

Madison Park Texaeo

LSI ADAPT

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Seattle 109 NW0799

July 16, 2002

ADAPT Job No. WA01-6142-2

Burkheimer Management Company 1326 5<sup>th</sup> Avenue Suite 708 Seattle, WA 98101

Attention:

Mr. Bob Burkheimer

Subject:

2nd Quarter Groundwater Quality Monitoring Report

4000 Madison Street Property 4000 East Madison Street

Seattle, Washington

Dear Mr. Burkheimer:

LSI ADAPT, Inc. (ADAPT), is pleased to provide you with the following results of our 2<sup>nd</sup> Quarter Groundwater Quality Monitoring Report for the above referenced site. This report is provided for Burkheimer Managerment Company and their agents. If this report is to be reproduced and/or transmitted to a third party, it must be reproduced and/or transmitted in its entirety. Any exceptions will be made only with the written permission of ADAPT.

The purpose of the ongoing assessment is to continue to evaluate the groundwater quality beneath the site. ADAPT installed three groundwater monitoring wells in March 2002. These wells are being sampled for a total of four quarters to evaluate groundwater quality. This report presents the results of the second of the four scheduled quarters of monitoring.

#### Monitoring Well Sampling

On June 25, 2002 the three monitoring wells were purged using low flow methods, with a GeoPump 2 Peristaltic pump, with disposable ¼-inch polyethylene tubing, until temperature, conductivity, and pH were stabilized and then sampled using a peristaltic pump. Prior to purging the depth to water in all three wells was recorded to evaluate the flow direction at time of sampling. During purging flow rate of the pump was approximately 0.05 Liters per minute (Lpm) to 0.150 Lpm and approximately 0.5 o 11.4-liters were purged from each well prior to sampling. Monitoring well MW-2 was pumped dry after approximately 0.5 liters and Monitoring well MW-3 was pumped of approximately three casing volumes prior to sampling. Groundwater field sampling sheets are attached in Appendix A.

SEP 2 3 2002

DEPT OF ECOLOGY

Samples were collected with the peristaltic pump and placed into laboratory prepared containers. The filled containers were placed in a chilled cooler at approximately 4 degrees Celsius for transport to OnSite Environmental Inc. for analytical testing for gasoline range hydrocarbons and BTEX using NWTPH-G/BTEX. Laboratory analytical results are summarized in Table 2. Laboratory reports and completed chain of custody are attached in Appendix B.

#### **Groundwater Elevation and Flow Direction**

Depth to water was measured in all three wells to evaluate the groundwater elevations beneath the suspected former fuel tank area. Groundwater depth in MW 1 was 7.85 feet bgs, in MW2 8.78 feet bgs, and in MW3, 8.62 feet bgs as measured from the top of casing at the time of monitoring/sampling (June 25, 2002). Based on the observed elevations groundwater migration direction appears to be towards the east beneath the subject site. Fluid levels are summarized on Table 1, and estimated groundwater migration direction is graphically depicted on Figure 3.

Table 1: Groundwater Elevation						
Well Number	Top of Casing Elevation (ft)	Date Measured	Depth to Water (ft)	Groundwater Elevation (ft)		
		3/15/02	6.68	93.32		
MW-1	100	6/25/02	7.85	92.15		
10100-1	100	,				
			· · ·	·		
	98.31	3/15/02	4.22	94.09		
MW-2		6/25/02	8.78	89.53		
10100-2						
		• .	. :			
,		3/15/02	7.45	93.70		
MW-3	101.15	6/25/02	8.62	93.83		
IVIVV-3	101.15					
	·			,		

Notes: Wells were surveyed using an assumed elevation of Monitoring Well MW-1 as 100 feet.

#### **Groundwater Analytical Results**

Three groundwater samples were submitted to OnSite Environmental Services for analytical testing for gasoline range hydrocarbons and BTEX using NWTPH-G/BTEX. In addition, a groundwater sample from MW-3 was submitted for total lead analysis. The samples were collected using low flow-sampling procedures designed to minimize agitation of the water. Monitoring Wells MW1 was purged and sampled at approximately 0.100 Lpm. Monitoring well Mw-2 was purged dry after approximately 4 minutes of pumping at approximately 0.05 to 0.100 Lpm. The well was allowed to recover to approximately 85% of initial water level prior to sampling. Monitoring well MW3 was purged and sampled at a pump rate of approximately 0.15 Lpm. Field parameters were monitored during purging for MW-1, and samples were collected after stable reading for pH, temperature and conductivity were obtained. The field parameter meter malfunctioned during the purging of MW-2 and MW-3 and was not used. As a result MW-3 was purged of approximately three casing volumes prior to sampling. Groundwater sampling

field parameter notes are presented in Appendix A. Analytical results have been summarized below in Table 2, depicted on Figure 3.

	Table 2 : Summary of Groundwater Analytical Results							
Sam	ple		N	WTPH-G/B1	TEX (ppb <sup>1</sup> )	- <del>-</del>		
Sample ID	Date	Gasoline	Benzene	Toluene	Ethyl- Benzene	Xylenes	MTBE	Lead
MW1	3/15/02	<100	<1.0	2.3	<1.0	<1.0	2	
	6/25/02	<100	<1.0	<1.0	<1.0	<1.0		<del></del>
	<del></del>							
MW2	3/15/02	<100	<1.0	<1.0	<1.0	<1.0		
	6/25/02	<100	<1.0	62	<1.0	<1.0		
-								
MW3	3/15/02	7485	280	75	240	600	<10	<del></del>
	6/25/02	8700	470	120	360	636		<1.1
MW4 <sup>3</sup>	3/15/02	8100	260	73	220	560		
	6/25/02	9100	490	120	370	663		
_	<del></del>		<del>.</del>		<del> </del>			
MTCA Met Residential Leve	Clean up	800	5	1,000	700	1,000	20	15

ppb = parts per billion

Based on the results summarized in Table 2, benzene and gasoline range hydrocarbons were exhibited above the State of Washington Department of Ecology's Model Toxics Control Act (MTCA) Unrestricted Cleanup levels of 5 parts per billion and 800 parts per billion, respectively. Based on a comparison with the initial groundwater sampling event it appears that the benzene and gasoline range hydrocarbon concentrations in MW-3 increased slightly. Toluene was exhibited in the downgradient well MW-2 at concentrations well below the MTCA Unrestricted Cleanup levels. Lead was not exhibited in the groundwater sample from MW-3 above the laboratory reporting limit. Copies of laboratory results and chain-of-custody documents have been included in Appendix B. Specific sampling locations are depicted on Figure 3.

#### CONCLUSIONS AND RECOMMENDATIONS

Benzene and gasoline range hydrocarbons were exhibited in the groundwater sample from MW-3, above MTCA Cleanup levels. The low concentrations of petroleum hydrocarbons in the downgradient well MW-2 appears to indicate that the dissolved plume may be limited in aerial extent and does not migrate off-site. ADAPT believes it would be prudent to continue the quarterly groundwater monitoring as outlined in the approved proposal. The next scheduled quarterly sampling will be conducted the week of September 23, 2002.

<sup>&</sup>lt;sup>2</sup>Not tested for the listed analyte

Duplicate of MW3

#### **LIMITATIONS**

Information contained in this report is based upon site characterization, field observations, and the laboratory analyses completed for this study. Conclusions presented are professional opinions based upon our interpretation of the analytical laboratory test results, as well as our experience and observations during the field activities. The number, locations, and depth of the explorations, as well as the analytical scope were completed within the site and proposal constraints. ADAPT's observations and the analytical data are limited to the vicinity of each test probe and do not necessarily reflect conditions across the site. No other warranty, express or implied is made. In the event that additional information regarding either the site or surrounding properties becomes known, or changes to existing conditions occurs, the conclusions in this report should be reviewed, and if necessary, revised to reflect the updated information. Project specific limitations are presented in the appropriate sections of this report.

This report has been prepared for the exclusive use of Burkheimer Management Company and their agents for specific application to the project site. Use or reliance upon this report by a third is at their own risk. ADAPT does not make any representation or warranty, express or implied, to such other parties as to the accuracy or completeness of this report or the suitability of its use by such other parties for any purpose whatever, known or unknown, to ADAPT.

ADAPT appreciates the opportunity to work with you on this project. If you have any questions, or if we can be of further assistance to you, please contact us at (206) 654-7045.

Respectfully Submitted,

LSI ADAPT, Inc.

Keith A. Ross, P.G., Senior Hydrogeologist

Environmental Services

Hydrogeologist 1127 Geologist Geologist 1127

Keith A. Ross

Dary S. Petrarca, P.G. Environmental Services

Senior Reviewer

KAR/DSP/kar

Attachments:

Paryl S. Petrarca

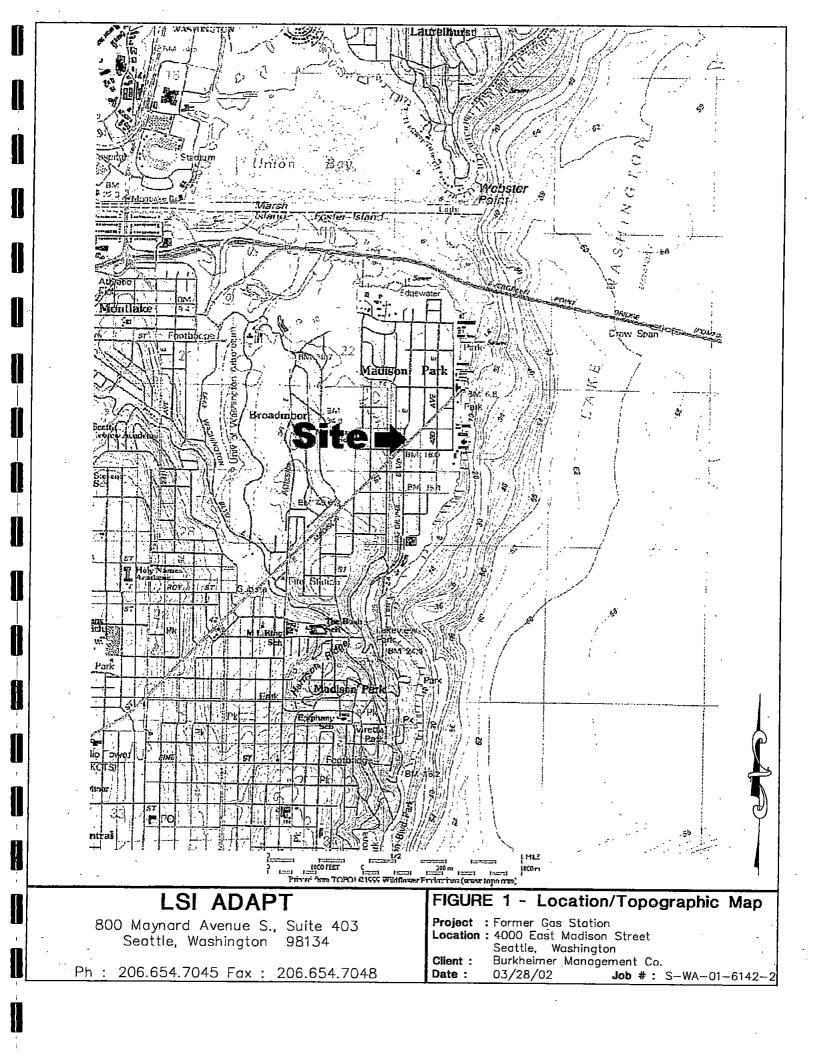
Figure 1 - Location Map

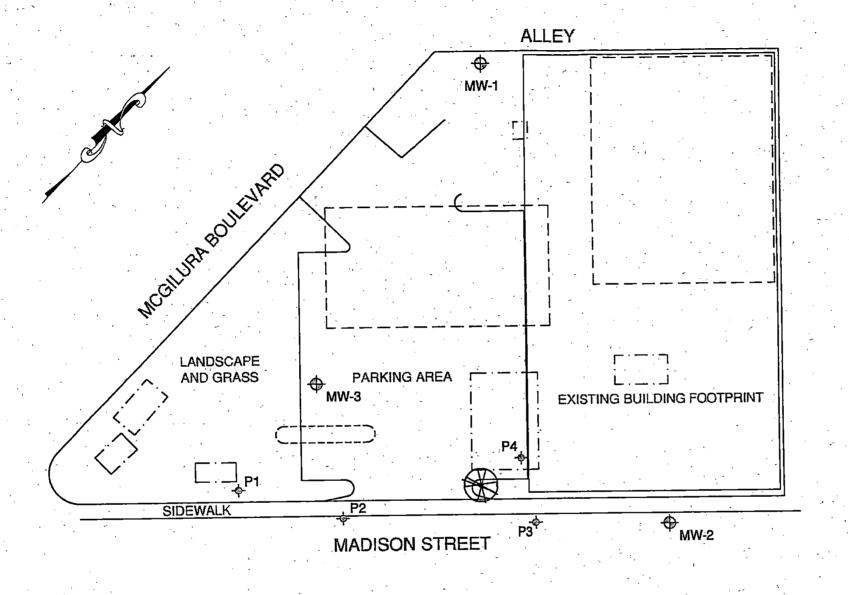
Figure 2 – Site & Vicinity Plan

Figure 3a – Groundwater Elevation and Flow Direction

Appendix A - Groundwater Sampling Field Forms

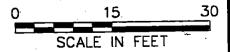
Appendix B - Laboratory Analytical Report / Chain of Custody Forms





APPROXIMATE LOCATION GEOPROBE BORINGS. (ADAPT APRIL, 2001)  $\square$   $\square$  APPROXIMATE LOCATION FORMER BUILDINGS APPROXIMATE LOCATION FORMER USTS. EXISTING BUILDING. MW-1 

APPROXIMATE LOCATION OF GROUNDWATER MONITORING WELLS (ADAPT, MARCH 2002)



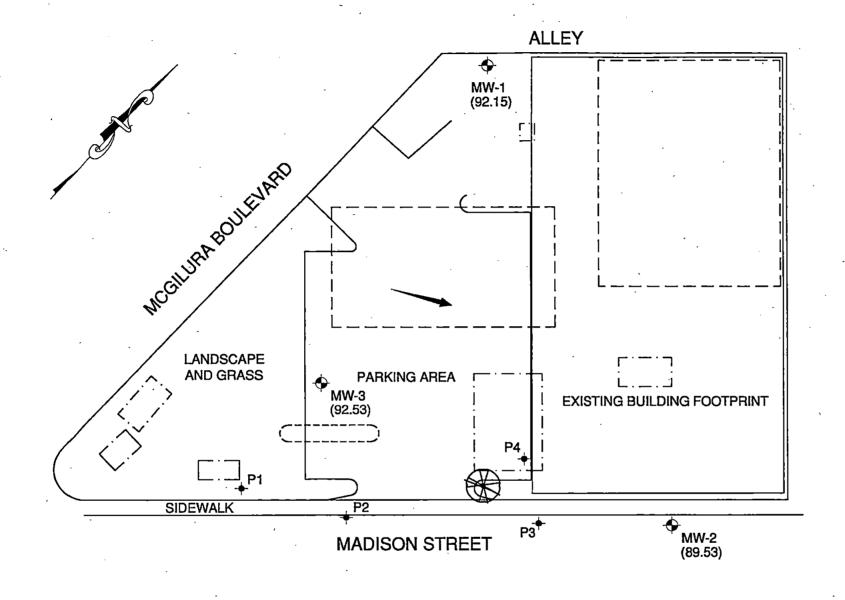
### LSI ADAPT

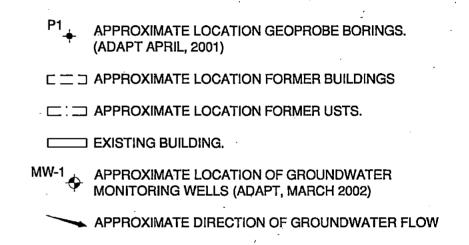
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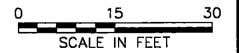
#### FIGURE 2 - Site Plan

Project: Former Gas Station
Location: 4000 East Madison Street
Seattle, Washington
Client: Burkheimer Management Co.
Date: 03/28/02 Job #: 5

Job #: S-WA-01-6142-2







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Ph: 206.654.7045 Fax: 206.654.7048

#### FIGURE 3a - Groundwater Elevation

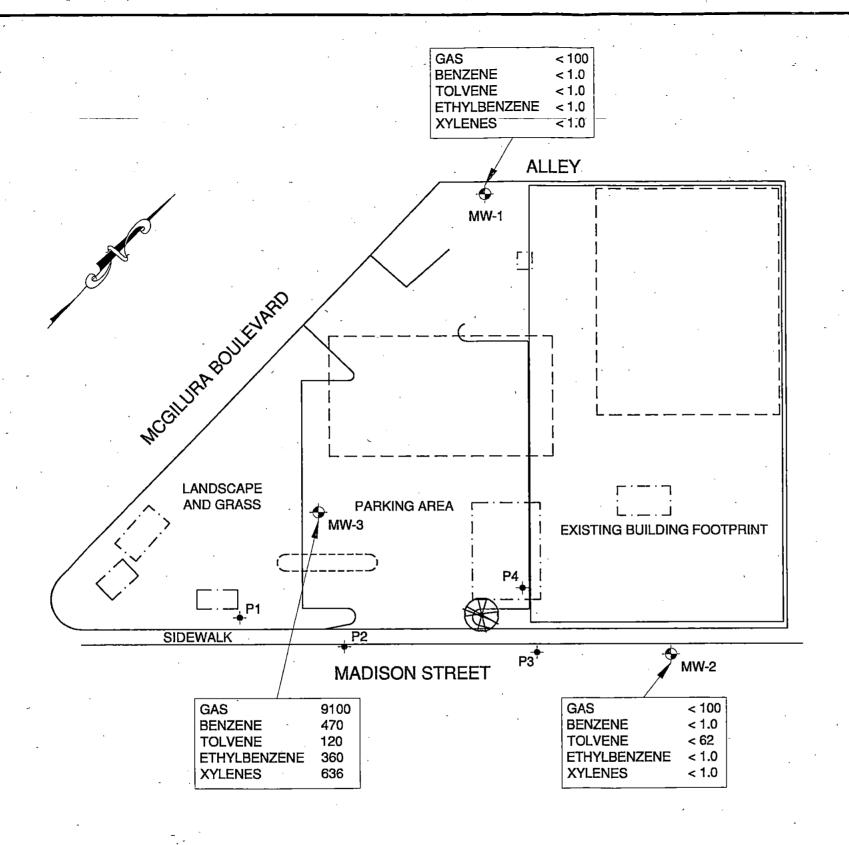
Project : Former Gas Station Location : 4000 East Madison Street

(06/25/02)

Seattle, Washington
Burkheimer Management Co.
07/08/02

Job #: Client:

Job #: S-WA-01-6142-2



APPROXIMATE LOCATION GEOPROBE BORINGS. (ADAPT APRIL, 2001) □ □ □ APPROXIMATE LOCATION FORMER BUILDINGS ☐ ☐ APPROXIMATE LOCATION FORMER USTS. EXISTING BUILDING. MW-1 APPROXIMATE LOCATION OF GROUNDWATER MONITORING WELLS (ADAPT, MARCH 2002)



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#### FIGURE 4a - Analytical Results: Groundwater

(06/25/02)

Project: Former Gas Station
Location: 4000 East Madison Street
Seattle, Washington Client: Burkheimer Management Co.

Date: 07/08/02 **Job #:** S-WA-01-6142-2

# APPENDIX A GROUNDWATER SAMPLING FIELD FORMS

## Groundwater Sample Collection Log

Project Name: 4	OUD E. MADI	<b>∑</b> 0~	Project	No: <u>W4-1-6142-6</u> Date: <u>6/25/02</u>
Monitor Well Number	: MW 21	Sampler: 16617	H Ross	Date: 6/25/02
Top of Casing Elevati	on:	Gro	oundwater Elevation: _	92.15
Weather: Sovy	not.	-		<del></del>
Water Translate		<del> ·</del>	<del></del>	<del></del> -
Water Level Me	easurement:			
(a) Depth to Water:	<u> 7,88</u>	_ft (c):	Height of water (b-a =	c):ft
(b) Total Depth of We	ll:	ft Equ	ipment:	·
Casing Size:	inches	(d) Casing volume:	gal/ft (2in-0.163	c):ft : 4in-0.653: 6in-1.469)
(e) 1 Casing Volume (	c x d = e):	gals (f) l	Purge volume (3 x e =	f): gals
Depth to Product:	<b>∼</b> ≉ft PID	gals (f) l Reading:unit	ts	
			•	,
Purge data:	_	0 ( )		
Purge Equipment:	stopunp 2	Peristeltie MIMIMAL DI	·	· 
Purge Procedure: <u>(</u>	ou Flow	MIMIMUTE DI	2Aw Down	<del></del>
	<del></del>	<del></del>		<u> </u>
	-		<del></del>	· · · · · · · · · · · · · · · · · · ·
Elow Dota: D. 100	ADMACDM HO	er determined. 1.14.4	-4 1-11.4.	•
riow Rate:	Q_PIVIOUPIVI FIO	w determined: wan	219 F BUCIFE	, ·
Commente: 6 .A	on clem	No User		
Comments.	1 186 -	110 0001	<del> </del>	<del></del>
		·		
Start Time: 1	4.5	End Time:_	820	
Volume Purged: 4.	A stero(Callons	End Time Time Purged		<del></del>
volulie Fulgeu. 7.	ZLREISAJanons	i nne ruiged		
Time	pH	Temperature	Conductivity	Total Volume Pumped (Liters)
741	7.51	61.6	545	0.1
746	7.68	60.7	373	
751	7.20	८०.४	354	
7-56	C. 85	60.6	3 44	~
801	6.62	60.6	354	
806	6.40	6 /. 0	346	
	6:22		346	
911	6. 04	61.0	351	<del> </del>
816	<u> </u>	61.5	1 1	<u>-</u>
* -	<del></del>			<del>                                     </del>
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	ı			<del>-</del>
			<u> </u>	<del></del>
o 1:				. ;
Sampling:	•			•
		•		
	1ω-1	Sampling Equipme	ent: SAME	
Sampling Procedure:_		<del></del>	· ·	
	<u> </u>		··	
Time of sample:	820	·		
Duplicate Sample take		If yes Sample ID:		Sample Time:
OTW at time of sampl	ing: ۲۰۰۶	· · · · · · · · · · · · · · · · · · ·		-
	-			

#### Groundwater Sample Collection Log Project Name: 4000 E. MANS. Project No: WAUL-6/42-C Date: 6/25/02 Monitor Well Number: Mw-2 Sampler: ICを、アイ Groundwater Elevation: 95.5 Top of Casing Elevation: \_\_\_ Weather: Summy Water Level Measurement: (a) Depth to Water: 8.75 (c) Height of water (b-a = c): \_\_\_\_\_ (b) Total Depth of Well: \_\_ Equipment: Casing Size: inches (d) Casing volume: gal/ft (2in-0.163: 4in-0.653: 6in-1.469) (e) 1 Casing Volume (c x d = e):\_ (f) Purge volume (3 x e = f):\_\_\_\_\_ Depth to Product: — ft PID Reading: Purge data: Purge Equipment: Geopone 2 Peristelhi Purge Procedure: Low 5-1-w Flow Rate: **6.05** APM/GPM How determined: WATCH Slightly closury. well 843 848 Start Time: End Time: Volume Purged: 0.25 Liters/Gallons Time Purged:\_\_\_ Total Volume Pumped Time pН Temperature Conductivity Eguly meid mar function **10**0 DATA Sampling: MW-2 Sampling Equipment:\_ Sample Number: Sampling Procedure:

Duplicate Sample taken:

DTW at time of sampling:

Time of sample:

7/0

(110)

If yes Sample ID:

Sample Time:

	<u> </u>	· · · · · · · · · · · · · · · · · · ·		LSI ADAF
Groundwat	er Sample C	ollection Log		
Project Name:	4000 E MA	01120	Project N	No: 6/25/02
Monitor Well Numb	er: Mw-I	Sampler:	CIPA RUS	Date: 6/25/02
Top of Casing Eleva	tion: 101.15	Gr	oundwater Elevation:	92.53
Weather: Sun	Ny hot			
Water Level M	leasurement:		<del></del>	- · · · · -
(a) Depth to Water:_	<u> </u>	ft (c)	Height of water (b-a = $a$	e): ft
(b) Total Depth of W	'ell:	ft Èq	uipment:	
Casing Size:	inches	(d) Casing volume:	gal/ft (2in-0.163:	4in-0.653: 6in-1.469)
(e) 1 Casing Volume	(c x d = e):	gals (f)	Purge volume (3 x $e = f$	):gals
Depth to Product:	ft PID	Reading:uni	Height of water (b-a = 6 uipment:gal/ft (2in-0.163: Purge volume (3 x e = f its	_
Purge data: Purge Equipment:	Georgiana 2	PE213た/he		
Purge Procedure:	LIN Flow			
	· · · · · · · · · · · · · · · · · · ·			
· ·		<u> </u>		
			•	
Comments: wan	re clere no	sheen, s/ch/	h moscak R	troleum obor
	<del></del>	<u> </u>	<del></del>	<del> </del>
Start Time: 93	<u> </u>	End Times	1050	
		Time Purge	d: <b>7</b> 6 min	
· O.a 2 a.goa	17 Extensions	, Time Tuiget	<u> </u>	
Time	pH	Temperature	Conductivity	Total Volume Pumped (Liters)
	METER MAL	Punction ~	16 DAM	
	Purcel	~ 3 volume	1	
	1			
<u> </u>				

### Sampling:

Sampling Procedure:			Sampling Equip	oment: مبه و د	<u>E</u>	
Time of sample:	Petron	105.	L A BECAN	1015		
Duplicate Sample tal DTW at time of sam	ken: yes		If yes Sample ID:	mw-4	Sample Time: 1100	



## Water Level Data Sheet

Project #: WAD-6142	Name: Your EAST MADISON	
Date: 4/25/or	Sampler: NEIF Ross	
Equipment: S. Jaist 1	VATRA LEURI	_
Comments:	<del></del>	
		_
	· ·	

Well ID	Sampled (Y/N)	Top of Casing (ft)	Depth to Water (ft)	Depth to Product (ft)	Total Depth (ft)	Groundwater Elev. (ft)	
mu-1	У	100	7.85	~A	92.15		,
MU-2	у	98.3)	8.78	NA	89.53		
m w- j	7	101.15	8.62	MA	9253		
			·	_			
			`			,	
·							
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		-					
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		1: 35.	·		-		

# APPENDIX B LABORATORY ANALYTICAL REPORT /CHAIN OF CUSTODY FORMS



July 3, 2002

Keith Ross LSI-Adapt Engineering 800 Maynard Avenue S, Suite 403 Seattle, WA 98134

Re:

Analytical Data for Project WA01-6142-2 Laboratory Reference No. 0206-196

Dear Keith:

Enclosed are the analytical results and associated quality control data for samples submitted on June 25, 2002.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

Enclosures

Date of Report: July 3, 2002

Samples Submitted: June 25, 2002

Lab Traveler: 06-196 Project: WA01-6142-2

#### **Case Narrative**

Samples were collected on June 25, 2002. Samples were maintained at the laboratory at 4°C and followed SW846 analysis and extraction methods.

#### **NWTPH Gx/BTEX Analysis**

Any QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

#### Total Lead EPA 200.8 Analysis

Any QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: July 3, 2002 Samples Submitted: June 25, 2002

Lab Traveler: 06-196 Project: WA01-6142-2

#### **NWTPH-Gx/BTEX**

Date Extracted:

6-26-02

Date Analyzed:

6-26-02

Matrix: Water Units: ug/L (ppb)

Client ID:

MW-1

MW-2

Lab ID:

06-196-01

06-196-02

	Result	Flags	PQL	Result	Flags	PQL
Benzene	ND	· ·	1.0	ND		1.0
Toluene	ND		1.0	62		1.0
Ethyl Benzene	ND		1.0	ND	,	1.0
m,p-Xylene	ND		1.0	ND		1.0
o-Xylene	ND		1.0	ND	,	1.0
TPH-Gas	ND		100	190	Z	100
Surrogate Recovery. Fluorobenzene	82%		·	82%		

Date of Report: July 3, 2002 Samples Submitted: June 25, 2002 Lab Traveler: 06-196

Project: WA01-6142-2

#### NWTPH-Gx/BTEX

Date Extracted: Date Analyzed:

6-27-02 6-27-02

Matrix: Water Units: ug/L (ppb)

Client ID:

MW-3

Lab ID:

06-196-03

MW-4

06-196-04

	Result	Flags	PQL	Result	Flags	PQL
Benzene	470	•	20	490		20
Toluene	120		20	120		20
Ethyl Benzene	360		20	370		20
m,p-Xylene	570	. ,	20	590		20
o-Xylene	66	•	20	73		20
TPH-Gas	8700		2000	9100		2000
Surrogate Recovery: Fluorobenzene	86%			88%		

## NWTPH-Gx/BTEX METHOD BLANK QUALITY CONTROL

Date Extracted:

6-26-02

Date Analyzed:

6-26-02

Matrix: Water Units: ug/L (ppb)

Lab ID:

MB0626W1

	Result	Flags	PQL
Benzene	ND		1.0
Toluene	ND <sup>'</sup>	,	1.0
Ethyl Benzene	ND		1.0
m,p-Xylene	ND		1.0
o-Xylene	ND		1.0
TPH-Gas	ND		100
Surrogate Recovery: Fluorobenzene	85%		

#### NWTPH-Gx/BTEX METHOD BLANK QUALITY CONTROL

Date Extracted:

6-27-02

Date Analyzed:

6-27-02

Matrix: Water Units: ug/L (ppb)

Lab ID:

MB0627W1

	Result	Flags	PQL
Benzene	ND	, ,	1.0
Toluene	ND		1.0
Ethyl Benzene	ND		1.0
m,p-Xylene	ND .		1.0
o-Xylene	ND		1.0
TPH-Gas	ND		100
Surrogate Recovery:	86%	•	•

## NWTPH-Gx/BTEX DUPLICATE QUALITY CONTROL

Date Extracted:

6-26-02

Date Analyzed:

6-26-02

Matrix: Water Units: ug/L (ppb)

Lab ID:	06-196-01 <b>Original</b>	06-196-01 Duplicate	RPD	Flags
Benzene	ND	ND	NA	
Toluene	ND	ND	NA ·	
Ethyl Benzene	ND	ND	NA ,	
m,p-Xylene	ND	ND,	NA	
o-Xylene	ND	ND	NA	
TPH-Gas	ND	ND	NA	
Surrogate Recovery:				
Fluorobenzene	82%	81%		

Date of Report: July 3, 2002 Samples Submitted: June 25, 2002

Lab Traveler: 06-196 Project: WA01-6142-2

#### **NWTPH-Gx/BTEX** MS/MSD QUALITY CONTROL

Date Extracted:

6-26-02

Date Analyzed:

6-26-02

Matrix: Water Units: ug/L (ppb)

Spike Level: 50.0 ppb

Lab ID:	06-196-01 <b>MS</b>	Percent Recovery	06-196-01 <b>MSD</b>	Percent Recovery	RPD	Flags
Benzene	43.9	88	44.3	89	0.79	
Toluene	46.0	92	46.1	92	0.22	,
Ethyl Benzene	46.5	93	46.6	93	0.11	•
m,p-Xylene	46.7	94	46.6	93	0.26	
o-Xylene	46.4	93	46.3	<b>93</b> ,	0.19	, .

Surrogate Recovery:

Fluorobenzene

85%

88%

Date of Report: July 3, 2002 Samples Submitted: June 25, 2002 Lab Traveler: 06-196

Project: WA01-6142-2

## TOTAL LEAD EPA 200.8

Date Extracted:

6-28-02

Date Analyzed:

7-1-02

Matrix:

Water

Units:

ug/L (ppb)

Client ID

Lab ID

Result

**PQL** 

MW-3

06-196-03

ND

1.1

#### **TOTAL LEAD** EPA 200.8 **METHOD BLANK QUALITY CONTROL**

Date Extracted:

6-28-02

Date Analyzed:

7-1-02

Matrix:

Water

Units:

ug/L (ppb)

Lab ID:

MB0628W2

Method Result **PQL** Analyte 200.8 ND 1.1 Lead

Date of Report: July 3, 2002 Samples Submitted: June 25, 2002

Lab Traveler: 06-196 Project: WA01-6142-2

## TOTAL LEAD EPA 200.8 DUPLICATE QUALITY CONTROL

Date Extracted: 6-28-02
Date Analyzed: 7-1-02

Matrix:

Water

Units:

ug/L (ppb)

Lab ID:

06-177-02

Analyte	-	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	4.	ND	ND	·NA	1.1	•

Date of Report: July 3, 2002 Samples Submitted: June 25, 2002

Lab Traveler: 06-196 Project: WA01-6142-2

#### **TOTAL LEAD** EPA 200.8 MS/MSD QUALITY CONTROL

Date Extracted:

6-28-02

Date Analyzed:

7-1-02

Matrix:

Water

Units:

ug/L (ppb)

Lab ID:

06-177-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	5500	5110	93.	5080	92	0.62	•



#### **DATA QUALIFIERS AND ABBREVIATIONS**

- A Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B The analyte indicated was also found in the blank sample.
- C The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- D Data from 1: \_\_\_ dilution.
- E The value reported exceeds the quantitation range, and is an estimate.
- F Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- G Insufficient sample quantity for duplicate analysis.
- H The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I Compound recovery is outside of the control limits.
- J The value reported was below the practical quantitation limit. The value is an estimate.
- K Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.
- L The RPD is outside of the control limits.
- M Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
- O Hydrocarbons outside the defined gasoline range are present in the sample.
- P The RPD of the detected concentrations between the two columns is greater than 40.
- Q Surrogate recovery is outside of the control limits.
- S Surrogate recovery data is not available due to the necessary dilution of the sample.
- T The sample chromatogram is not similar to a typical .
- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- V Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X Sample extract treated with a silica gel cleanup procedure.
- Y Sample extract treated with an acid cleanup procedure.
- Z The gasoline result for sample MW-2 is attributed to a single peak of Toluene.
- ND Not Detected at PQL
- MRL Method Reporting Limit
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference



# Chain of Custody

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