RECEIVED
JUL 20 2012
RRD-MDEQ
GRAND RAPIDS DISTRICT

July 18, 2012

Mr. Doug Melching
Melching, Inc.
2400 Lakeshore Drive
Muskegon, Michigan 49443

Re: Quarterly Groundwater Sampling and Floating Fuel Oil Summary/Evaluation
Former Sappi Fine Paper Site, Muskegon, Michigan

Dear Mr. Melching:

Lakeshore Environmental, Inc. (Lakeshore) presents the following summary of the quarterly groundwater monitoring activities conducted at the former Sappi Fine Paper Site in Muskegon, Michigan. These activities were conducted in accordance with the Baseline Assessment and Response Plan (BARP) submitted to the Department of Environmental Quality (DEQ) in May 2012.

Site Activities

Groundwater Sampling

On June 20, 2012 Lakeshore sampled ten monitoring wells as outlined in the BARP. Monitoring wells were analyzed for the following parameters:

- pH (field)
- Dissolved Oxygen (DO, field)
- Specific Conductance (field)
- Oxidation Reduction Potential (ORP, field)
- Temperature (field)
- Turbidity (field)
- Static Water Level (ft)
- Sulfate
- Sodium
- PNA's

Static water levels were measured relative to top of casing (TOC) using an electronic water level meter accurate to 0.01 feet. Approved low-flow sampling methods were used and samples were collected from each well upon stabilization of field parameters and a turbidity reading below 10 NTU was obtained. Samples were collected in laboratory provided containers then stored on ice pending pick-up and delivery to ALS Laboratories in Holland, Michigan.

Floating Fuel Oil Evaluation

On June 20, 2012, Lakeshore also inspected the former recovery well and two additional monitoring wells (MW-1 and MW-2) for the presence of fuel oil. The inspection was completed using a clear bailer to visually inspect for the presence of floating fuel oil. An electronic free product/water level meter was also used to check for floating fuel oil in each well.

Results

Groundwater Elevations

Groundwater elevation data are summarized in Table 1 and the corresponding Groundwater Elevation Contour Map is presented as Figure 1. Groundwater elevations recorded in June 2012 were 0.27 feet (maximum) lower than those of April 2012 due to normal seasonal fluctuations. The observed

groundwater flow remained northerly towards Muskegon Lake, and appeared relatively unchanged compared to the previously submitted contour map.

Groundwater Sampling

The field measurements and analytical results are summarized in Table 2 and a figure depicting parameter concentrations at each well location is included as Figure 2. The analytical results of the June 20, 2012 sampling event indicate that groundwater quality is good and improving. The laboratory report is included in Attachment A. A summary of the results is provided below.

Sulfate

In comparison to the April 2012 sampling event, monitoring wells LMW-1S, -2, -3I, -4, and -6 reported a slight increase in sulfate concentration whereas wells LMW-1D, -3S, -6 and -7 reported decreases. No pattern was evident in the changes, therefore, site conditions are considered the same as previously observed. The groundwater from all monitoring wells was below applicable criteria.

Sodium

Sodium concentrations on-site are generally stable or decreasing. Only wells LMW-1S and LMW-5 contained higher sodium concentrations when compared to previous results. All concentrations are below applicable criteria.

PNA's

No PNA's were detected in any monitoring wells on-site.

Floating Fuel Oil Evaluation

The floating fuel oil inspection form from June 20, 2012 is provided in Attachment B. No floating fuel oil/odor was present in MW-1, MW-2 or the Recovery Well.

Conclusions

The results of the June quarterly monitoring indicate that groundwater conditions at the former Sappi Fine Paper Site are good and slowly improving.

Recommendations

Based on the current groundwater quality, Lakeshore recommends that quarterly well sampling and floating fuel oil monitoring continue as outlined in the BARP.

Thank you for your consideration, please feel free to contact me with any questions or comments.

Sincerely,
Lakeshore Environmental, Inc.

Erin R. Gerber
Environmental Engineer

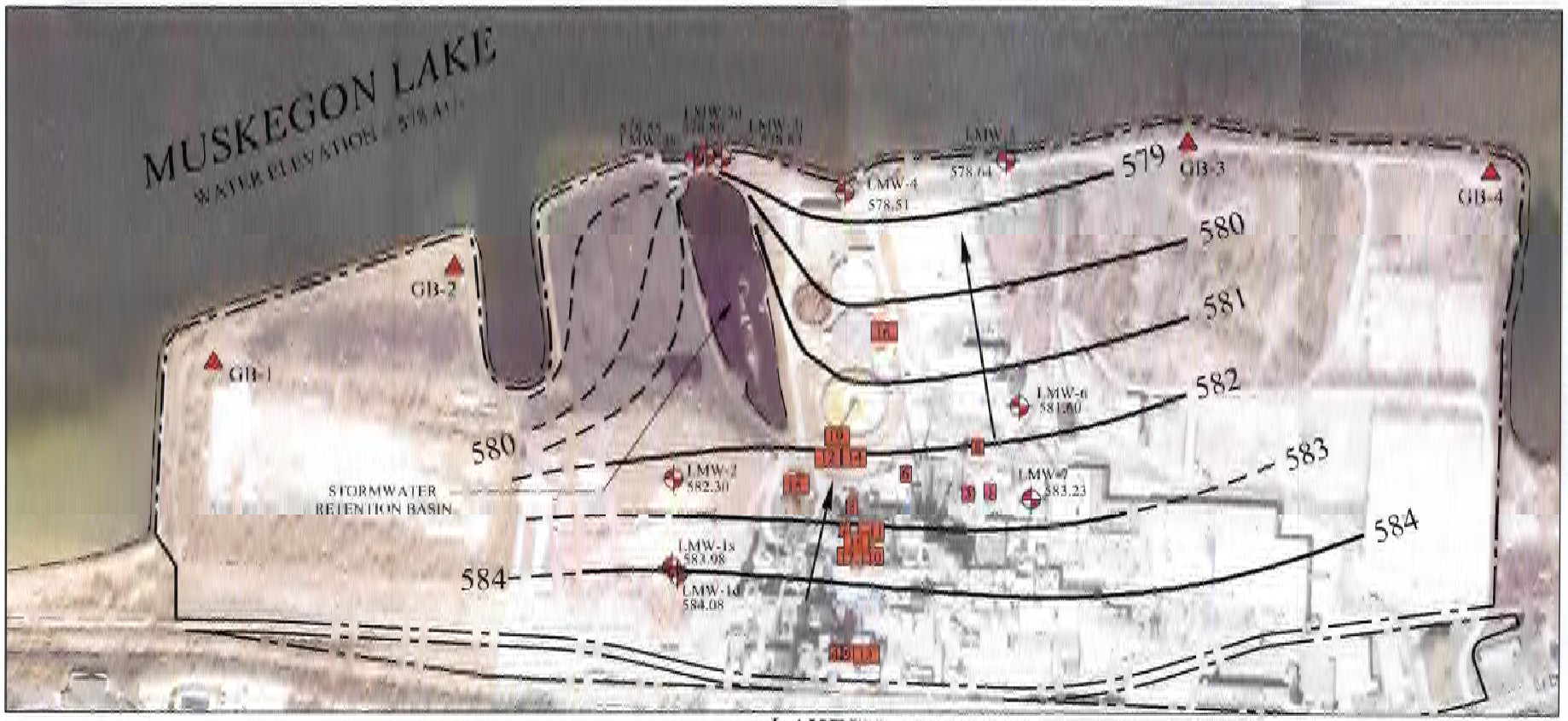
Attachments

Cc: Matt VanHoef – Scholten & Faut
Heather Hopkins – DEQ, Grand Rapids District ✓
File – Lakeshore

10-339 KCE.erg

Lakeshore Environmental, Inc.
Scientists | Engineers | Planners

Figures



LEGEND

LMW-5 578.63 — MONITORING WELL GROUNDWATER ELEVATION

GB — GEOLOGICAL BORING

578 — GROUNDWATER ELEVATION CONTOUR

MDEQ AREAS OF CONCERN

DIRECTION OF GROUNDWATER FLOW

0 300' 600'

SCALE: 1" = 300'

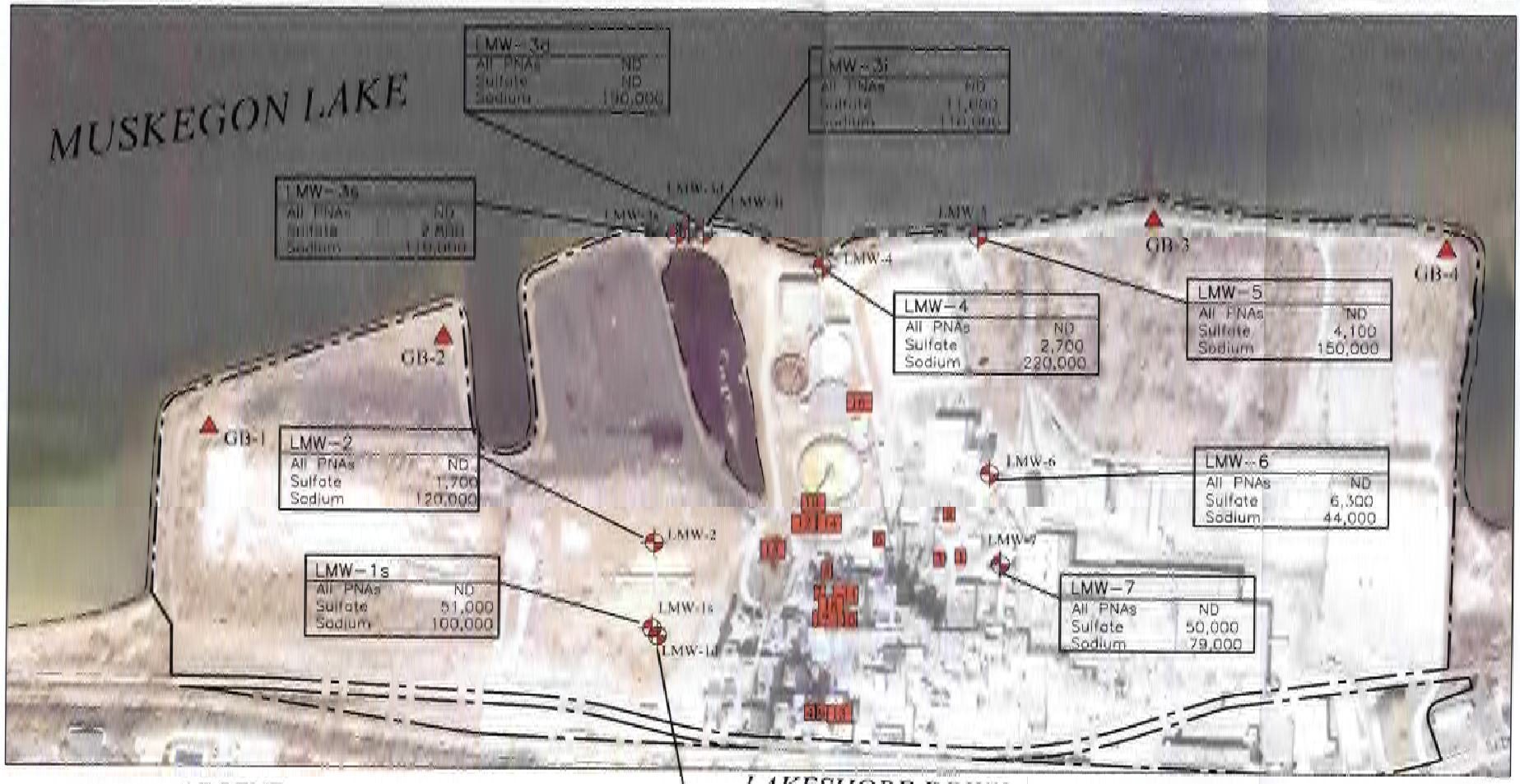
N

Lakeshore Environmental, Inc.
Scientists | Engineers | Planners

DUE CARE GROUNDWATER ELEVATION CONTOUR MAP

2400 LAKESHORE DRIVE
MUSKEGON, MICHIGAN

JOB # 10-339-01	JUNE 20, 2012	FIGURE 1



LEGEND

LMW-5 MONITORING WELL

GB GEOLOGICAL BORING

MDEQ AREAS OF CONCERN

ALL RESULTS IN ug/L

NO APPLICABLE CRITERIA ARE EXCEEDED

0 300' 600'

SCALE: 1" = 300'

N

Lakeshore Environmental, Inc.
Scientists | Engineers | Planners

DUE CARE GROUNDWATER SAMPLING DATA
2400 LAKESHORE DRIVE
MUSKEGON, MICHIGAN

JOB # 10-339-01 | JUNE 20, 2012 | FIGURE 2

Tables

Table 1: Groundwater Monitoring Well Data Summary
Melching, Inc.
2400 Lakeshore Drive, Muskegon, Muskegon County, MI

Geological Boring / Well Location	Depth of Boring(ft)	Well Screened Interval (ft bgs)	Ground Elevation (ft)	TOC Elevation (ft)	4/19/2012		5/15/2012		6/20/2012	
					SWL (ft)	GWE (ft*)	SWL (ft)	GWE (ft*)	SWL (ft)	GWE (ft*)
LMW-1S	15	10-15	591.10	593.60	9.35	584.25	NM	NM	9.62	583.98
LMW-1D	45	40-45	590.79	593.29	8.98	584.31	NM	NM	9.21	584.08
LMW-2	20	15-20	592.61	592.61	10.29	582.32	NM	NM	10.31	582.30
LMW-3S	20	10-15	587.54	591.54	13.09	578.45	NM	NM	12.99	578.55
LMW-3I	35	27-31	587.62	591.62	12.80	578.82	NM	NM	12.79	578.83
LMW-3D	50	42-47	586.91	590.91	12.05	578.86	NM	NM	12.05	578.86
LMW-4	12	7-12	586.92	589.92	11.32	578.60	NM	NM	11.35	578.57
LMW-5	12	7-12	589.08	591.58	12.95	578.63	NM	NM	12.94	578.64
LMW-6	10	5-10	586.02	585.68	3.87	581.81	4.01	581.67	4.08	581.60
LMW-7	7	2-7	587.06	586.94	4.20	582.74	5.24	581.70	5.31	581.63
MW-1	13	10-12.5	587.79	591.46	NM	NM	10.97	580.49	10.93	580.53
MW-2	14	10-14	587.60	591.77	NM	NM	11.18	580.59	11.15	580.62
Recovery Well	17	6.5-16.5	587.29	589.69	NM	NM	9.21	580.48	9.15	580.54

ft bgs: Feet Below Ground Suface
SWL: Static Water Level
GWE: Groundwater Elevation
*: USGS Datum
TOC: Top of Well Casing Elevation
NM: Not Measured

Table 2: Groundwater Sampling Analytical Results
Melching, Inc.
Due Care Sampling
2400 Lakeshore Drive, Muskegon, Muskegon County, MI

Constituent	Non Residential Part 201 Generic Cleanup Criteria and Screening Levels		Sample Identification Number (Screen Interval)																			
	Non Residential Drinking Water Criteria & RBSLs	Groundwater Surface Water Interface Criteria & RBSLs	LMW-1s 10'-15' BGS		LMW-1d 40'-45' BGS		LMW-2 15'-20' BGS		LMW-3s 10'-15' BGS		LMW-3i 26'-31' BGS		LMW-3d 42'-47' BGS		LMW-4 7'-12' BGS		LMW-5 7'-12' BGS		LMW-6 5'-10' BGS		LMW-7 2'-7' BGS	
			4/18/2012	6/20/2012	4/18/2012	6/20/2012	4/18/2012	6/20/2012	4/18/2012	6/20/2012	4/18/2012	6/20/2012	4/18/2012	6/20/2012	4/18/2012	6/20/2012	4/18/2012	6/20/2012	4/18/2012	6/20/2012	4/18/2012	6/20/2012
Semi-volatiles (µg/L)																						
PNAs	Various	Various	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																						
Sulfate	250,000	NA	38,000	51,000	92,000	85,000	ND	1,700	16,000	2,800	4,700	11,000	ND	ND	1,300	2,700	25,000	4,100	3,700	6,300	61,000	50,000
Sodium	350,000	NA	76,000	100,000	24,000	24,000	120,000	120,000	110,000	110,000	130,000	110,000	230,000	190,000	200,000	220,000	140,000	150,000	62,000	44,000	79,000	75,000
Field Parameters																						
pH	6.5 to 8.5 (E)	6.5 to 9.0	7.26	7.88	8.04	8	7.02	7.22	7.17	8.03	7.01	7.24	6.7	7.26	6.91	6.98	7.07	7.27	6.8	7.29	7.48	6.66
Conductivity (uS/cm)	NC	NC	1308	1240	440.3	537	1154	1198	701.8	762	1130	1014	1332	1458	1014	1331	1730	1695	574	669	852	880
ORP (mV)	NA	(EE)	-25	-120.4	-461	-150	-77	-137.7	-244	-215.5	-105	-196.8	-203	-197.8	-189	446	-51	-214	-229	-238.2	-20	-56.7
Dissolved Oxygen (mg/L)	NA	(EE)	1.6	0.18	0.72	1.39	0.87	2.46	1.34	0.72	0.38	0.47	1.73	0.91	1.33	0.22	0.66	0.35	1.34	0.91	1.05	0.92
Temperature (degrees C)	NA	NA	12.2	10.36	12.47	13.3	13.1	14.33	8.47	15.53	11.9	13.31	13.11	15.36	11.59	12.5	12.4	14.4	11.8	13.65	13.2	13.21
Turbidity (NTU)	NA	(EE)	14.5	0.6	12.47	2	3.14	4	7.87	2	1.42	7	4.91	2	5.3	2	1.04	1	0.99	1	0.39	2

Notes:

No samples exceeded applicable criteria

BGS - Below ground surface (feet).

NA - Not Available

NC - No criteria developed

ND: Constituent not detected above laboratory method detection limit

EE/FF - Value dependent upon receiving water body use/designation.

ID: Inadequate data to develop criterion

Attachment A:

Laboratory Analytical Report

Lakeshore Environmental, Inc.
Scientists | Engineers | Planners

ALS Group USA, Corp

Date: 29-Jun-12

Client: Lakeshore Environmental, Inc.
Project: Melching 10-339 6/20/12
Work Order: 1206718

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1206718-01	LMW-1S	Water		6/20/2012 11:00	6/21/2012 09:45	☐
1206718-02	LMW-1D	Water		6/20/2012 09:40	6/21/2012 09:45	☐
1206718-03	LMW-2	Water		6/20/2012 11:20	6/21/2012 09:45	☐
1206718-04	LMW-6	Water		6/20/2012 12:05	6/21/2012 09:45	☐
1206718-05	LMW-7	Water		6/20/2012 12:45	6/21/2012 09:45	☐
1206718-06	LMW-5	Water		6/20/2012 13:10	6/21/2012 09:45	☐
1206718-07	LMW-4	Water		6/20/2012 13:45	6/21/2012 09:45	☐
1206718-08	LMW-3I	Water		6/20/2012 14:40	6/21/2012 09:45	☐
1206718-09	LMW-3S	Water		6/20/2012 14:10	6/21/2012 09:45	☐
1206718-10	LMW-3D	Water		6/20/2012 14:50	6/21/2012 09:45	☐

ALS Environmental

29-Jun-2012

Kirk Perschbacher
Lakeshore Environmental, Inc.
803 VerHoeks St
Grand Haven, MI 49417

Re: Melching 10-339 6/20/12 Work Order: **1206718**

Dear Kirk,

ALS Environmental received 10 samples on 21-Jun-2012 09:45 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 22.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Ann Preston

Electronically approved by: Ann Preston

Ann Preston
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: MN331938

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Group A Campbell Brothers Limited Company
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RIGHT SOLUTIONS RIGHT PARTNER

ALS Group USA, Corp

Date: 29-Jun-12

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12
Lab ID: 1206718-01

Client Sample ID: LMW-1S
Collection Date: 6/20/2012 11:00:00 AM
Matrix: WATER

Analyses	Result	Report Limit	MDEQ OP Memo 2 PDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **6/25/2012**		Analyst: **CES**
Sodium	100	1.0	1.0		mg/L	1	6/26/2012
POLYNUCLEAR AROMATIC HYDROCARBONS			**SW8270**		Prep Date: **6/25/2012**		Analyst: **RM**
2-Chloronaphthalene	ND	5.0	5.0		µg/L	1	6/28/2012
2-Methylnaphthalene	ND	5.0	5.0		µg/L	1	6/28/2012
Acenaphthene	ND	5.0	5.0		µg/L	1	6/28/2012
Acenaphthylene	ND	5.0	5.0		µg/L	1	6/28/2012
Anthracene	ND	5.0	5.0		µg/L	1	6/28/2012
Benzo(a)anthracene	ND	1.0	1.0		µg/L	1	6/28/2012
Benzo(a)pyrene	ND	1.0	1.0		µg/L	1	6/28/2012
Benzo(b)fluoranthene	ND	1.0	1.0		µg/L	1	6/28/2012
Benzo(g,h,i)perylene	ND	1.0	1.0		µg/L	1	6/28/2012
Benzo(k)fluoranthene	ND	1.0	1.0		µg/L	1	6/28/2012
Chrysene	ND	1.0	1.0		µg/L	1	6/28/2012
Dibenzo(a,h)anthracene	ND	2.0	2.0		µg/L	1	6/28/2012
Fluoranthene	ND	1.0	1.0		µg/L	1	6/28/2012
Fluorene	ND	5.0	5.0		µg/L	1	6/28/2012
Indeno(1,2,3-cd)pyrene	ND	2.0	2.0		µg/L	1	6/28/2012
Naphthalene	ND	5.0	5.0		µg/L	1	6/28/2012
Phenanthrene	ND	2.0	2.0		µg/L	1	6/28/2012
Pyrene	ND	5.0	5.0		µg/L	1	6/28/2012
Surr: 2-Fluorobiphenyl	*87.2*	*20-122*			*%REC*	1	6/28/2012
Surr: 4-Terphenyl-d14	*50.8*	*22-172*			*%REC*	1	6/28/2012
Surr: Nitrobenzene-d5	*71.6*	*8-115*			*%REC*	1	6/28/2012
ANIONS BY ION CHROMATOGRAPHY			**SW9056**				Analyst: **EE**
Sulfate	51	10	1.0		mg/L	10	6/27/2012

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 29-Jun-12

Client: Lakeshore Environmental, Inc.
Project: Melching 10-339 6/20/12
WorkOrder: 1206718

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
SD	Serial Dilution
TDL	Target Detection Limit

Units Reported	Description
µg/L	Micrograms per Liter
mg/L	Milligrams per Liter

ALS Group USA, Corp

Date: *29-Jun-12*

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12
Lab ID: 1206718-03

Client Sample ID: LMW-2
Collection Date: 6/20/2012 11:20:00 AM
Matrix: WATER

Analyses	Result	Report Limit	MDEQ OP Memo 2 IDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **6/25/2012**		Analyst: **CES**
Sodium	**120**	**1.0**	**1.0**		**mg/L**	**1**	**6/27/2012**
POLYNUCLEAR AROMATIC HYDROCARBONS			**SW8270**		Prep Date: **6/25/2012**		Analyst: **RM**
2-Chloronaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
2-Methylnaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthylene	ND	5.0	5.0		µg/L	1	6/29/2012
Anthracene	ND	5.0	5.0		µg/L	1	6/29/2012
Benzo(a)anthracene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(a)pyrene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(b)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(g,h,i)perylene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(k)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Chrysene	ND	1.0	1.0		µg/L	1	6/29/2012
Dibenzo(a,h)anthracene	ND	2.0	2.0		µg/L	1	6/29/2012
Fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Fluorene	ND	5.0	5.0		µg/L	1	6/29/2012
Indeno(1,2,3-cd)pyrene	ND	2.0	2.0		µg/L	1	6/29/2012
Naphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Phenanthrene	ND	2.0	2.0		µg/L	1	6/29/2012
Pyrene	ND	5.0	5.0		µg/L	1	6/29/2012
Surr: 2-Fluorobiphenyl	*108*	*20-122*			*%REC*	1	6/29/2012
Surr: 4-Terphenyl-d14	*56.3*	*22-172*			*%REC*	1	6/29/2012
Surr: Nitrobenzene-d5	*72.0*	*8-115*			*%REC*	1	6/29/2012
ANIONS BY ION CHROMATOGRAPHY			**SW9056**				Analyst: **EE**
Sulfate	**1.7**	**1.0**	**1.0**		**mg/L**	**1**	**6/28/2012**

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *29-Jun-12*

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12
Lab ID: 1206718-02

Client Sample ID: LMW-1D
Collection Date: 6/20/2012 9:40:00 AM
Matrix: WATER

Analyses	Result	Report Limit	MDEQ OP Memo 2 IDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **6/25/2012**		Analyst: **CES**
Sodium	**24**	**1.0**	**1.0**		**mg/L**	**1**	**6/27/2012**
POLYNUCLEAR AROMATIC HYDROCARBONS			**SW8270**		Prep Date: **6/25/2012**		Analyst: **RM**
2-Chloronaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
2-Methylnaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthylene	ND	5.0	5.0		µg/L	1	6/29/2012
Anthracene	ND	5.0	5.0		µg/L	1	6/29/2012
Benzo(a)anthracene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(a)pyrene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(b)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(g,h,i)perylene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(k)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Chrysene	ND	1.0	1.0		µg/L	1	6/29/2012
Dibenzo(a,h)anthracene	ND	2.0	2.0		µg/L	1	6/29/2012
Fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Fluorene	ND	5.0	5.0		µg/L	1	6/29/2012
Indeno(1,2,3-cd)pyrene	ND	2.0	2.0		µg/L	1	6/29/2012
Naphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Phenanthrene	ND	2.0	2.0		µg/L	1	6/29/2012
Pyrene	ND	5.0	5.0		µg/L	1	6/29/2012
Surr: 2-Fluorobiphenyl	*101*	*20-122*			*%REC*	1	6/29/2012
Surr: 4-Terphenyl-d14	*82.6*	*22-172*			*%REC*	1	6/29/2012
Surr: Nitrobenzene-d5	*71.4*	*8-115*			*%REC*	1	6/29/2012
ANIONS BY ION CHROMATOGRAPHY			**SW9056**				Analyst: **EE**
Sulfate	**85**	**10**	**1.0**		**mg/L**	**10**	**6/27/2012**

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *29-Jun-12*

Client: Lakeshore Environmental, Inc.
Client Sample ID: LMW-7
Work Order: 1206718
Collection Date: 6/20/2012 12:45:00 PM
Project: Melching 10-339 6/20/12
Lab ID: 1206718-05
Matrix: WATER

Analyses	Result	Report Limit	MDEQ OP Memo 2 RDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **6/25/2012**		Analyst: **CES**
Sodium	**75**	**1.0**	**1.0**		**mg/L**	**1**	**6/27/2012**
POLYNUCLEAR AROMATIC HYDROCARBONS			**SW8270**		Prep Date: **6/25/2012**		Analyst: **RM**
2-Chloronaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
2-Methylnaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthylene	ND	5.0	5.0		µg/L	1	6/29/2012
Anthracene	ND	5.0	5.0		µg/L	1	6/29/2012
Benzo(a)anthracene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(a)pyrene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(b)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(g,h,i)perylene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(k)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Chrysene	ND	1.0	1.0		µg/L	1	6/29/2012
Dibenzo(a,h)anthracene	ND	2.0	2.0		µg/L	1	6/29/2012
Fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Fluorene	ND	5.0	5.0		µg/L	1	6/29/2012
Indeno(1,2,3-cd)pyrene	ND	2.0	2.0		µg/L	1	6/29/2012
Naphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Phenanthrene	ND	2.0	2.0		µg/L	1	6/29/2012
Pyrene	ND	5.0	5.0		µg/L	1	6/29/2012
Surr: 2-Fluorobiphenyl	*106*	*20-122*			*%REC*	1	6/29/2012
Surr: 4-Terphenyl-d14	*86.5*	*22-172*			*%REC*	1	6/29/2012
Surr: Nitrobenzene-d5	*68.4*	*8-115*			*%REC*	1	6/29/2012
ANIONS BY ION CHROMATOGRAPHY			**SW9056**				Analyst: **EE**
Sulfate	**50**	**10**	**1.0**		**mg/L**	**10**	**6/27/2012**

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *29-Jun-12*

Client: Lakeshore Environmental, Inc.
Client Sample ID: LMW-6
Work Order: 1206718
Collection Date: 6/20/2012 12:05:00 PM
Project: Melching 10-339 6/20/12
Lab ID: 1206718-04
Matrix: WATER

Analyses	Result	Report Limit	MDEQ OP Memo 2 RDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **6/25/2012**		Analyst: **CES**
Sodium	**44**	**1.0**	**1.0**		**mg/L**	**1**	**6/27/2012**
POLYNUCLEAR AROMATIC HYDROCARBONS			**SW8270**		Prep Date: **6/25/2012**		Analyst: **RM**
2-Chloronaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
2-Methylnaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthylene	ND	5.0	5.0		µg/L	1	6/29/2012
Anthracene	ND	5.0	5.0		µg/L	1	6/29/2012
Benzo(a)anthracene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(a)pyrene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(b)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(g,h,i)perylene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(k)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Chrysene	ND	1.0	1.0		µg/L	1	6/29/2012
Dibenzo(a,h)anthracene	ND	2.0	2.0		µg/L	1	6/29/2012
Fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Fluorene	ND	5.0	5.0		µg/L	1	6/29/2012
Indeno(1,2,3-cd)pyrene	ND	2.0	2.0		µg/L	1	6/29/2012
Naphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Phenanthrene	ND	2.0	2.0		µg/L	1	6/29/2012
Pyrene	ND	5.0	5.0		µg/L	1	6/29/2012
Surr: 2-Fluorobiphenyl	*105*	*20-122*			*%REC*	1	6/29/2012
Surr: 4-Terphenyl-d14	*80.3*	*22-172*			*%REC*	1	6/29/2012
Surr: Nitrobenzene-d5	*71.0*	*8-115*			*%REC*	1	6/29/2012
ANIONS BY ION CHROMATOGRAPHY			**SW9056**				Analyst: **EE**
Sulfate	**6.3**	**1.0**	**1.0**		**mg/L**	**1**	**6/28/2012**

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *29-Jun-12*

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12
Lab ID: 1206718-07

Client Sample ID: LMW-4
Collection Date: 6/20/2012 1:45:00 PM
Matrix: WATER

Analyses	Result	Report Limit	MDEQ OP Memo 2 FDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **6/25/2012**		Analyst: **CES**
Sodium	**220**	**1.0**	**1.0**		mg/L	10	6/27/2012
POLYNUCLEAR AROMATIC HYDROCARBONS			**SW8270**		Prep Date: **6/25/2012**		Analyst: **RM**
2-Chloronaphthalene	ND	18	5.0		µg/L	1	6/29/2012
2-Methylnaphthalene	ND	18	5.0		µg/L	1	6/29/2012
Acenaphthene	ND	18	5.0		µg/L	1	6/29/2012
Acenaphthylene	ND	18	5.0		µg/L	1	6/29/2012
Anthracene	ND	18	5.0		µg/L	1	6/29/2012
Benzo(a)anthracene	ND	3.5	1.0		µg/L	1	6/29/2012
Benzo(a)pyrene	ND	3.5	1.0		µg/L	1	6/29/2012
Benzo(b)fluoranthene	ND	3.5	1.0		µg/L	1	6/29/2012
Benzo(g,h,i)perylene	ND	3.5	1.0		µg/L	1	6/29/2012
Benzo(k)fluoranthene	ND	3.5	1.0		µg/L	1	6/29/2012
Chrysene	ND	3.5	1.0		µg/L	1	6/29/2012
Dibenzo(a,h)anthracene	ND	7.0	2.0		µg/L	1	6/29/2012
Fluoranthene	ND	3.5	1.0		µg/L	1	6/29/2012
Fluorene	ND	18	5.0		µg/L	1	6/29/2012
Indeno(1,2,3-cd)pyrene	ND	7.0	2.0		µg/L	1	6/29/2012
Naphthalene	ND	18	5.0		µg/L	1	6/29/2012
Phenanthrene	ND	7.0	2.0		µg/L	1	6/29/2012
Pyrene	ND	18	5.0		µg/L	1	6/29/2012
Surr: 2-Fluorobiphenyl	*87.7*	*20-122*			*%REC*	1	6/29/2012
Surr: 4-Terphenyl-d14	*57.0*	*22-172*			*%REC*	1	6/29/2012
Surr: Nitrobenzene-d5	*64.5*	*8-115*			*%REC*	1	6/29/2012
ANIONS BY ION CHROMATOGRAPHY			**SW9056**				Analyst: **EE**
Sulfate	**2.7**	**1.0**	**1.0**		mg/L	1	6/28/2012

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *29-Jun-12*

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12
Lab ID: 1206718-06

Client Sample ID: LMW-5
Collection Date: 6/20/2012 1:10:00 PM
Matrix: WATER

Analyses	Result	Report Limit	MDEQ OP Memo 2 FDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **6/25/2012**		Analyst: **CES**
Sodium	**150**	**1.0**	**1.0**		mg/L	1	6/27/2012
POLYNUCLEAR AROMATIC HYDROCARBONS			**SW8270**		Prep Date: **6/25/2012**		Analyst: **RM**
2-Chloronaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
2-Methylnaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthylene	ND	5.0	5.0		µg/L	1	6/29/2012
Anthracene	ND	5.0	5.0		µg/L	1	6/29/2012
Benzo(a)anthracene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(a)pyrene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(b)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(g,h,i)perylene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(k)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Chrysene	ND	1.0	1.0		µg/L	1	6/29/2012
Dibenzo(a,h)anthracene	ND	2.0	2.0		µg/L	1	6/29/2012
Fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Fluorene	ND	5.0	5.0		µg/L	1	6/29/2012
Indeno(1,2,3-cd)pyrene	ND	2.0	2.0		µg/L	1	6/29/2012
Naphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Phenanthrene	ND	2.0	2.0		µg/L	1	6/29/2012
Pyrene	ND	5.0	5.0		µg/L	1	6/29/2012
Surr: 2-Fluorobiphenyl	*99.6*	*20-122*			*%REC*	1	6/29/2012
Surr: 4-Terphenyl-d14	*73.2*	*22-172*			*%REC*	1	6/29/2012
Surr: Nitrobenzene-d5	*66.6*	*8-115*			*%REC*	1	6/29/2012
ANIONS BY ION CHROMATOGRAPHY			**SW9056**				Analyst: **EE**
Sulfate	**4.1**	**1.0**	**1.0**		mg/L	1	6/28/2012

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *29-Jun-12*

Client: Lakeshore Environmental, Inc.
Client Sample ID: LMW-3S
Work Order: 1206718
Collection Date: 6/20/2012 2:10:00 PM
Project: Melching 10-339 6/20/12
Lab ID: 1206718-09
Matrix: WATER

Analyses	Result	Report Limit	MDEQ OP Memo 2 TDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **6/25/2012**		Analyst: **CES**
Sodium	110	1.0	1.0		mg/L	1	6/27/2012
POLYNUCLEAR AROMATIC HYDROCARBONS			**SW8270**		Prep Date: **6/25/2012**		Analyst: **RM**
2-Chloronaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
2-Methylnaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthylene	ND	5.0	5.0		µg/L	1	6/29/2012
Anthracene	ND	5.0	5.0		µg/L	1	6/29/2012
Benzo(a)anthracene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(a)pyrene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(b)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(g,h,i)perylene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(k)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Chrysene	ND	1.0	1.0		µg/L	1	6/29/2012
Dibenzo(a,h)anthracene	ND	2.0	2.0		µg/L	1	6/29/2012
Fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Fluorene	ND	5.0	5.0		µg/L	1	6/29/2012
Indeno(1,2,3-cd)pyrene	ND	2.0	2.0		µg/L	1	6/29/2012
Naphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Phenanthrene	ND	2.0	2.0		µg/L	1	6/29/2012
Pyrene	ND	5.0	5.0		µg/L	1	6/29/2012
Surr: 2-Fluorobiphenyl	*105*	*20-122*			*%REC*	1	6/29/2012
Surr: 4-Terphenyl-d14	*75.2*	*22-172*			*%REC*	1	6/29/2012
Surr: Nitrobenzene-d5	*66.9*	*8-115*			*%REC*	1	6/29/2012
ANIONS BY ION CHROMATOGRAPHY			**SW9056**				Analyst: **EE**
Sulfate	2.8	1.0	1.0		mg/L	1	6/28/2012

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *29-Jun-12*

Client: Lakeshore Environmental, Inc.
Client Sample ID: LMW-3I
Work Order: 1206718
Collection Date: 6/20/2012 2:40:00 PM
Project: Melching 10-339 6/20/12
Lab ID: 1206718-08
Matrix: WATER

Analyses	Result	Report Limit	MDEQ OP Memo 2 TDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **6/25/2012**		Analyst: **CES**
Sodium	110	1.0	1.0		mg/L	1	6/27/2012
POLYNUCLEAR AROMATIC HYDROCARBONS			**SW8270**		Prep Date: **6/25/2012**		Analyst: **RM**
2-Chloronaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
2-Methylnaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthylene	ND	5.0	5.0		µg/L	1	6/29/2012
Anthracene	ND	5.0	5.0		µg/L	1	6/29/2012
Benzo(a)anthracene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(a)pyrene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(b)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(g,h,i)perylene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(k)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Chrysene	ND	1.0	1.0		µg/L	1	6/29/2012
Dibenzo(a,h)anthracene	ND	2.0	2.0		µg/L	1	6/29/2012
Fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Fluorene	ND	5.0	5.0		µg/L	1	6/29/2012
Indeno(1,2,3-cd)pyrene	ND	2.0	2.0		µg/L	1	6/29/2012
Naphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Phenanthrene	ND	2.0	2.0		µg/L	1	6/29/2012
Pyrene	ND	5.0	5.0		µg/L	1	6/29/2012
Surr: 2-Fluorobiphenyl	*101*	*20-122*			*%REC*	1	6/29/2012
Surr: 4-Terphenyl-d14	*50.1*	*22-172*			*%REC*	1	6/29/2012
Surr: Nitrobenzene-d5	*66.5*	*8-115*			*%REC*	1	6/29/2012
ANIONS BY ION CHROMATOGRAPHY			**SW9056**				Analyst: **EE**
Sulfate	11	10	1.0		mg/L	10	6/27/2012

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 29-Jun-12

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12

QC BATCH REPORT

Batch ID: 41923 Instrument ID ICPMS2 Method: SW6020A

MBLK Sample ID: MBLK-41923-41923 Units: mg/L Analysis Date: 6/26/2012 11:17 PM
Client ID: Run ID: ICPMS2_120625A SeqNo: 2013776 Prep Date: 6/25/2012 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	ND	0.20								

LCS Sample ID: LCS-41923-41923 Units: mg/L Analysis Date: 6/26/2012 11:22 PM
Client ID: Run ID: ICPMS2_120625A SeqNo: 2013778 Prep Date: 6/25/2012 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	9.07	0.20	10	0	90.7	80-120	0			

MS Sample ID: 1206758-03AMS Units: mg/L Analysis Date: 6/27/2012 02:47 AM
Client ID: Run ID: ICPMS2_120625A SeqNo: 2013860 Prep Date: 6/25/2012 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	23.91	0.20	10	14.93	89.8	80-120	0			

MSD Sample ID: 1206758-03AMSD Units: mg/L Analysis Date: 6/27/2012 02:52 AM
Client ID: Run ID: ICPMS2_120625A SeqNo: 2013861 Prep Date: 6/25/2012 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	24.08	0.20	10	14.93	91.5	80-120	23.91	0.708	20	

The following samples were analyzed in this batch:

1206718-01B	1206718-02B	1206718-03B
1206718-04B	1206718-05B	1206718-06B
1206718-07B	1206718-08B	1206718-09B
1206718-10B		

Note: See Qualifiers Page for a list of Qualifiers and their explanation

ALS Group USA, Corp

Date: *29-Jun-12*

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12
Lab ID: 1206718-10

Client Sample ID: LMW-3D
Collection Date: 6/20/2012 2:50:00 PM
Matrix: WATER

Analyses	Result	Report Limit	MDEQ OP Memo 2 TDL	Qual	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **6/25/2012**		Analyst: **CES**
Sodium	190	1.0	1.0		mg/L	10	6/27/2012
POLYNUCLEAR AROMATIC HYDROCARBONS			**SW8270**		Prep Date: **6/25/2012**		Analyst: **RM**
2-Chloronaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
2-Methylnaphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthene	ND	5.0	5.0		µg/L	1	6/29/2012
Acenaphthylene	ND	5.0	5.0		µg/L	1	6/29/2012
Anthracene	ND	5.0	5.0		µg/L	1	6/29/2012
Benzo(a)anthracene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(a)pyrene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(b)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(g,h,i)perylene	ND	1.0	1.0		µg/L	1	6/29/2012
Benzo(k)fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Chrysene	ND	1.0	1.0		µg/L	1	6/29/2012
Dibenzo(a,h)anthracene	ND	2.0	2.0		µg/L	1	6/29/2012
Fluoranthene	ND	1.0	1.0		µg/L	1	6/29/2012
Fluorene	ND	5.0	5.0		µg/L	1	6/29/2012
Indeno(1,2,3-cd)pyrene	ND	2.0	2.0		µg/L	1	6/29/2012
Naphthalene	ND	5.0	5.0		µg/L	1	6/29/2012
Phenanthrene	ND	2.0	2.0		µg/L	1	6/29/2012
Pyrene	ND	5.0	5.0		µg/L	1	6/29/2012
Surr: 2-Fluorobiphenyl	*95.0*	*20-122*			*%REC*	1	6/29/2012
Surr: 4-Terphenyl-d14	*45.6*	*22-172*			*%REC*	1	6/29/2012
Surr: Nitrobenzene-d5	*65.2*	*8-115*			*%REC*	1	6/29/2012
ANIONS BY ION CHROMATOGRAPHY			**SW9056**				Analyst: **EE**
Sulfate	ND	1.0	1.0		mg/L	1	6/28/2012

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12

QC BATCH REPORT

Batch ID: **41920** Instrument ID **SVMS6** Method: **SW8270**

LCS Sample ID: **SLCSW1-41920-41920** Units: µg/L Analysis Date: **6/28/2012 07:17 PM**
Client ID: Run ID: **SVMS6_120628A** SeqNo: **2016451** Prep Date: **6/25/2012** DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Chloronaphthalene	41.97	5.0	45.7	0	91.8	70-130	0			
2-Methylnaphthalene	52.37	5.0	45.7	0	115	70-130	0			
Acenaphthene	43.82	5.0	45.7	0	95.9	70-130	0			
Acenaphthylene	40.34	5.0	45.7	0	88.3	70-130	0			
Anthracene	46.17	5.0	45.7	0	101	70-130	0			
Benzo(a)anthracene	42.81	5.0	45.7	0	93.7	70-130	0			
Benzo(a)pyrene	44.87	5.0	45.7	0	98.2	70-130	0			
Benzo(b)fluoranthene	44.32	5.0	45.7	0	97	70-130	0			
Benzo(g,h,i)perylene	40.78	5.0	45.7	0	89.2	70-130	0			
Benzo(k)fluoranthene	41.76	5.0	45.7	0	91.4	70-130	0			
Chrysene	40.98	5.0	45.7	0	89.7	70-130	0			
Dibenzo(a,h)anthracene	46.08	5.0	45.7	0	101	70-130	0			
Fluoranthene	44.09	5.0	45.7	0	96.5	70-130	0			
Fluorene	48.27	5.0	45.7	0	106	70-130	0			
Indeno(1,2,3-cd)pyrene	44.89	5.0	45.7	0	98.2	70-130	0			
Naphthalene	46.38	5.0	45.7	0	101	70-130	0			
Phenanthrene	42.72	5.0	45.7	0	93.5	70-130	0			
Pyrene	43.66	5.0	45.7	0	95.5	70-130	0			
Surr: 2-Fluorobiphenyl	*90.29*	0	*114*	0	*79.2*	*20-122*	0			
Surr: 4-Terphenyl-d14	*85.21*	0	*114*	0	*74.7*	*22-172*	0			
Surr: Nitrobenzene-d5	*108.3*	0	*114*	0	*95*	*8-115*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12

QC BATCH REPORT

Batch ID: **41920** Instrument ID **SVMS6** Method: **SW8270**

MBLK Sample ID: **SBLKW1-41920-41920** Units: µg/L Analysis Date: **6/28/2012 08:19 PM**
Client ID: Run ID: **SVMS6_120628A** SeqNo: **2016453** Prep Date: **6/25/2012** DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Chloronaphthalene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
Acenaphthene	ND	5.0								
Acenaphthylene	ND	5.0								
Anthracene	ND	5.0								
Benzo(a)anthracene	ND	5.0								
Benzo(a)pyrene	ND	5.0								
Benzo(b)fluoranthene	ND	5.0								
Benzo(g,h,i)perylene	ND	5.0								
Benzo(k)fluoranthene	ND	5.0								
Chrysene	ND	5.0								
Dibenzo(a,h)anthracene	ND	5.0								
Fluoranthene	ND	5.0								
Fluorene	ND	5.0								
Indeno(1,2,3-cd)pyrene	ND	5.0								
Naphthalene	ND	5.0								
Phenanthrene	ND	5.0								
Pyrene	ND	5.0								
Surr: 2-Fluorobiphenyl	*107.8*	0	*114*	0	*94.6*	*20-122*	0			
Surr: 4-Terphenyl-d14	*74.86*	0	*114*	0	*65.7*	*22-172*	0			
Surr: Nitrobenzene-d5	*83.43*	0	*114*	0	*73.2*	*8-115*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12

QC BATCH REPORT

Batch ID: 41920 Instrument ID SVMS6 Method: SW8270

MSD Sample ID: 1206718-01C MSD Units: µg/L Analysis Date: 6/28/2012 09:51 PM
Client ID: LMW-1S Run ID: SVMS6_120628A SeqNo: 2016458 Prep Date: 6/25/2012 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Chloronaphthalene	150.8	18	160	0	94.3	60-140	150.5	0.212	30	
2-Methylnaphthalene	182.6	18	160	0	114	60-140	182.3	0.132	30	
Acenaphthene	158.1	18	160	0	98.8	60-140	158.8	0.454	30	
Acenaphthylene	143.6	18	160	0	89.8	60-140	146.4	1.93	30	
Anthracene	168.2	18	160	0	105	60-140	171.8	2.07	30	
Benzo(a)anthracene	158	18	160	0	98.8	60-140	158.6	0.354	30	
Benzo(a)pyrene	161	18	160	0	101	60-140	165.3	2.65	30	
Benzo(b)fluoranthene	162.8	18	160	0	102	60-140	171.7	5.31	30	
Benzo(g,h,i)perylene	148.8	18	160	0	93	60-140	147.4	0.972	30	
Benzo(k)fluoranthene	149.8	18	160	0	93.7	60-140	145.4	2.98	30	
Chrysene	150.4	18	160	0	94	60-140	148.8	1.07	30	
Dibenzo(a,h)anthracene	165.8	18	160	0	104	60-140	166.1	0.145	30	
Fluoranthene	160	18	160	0	100	60-140	163.7	2.27	30	
Fluorene	177.4	18	160	0	111	60-140	179.7	1.25	30	
Indeno(1,2,3-cd)pyrene	161.4	18	160	0	101	60-140	162.2	0.495	30	
Naphthalene	169.6	18	160	0	106	60-140	170.3	0.424	30	
Phenanthrene	156.7	18	160	0	98	60-140	158.6	1.17	30	
Pyrene	164.7	18	160	0	103	60-140	166.5	1.06	30	
Surr: 2-Fluorobiphenyl	*331.9*	0	*399*	0	*83.2*	*20-122*	348.8	*4.38*	*30*	
Surr: 4-Terphenyl-d14	*326.2*	0	*399*	0	*81.8*	*22-172*	338.9	*3.21*	*30*	
Surr: Nitrobenzene-d5	*381.9*	0	*399*	0	*95.7*	*8-115*	384.7	*0.73*	*30*	

The following samples were analyzed in this batch:

1206718-01C	1206718-02C	1206718-03C
1206718-04C	1206718-05C	1206718-06C
1206718-07C	1206718-08C	1206718-09C
1206718-10C		

Note: See Qualifiers Page for a list of Qualifiers and their explanation

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12

QC BATCH REPORT

Batch ID: 41920 Instrument ID SVMS6 Method: SW8270

MS Sample ID: 1206718-01C MS Units: µg/L Analysis Date: 6/28/2012 09:21 PM
Client ID: LMW-1S Run ID: SVMS6_120628A SeqNo: 2016455 Prep Date: 6/25/2012 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2-Chloronaphthalene	150.5	18	160	0	94.1	60-140	0			
2-Methylnaphthalene	182.3	18	160	0	114	60-140	0			
Acenaphthene	158.8	18	160	0	99.3	60-140	0			
Acenaphthylene	146.4	18	160	0	91.5	60-140	0			
Anthracene	171.8	18	160	0	107	60-140	0			
Benzo(a)anthracene	158.6	18	160	0	99.1	60-140	0			
Benzo(a)pyrene	165.3	18	160	0	103	60-140	0			
Benzo(b)fluoranthene	171.7	18	160	0	107	60-140	0			
Benzo(g,h,i)perylene	147.4	18	160	0	92.1	60-140	0			
Benzo(k)fluoranthene	145.4	18	160	0	90.9	60-140	0			
Chrysene	148.8	18	160	0	93	60-140	0			
Dibenzo(a,h)anthracene	166.1	18	160	0	104	60-140	0			
Fluoranthene	163.7	18	160	0	102	60-140	0			
Fluorene	179.7	18	160	0	112	60-140	0			
Indeno(1,2,3-cd)pyrene	162.2	18	160	0	101	60-140	0			
Naphthalene	170.3	18	160	0	106	60-140	0			
Phenanthrene	158.6	18	160	0	99.1	60-140	0			
Pyrene	166.5	18	160	0	104	60-140	0			
Surr: 2-Fluorobiphenyl	*345.8*	0	*399*	0	*86.9*	*20-122*	0			
Surr: 4-Terphenyl-d14	*336.9*	0	*399*	0	*84.4*	*22-172*	0			
Surr: Nitrobenzene-d5	*384.7*	0	*399*	0	*96.4*	*8-115*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12

QC BATCH REPORT

Batch ID: **R106716** Instrument ID **IC3** Method: **SW9056**

MBLK	Sample ID: **MB-R106716-R106716**				Units: mg/L			Analysis Date: **6/28/2012 11:03 AM**		
Client ID:	Run ID: **IC3_120628A**			SeqNo: **2016341**	Prep Date:		DF: **1**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	ND	1.0								

LCS	Sample ID: **LCS-R106716-R106716**				Units: mg/L			Analysis Date: **6/28/2012 11:23 AM**		
Client ID:	Run ID: **IC3_120628A**			SeqNo: **2016342**	Prep Date:		DF: **1**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	18.99	1.0	20	0	95	85-110	0			

MS	Sample ID: **1206718-04A MS**				Units: mg/L			Analysis Date: **6/28/2012 12:24 PM**		
Client ID: **LMW-6**	Run ID: **IC3_120628A**			SeqNo: **2016345**	Prep Date:		DF: **1**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	25.82	1.0	20	6.332	97.4	75-125	0			

MSD	Sample ID: **1206718-04A MSD**				Units: mg/L			Analysis Date: **6/28/2012 12:44 PM**		
Client ID: **LMW-6**	Run ID: **IC3_120628A**			SeqNo: **2016346**	Prep Date:		DF: **1**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	25.24	1.0	20	6.332	94.5	75-125	25.82	2.29	20	

The following samples were analyzed in this batch:

1206718-03A	1206718-04A	1206718-06A
1206718-07A	1206718-09A	1206718-10A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lakeshore Environmental, Inc.
Work Order: 1206718
Project: Melching 10-339 6/20/12

QC BATCH REPORT

Batch ID: **R106686** Instrument ID **IC4** Method: **SW9056**

MBLK	Sample ID: **MB-R106686-R106686**				Units: mg/L			Analysis Date: **6/27/2012 12:48 AM**		
Client ID:	Run ID: **IC4_120627B**			SeqNo: **2015566**	Prep Date:		DF: **1**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	ND	1.0								

LCS	Sample ID: **LCS-R106686-R106686**				Units: mg/L			Analysis Date: **6/27/2012 01:08 AM**		
Client ID:	Run ID: **IC4_120627B**			SeqNo: **2015567**	Prep Date:		DF: **1**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	19.55	1.0	20	0	97.7	85-110	0			

MS	Sample ID: **1206686-04B MS**				Units: mg/L			Analysis Date: **6/27/2012 06:09 AM**		
Client ID:	Run ID: **IC4_120627B**			SeqNo: **2015580**	Prep Date:		DF: **40**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	1179	40	800	354.8	103	75-125	0			

MSD	Sample ID: **1206686-04B MSD**				Units: mg/L			Analysis Date: **6/27/2012 05:29 AM**		
Client ID:	Run ID: **IC4_120627B**			SeqNo: **2015581**	Prep Date:		DF: **40**			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	1189	40	800	354.8	102	75-125	1179	0.864	20	

The following samples were analyzed in this batch:

1206718-01A	1206718-02A	1206718-03A
1206718-04A	1206718-05A	1206718-06A
1206718-07A	1206718-08A	1206718-09A
1206718-10A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Chain of Custody Form

ALS Environmental

Page 1 of 1

COC ID: 00396

☐ Cincinnati, OH +1 513 733 5336 ☐ Holland, MI +1 616 399 6070 ☐ Salt Lake City, UT +1 801 266 7700
☐ Everett, WA +1 425 356 2600 ☐ Houston, TX +1 281 530 5656 ☐ Spring City, PA +1 610 948 4903
☐ Fort Collins, CO +1 970 490 1511 ☐ Middletown, PA +1 717 944 5541 ☐ York, PA +1 717 505 5280

ALS Project Manager: | Work Order #: 1206718

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Melching	A	Sulfate
Work Order		Project Number	10-339	B	Sodium
Company Name	LEI	Bill To Company		C	PNAs
Send Report To	Kirk Pershbacher	Invoice Attn.	Kirk Pershbacher	D	
Address	803 Vertlocks St	Address		E	
				F	
City/State/Zip	Grand Haven MI 49417	City/State/Zip		G	
Phone	616 844 6060	Phone		H	
Fax	5053	Fax		I	
e-Mail Address	KirkP@lakeshoreenvironmental	e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	LMW-1S	6/20/12	1100	W	none, 2	4	X	X	X								
2	LMW-1D		940	W													
3	LMW-2		1120														
4	LMW-6		1205														
5	LMW-7		1245														
6	LMW-5		1310														
7	LMW-4		1345														
8	LMW-3I		1440														
9	LMW-3S		1410														
10	LMW-3D	6/20/12	1450	W	none, 2	4	X	X	X								

Sampler(s): Please Print & Sign: ERIN R Gerber, E R Gerber

Shipment Method:

Required Turnaround Time: ☐ Other ____ ☐ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Notes:
[signature]	6/12/12	8:40	[signature]	
Relinquished by: [signature]	Date: 6/21/12	Time: 0945	Received by (Laboratory): [signature]	Cooler Temp. 5.2°C
Logged by (Laboratory): KW	Date: 6/21/12	Time: 1045	Checked by (Laboratory): [signature]	

QC Package: (Check Box Below)
- Level II: Standard QC
- Level III: Std QC + Raw Data
- Level IV: SW846 CLP-Like
- Other: ____

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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Sample Receipt Checklist

Client Name: LAKESHOREENV
Work Order: 1206718
Date/Time Received: 21-Jun-12 09:45
Received by: KRW

Checklist completed by: [signature] (eSignature) 21-Jun-12 (Date)
Reviewed by: [signature] (eSignature) 21-Jun-12 (Date)

Matrices: Water
Carrier name: ALSHN

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	5.2 C		
Cooler(s)/Kit(s):			
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			
Login Notes:			

Client Contacted: | Date Contacted: | Person Contacted:
Contacted By: | Regarding:
Comments:
CorrectiveAction:

Attachment B:

Floating Fuel Oil Inspection Form

Building 50/56 Floating Fuel Oil Inspection Form

Melching, Inc.

2400 Lakeshore Drive

Muskegon, Michigan 49443

Project Number: 10-339

Date: 6/20/12 Personnel: ERG / NCK

Weather: 90°F Sunny

	Presence of Oil	Thickness (ft)	Depth to Water (ft)	Odor
Recovery Well	No	—	9.15	None
MW-1 TW-2 (Road)	No	—	10.93	none
MW-2 TW-3	No	—	11.15	None

Comments: _____

Lakeshore Environmental, Inc.
CELEBRATING 20 YEARS

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Grand Haven, Michigan 49417
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www.LakeshoreEnvironmental.com

Western Michigan Mid-Michigan Northern Ohio