1.0		0.9	1.1	0.1	1315688
Available Vanadium (V)	mg/kg	28		25	29	2	1315688
Available Zinc (Zn)	mg/kg	68		67	77	5	1315688

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A778419
Report Date: 2007/08/08

AMEC Earth and Environmental
Client Project #: TV71002
Project name: MELFORD
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		T71589		
Sampling Date		2007/07/25		
COC Number		B 23265		
	Units	66 A&B Lab-Dup	RDL	QC Batch

Elements (ICP-MS)				
Available Aluminum (Al)	mg/kg	9000	10	1315688
Available Antimony (Sb)	mg/kg	ND	2	1315688
Available Arsenic (As)	mg/kg	8	2	1315688
Available Barium (Ba)	mg/kg	92	5	1315688
Available Beryllium (Be)	mg/kg	ND	2	1315688
Available Boron (B)	mg/kg	15	5	1315688
Available Cadmium (Cd)	mg/kg	ND	0.3	1315688
Available Chromium (Cr)	mg/kg	17	2	1315688
Available Cobalt (Co)	mg/kg	9	1	1315688
Available Copper (Cu)	mg/kg	14	2	1315688
Available Iron (Fe)	mg/kg	17000	50	1315688
Available Lead (Pb)	mg/kg	23	0.5	1315688
Available Manganese (Mn)	mg/kg	340	2	1315688
Available Molybdenum (Mo)	mg/kg	ND	2	1315688
Available Nickel (Ni)	mg/kg	22	2	1315688
Available Selenium (Se)	mg/kg	ND	1	1315688
Available Silver (Ag)	mg/kg	ND	0.5	1315688
Available Strontium (Sr)	mg/kg	93	5	1315688
Available Thallium (Tl)	mg/kg	ND	0.1	1315688
Available Uranium (U)	mg/kg	1.0	0.1	1315688
Available Vanadium (V)	mg/kg	28	2	1315688
Available Zinc (Zn)	mg/kg	76	5	1315688

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A778419
Report Date: 2007/08/08

AMEC Earth and Environmental
Client Project #: TV71002
Project name: MELFORD
Sampler Initials:

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		T71554	T71555	T71575	T71587		
Sampling Date		2007/07/25	2007/07/25	2007/07/25	2007/07/25		
COC Number		B 23265	B 23265	B 23265	B 23265		
	Units	5 A&B	10 A&B	26 A&B	41 A&B	RDL	QC Batch

PAHs							
1-Methylnaphthalene	mg/kg	ND	0.008	ND	0.014	0.005	1314825
2-Methylnaphthalene	mg/kg	0.010	0.010	0.008	0.018	0.005	1314825
Acenaphthene	mg/kg	ND	ND	ND	ND	0.005	1314825
Acenaphthylene	mg/kg	ND	ND	ND	ND	0.005	1314825
Anthracene	mg/kg	ND	ND	ND	0.006	0.005	1314825
Benzo(a)anthracene	mg/kg	0.010	ND	ND	0.020	0.005	1314825
Benzo(a)pyrene	mg/kg	0.009	ND	ND	0.014	0.005	1314825
Benzo(b)fluoranthene	mg/kg	0.012	ND	ND	0.022	0.005	1314825
Benzo(g,h,i)perylene	mg/kg	ND	ND	ND	0.015	0.005	1314825
Benzo(k)fluoranthene	mg/kg	0.012	ND	ND	0.022	0.005	1314825
Chrysene	mg/kg	0.012	ND	ND	0.019	0.005	1314825
Dibenz(a,h)anthracene	mg/kg	ND	ND	ND	ND	0.005	1314825
Fluoranthene	mg/kg	0.026	0.013	0.011	0.050	0.005	1314825
Fluorene	mg/kg	ND	ND	ND	ND	0.005	1314825
Indeno(1,2,3-cd)pyrene	mg/kg	0.006	ND	ND	0.013	0.005	1314825
Naphthalene	mg/kg	0.014	0.014	0.011	0.021	0.005	1314825
Perylene	mg/kg	0.010	ND	ND	0.021	0.005	1314825
Phenanthrene	mg/kg	0.013	0.008	0.009	0.029	0.005	1314825
Pyrene	mg/kg	0.019	0.010	0.010	0.037	0.005	1314825
Surrogate Recovery (%)							
D10-Anthracene	%	103	86	91	99		1314825
D14-Terphenyl	%	115	96	89	101		1314825
D8-Acenaphthylene	%	93	81	82	91		1314825

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A778419
Report Date: 2007/08/08

AMEC Earth and Environmental
Client Project #: TV71002
Project name: MELFORD
Sampler Initials:

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		T71588	T71589		
Sampling Date		2007/07/25	2007/07/25		
COC Number		B 23265	B 23265		
	Units	57 A&B	66 A&B	RDL	QC Batch

PAHs					
1-Methylnaphthalene	mg/kg	0.011	0.013	0.005	1314825
2-Methylnaphthalene	mg/kg	0.015	0.018	0.005	1314825
Acenaphthene	mg/kg	ND	ND	0.005	1314825
Acenaphthylene	mg/kg	ND	ND	0.005	1314825
Anthracene	mg/kg	ND	ND	0.005	1314825
Benzo(a)anthracene	mg/kg	0.010	0.011	0.005	1314825
Benzo(a)pyrene	mg/kg	ND	0.010	0.005	1314825
Benzo(b)fluoranthene	mg/kg	0.012	0.016	0.005	1314825
Benzo(g,h,i)perylene	mg/kg	0.009	0.012	0.005	1314825
Benzo(k)fluoranthene	mg/kg	0.012	0.016	0.005	1314825
Chrysene	mg/kg	0.011	0.012	0.005	1314825
Dibenz(a,h)anthracene	mg/kg	ND	ND	0.005	1314825
Fluoranthene	mg/kg	0.025	0.034	0.005	1314825
Fluorene	mg/kg	ND	ND	0.005	1314825
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.010	0.005	1314825
Naphthalene	mg/kg	0.020	0.021	0.005	1314825
Perylene	mg/kg	0.012	0.016	0.005	1314825
Phenanthrene	mg/kg	0.015	0.018	0.005	1314825
Pyrene	mg/kg	0.019	0.024	0.005	1314825
Surrogate Recovery (%)					
D10-Anthracene	%	92	91		1314825
D14-Terphenyl	%	91	90		1314825
D8-Acenaphthylene	%	83	81		1314825

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A778419
Report Date: 2007/08/08

AMEC Earth and Environmental
Client Project #: TV71002
Project name: MELFORD
Sampler Initials:

GENERAL COMMENTS

Results relate only to the items tested.

AMEC Earth and Environmental
Attention: Bruce Moore
Client Project #: TV71002
P.O. #:
Project name: MELFORD

Quality Assurance Report
Maxxam Job Number: DA778419

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits		
1314825 RDE	MATRIX SPIKE	D10-Anthracene	2007/08/02		91	%	30 - 130		
		D14-Terphenyl	2007/08/02		88	%	30 - 130		
		D8-Acenaphthylene	2007/08/02		92	%	30 - 130		
		1-Methylnaphthalene	2007/08/02		83	%	30 - 130		
		2-Methylnaphthalene	2007/08/02		80	%	30 - 130		
		Acenaphthene	2007/08/02		68 (1)	%	30 - 130		
		Acenaphthylene	2007/08/02		106	%	30 - 130		
		Anthracene	2007/08/02		94	%	30 - 130		
		Benzo(a)anthracene	2007/08/02		94	%	30 - 130		
		Benzo(a)pyrene	2007/08/02		83	%	30 - 130		
		Benzo(b)fluoranthene	2007/08/02		96	%	30 - 130		
		Benzo(g,h,i)perylene	2007/08/02		88	%	30 - 130		
		Benzo(k)fluoranthene	2007/08/02		96	%	30 - 130		
		Chrysene	2007/08/02		82	%	30 - 130		
		Dibenz(a,h)anthracene	2007/08/02		91	%	30 - 130		
		Fluoranthene	2007/08/02		94	%	30 - 130		
		Fluorene	2007/08/02		82	%	30 - 130		
		Indeno(1,2,3-cd)pyrene	2007/08/02		78	%	30 - 130		
		Naphthalene	2007/08/02		76	%	30 - 130		
		Perylene	2007/08/02		91	%	30 - 130		
		Phenanthrene	2007/08/02		97	%	30 - 130		
		Pyrene	2007/08/02		81	%	30 - 130		
		Spiked Blank	MATRIX SPIKE	D10-Anthracene	2007/08/02		85	%	30 - 130
				D14-Terphenyl	2007/08/02		96	%	30 - 130
				D8-Acenaphthylene	2007/08/02		80	%	30 - 130
				1-Methylnaphthalene	2007/08/02		85	%	30 - 130
				2-Methylnaphthalene	2007/08/02		78	%	30 - 130
				Acenaphthene	2007/08/02		90	%	30 - 130
				Acenaphthylene	2007/08/02		93	%	30 - 130
				Anthracene	2007/08/02		93	%	30 - 130
				Benzo(a)anthracene	2007/08/02		108	%	30 - 130
				Benzo(a)pyrene	2007/08/02		92	%	30 - 130
Benzo(b)fluoranthene	2007/08/02				104	%	30 - 130		
Benzo(g,h,i)perylene	2007/08/02				101	%	30 - 130		
Benzo(k)fluoranthene	2007/08/02				104	%	30 - 130		
Chrysene	2007/08/02				102	%	30 - 130		
Dibenz(a,h)anthracene	2007/08/02				103	%	30 - 130		
Fluoranthene	2007/08/02				103	%	30 - 130		
Fluorene	2007/08/02				83	%	30 - 130		
Indeno(1,2,3-cd)pyrene	2007/08/02				92	%	30 - 130		
Naphthalene	2007/08/02				81	%	30 - 130		
Perylene	2007/08/02				92	%	30 - 130		
Phenanthrene	2007/08/02				94	%	30 - 130		
Pyrene	2007/08/02				99	%	30 - 130		
Method Blank	MATRIX SPIKE			D10-Anthracene	2007/08/02		83	%	30 - 130
				D14-Terphenyl	2007/08/02		95	%	30 - 130
				D8-Acenaphthylene	2007/08/02		79	%	30 - 130
				1-Methylnaphthalene	2007/08/02	ND, RDL=0.005		mg/kg	
				2-Methylnaphthalene	2007/08/02	ND, RDL=0.005		mg/kg	
				Acenaphthene	2007/08/02	ND, RDL=0.005		mg/kg	
				Acenaphthylene	2007/08/02	ND, RDL=0.005		mg/kg	
				Anthracene	2007/08/02	ND, RDL=0.005		mg/kg	
				Benzo(a)anthracene	2007/08/02	ND, RDL=0.005		mg/kg	
				Benzo(a)pyrene	2007/08/02	ND, RDL=0.005		mg/kg	
		Benzo(b)fluoranthene	2007/08/02	ND, RDL=0.005		mg/kg			

AMEC Earth and Environmental
Attention: Bruce Moore
Client Project #: TV71002
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Project name: MELFORD

Quality Assurance Report (Continued)
Maxxam Job Number: DA778419

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1314825 RDE	Method Blank	Benzo(g,h,i)perylene	2007/08/02	ND, RDL=0.005		mg/kg	
		Benzo(k)fluoranthene	2007/08/02	ND, RDL=0.005		mg/kg	
		Chrysene	2007/08/02	ND, RDL=0.005		mg/kg	
		Dibenz(a,h)anthracene	2007/08/02	ND, RDL=0.005		mg/kg	
		Fluoranthene	2007/08/02	ND, RDL=0.005		mg/kg	
		Fluorene	2007/08/02	ND, RDL=0.005		mg/kg	
		Indeno(1,2,3-cd)pyrene	2007/08/02	ND, RDL=0.005		mg/kg	
		Naphthalene	2007/08/02	ND, RDL=0.005		mg/kg	
		Perylene	2007/08/02	ND, RDL=0.005		mg/kg	
		Phenanthrene	2007/08/02	ND, RDL=0.005		mg/kg	
		Pyrene	2007/08/02	ND, RDL=0.005		mg/kg	
	RPD	1-Methylnaphthalene	2007/08/02	NC		%	50
		2-Methylnaphthalene	2007/08/02	NC		%	50
		Acenaphthene	2007/08/02	NC		%	50
		Acenaphthylene	2007/08/02	NC		%	50
		Anthracene	2007/08/02	NC		%	50
		Benzo(a)anthracene	2007/08/02	NC		%	50
		Benzo(a)pyrene	2007/08/02	NC		%	50
		Benzo(b)fluoranthene	2007/08/02	NC		%	50
		Benzo(g,h,i)perylene	2007/08/02	NC		%	50
		Benzo(k)fluoranthene	2007/08/02	NC		%	50
		Chrysene	2007/08/02	NC		%	50
		Dibenz(a,h)anthracene	2007/08/02	NC		%	50
		Fluoranthene	2007/08/02	NC		%	50
		Fluorene	2007/08/02	NC		%	50
		Indeno(1,2,3-cd)pyrene	2007/08/02	NC		%	50
		Naphthalene	2007/08/02	NC		%	50
		Perylene	2007/08/02	NC		%	50
		Phenanthrene	2007/08/02	NC		%	50
		Pyrene	2007/08/02	5.8		%	50
1315682 RPE	MATRIX SPIKE	Available Tin (Sn)	2007/07/30		100	%	75 - 125
	Spiked Blank	Available Tin (Sn)	2007/07/30		105	%	75 - 125
	Method Blank	Available Tin (Sn)	2007/07/30	ND, RDL=2		mg/kg	
	RPD	Available Tin (Sn)	2007/07/30	NC		%	25
1315688 RPE	MATRIX SPIKE [T71589-01]	Available Aluminum (Al)	2007/07/30		NC	%	75 - 125
		Available Antimony (Sb)	2007/07/30		6.0 (2)	%	75 - 125
		Available Arsenic (As)	2007/07/30		98	%	75 - 125
		Available Barium (Ba)	2007/07/30		NC	%	75 - 125
		Available Beryllium (Be)	2007/07/30		97	%	75 - 125
		Available Boron (B)	2007/07/30		86	%	75 - 125
		Available Cadmium (Cd)	2007/07/30		97	%	75 - 125
		Available Chromium (Cr)	2007/07/30		96	%	75 - 125
		Available Cobalt (Co)	2007/07/30		98	%	75 - 125
		Available Copper (Cu)	2007/07/30		93	%	75 - 125
		Available Iron (Fe)	2007/07/30		NC	%	75 - 125
		Available Lead (Pb)	2007/07/30		97	%	75 - 125
		Available Manganese (Mn)	2007/07/30		103	%	75 - 125
		Available Molybdenum (Mo)	2007/07/30		83	%	75 - 125
		Available Nickel (Ni)	2007/07/30		96	%	75 - 125
		Available Selenium (Se)	2007/07/30		85	%	75 - 125
		Available Silver (Ag)	2007/07/30		98	%	75 - 125
		Available Strontium (Sr)	2007/07/30		NC	%	75 - 125
		Available Thallium (Tl)	2007/07/30		98	%	75 - 125
		Available Uranium (U)	2007/07/30		103	%	75 - 125

AMEC Earth and Environmental
Attention: Bruce Moore
Client Project #: TV71002
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Project name: MELFORD

Quality Assurance Report (Continued)
Maxxam Job Number: DA778419

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1315688 RPE	MATRIX SPIKE [T71589-01]	Available Vanadium (V)	2007/07/30		109	%	75 - 125
		Available Zinc (Zn)	2007/07/30		96	%	75 - 125
	QC STANDARD	Available Aluminum (Al)	2007/07/30		77	%	75 - 125
		Available Arsenic (As)	2007/07/30		113	%	75 - 125
		Available Barium (Ba)	2007/07/30		107	%	75 - 125
		Available Chromium (Cr)	2007/07/30		90	%	75 - 125
		Available Cobalt (Co)	2007/07/30		100	%	75 - 125
		Available Copper (Cu)	2007/07/30		100	%	75 - 125
		Available Iron (Fe)	2007/07/30		83	%	75 - 125
		Available Lead (Pb)	2007/07/30		103	%	75 - 125
		Available Manganese (Mn)	2007/07/30		98	%	75 - 125
		Available Nickel (Ni)	2007/07/30		106	%	75 - 125
		Available Strontium (Sr)	2007/07/30		85	%	75 - 125
		Available Vanadium (V)	2007/07/30		86	%	75 - 125
		Available Zinc (Zn)	2007/07/30		111	%	75 - 125
	Spiked Blank	Available Aluminum (Al)	2007/07/30		100	%	75 - 125
		Available Antimony (Sb)	2007/07/30		102	%	75 - 125
		Available Arsenic (As)	2007/07/30		100	%	75 - 125
		Available Barium (Ba)	2007/07/30		97	%	75 - 125
		Available Beryllium (Be)	2007/07/30		102	%	75 - 125
		Available Boron (B)	2007/07/30		92	%	75 - 125
		Available Cadmium (Cd)	2007/07/30		96	%	75 - 125
		Available Chromium (Cr)	2007/07/30		100	%	75 - 125
		Available Cobalt (Co)	2007/07/30		101	%	75 - 125
		Available Copper (Cu)	2007/07/30		101	%	75 - 125
		Available Iron (Fe)	2007/07/30		101	%	75 - 125
		Available Lead (Pb)	2007/07/30		102	%	75 - 125
		Available Manganese (Mn)	2007/07/30		99	%	75 - 125
		Available Molybdenum (Mo)	2007/07/30		100	%	75 - 125
		Available Nickel (Ni)	2007/07/30		100	%	75 - 125
		Available Selenium (Se)	2007/07/30		87	%	75 - 125
		Available Silver (Ag)	2007/07/30		100	%	75 - 125
		Available Strontium (Sr)	2007/07/30		100	%	75 - 125
		Available Thallium (Tl)	2007/07/30		100	%	75 - 125
		Available Uranium (U)	2007/07/30		100	%	75 - 125
		Available Vanadium (V)	2007/07/30		100	%	75 - 125
		Available Zinc (Zn)	2007/07/30		97	%	75 - 125
	Method Blank	Available Aluminum (Al)	2007/07/30	ND, RDL=10		mg/kg	
		Available Antimony (Sb)	2007/07/30	ND, RDL=2		mg/kg	
		Available Arsenic (As)	2007/07/30	ND, RDL=2		mg/kg	
		Available Barium (Ba)	2007/07/30	ND, RDL=5		mg/kg	
		Available Beryllium (Be)	2007/07/30	ND, RDL=2		mg/kg	
		Available Boron (B)	2007/07/30	ND, RDL=5		mg/kg	
		Available Cadmium (Cd)	2007/07/30	ND, RDL=0.3		mg/kg	
		Available Chromium (Cr)	2007/07/30	ND, RDL=2		mg/kg	
		Available Cobalt (Co)	2007/07/30	ND, RDL=1		mg/kg	
		Available Copper (Cu)	2007/07/30	ND, RDL=2		mg/kg	
		Available Iron (Fe)	2007/07/30	ND, RDL=50		mg/kg	
		Available Lead (Pb)	2007/07/30	ND, RDL=0.5		mg/kg	
		Available Manganese (Mn)	2007/07/30	ND, RDL=2		mg/kg	
		Available Molybdenum (Mo)	2007/07/30	ND, RDL=2		mg/kg	
		Available Nickel (Ni)	2007/07/30	ND, RDL=2		mg/kg	
		Available Selenium (Se)	2007/07/30	ND, RDL=1		mg/kg	
		Available Silver (Ag)	2007/07/30	ND, RDL=0.5		mg/kg	

AMEC Earth and Environmental
Attention: Bruce Moore
Client Project #: TV71002
P.O. #:
Project name: MELFORD

Quality Assurance Report (Continued)
Maxxam Job Number: DA778419

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits	
1315688 RPE	Method Blank	Available Strontium (Sr)	2007/07/30	ND, RDL=5		mg/kg		
		Available Thallium (Tl)	2007/07/30	ND, RDL=0.1		mg/kg		
		Available Uranium (U)	2007/07/30	ND, RDL=0.1		mg/kg		
		Available Vanadium (V)	2007/07/30	ND, RDL=2		mg/kg		
	RPD [T71589-01]	Available Zinc (Zn)	2007/07/30	ND, RDL=5		mg/kg		
		Available Aluminum (Al)	2007/07/30	1.7		%	35	
		Available Antimony (Sb)	2007/07/30	NC		%	35	
		Available Arsenic (As)	2007/07/30	NC		%	35	
		Available Barium (Ba)	2007/07/30	2.3		%	35	
		Available Beryllium (Be)	2007/07/30	NC		%	35	
		Available Boron (B)	2007/07/30	NC		%	35	
		Available Cadmium (Cd)	2007/07/30	NC		%	35	
		Available Chromium (Cr)	2007/07/30	1.5		%	35	
		Available Cobalt (Co)	2007/07/30	1.6		%	35	
		Available Copper (Cu)	2007/07/30	1.4		%	35	
		Available Iron (Fe)	2007/07/30	1.3		%	35	
		Available Lead (Pb)	2007/07/30	4.5		%	35	
		Available Manganese (Mn)	2007/07/30	13.2		%	35	
		Available Molybdenum (Mo)	2007/07/30	NC		%	35	
		Available Nickel (Ni)	2007/07/30	1.3		%	35	
		Available Selenium (Se)	2007/07/30	NC		%	35	
		Available Silver (Ag)	2007/07/30	NC		%	35	
		Available Strontium (Sr)	2007/07/30	2.2		%	35	
		Available Thallium (Tl)	2007/07/30	NC		%	35	
		Available Uranium (U)	2007/07/30	2.2		%	35	
		Available Vanadium (V)	2007/07/30	3.1		%	35	
		Available Zinc (Zn)	2007/07/30	1.4		%	35	
1317464 ALE	MATRIX SPIKE	Isobutylbenzene - Extractable	2007/08/02		100	%	30 - 130	
		n-Dotriacontane - Extractable	2007/08/02		95	%	30 - 130	
		>C10-C21 Hydrocarbons	2007/08/02		92	%	30 - 130	
		>C21-<C32 Hydrocarbons	2007/08/02		88	%	30 - 130	
		Spiked Blank	Isobutylbenzene - Extractable	2007/08/02		99	%	30 - 130
	Method Blank	n-Dotriacontane - Extractable	2007/08/02		110	%	30 - 130	
		>C10-C21 Hydrocarbons	2007/08/02		93	%	30 - 130	
		>C21-<C32 Hydrocarbons	2007/08/02		99	%	30 - 130	
		Isobutylbenzene - Extractable	2007/08/02		121	%	30 - 130	
		n-Dotriacontane - Extractable	2007/08/02		138 (3)	%	30 - 130	
	RPD	>C10-C21 Hydrocarbons	2007/08/02		ND, RDL=15		mg/kg	
		>C21-<C32 Hydrocarbons	2007/08/02		ND, RDL=15		mg/kg	
		>C10-C21 Hydrocarbons	2007/08/02		NC		%	50
		>C21-<C32 Hydrocarbons	2007/08/02		21.4		%	50
1317646 LMU	MATRIX SPIKE [T71589-01]	Isobutylbenzene - Volatile	2007/08/02		108	%	60 - 140	
		Benzene	2007/08/02		92	%	60 - 140	
		Toluene	2007/08/02		122	%	60 - 140	
		Ethylbenzene	2007/08/02		89	%	60 - 140	
		Xylene (Total)	2007/08/02		118	%	60 - 140	
	Spiked Blank	Isobutylbenzene - Volatile	2007/08/02		97	%	60 - 140	
		Benzene	2007/08/02		73	%	60 - 140	
		Toluene	2007/08/02		86	%	60 - 140	
		Ethylbenzene	2007/08/02		91	%	60 - 140	
		Xylene (Total)	2007/08/02		97	%	60 - 140	
	Method Blank	Isobutylbenzene - Volatile	2007/08/02		97	%	60 - 140	
		Benzene	2007/08/02		ND, RDL=0.03		mg/kg	
		Toluene	2007/08/02		ND, RDL=0.03		mg/kg	

AMEC Earth and Environmental
Attention: Bruce Moore
Client Project #: TV71002
P.O. #:
Project name: MELFORD

Quality Assurance Report (Continued)
Maxxam Job Number: DA778419

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1317646 LMU	Method Blank	Ethylbenzene	2007/08/02	ND, RDL=0.03		mg/kg	
		Xylene (Total)	2007/08/02	ND, RDL=0.05		mg/kg	
		C6 - C10 (less BTEX)	2007/08/02	ND, RDL=3		mg/kg	
	RPD [T71589-01]	Benzene	2007/08/02	NC		%	50
		Toluene	2007/08/02	NC		%	50
		Ethylbenzene	2007/08/02	NC		%	50
		Xylene (Total)	2007/08/02	NC		%	50
		C6 - C10 (less BTEX)	2007/08/02	NC		%	50
1318205 HVP	RPD	Moisture	2007/08/01	0.9		%	50
1318732 VRO	MATRIX SPIKE	Chromium (VI)	2007/08/02		98	%	75 - 125
	QC STANDARD	Chromium (VI)	2007/08/02		97	%	85 - 115
	Spiked Blank	Chromium (VI)	2007/08/02		99	%	75 - 125
	Method Blank	Chromium (VI)	2007/08/02	ND, RDL=0.05		ug/g	
	RPD	Chromium (VI)	2007/08/02	NC		%	35
1322752 AMC	MATRIX SPIKE	Mercury (Hg)	2007/08/07		103	%	75 - 125
	QC STANDARD	Mercury (Hg)	2007/08/07		77	%	75 - 125
	Spiked Blank	Mercury (Hg)	2007/08/07		99	%	N/A
	Method Blank	Mercury (Hg)	2007/08/07	ND, RDL=0.01		mg/kg	
	RPD	Mercury (Hg)	2007/08/07	NC		%	35
1323256 AMC	MATRIX SPIKE	Mercury (Hg)	2007/08/08		88	%	75 - 125
	[T71587-04]	Mercury (Hg)	2007/08/08		79	%	75 - 125
	QC STANDARD	Mercury (Hg)	2007/08/08		102	%	N/A
	Spiked Blank	Mercury (Hg)	2007/08/08				
	Method Blank	Mercury (Hg)	2007/08/08	ND, RDL=0.01		mg/kg	
	RPD [T71587-04]	Mercury (Hg)	2007/08/08	NC		%	35

ND = Not detected
N/A = Not Applicable
NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
SPIKE = Fortified sample
(1) Matrix Spike: < 10 % of compounds in multi-component analysis in violation.
(2) Low recovery due to digestion efficiency.
(3) Surrogate: within acceptance limits.

Your P.O. #: TV 71002
Site: MELFORD
Your C.O.C. #: B 38921

Attention: Bruce Moore
AMEC Earth and Environmental
580 Main St/ Suite 110
Hilyard Place Building B
Saint John, NB
E2K 1J5

Report Date: 2007/09/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A789348
Received: 2007/08/21, 15:41

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Particle size in solids (pipette&sieve)	6	N/A	2007/09/04	ATL SOP 00012 R2	based on MSAMS-1978

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

TROY MACKAY, Project Manager
Email: troy.mackay.reports@maxxamanalytics.com
Phone# (902) 420-0203

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A789348
Report Date: 2007/09/05

AMEC Earth and Environmental
Client Project #:
Project name: MELFORD
Your P.O. #: TV 71002
Sampler Initials:

RESULTS OF ANALYSES OF SOIL

Maxxam ID		U18290	U18296	U18297	U18298	U18299		
Sampling Date		2007/07/25	2007/07/25	2007/07/25	2007/07/25	2007/07/25		
COC Number		B 38921	B 38921	B 38921	B 38921	B 38921		
	Units	5 A+B (P# T71554)	10 A+B (P# T71555)	26 A+B (P# T71575)	41 A+B (P# T71587)	57 A+B (P# T71588)	RDL	QC Batch

INORGANICS								
< -4 Phi	%	100	100	100	100	100	0.1	1345573
< -3 Phi	%	100	100	100	100	100	0.1	1345573
< -2 Phi	%	100	100	100	100	100	0.1	1345573
< -1 Phi	%	62	58	38	76	88	0.1	1345573
< 0 Phi	%	56	51	32	72	81	0.1	1345573
< +1 Phi	%	48	44	27	68	75	0.1	1345573
< +2 Phi	%	34	31	20	64	64	0.1	1345573
< +3 Phi	%	29	21	15	60	59	0.1	1345573
< +4 Phi	%	24	14	8.1	57	51	0.1	1345573
< +5 Phi	%	21	11	5.7	50	44	0.1	1345573
< +6 Phi	%	17	8.2	4.5	41	36	0.1	1345573
< +7 Phi	%	12	6.4	3.6	30	25	0.1	1345573
< +8 Phi	%	10	5.6	3.3	25	22	0.1	1345573
< +9 Phi	%	6.5	4.6	2.7	17	15	0.1	1345573
Gravel	%	38	42	62	24	12	0.1	1345573
Sand	%	38	45	29	20	36	0.1	1345573
Silt	%	14	8.0	4.8	32	29	0.1	1345573
Clay	%	10	5.6	3.3	25	22	0.1	1345573

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A789348
Report Date: 2007/09/05

AMEC Earth and Environmental
Client Project #:
Project name: MELFORD
Your P.O. #: TV 71002
Sampler Initials:

RESULTS OF ANALYSES OF SOIL

Maxxam ID		U18300	U18300		
Sampling Date		2007/07/25	2007/07/25		
COC Number		B 38921	B 38921		
	Units	66 A+B (P# T71589)	66 A+B (P# T71589) Lab-Dup	RDL	QC Batch

INORGANICS					
< -4 Phi	%	100	100	0.1	1345573
< -3 Phi	%	100	100	0.1	1345573
< -2 Phi	%	100	100	0.1	1345573
< -1 Phi	%	76	91	0.1	1345573
< 0 Phi	%	72	86	0.1	1345573
< +1 Phi	%	68	81	0.1	1345573
< +2 Phi	%	63	75	0.1	1345573
< +3 Phi	%	60	70	0.1	1345573
< +4 Phi	%	55	65	0.1	1345573
< +5 Phi	%	40	59 (1)	0.1	1345573
< +6 Phi	%	53	50	0.1	1345573
< +7 Phi	%	31	37	0.1	1345573
< +8 Phi	%	25	32	0.1	1345573
< +9 Phi	%	12	22 (1)	0.1	1345573
Gravel	%	24	9.2 (2)	0.1	1345573
Sand	%	21	26	0.1	1345573
Silt	%	30	33	0.1	1345573
Clay	%	25	32	0.1	1345573

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) % RPD violation not applicable for individual PHI fractions.
(2) Poor %RPD due to sample matrix. Large fragment present in duplicate aliquot.

Maxxam Job #: A789348
Report Date: 2007/09/05

AMEC Earth and Environmental
Client Project #:
Project name: MELFORD
Your P.O. #: TV 71002
Sampler Initials:

GENERAL COMMENTS

Results relate only to the items tested.

AMEC Earth and Environmental
Attention: Bruce Moore
Client Project #:
P.O. #: TV 71002
Project name: MELFORD

Quality Assurance Report
Maxxam Job Number: DA789348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1345573 SBK	RPD [U18300-01]	< -4 Phi	2007/09/04	0		%	25
		< -3 Phi	2007/09/04	0		%	25
		< -2 Phi	2007/09/04	0		%	25
		< -1 Phi	2007/09/04	17.7		%	25
		< 0 Phi	2007/09/04	17.0		%	25
		< +1 Phi	2007/09/04	16.8		%	25
		< +2 Phi	2007/09/04	16.7		%	25
		< +3 Phi	2007/09/04	14.2		%	25
		< +4 Phi	2007/09/04	16.6		%	25
		< +5 Phi	2007/09/04	38.0 (1)		%	25
		< +6 Phi	2007/09/04	6.2		%	25
		< +7 Phi	2007/09/04	16.7		%	25
		< +8 Phi	2007/09/04	23.6		%	25
		< +9 Phi	2007/09/04	61.2 (1)		%	25
		Gravel	2007/09/04	89.2 (2)		%	25
		Sand	2007/09/04	20.5		%	25
		Silt	2007/09/04	10.3		%	25
		Clay	2007/09/04	23.6		%	25

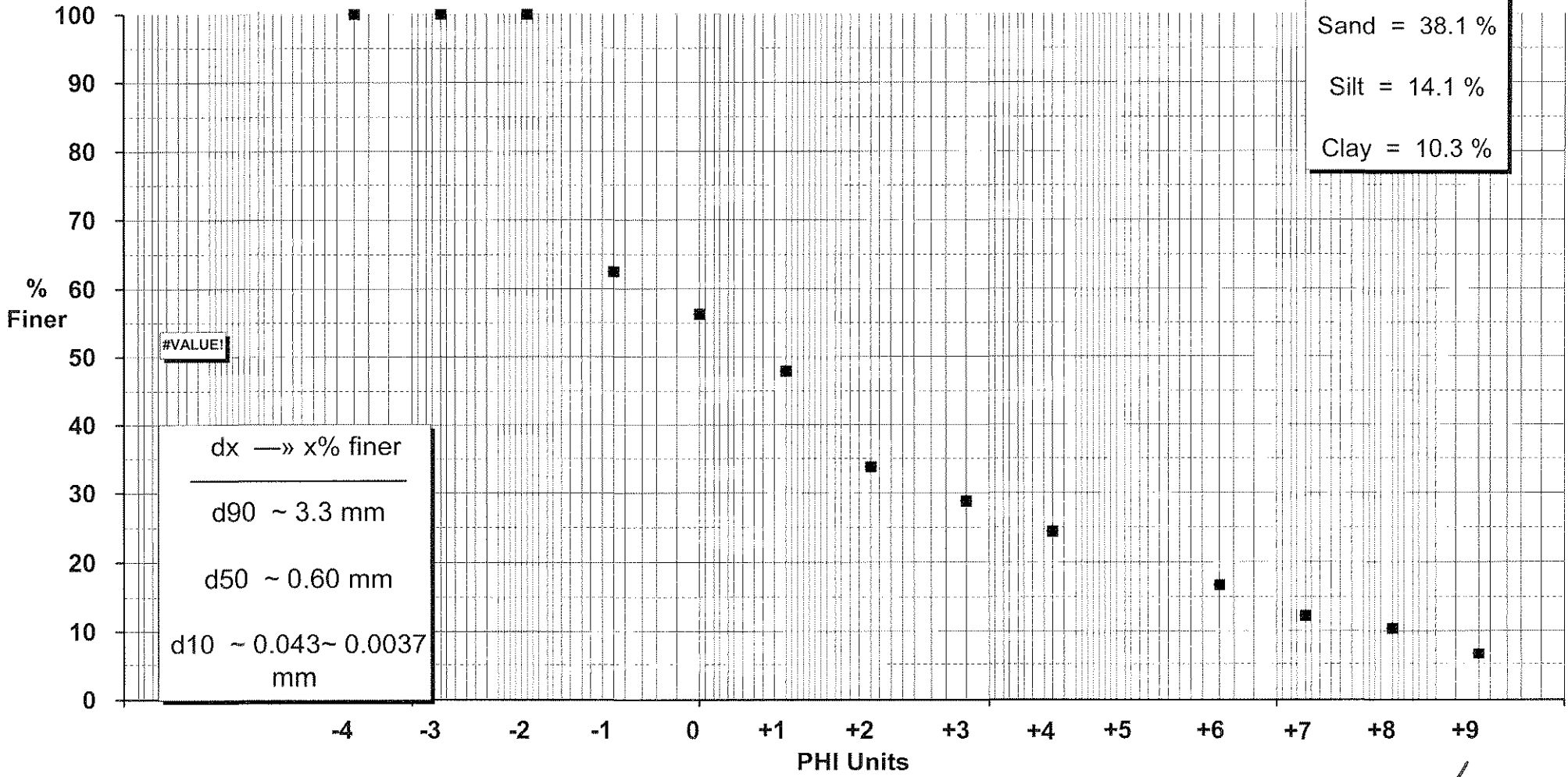
RPD = Relative Percent Difference
 (1) % RPD violation not applicable for individual PHI fractions.
 (2) Poor %RPD due to sample matrix. Large fragment present in duplicate aliquot.



5 A+B (P#T71554)

Percent Coarser than 75 μm (PHI = 3.737)	Percent Coarser than 50 μm (PHI = 4.322)
74.5 %	84.1 %

Wentworth
Gravel = 37.5 %
Sand = 38.1 %
Silt = 14.1 %
Clay = 10.3 %



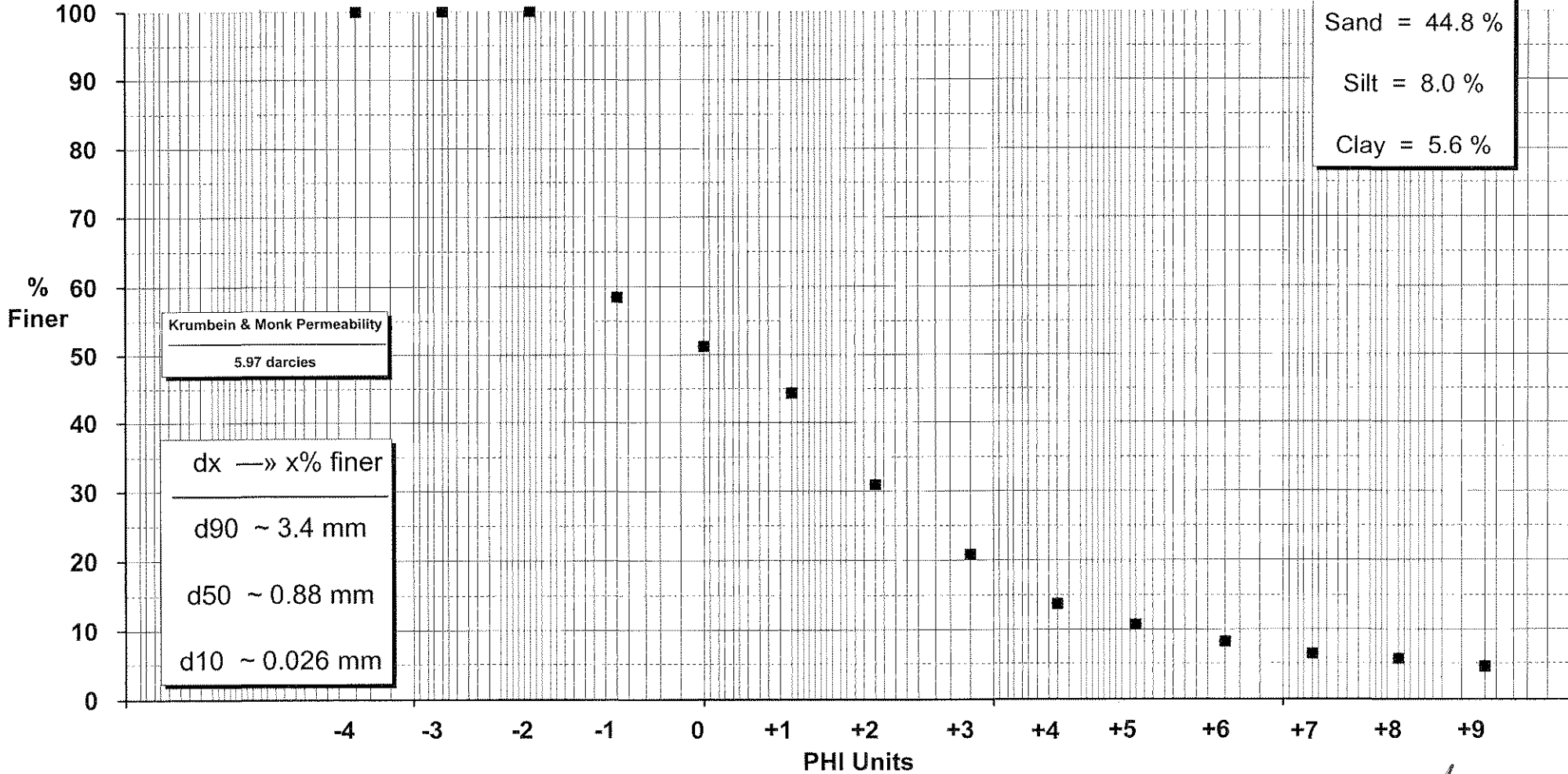
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Approved



10 A+B (P#T71555)

Percent Coarser than 75 μm (PHI = 3.737)	Percent Coarser than 50 μm (PHI = 4.322)
84.5 %	87.3 %

Wentworth
Gravel = 41.5 %
Sand = 44.8 %
Silt = 8.0 %
Clay = 5.6 %



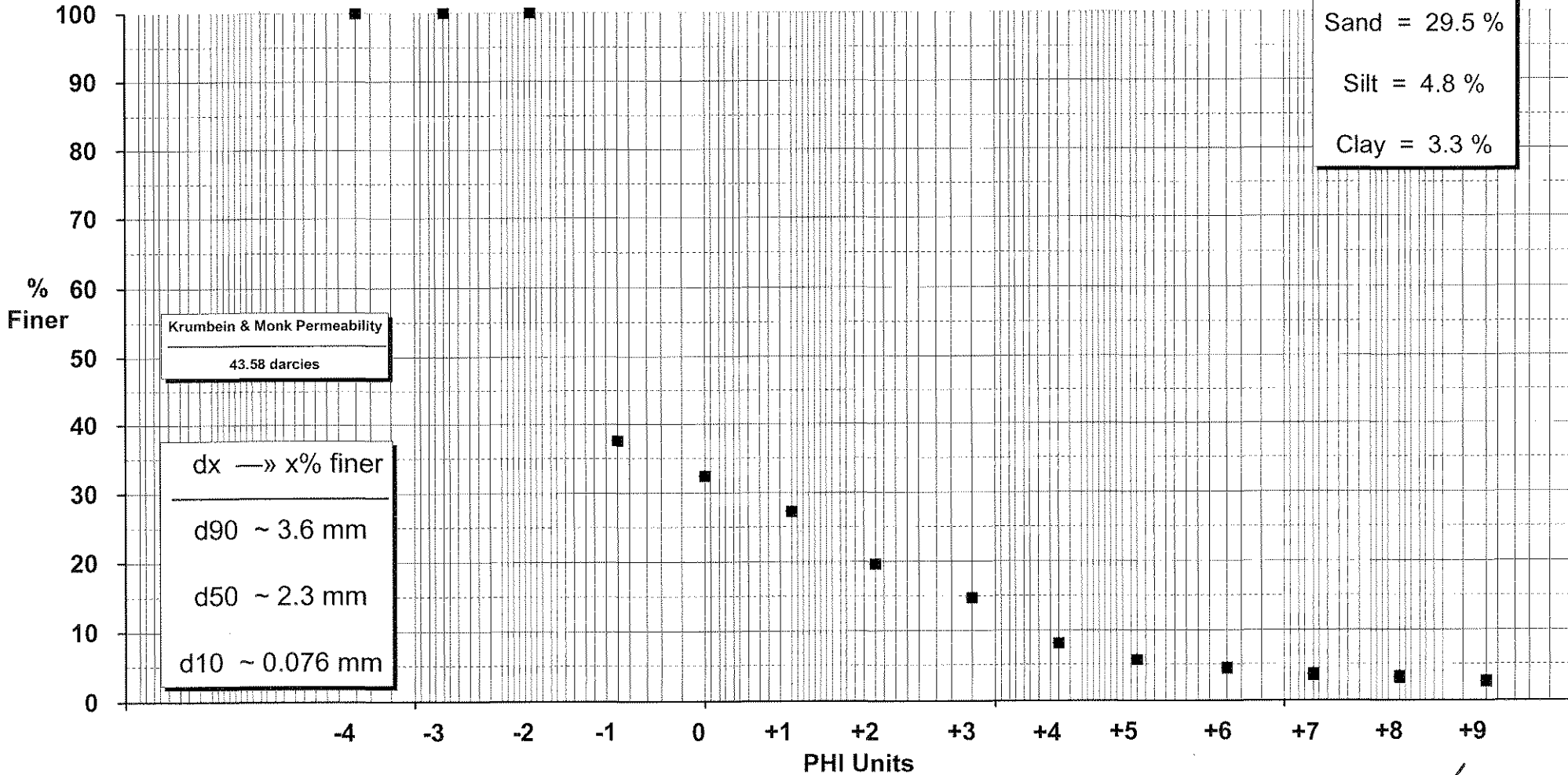

Approved



26 A+B (P#T71575)

Percent Coarser than 75 μm (PHI = 3.737)	Percent Coarser than 50 μm (PHI = 4.322)
90.2 %	92.7 %

Wentworth
Gravel = 62.5 %
Sand = 29.5 %
Silt = 4.8 %
Clay = 3.3 %



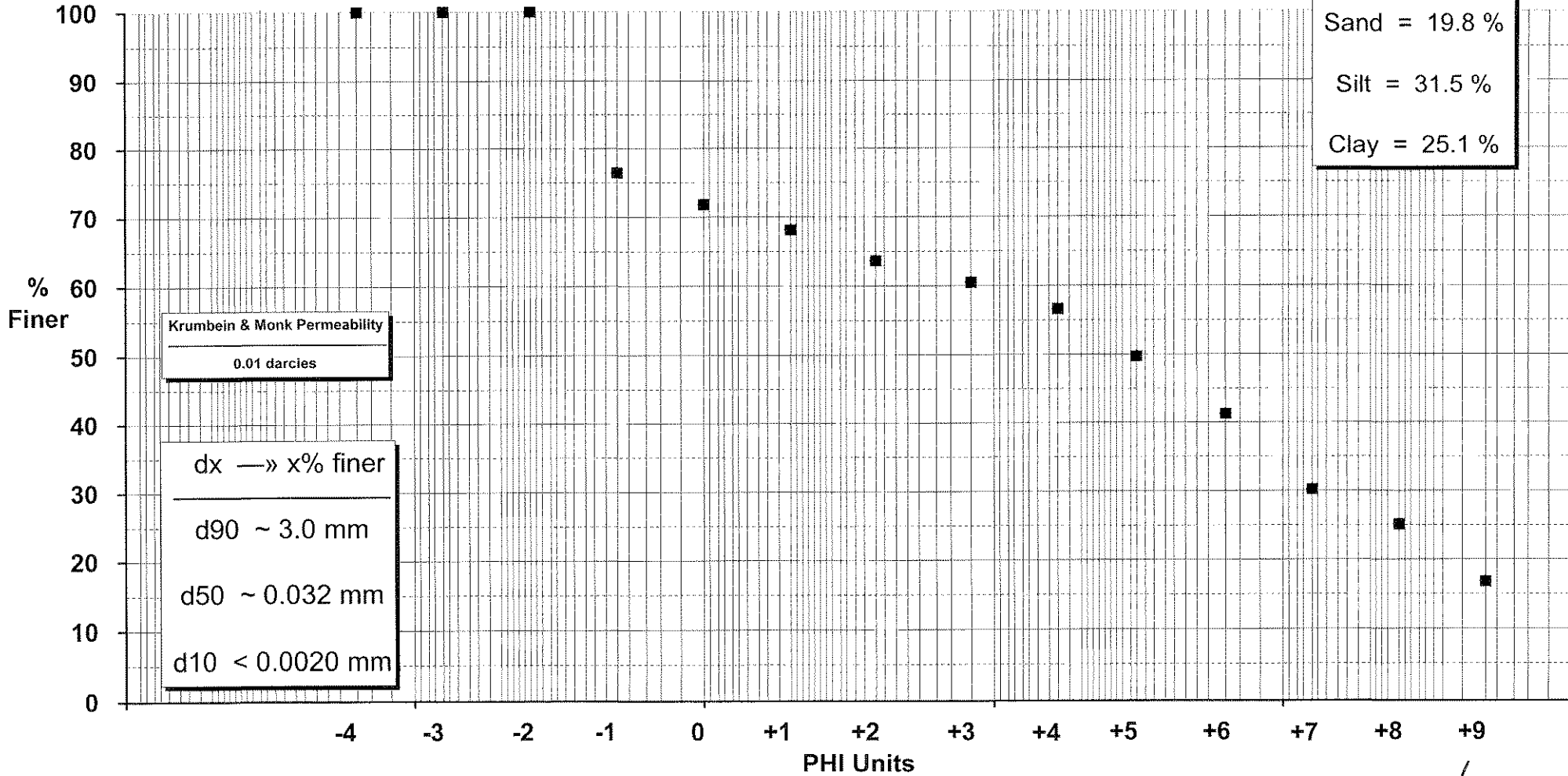
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Approved



41 A+B (P#T71587)

Percent Coarser than 75 μm (PHI = 3.737)	Percent Coarser than 50 μm (PHI = 4.322)
42.4 %	45.6 %

Wentworth
Gravel = 23.6 %
Sand = 19.8 %
Silt = 31.5 %
Clay = 25.1 %



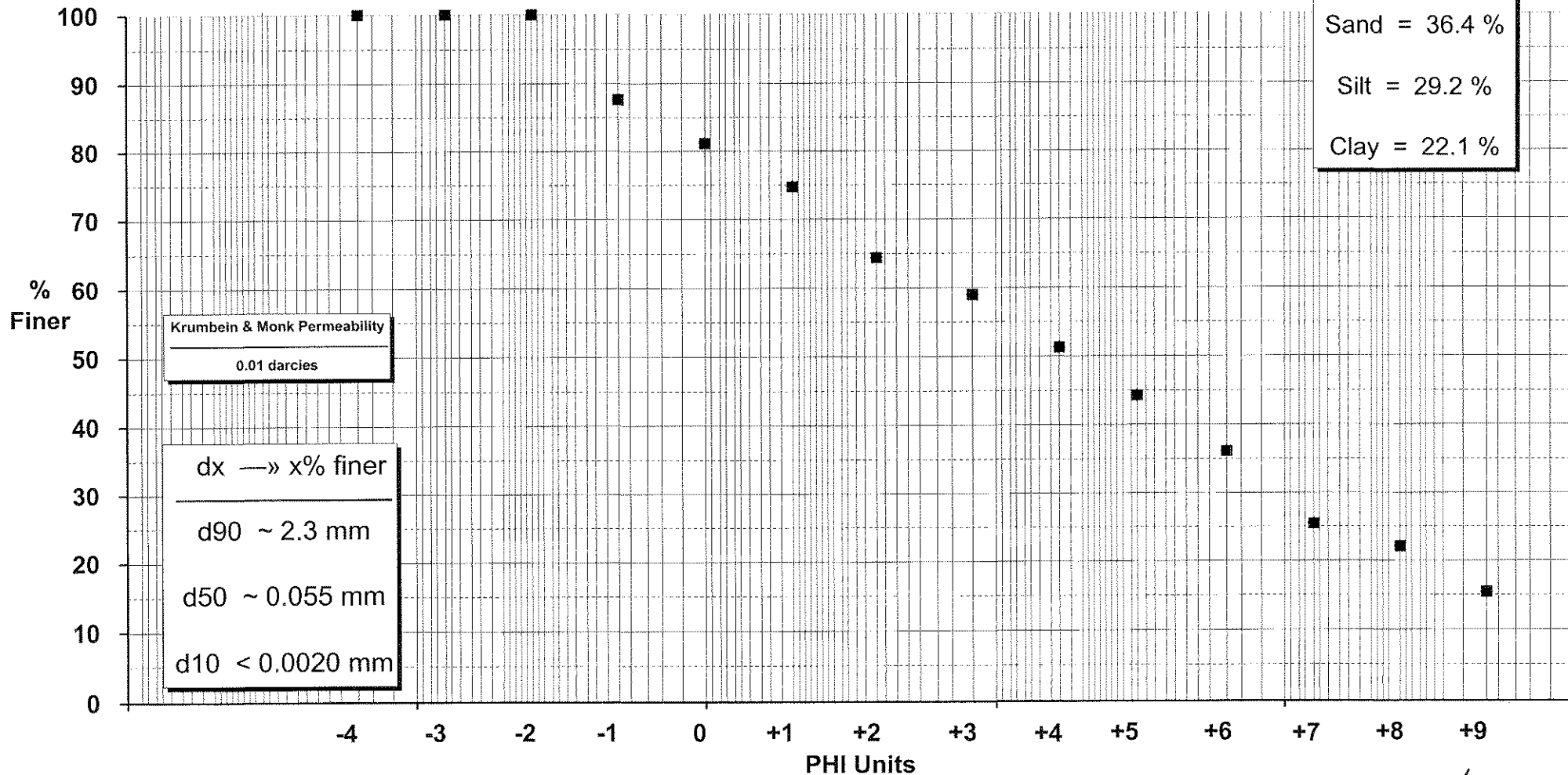
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Approved



57 A+B (P#T71588)

Percent Coarser than 75 μm (PHI = 3.737)	Percent Coarser than 50 μm (PHI = 4.322)
46.7 %	51.0 %

Wentworth
Gravel = 12.4 %
Sand = 36.4 %
Silt = 29.2 %
Clay = 22.1 %



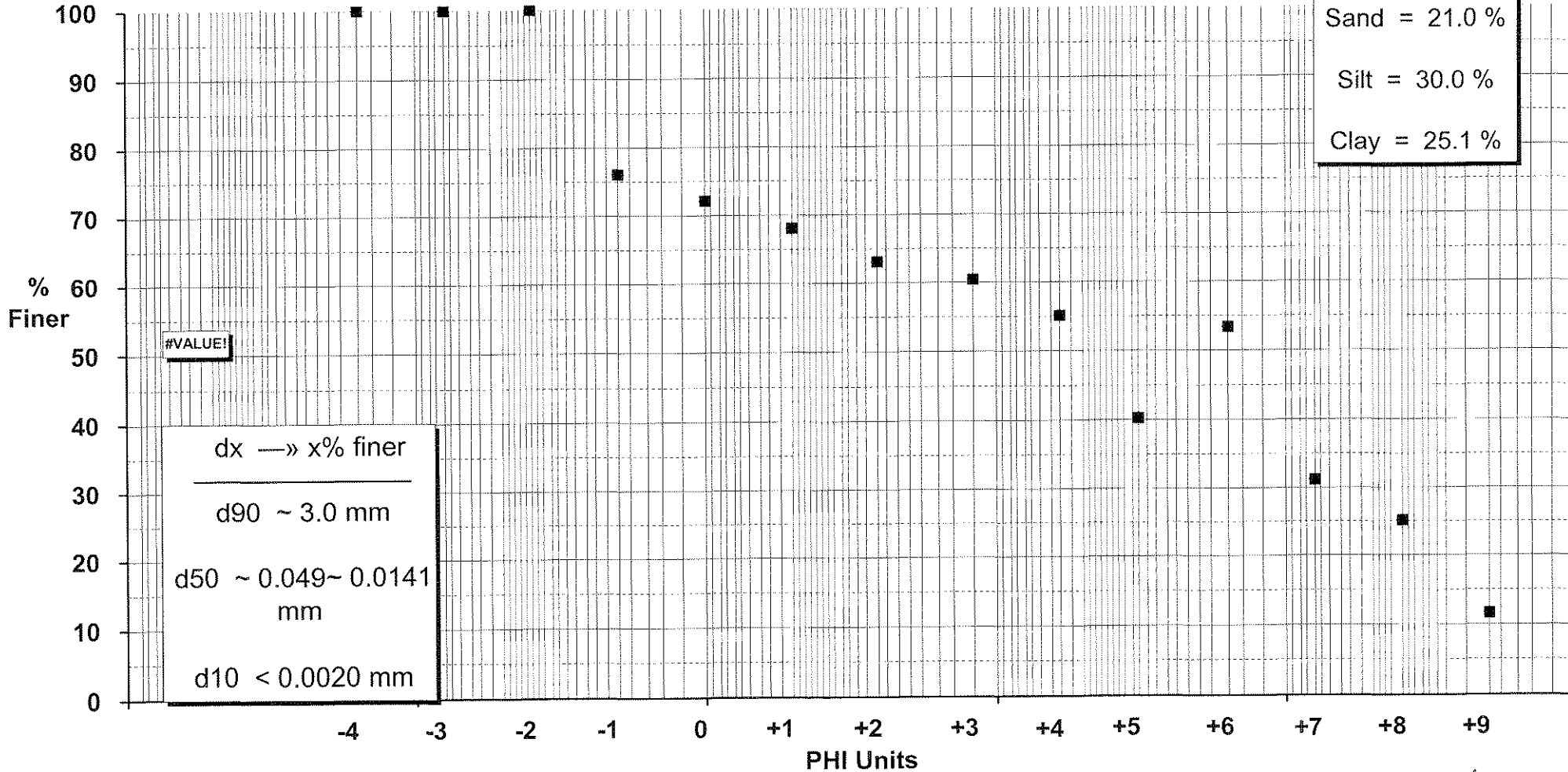
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Approved



66 A+B (P#T71589)

Percent Coarser than 75 μm (PHI = 3.737)	Percent Coarser than 50 μm (PHI = 4.322)
43.5 %	49.7 %

Wentworth
Gravel = 23.9 %
Sand = 21.0 %
Silt = 30.0 %
Clay = 25.1 %

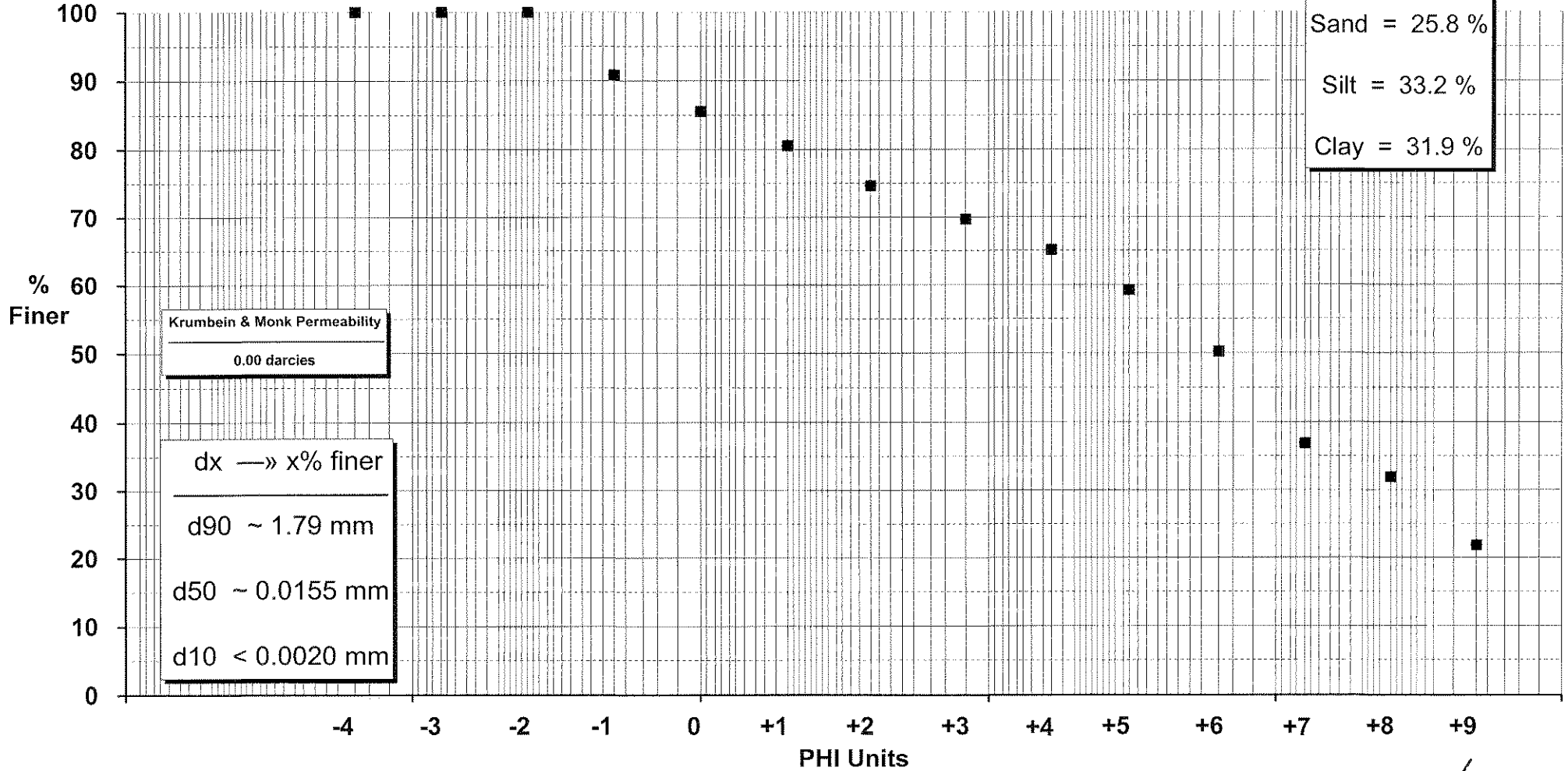


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Approved

66 A+B (P#T71589) :D1

Percent Coarser than 75 μm (PHI = 3.737)	Percent Coarser than 50 μm (PHI = 4.322)
33.7 %	36.8 %

Wentworth
Gravel = 9.2 %
Sand = 25.8 %
Silt = 33.2 %
Clay = 31.9 %



Approved

ATTACHMENT B
Limitations

LIMITATIONS

1. The work performed in this report was carried out in accordance with the Standard Terms of Conditions made part of our contract. The conclusions presented herein are based solely upon the scope of services and time and budgetary limitations described our contract.
2. The report has been prepared in accordance with generally accepted environmental study practices. No other warranties, either expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.
3. The objective of this report was to collect samples from the proposed Project area, given the context of the terms of reference provided by Melford Marine Terminal Inc., and compare the analytical results of the samples with applicable environmental regulations within the Project jurisdiction.
4. The conclusions of this report are based in part, on the information provided by others. The possibility remains that unexpected environmental conditions may be encountered at the site in locations not specifically investigated. Should such an event occur, AMEC Earth & Environmental, a division of AMEC Americas Limited must be notified in order that we may determine if modifications to our conclusions are necessary.
5. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it are the responsibility of such third parties. AMEC Earth & Environmental, a division of AMEC Americas Limited accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.