



ANALYTICAL REPORT

Job Number: 580-5165-2

Job Description: Gasoline Uptake Study

For:
IRST
11760 Commonwealth Dr.
Louisville, KY 40299

Attention: Brent Hepner

A handwritten signature in cursive script, appearing to read "H Curbow".

Heather Curbow
Project Manager I
hcurbow@stl-inc.com
03/21/2007

cc: Dan Parker

Project Manager: Heather Curbow

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METHOD SUMMARY

Client: IRST

Job Number: 580-5165-2

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Volatile Organic Compounds by GC/MS	STL SEA	SW846 8260B	
Toxicity Characteristic Leaching Procedure (ZHE)	STL SEA		SW846 1311
Purge and Trap on Leachates	STL SEA		SW846 5030B
Pensky-Martens Closed-Cup Method for Determining Ignitability	STL SEA	SW846 1010	
Matrix: Water			
Volatile Petroleum Products	STL SEA	NWTPH NWTPH-Gx	
Purge-and-Trap	STL SEA		SW846 5030B

LAB REFERENCES:

STL SEA = STL Seattle

METHOD REFERENCES:

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

SAMPLE SUMMARY

Client: IRST

Job Number: 580-5165-2

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
580-5165-1	CI Agent/Gasoline Leachability 1.79	Solid	03/07/2007 1400	03/07/2007 1418
580-5165-2	CI Agent/Gasoline Leachability 1.79	Water	03/07/2007 1400	03/07/2007 1418

Analytical Data

Client: IRST

Job Number: 580-5165-2

Client Sample ID: CI Agent/Gasoline Leachability 1.79

Lab Sample ID: 580-5165-1
Client Matrix: Solid

Date Sampled: 03/07/2007 1400
Date Received: 03/07/2007 1418

8260B Volatile Organic Compounds by GC/MS -TCLP

Method: 8260B Analysis Batch: 580-16594 Instrument ID: SEA001
Preparation: 5030B Leachate Batch: 580-16470 Lab File ID: AG31242.D
Dilution: 50 Initial Weight/Volume: 5 mL
Date Analyzed: 03/13/2007 1303 Final Weight/Volume: 5 mL
Date Prepared: 03/13/2007 1303
Date Leached: 03/08/2007 1056

Analyte	DryWt Corrected: N	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride		ND		9.0	50
1,1-Dichloroethene		ND		4.9	50
2-Butanone		ND		60	250
Chloroform		ND		3.4	50
Carbon tetrachloride		ND		3.5	50
Benzene		ND		5.0	50
1,2-Dichloroethane		ND		10	50
Trichloroethene		ND		3.7	50
Tetrachloroethene		ND		4.4	50
Chlorobenzene		ND		3.2	50
Toluene		ND		3.3	50
m-Xylene & p-Xylene		44	J	8.5	100
o-Xylene		38	J	3.4	50
Surrogate		%Rec		Acceptance Limits	
Fluorobenzene (Surr)		97		80 - 120	
Toluene-d8 (Surr)		92		80 - 120	
Ethylbenzene-d10		91		80 - 120	
4-Bromofluorobenzene (Surr)		87		80 - 120	
Trifluorotoluene (Surr)		112		80 - 120	

Analytical Data

Client: IRST

Job Number: 580-5165-2

Client Sample ID: CI Agent/Gasoline Leachability 1.79

Lab Sample ID: 580-5165-2

Date Sampled: 03/07/2007 1400

Client Matrix: Water

Date Received: 03/07/2007 1418

NWTPH-Gx Volatile Petroleum Products

Method: NWTPH-Gx

Analysis Batch: 580-16533

Instrument ID: SEA041

Preparation: 5030B

Lab File ID: GX0005582.D

Dilution: 50

Initial Weight/Volume: 5 mL

Date Analyzed: 03/09/2007 1548

Final Weight/Volume: 5 mL

Date Prepared: 03/09/2007 1548

Injection Volume:

Column ID: PRIMARY

Analyte	Result (mg/L)	Qualifier	MDL	RL
Gasoline	3.6	B	0.39	2.5
Surrogate	%Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)	96		50 - 150	
Trifluorotoluene (Surr)	99		50 - 150	
Ethylbenzene-d10	101		50 - 150	
Fluorobenzene (Surr)	94		50 - 150	
Toluene-d8 (Surr)	102		50 - 150	

Analytical Data

Client: IRST

Job Number: 580-5165-2

General Chemistry

Client Sample ID: CI Agent/Gasoline Leachability 1.79

Lab Sample ID: 580-5165-1

Date Sampled: 03/07/2007 1400

Client Matrix: Solid

Date Received: 03/07/2007 1418

Analyte	Result	Qual	Units	Dil	Method
Flashpoint	>212		Degrees F	1.0	1010
	Anly Batch: 580-16784	Date Analyzed	03/19/2007 1417		DryWt Corrected: N

Quality Control Results

Client: IRST

Job Number: 580-5165-2

Method Blank - Batch: 580-16594

Lab Sample ID: MB 580-16594/1
Client Matrix: Solid
Dilution: 50
Date Analyzed: 03/13/2007 1238
Date Prepared: 03/13/2007 1238

Analysis Batch: 580-16594
Prep Batch: N/A
Units: ug/L

Method: 8260B Preparation: 5030B TCLP

Instrument ID: SEA001
Lab File ID: AG31241.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Vinyl chloride	ND		9.0	50
1,1-Dichloroethene	ND		4.9	50
2-Butanone	ND		60	250
Chloroform	ND		3.4	50
Carbon tetrachloride	ND		3.5	50
Benzene	ND		5.0	50
1,2-Dichloroethane	ND		10	50
Trichloroethene	ND		3.7	50
Tetrachloroethene	ND		4.4	50
Chlorobenzene	ND		3.2	50
Toluene	ND		3.3	50
m-Xylene & p-Xylene	ND		8.5	100
o-Xylene	ND		3.4	50
Surrogate	% Rec		Acceptance Limits	
Fluorobenzene (Surr)	97		80 - 120	
Toluene-d8 (Surr)	91		80 - 120	
Ethylbenzene-d10	92		80 - 120	
4-Bromofluorobenzene (Surr)	86		80 - 120	
Trifluorotoluene (Surr)	105		80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: IRST

Job Number: 580-5165-2

Lab Control Spike - Batch: 580-16594

Method: 8260B
Preparation: 5030B
TCLP

Lab Sample ID: LCS 580-16594/2
Client Matrix: Solid
Dilution: 50
Date Analyzed: 03/13/2007 1200
Date Prepared: 03/13/2007 1200

Analysis Batch: 580-16594
Prep Batch: N/A
Units: ug/L

Instrument ID: SEA001
Lab File ID: AG31239.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Vinyl chloride	250	274	109	50 - 145	
1,1-Dichloroethene	250	280	112	70 - 130	
2-Butanone	1250	1210	97	30 - 150	
Chloroform	250	261	105	65 - 135	
Carbon tetrachloride	250	299	120	65 - 140	
Benzene	250	264	105	80 - 120	
1,2-Dichloroethane	250	248	99	70 - 130	
Trichloroethene	250	241	96	75 - 125	
Tetrachloroethene	250	259	104	45 - 150	
Chlorobenzene	250	261	104	80 - 120	
Toluene	250	265	106	75 - 120	
m-Xylene & p-Xylene	500	481	96	75 - 130	
o-Xylene	250	255	102	80 - 120	
Surrogate		% Rec		Acceptance Limits	
Fluorobenzene (Surr)		95		80 - 120	
Toluene-d8 (Surr)		98		80 - 120	
Ethylbenzene-d10		99		80 - 120	
4-Bromofluorobenzene (Surr)		95		80 - 120	
Trifluorotoluene (Surr)		113		80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: IRST

Job Number: 580-5165-2

Matrix Spike - Batch: 580-16594

Method: 8260B
Preparation: 5030B
TCLP

Lab Sample ID: 580-5165-1
Client Matrix: Solid
Dilution: 50
Date Analyzed: 03/13/2007 1242
Date Prepared: 03/13/2007 1242
Date Leached: 03/08/2007 1056

Analysis Batch: 580-16594
Prep Batch: N/A
Units: ug/L

Instrument ID: SEA001
Lab File ID: AG31244.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Leachate Batch: 580-16470

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Vinyl chloride	ND	250	254	102	50 - 145	
1,1-Dichloroethene	ND	250	271	109	70 - 130	
2-Butanone	ND	1250	1240	99	30 - 150	
Chloroform	ND	250	265	106	65 - 135	
Carbon tetrachloride	ND	250	285	114	65 - 140	
Benzene	ND	250	257	103	80 - 120	
1,2-Dichloroethane	ND	250	253	101	70 - 130	
Trichloroethene	ND	250	236	94	75 - 125	
Tetrachloroethene	ND	250	243	97	45 - 150	
Chlorobenzene	ND	250	257	103	80 - 120	
Toluene	ND	250	255	102	75 - 120	
m-Xylene & p-Xylene	44 J	500	511	93	75 - 130	
o-Xylene	38 J	250	299	104	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: IRST

Job Number: 580-5165-2

Method Blank - Batch: 580-16533

**Method: NWTPH-Gx
Preparation: 5030B**

Lab Sample ID: MB 580-16533/1
 Client Matrix: Water
 Dilution: 50
 Date Analyzed: 03/09/2007 1503
 Date Prepared: 03/09/2007 1503

Analysis Batch: 580-16533
 Prep Batch: N/A
 Units: mg/L

Instrument ID: SEA041
 Lab File ID: GX0005580.D
 Initial Weight/Volume: 5 mL
 Final Weight/Volume: 5 mL
 Injection Volume:
 Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
Gasoline	0.51	J	0.39	2.5
Surrogate	% Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)	95		50 - 150	
Trifluorotoluene (Surr)	101		50 - 150	
Ethylbenzene-d10	100		50 - 150	
Fluorobenzene (Surr)	94		50 - 150	
Toluene-d8 (Surr)	103		50 - 150	

Lab Control Spike - Batch: 580-16533

**Method: NWTPH-Gx
Preparation: 5030B**

Lab Sample ID: LCS 580-16533/2
 Client Matrix: Water
 Dilution: 50
 Date Analyzed: 03/09/2007 1526
 Date Prepared: 03/09/2007 1526

Analysis Batch: 580-16533
 Prep Batch: N/A
 Units: mg/L

Instrument ID: SEA041
 Lab File ID: GX0005581.D
 Initial Weight/Volume: 5 mL
 Final Weight/Volume: 5 mL
 Injection Volume:
 Column ID: PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Gasoline	62.5	52.1	83	79 - 110	
Surrogate		% Rec		Acceptance Limits	
4-Bromofluorobenzene (Surr)		96		50 - 150	
Trifluorotoluene (Surr)		109		50 - 150	
Ethylbenzene-d10		101		50 - 150	
Fluorobenzene (Surr)		102		50 - 150	
Toluene-d8 (Surr)		99		50 - 150	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: IRST

Job Number: 580-5165-2

Matrix Spike - Batch: 580-16533

Method: NWTPH-Gx
Preparation: 5030B

Lab Sample ID: 580-5165-2
Client Matrix: Water
Dilution: 50
Date Analyzed: 03/09/2007 1633
Date Prepared: 03/09/2007 1633

Analysis Batch: 580-16533
Prep Batch: N/A
Units: mg/L

Instrument ID: SEA041
Lab File ID: GX0005584.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
Injection Volume:
Column ID: PRIMARY

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Gasoline	3.6	62.5	56.5	85	50 - 150	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: IRST

Job Number: 580-5165-2

Lab Control Spike - Batch: 580-16784

Method: 1010
Preparation: N/A

Lab Sample ID: LCS 580-16784/1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/19/2007 1417
Date Prepared: N/A

Analysis Batch: 580-16784
Prep Batch: N/A
Units: Degrees F

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Flashpoint	81.0	80.0	99	97.6 - 102.4	

Calculations are performed before rounding to avoid round-off errors in calculated results.

DATA REPORTING QUALIFIERS

Client: IRST

Job Number: 580-5165-2

Lab Section	Qualifier	Description
GC/MS VOA	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
GC VOA	B	Compound was found in the blank and sample.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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**Chain of
Custody Record**

501K

Client IRST		Project Manager		Date 03/07/07	Chain of Custody Number 02348
Address 11760 Commonwealth Dr.		Telephone Number (Area Code)/Fax Number 1-253-922-2310 (1-800-255-6073)		Page 02348 of 02348	
City Louisville	State KY	Zip Code 40299	Site Contact Brent Heper	Analysis (Attach list if more space is needed)	
Project Name and Location (State) Gasoline Leachate Site - 2 Weekold 2 Day Storage			Lab Contact Brent Heper	Special Instructions/ Conditions of Receipt	
Contract/Purchase Order/Quote No.			Carrier/Waybill Number		
Sample I.D. and Location/Description (Containers for each sample may be combined on one line)		Matrix	Containers & Preservatives	<input type="checkbox"/> Sample Disposal <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)	
CI Agent / Gasoline Leachate 03/07/07 1400		Aqueous Soil Sed. Rock Unpres. H2SO4 HNO3 HCl NaOH ZnAc NaOH	+ TCEP-82608 + TCEP-NUTR-GAS		
Possible Hazard Identification		QC Requirements (Specify)			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		<input type="checkbox"/> 10 Days <input type="checkbox"/> 15 Days <input type="checkbox"/> Other _____			
Cooler		Turn Around Time Required (business days)			
<input type="checkbox"/> Yes <input type="checkbox"/> No Cooler Temp: _____		<input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 5 Days			
1. Relinquished By Brent Heper		Date 03/07/07	Time 1400	1. Received By <i>Gie</i>	
2. Relinquished By		Date	Time	2. Received By	
3. Relinquished By		Date	Time	3. Received By	
Comments					

LOGIN SAMPLE RECEIPT CHECK LIST

Client: IRST

Job Number: 580-5165-2

Login Number: 5165

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	NA	client dropped off in SR
Cooler Temperature is acceptable.	NA	
Cooler Temperature is recorded.	NA	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	NA	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	