Analytical Resources, Incorporated
Analytical Chemists and Consultants

AMEC E&E
Received
SEP 15 2011
SEATTLE ORG. 5009

September 14, 2011

John Long
AMEC/Geomatrix
600 University Suite 1020
Seattle, WA 98101

RE: Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Number: TK50

Dear John:

Please find enclosed the final data package for samples for the project referenced above. ARI received nineteen soil samples on August 30, 2011.

Please refer to the case narrative for details on the analyses of these samples.

A copy of this package will be kept on file at ARI. If you have questions or problems, please feel free to contact me at any time.

Sincerely,

ANALYTICAL RESOURCES, INC.

Kelly Bottem
Client Services Manager
206/695-6211
kellyb@arilabs.com

Enclosures

cc: file TK50

KFB/esj

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

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Client: AMEC Geomatrix

Received SEP 15 2011 SEATTLE ORG. 5008

Project: 8769 FRP Shoreline Investigation 2011

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Signature

September-12-2011
Date

Chain of Custody Documentation

ARI Job ID: TK50

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: TK50
Turn-around Requested: Standard
Page: 1 of 4
ARI Client Company: AMEC GMX
Phone: 206-342-1773
Date: 8/30/11
Ice Present? Y
Client Contact: Nik Bacher / John Long
No. of Coolers: 4
Cooler Temps: 3.8, 2.4
Client Project Name: FRP Shoreline Investigation 2011
Client Project #: 8769
Samplers: Nik Bacher

Analytical Resources, Incorporated
Analytical Chemists and Consultants
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Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Metals - 6010B	Mercury - H2O 7470A	Mercury - SOIL 7471A	VOCs - 8260C	pH H2O - 150.1	pH SOIL - 9045D	ASTM D421	ASTM D422	ASTM D2216	ASTM D4318	ASTM D2937 API RP40 EPA 9100	Notes/Comments
FRP-083011-001	8/30/11	0920	SOIL	4	X	X	X	X		X						
FRP-083011-002		0925		4	X	X	X	X		X						
FRP-083011-003		0930		4	X	X	X	X		X						
FRP-083011-004		0935		4	X	X	X	X		X						
FRP-083011-005		0940		4	X	X	X	X		X						
FRP-083011-006		0945		4	X	X	X	X		X						
FRP-083011-007		0950		4	X	X	X	X		X						
FRP-083011-008		0955		4	X	X	X	X		X						
FRP-083011-009		1000		2							X	X	X	X	X	
FRP-083011-010		1100		4	X	X	X	X		X						

Comments/Special Instructions: METALS INCLUDE: Al, As, Co, Cr, Cu, Pb, Mn, Ni, Se, Th, V, Zn

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Nik Bacher	[illegible]		
Printed Name: Nik Bacher	Printed Name: C. OREIRO	Printed Name:	Printed Name:
Company: AGMX	Company: ARI	Company:	Company:
Date & Time: 8/30/11 1615	Date & Time: 8/30/11 1615	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: TK50	Turn-around Requested: Standard	Page: 2 of 4	
ARI Client Company: AMEC GMX	Phone: 206-342-1773	Date: 8/30/11	Ice Present? 2
Client Contact: Nik Bacher / John Long		No. of Coolers: 4	Cooler Temps: 3.8, 2.4
Client Project Name: FRP Shoreline Investigation 2011			
Client Project #: 8769	Samplers: Nik Bacher		

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Sample ID	Date	Time	Matrix	No. Containers	Metals 6010B	Mercury H2O 7470A	Mercury Soil 7471A	VOCs 8260C	pH-H2O 150.1	pH Soil 9045D	ASTM D421/422	ASTM D2216	ASTM D4318	ASTM D2937 API RP40 EPA 9100	Notes/Comments
FRP-083011-011	8/30/11	1105	Soil	4	X		X	X		X					
FRP-083011-012		1110		4	X		X	X		X					
FRP-083011-013		1115		4	X		X	X		X					
FRP-083011-014		1120		4	X		X	X		X					
FRP-083011-015		1125		4	X		X	X		X					
FRP-083011-016		1130		4	X		X	X		X					
FRP-083011-017		1135		4	X		X	X		X					
FRP-083011-018		1140		4	X		X	X		X					
FRP-083011-019		1145		4	X		X	X		X					
FRP-083011-020		1150		2							X	X	X	X	

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
Metals include Al, As, Cd, Cr, Cu Pb, Ni, Se, Th, V Zn	(Signature) [signature]	(Signature) [signature]	(Signature)	(Signature)
	Printed Name: Nik Bacher	Printed Name: C. OREIRO	Printed Name:	Printed Name:
	Company: AGMX	Company: ARI	Company:	Company:
	Date & Time: 8/30/11 1615	Date & Time: 8/30/11 1615	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: AMEC GeoMatrix

Project Name: FRP Shoreline Investigation 2011

COC No(s): NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: TK50

Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)..... 3.8 2.4

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90941619

Cooler Accepted by: JO Date: 8/30/11 Time: 1615

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: Cardboard			
Was sufficient ice used (if appropriate)?	NA	YES	NO
Were all bottles sealed in individual plastic bags?		YES	NO
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	~~See comment~~ JM	

Was Sample Split by ARI : NA YES Date/Time: Equipment: Split by:

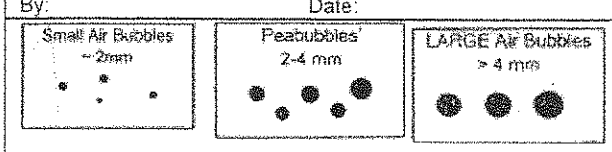
Samples Logged by: JM Date: 8/31/11 Time: 706

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm"	
Peabubbles → "pb"	
Large → "lg"	
Headspace → "hs"	

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: TK50

Case Narrative

AMEC/Geomatrix
Client Project: Former Rhone Poulenc- 8769 Shoreline Investigation
ARI Job Number: TK50
September 14, 2011

Sample Receipt:

Please find enclosed the original chain of custody (COC) record and analytical results for the project referenced above. Analytical Resources, Inc. accepted nineteen soil samples in good condition on 8/30/11. Please see the enclosed Cooler Receipt Form for further details.

Volatiles by 8260C

The samples were analyzed on 9/6/11 and 9/7/11 - within the method recommended holding time.

Initial calibration (s): All analytes of interest were within method acceptance criteria.

Continuing calibration (s): The 9/6/11 CCAL is out of control high for all associated FORM III "Q" flagged analytes. All associated samples that contain these analytes have been flagged with a "Q" qualifier.

The 9/7/11 CCAL is out of control high for all associated FORM III "Q" flagged analytes. All associated samples that contain analyte have been flagged with a "Q" qualifier.

LCS/LCSD/RPDs: The 9/6/11 soil LCS and LCSD are out of control high for 2-Chloroethylvinylether.

The 9/7/11 soil LCS and LCSD are out of control high for 2-Chloroethylvinylether. The LCSD is out of control low for 1,2,4-Trichlorobenzene.

Surrogates: All surrogate recoveries were within control limits.

Method Blank (s): The method blanks were free of contamination.

Samples: There were no anomalies associated with these samples.

Metals Analysis (6010, 200.8 and 7000 series)

The samples were digested on 9/6/11 - within the method recommended holding time and analyzed on 9/8/11.

Initial calibration (s): All analytes of interest were within method acceptance criteria.

Continuing calibration (s): All analytes of interest were within method acceptance criteria.

Internal Standards: Internal standard areas were in control.

LCS/LCSD/RPDs: The percent recoveries and RPDs are in control.

Surrogates: All surrogate recoveries were within control limits.

Method Blank (s): The method blank was free of contamination.

Samples: There were no anomalies associated with these samples.

Matrix spike/ Sample duplicate/ RPD(s): The percent recoveries and RPDs were in control.

pH by method 9045:

The samples were analyzed on 8/31/11 within method recommended holding time.

Initial calibration (s): All analytes of interest were within method acceptance criteria.

LCS/LCSD/RPDs: The percent recovery is in control.

Sample duplicate/ RPD(s): The RPDs are in control.

Geotechnical

A laboratory specific narrative follows.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: AMEC Geomatrix	**ARI Job No.:** TK50
Client Project: FRP Shoreline Investigation 2011	**Client Project No.:** 8769

Case Narrative

1. Two samples were submitted on August 31, 2011 for grain size analysis, Atterberg limits, bulk density and moisture content determination. The samples were in good condition.
2. The Atterberg limits determination was run according to ASTM D4318.
3. Grain size distribution was run according to ASTM D422, sieve and hydrometer analysis. The samples were set up according to ASTM D421. A standard milkshake-type mixer was used to disperse the hydrometer sample. A specific gravity of 2.65 was used in the hydrometer calculations. The samples were run in a single batch, and one sample from another job in this project, FRP-082911-005, was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
4. The moisture content was run according to ASTM D2216.
5. Bulk (wet/dry) density was run according to ASTM D7263. The samples were batched with a triplicate from another job, FRP-082911-005.
6. The data is provided in summary tables and plots.
7. There were no noted anomalies in the samples or methods on this project.

Released by: [signature] Date: 9/8/11
Title: *Geotechnical Division Manager*

Reviewed by: [signature] Date: 9·8·2011
Title: *Lead Technician*

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: TK50
Client: AMEC Geomatrix
Project Event: 8769
Project Name: FRP Shoreline Investigation 2011

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	FRP-083011-001	TK50A	11-18869	Soil	08/30/11 09:20	08/30/11 16:15
2.	FRP-083011-002	TK50B	11-18870	Soil	08/30/11 09:25	08/30/11 16:15
3.	FRP-083011-003	TK50C	11-18871	Soil	08/30/11 09:30	08/30/11 16:15
4.	FRP-083011-004	TK50D	11-18872	Soil	08/30/11 09:35	08/30/11 16:15
5.	FRP-083011-005	TK50E	11-18873	Soil	08/30/11 09:40	08/30/11 16:15
6.	FRP-083011-006	TK50F	11-18874	Soil	08/30/11 09:45	08/30/11 16:15
7.	FRP-083011-007	TK50G	11-18875	Soil	08/30/11 09:50	08/30/11 16:15
8.	FRP-083011-008	TK50H	11-18876	Soil	08/30/11 09:55	08/30/11 16:15
9.	FRP-083011-010	TK50I	11-18877	Soil	08/30/11 11:00	08/30/11 16:15
10.	FRP-083011-011	TK50J	11-18878	Soil	08/30/11 11:05	08/30/11 16:15
11.	FRP-083011-012	TK50K	11-18879	Soil	08/30/11 11:10	08/30/11 16:15
12.	FRP-083011-013	TK50L	11-18880	Soil	08/30/11 11:15	08/30/11 16:15
13.	FRP-083011-014	TK50M	11-18881	Soil	08/30/11 11:20	08/30/11 16:15
14.	FRP-083011-015	TK50N	11-18882	Soil	08/30/11 11:25	08/30/11 16:15
15.	FRP-083011-016	TK50O	11-18883	Soil	08/30/11 11:30	08/30/11 16:15
16.	FRP-083011-017	TK50P	11-18884	Soil	08/30/11 11:35	08/30/11 16:15
17.	FRP-083011-018	TK50Q	11-18885	Soil	08/30/11 11:40	08/30/11 16:15
18.	FRP-083011-019	TK50R	11-18886	Soil	08/30/11 11:45	08/30/11 16:15
19.	FRP-083011-009	TK50S	11-18887	Soil	08/30/11 10:00	08/30/11 16:15
20.	FRP-083011-020	TK50T	11-18888	Soil	08/30/11 11:50	08/30/11 16:15

Printed 08/31/11

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q — Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

TK50 : 00011

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

TK50 : 60012

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

TK50 : 00013

Analytical Resources,Incorporated
Analytical Chemists and Consultants

Spike Recovery Control Limits for Analysis of Solid Samples
Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C
5 mL Purge Volume [7]

Effective:5/18/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	Low Level [1]	Low Level ME Limits [3]	Medium Level [2]	Medium Level ME Limits [3]
LCS Spike Recovery [8]				
Dichlorodifluoromethane	53 - 148	37 - 164	25 - 128	**10** - 145
Chloromethane	64 - 125	54 - 135	55 - 121	44 - 132
Vinyl Chloride	63 - 137	51 - 149	66 - 123	57 - 133
Bromomethane	57 - 136	44 - 149	40 - 154	21 - 173
Chloroethane	64 - 131	53 - 142	72 - 128	63 - 137
Trichlorofluoromethane	69 - 132	59 - 143	69 - 135	58 - 146
Acrolein	54 - 137	40 - 151	39 - 135	23 - 151
1,1,2-Trichloro-1,2,2-trifluoroethane	74 - 130	65 - 139	65 - 139	53 - 151
Acetone	60 - 131	48 - 143	55 - 130	43 - 143
1,1-Dichloroethene	75 - 126	67 - 135	73 - 133	63 - 143
Bromoethane	76 - 126	68 - 134	74 - 133	64 - 143
Methyl Iodide	65 - 139	53 - 151	47 - 155	29 - 173
Methylene Chloride	70 - 123	61 - 132	**80** - **120**	75 - 122
Acrylonitrile	67 - 125	57 - 135	62 - 129	51 - 140
Methyl tert-Butyl Ether	70 - 120	62 - 128	69 - 128	59 - 138
Carbon Disulfide	71 - 129	61 - 139	64 - 135	52 - 147
trans-1,2-Dichloroethene	80 - **120**	74 - 126	78 - 125	70 - 133
Vinyl Acetate	60 - 136	47 - 149	66 - 132	55 - 143
1,1-Dichloroethane	**80** - **120**	75 - 124	77 - 124	69 132
2-Butanone	70 - **120**	62 - 127	65 - 126	55 - 136
2,2-Dichloropropane	74 - 123	66 - 131	75 - 127	66 - 136
cis-1,2-Dichloroethene	**80** - **120**	76 - 123	**80** - 125	74 - 132
Chloroform	80 - **120**	74 - 123	**80** - 124	73 - 131
Bromodichloromethane	77 - 121	70 - 128	78 - 130	69 - 139
1,1,1-Trichloroethane	77 - 121	70 - 128	76 - 130	67 - 139
1,1-Dichloropropene	**80** - **120**	77 - 123	77 - 131	68 - 140
Carbon Tetrachloride	77 - 122	70 - 130	74 - 129	65 - 138
1,2-Dichloroethane	76 - **120**	69 - 123	73 - 123	65 - 131
Benzene	**80** - 120	80 - 126	**80** - **120**	75 - 130
Trichloroethene	**80** - **120**	77 - 123	**80** - 125	75 - 132
1,2-Dichloropropane	**80** - **120**	76 - 120	**80** - 122	74 - 129
Bromochloromethane	80 - 120	73 - 127	**80** - 127	73 - 135
Dibromomethane	80 - **120**	74 - 121	**80** - 121	76 - 128
2-Chloroethylvinylether	**10** - 191	**10** - 222	61 - 128	50 - 139

TK50 : 00614

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Spike Recovery Control Limits for Analysis of Solid Samples Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C 5 mL Purge Volume [7]

Effective:5/18/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	Low Level [1]	Low Level ME Limits [3]	Medium Level [2]	Medium Level ME Limits [3]
4-Methyl-2-Pentanone	67 - **120**	59 - 125	80 - 123	73 - 130
cis-1,3-Dichloropropene	74 - **120**	67 - 125	80 - 122	73 - 129
Toluene	**80** - **120**	79 - **120**	**80** - 122	**80** - 127
trans-1,3-Dichloropropene	65 - **120**	57 - 125	**80** - 123	79 - 129
2-Hexanone	65 - 130	54 - 141	58 - 129	46 - 141
1,1,2-Trichloroethane	**80** - **120**	75 - 122	**80** - 120	77 - 126
1,3-Dichloropropane	80 - **120**	74 - 122	**80** - 120	76 - 126
Tetrachloroethene	**80** - 121	79 - 127	**80** - 130	73 - 138
Dibromochloromethane	64 - **120**	55 - 128	77 - 120	70 - 127
Ethylene Dibromide	75 - **120**	68 - 124	**80** - **120**	**80** - 120
Chlorobenzene	**80** - **120**	82 - 120	**80** - 121	80 - 127
Ethylbenzene	**80** - 127	80 - 134	**80** - 126	**80** - 132
1,1,2,2-Tetrachloroethane	74 - 120	66 - 128	79 - **120**	73 - 123
m,p-Xylene	**80** - 125	**80** - 131	**80** - 130	**80** - 137
o-Xylene	78 - **120**	71 - 126	**80** - 124	**80** - 130
Styrene	**80** - 123	78 - 130	**80** - 132	77 - 140
Isopropylbenzene	**80** - 127	84 - 133	**80** - 130	**80** - 137
Bromoform	60 - **120**	50 - 128	68 - 129	58 - 139
1,1,1,2-Tetrachloroethane	69 - 121	60 - 130	**80** - 126	76 - 133
1,2,3-Trichloropropane	72 - 121	64 - 129	77 - **120**	71 - 121
trans-1,4-Dichloro-2-butene	65 - 126	55 - 136	66 - 127	56 - 137
n-Propylbenzene	**80** - 132	**80** - 139	**80** - 132	77 - 140
Bromobenzene	**80** - **120**	78 - 122	**80** - 121	80 - 127
1,3,5-Trimethylbenzene	**80** - 125	**80** - 131	78 - 137	68 - 147
2-Chlorotoluene	**80** - 125	77 - 132	**80** - 123	**80** - 129
4-Chlorotoluene	**80** - 127	77 - 134	**80** - 130	74 - 138
tert-Butylbenzene	**87** - 122	**80** - 128	**80** - 133	78 - 141
1,2,4-Trimethylbenzene	**80** - 126	**80** - 132	**80** - 131	79 - 139
sec-Butylbenzene	**80** - 134	80 - 142	**80** - 136	76 - 146
4-Isopropyltoluene	**80** - 131	**80** - 138	**80** - 141	71 - 151
1,3-Dichlorobenzene	**80** - 120	**80** - 126	**80** 126	77 - 133
1,4-Dichlorobenzene	**80** - 120	79 - 126	**80** 121	77 - 127
n-Butylbenzene	**80** - 138	**80** - 146	**80** - 138	77 - 147
1,2-Dichlorobenzene	**80** - **120**	78 - 122	**80** - **120**	**80** - 121
1,2-Dibromo-3-chloropropane	59 - 120	49 - 130	67 - 121	58 - 130
1,2,4-Trichlorobenzene	78 - 130	69 - 139	**80** - 133	72 - 142

TK50 : 00015

Analytical Resources,Incorporated
Analytical Chemists and Consultants

Spike Recovery Control Limits for Analysis of Solid Samples Volatile Organic Compounds (VOA) EPA SW-846 Methods 8260C 5 mL Purge Volume [7]

Effective:5/18/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	Low Level [1]	Low Level ME Limits [3]	Medium Level [2]	Medium Level ME Limits [3]
Hexachloro-1,3-butadiene	76 - 129	67 - 138	62 - 148	48 - 162
Naphthalene	66 - **120**	58 - 126	74 - 133	64 - 143
1,2,3-Trichlorobenzene	73 - 123	65 - 131	80 - 126	72 - 134
MB/LCS Surrogate Recovery				
Dibromofluoromethane	**80 - 120**	(4)	**80 - 120**	(4)
d4-1,2-Dichloroethane	79 - 121	(4)	76 - **120**	(4)
d8-Toluene	**80 - 120**	(4)	**80 - 120**	(4)
4-Bromofluorobenzene	**80 - 120**	(4)	**80 - 120**	(4)
d4-1,2-Dichlorobenzene	**80 - 120**	(4)	**80 - 120**	(4)
Sample Surrogate Recovery				
Dibromofluoromethane	30 - 160[6]	(4)	30 - 160[6]	(4)
d4-1,2-Dichloroethane	75 - 152	(4)	69 - **120**	(4)
d8-Toluene	82 - 115	(4)	**80 - 120**	(4)
4-Bromofluorobenzene	64 - **120**	(4)	76 - 128	(4)
d4-1,2-Dichlorobenzene	**80 - 120**	(4)	**80 - 120**	(4)

(1) Control Limits calculated using all data generated 1/1/08 through 12/31/08.
(2) Control Limits calculated using all data generated 3/1/07 through 11/15/07.
(3) **ME** = A **marginal exceedance** defined in the NELAC Standard[5] as beyond the LCS-CL but still within the ME limits. ME limits are between 3 and 4 standard deviations around the mean. A maximum of four marginal exceedances are acceptable. Five or more marginal exceedances require corrective action.
(4) Marginal Exceedances not allowed for surrogate standards
(5) **2003 NELAC Standard (EPA/600/R-04/003), July 2003**, Chapter 5, pages 251-252.
(6) 30 – 160 are default, advisory control limits used when there is insufficient data to calculate historic control limits. **DO NOT** use these limits as the sole reason to reject the data from a batch of analyses
(7) Highlighted control limits (**bold font**) are adjusted from the calculated values as follows:
a) ARI does not use control limits < 10
b) Control limits for analyzes with no separate preparation procedure are adjusted to reflect the minimum uncertainty in the calibration of the instrument allowed by the referenced analytical method.
(8) Laboratory Control Sample (LCS) spike recovery control limits also used as advisory control limits for sample matrix spike (MS) analyzes. MS recovery values are advisory and not used to assess the acceptability of an analytical batch.

TK50 : 00016

Analytical Resources,Incorporated
Analytical Chemists and Consultants

Summary of Laboratory Control Limits Metals Analyses (All Methods & Sample Matrices)

Effective 5/1/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

Element	Matrix Spike Recovery	LCS Recovery	Replicate RPD
Aluminum	75 - 125	80 - 120	≤ 20%
Antimony	75 - 125	80 - 120	≤ 20%
Arsenic	75 - 125	80 - 120	≤ 20%
Barium	75 - 125	80 - 120	≤ 20%
Beryllium	75 - 125	80 - 120	≤ 20%
Boron	75 - 125	80 - 120	≤ 20%
Cadmium	75 - 125	80 - 120	≤ 20%
Calcium	75 - 125	80 - 120	≤ 20%
Chromium	75 - 125	80 - 120	≤ 20%
Cobalt	75 - 125	80 - 120	≤ 20%
Copper	75 - 125	80 - 120	≤ 20%
Iron	75 - 125	80 - 120	≤ 20%
Lead	75 - 125	80 - 120	≤ 20%
Magnesium	75 - 125	80 - 120	≤ 20%
Manganese	75 - 125	80 - 120	≤ 20%
Mercury	75 - 125	80 - 120	≤ 20%
Nickel	75 - 125	80 - 120	≤ 20%
Potassium	75 - 125	80 - 120	≤ 20%
Selenium	75 - 125	80 - 120	≤ 20%
Silica	75 - 125	80 - 120	≤ 20%
Silver	75 - 125	80 - 120	≤ 20%
Sodium	75 - 125	80 - 120	≤ 20%
Strontium	75 - 125	80 - 120	≤ 20%
Thallium	75 - 125	80 - 120	≤ 20%
Vanadium	75 - 125	80 - 120	≤ 20%
Zinc	75 - 125	80 - 120	≤ 20%

TK50 : 00017

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Spike Recovery Control Limits for Conventional Wet Chemistry

Effective 5/1/09

Control limits are updated periodically. Assure that you have ARI's current control limits by downloading the files at the time of use. http://www.arilabs.com/portal/downloads/ARI-CLs.zip

	ARI's Control Limits	
Sample Matrix:	Water	Soil / Sediment
Matrix Spike Recoveries	% Recovery	% Recovery
Ammonia	75 - 125	75 - 125
Bromide	75 125	75 - 125
Chloride	75 125	75 - 125
Cyanide	75 - 125	75 - 125
Ferrous Iron	75 - 125	75 - 125
Fluoride	75 - 125	75 - 125
Formaldehyde	75 - 125	75 - 125
Hexane Extractable Material	-- - --	78 - 114
Hexavalent Chromium	75 - 125	75 - 125
Nitrate/Nitrite	75 - 125	75 - 125
Oil and Grease	75 - 125	75 - 125
Phenol	75 - 125	75 - 125
Phosphorous	75 - 125	75 - 125
Sulfate	75 - 125	75 - 125
Sulfide	75 - 125	75 - 125
Total Kjeldahl Nitrogen	75 - 125	75 - 125
Total Organic Carbon	75 - 125	75 - 125
Duplicate RPDs		
Acidity	±20%	±20%
Alkalinity	±20%	±20%
BOD	±20%	±20%
Cation Exchange	±20%	±20%
COD	±20%	±20%
Conductivity	±20%	±20%
Salinity	±20%	±20%
Solids	±20%	±20%
Turbidity	±20%	±20%

TK50 : 00018

Volatile Analysis
Report and Summary QC Forms

ARI Job ID: TK50

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-001**
 SAMPLE

Lab Sample ID: TK50A
LIMS ID: 11-18869
Matrix: Soil
Data Release Authorized:
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 14:59

Sample Amount: 4.44 g-dry-wt
Percent Moisture: 7.3%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.30	1.1	< 1.1 U
74-83-9	Bromomethane	0.21	1.1	< 1.1 U
75-01-4	Vinyl Chloride	0.26	1.1	< 1.1 U
75-00-3	Chloroethane	0.52	1.1	< 1.1 U
75-09-2	Methylene Chloride	0.72	2.3	< 2.3 U
67-64-1	**Acetone**	**0.54**	**5.6**	**20**
75-15-0	Carbon Disulfide	0.63	1.1	< 1.1 U
75-35-4	1,1-Dichloroethene	0.38	1.1	< 1.1 U
75-34-3	1,1-Dichloroethane	0.23	1.1	< 1.1 U
156-60-5	trans-1,2-Dichloroethene	0.30	1.1	< 1.1 U
156-59-2	cis-1,2-Dichloroethene	0.27	1.1	< 1.1 U
67-66-3	Chloroform	0.26	1.1	< 1.1 U
107-06-2	1,2-Dichloroethane	0.22	1.1	< 1.1 U
78-93-3	2-Butanone	0.58	5.6	< 5.6 U
71-55-6	1,1,1-Trichloroethane	0.25	1.1	< 1.1 U
56-23-5	Carbon Tetrachloride	0.24	1.1	< 1.1 U
108-05-4	Vinyl Acetate	0.43	5.6	< 5.6 U
75-27-4	Bromodichloromethane	0.29	1.1	< 1.1 U
78-87-5	1,2-Dichloropropane	0.18	1.1	< 1.1 U
10061-01-5	cis-1,3-Dichloropropene	0.25	1.1	< 1.1 U
79-01-6	Trichloroethene	0.24	1.1	< 1.1 U
124-48-1	Dibromochloromethane	0.30	1.1	< 1.1 U
79-00-5	1,1,2-Trichloroethane	0.32	1.1	< 1.1 U
71-43-2	Benzene	0.33	1.1	< 1.1 U
10061-02-6	trans-1,3-Dichloropropene	0.24	1.1	< 1.1 U
110-75-8	2-Chloroethylvinylether	0.31	5.6	< 5.6 U
75-25-2	Bromoform	0.33	1.1	< 1.1 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.47	5.6	< 5.6 U
591-78-6	2-Hexanone	0.49	5.6	< 5.6 U
127-18-4	Tetrachloroethene	0.29	1.1	< 1.1 U
79-34-5	1,1,2,2-Tetrachloroethane	0.28	1.1	< 1.1 U
108-88-3	Toluene	0.17	1.1	< 1.1 U
108-90-7	Chlorobenzene	0.25	1.1	< 1.1 U
100-41-4	Ethylbenzene	0.23	1.1	< 1.1 U
100-42-5	Styrene	0.16	1.1	< 1.1 U
75-69-4	Trichlorofluoromethane	0.30	1.1	< 1.1 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.32	2.3	< 2.3 U
179601-23-1	m,p-Xylene	0.44	1.1	< 1.1 U
95-47-6	o-Xylene	0.25	1.1	< 1.1 U
95-50-1	1,2-Dichlorobenzene	0.33	1.1	< 1.1 U
541-73-1	1,3-Dichlorobenzene	0.26	1.1	< 1.1 U
106-46-7	1,4-Dichlorobenzene	0.26	1.1	< 1.1 U
107-02-8	Acrolein	4.3	56	< 56 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-001
SAMPLE

Lab Sample ID: TK50A
LIMS ID: 11-18869
Matrix: Soil
Date Analyzed: 09/06/11 14:59

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.24	1.1	< 1.1 U
74-96-4	Bromoethane	0.50	2.3	< 2.3 U
107-13-1	Acrylonitrile	1.2	5.6	< 5.6 U
563-58-6	1,1-Dichloropropene	0.35	1.1	< 1.1 U
74-95-3	Dibromomethane	0.17	1.1	< 1.1 U
630-20-6	1,1,1,2-Tetrachloroethane	0.26	1.1	< 1.1 U
96-12-8	1,2-Dibromo-3-chloropropane	0.66	5.6	< 5.6 U
96-18-4	1,2,3-Trichloropropane	0.58	2.3	< 2.3 U
110-57-6	trans-1,4-Dichloro-2-butene	0.49	5.6	< 5.6 U
108-67-8	1,3,5-Trimethylbenzene	0.29	1.1	< 1.1 U
95-63-6	1,2,4-Trimethylbenzene	0.26	1.1	< 1.1 U
87-68-3	Hexachlorobutadiene	0.46	5.6	< 5.6 U
106-93-4	Ethylene Dibromide	0.20	1.1	< 1.1 U
74-97-5	Bromochloromethane	0.36	1.1	< 1.1 U
594-20-7	2,2-Dichloropropane	0.33	1.1	< 1.1 U
142-28-9	1,3-Dichloropropane	0.24	1.1	< 1.1 U
98-82-8	Isopropylbenzene	0.26	1.1	< 1.1 U
103-65-1	n-Propylbenzene	0.31	1.1	< 1.1 U
108-86-1	Bromobenzene	0.17	1.1	< 1.1 U
95-49-8	2-Chlorotoluene	0.34	1.1	< 1.1 U
106-43-4	4-Chlorotoluene	0.31	1.1	< 1.1 U
98-06-6	tert-Butylbenzene	0.34	1.1	< 1.1 U
135-98-8	sec-Butylbenzene	0.27	1.1	< 1.1 U
99-87-6	4-Isopropyltoluene	0.27	1.1	< 1.1 U
104-51-8	n-Butylbenzene	0.30	1.1	< 1.1 U
120-82-1	1,2,4-Trichlorobenzene	0.37	5.6	< 5.6 U
91-20-3	Naphthalene	0.48	5.6	< 5.6 U
87-61-6	1,2,3-Trichlorobenzene	0.34	5.6	< 5.6 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	102%
Bromofluorobenzene	96.7%
d4-1,2-Dichlorobenzene	103%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: FRP-083011-002
  SAMPLE

Lab Sample ID: TK50B
LIMS ID: 11-18870
Matrix: Soil
Data Release Authorized: VD
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 15:26

Sample Amount: 4.12 g-dry-wt
Percent Moisture: 9.4%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.32	1.2	< 1.2 U
74-83-9	Bromomethane	0.23	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.29	1.2	< 1.2 U
75-00-3	Chloroethane	0.56	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.77	2.4	< 2.4 U
67-64-1	**Acetone**	**0.58**	**6.1**	**50**
75-15-0	Carbon Disulfide	0.68	1.2	< 1.2 U
75-35-4	1,1-Dichloroethene	0.41	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.25	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.32	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.29	1.2	< 1.2 U
67-66-3	Chloroform	0.28	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.23	1.2	< 1.2 U
78-93-3	2-Butanone	0.62	6.1	< 6.1 U
71-55-6	1,1,1-Trichloroethane	0.27	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.26	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.46	6.1	< 6.1 U
75-27-4	Bromodichloromethane	0.31	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.20	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.27	1.2	< 1.2 U
79-01-6	Trichloroethene	0.26	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.32	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.35	1.2	< 1.2 U
71-43-2	Benzene	0.36	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.26	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.33	6.1	< 6.1 U
75-25-2	Bromoform	0.36	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.51	6.1	< 6.1 U
591-78-6	2-Hexanone	0.53	6.1	< 6.1 U
127-18-4	Tetrachloroethene	0.31	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.31	1.2	< 1.2 U
108-88-3	Toluene	0.18	1.2	< 1.2 U
108-90-7	Chlorobenzene	0.27	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.25	1.2	< 1.2 U
100-42-5	Styrene	0.17	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.32	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.35	2.4	< 2.4 U
179601-23-1	m,p-Xylene	0.48	1.2	< 1.2 U
95-47-6	o-Xylene	0.27	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.36	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.28	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.28	1.2	< 1.2 U
107-02-8	Acrolein	4.6	61	< 61 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-002
SAMPLE

Lab Sample ID: TK50B
LIMS ID: 11-18870
Matrix: Soil
Date Analyzed: 09/06/11 15:26

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.26	1.2	< 1.2 U
74-96-4	Bromoethane	0.53	2.4	< 2.4 U
107-13-1	Acrylonitrile	1.2	6.1	< 6.1 U
563-58-6	1,1-Dichloropropene	0.38	1.2	< 1.2 U
74-95-3	Dibromomethane	0.18	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.28	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.71	6.1	< 6.1 U
96-18-4	1,2,3-Trichloropropane	0.63	2.4	< 2.4 U
110-57-6	trans-1,4-Dichloro-2-butene	0.53	6.1	< 6.1 U
108-67-8	1,3,5-Trimethylbenzene	0.31	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.28	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.50	6.1	< 6.1 U
106-93-4	Ethylene Dibromide	0.21	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.39	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.35	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.25	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.28	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.33	1.2	< 1.2 U
108-86-1	Bromobenzene	0.19	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.36	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.34	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.37	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.29	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.29	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.32	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.40	6.1	< 6.1 U
91-20-3	Naphthalene	0.52	6.1	< 6.1 U
87-61-6	1,2,3-Trichlorobenzene	0.37	6.1	< 6.1 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	114%
d8-Toluene	101%
Bromofluorobenzene	95.4%
d4-1,2-Dichlorobenzene	100%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-003
SAMPLE

Lab Sample ID: TK50C
LIMS ID: 11-18871
Matrix: Soil
Data Release Authorized: VD
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 15:54

Sample Amount: 3.79 g-dry-wt
Percent Moisture: 14.9%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.35	1.3	< 1.3 U
74-83-9	Bromomethane	0.25	1.3	< 1.3 U
75-01-4	Vinyl Chloride	0.31	1.3	< 1.3 U
75-00-3	Chloroethane	0.61	1.3	< 1.3 U
75-09-2	**Methylene Chloride**	**0.84**	**2.6**	**3.4**
67-64-1	**Acetone**	**0.64**	**6.6**	**43**
75-15-0	Carbon Disulfide	0.74	1.3	< 1.3 U
75-35-4	1,1-Dichloroethene	0.44	1.3	< 1.3 U
75-34-3	1,1-Dichloroethane	0.27	1.3	< 1.3 U
156-60-5	trans-1,2-Dichloroethene	0.35	1.3	< 1.3 U
156-59-2	cis-1,2-Dichloroethene	0.32	1.3	< 1.3 U
67-66-3	Chloroform	0.31	1.3	< 1.3 U
107-06-2	1,2-Dichloroethane	0.25	1.3	< 1.3 U
78-93-3	2-Butanone	0.68	6.6	< 6.6 U
71-55-6	1,1,1-Trichloroethane	0.30	1.3	< 1.3 U
56-23-5	Carbon Tetrachloride	0.28	1.3	< 1.3 U
108-05-4	Vinyl Acetate	0.50	6.6	< 6.6 U
75-27-4	Bromodichloromethane	0.34	1.3	< 1.3 U
78-87-5	1,2-Dichloropropane	0.21	1.3	< 1.3 U
10061-01-5	cis-1,3-Dichloropropene	0.30	1.3	< 1.3 U
79-01-6	Trichloroethene	0.28	1.3	< 1.3 U
124-48-1	Dibromochloromethane	0.35	1.3	< 1.3 U
79-00-5	1,1,2-Trichloroethane	0.38	1.3	< 1.3 U
71-43-2	Benzene	0.39	1.3	< 1.3 U
10061-02-6	trans-1,3-Dichloropropene	0.28	1.3	< 1.3 U
110-75-8	2-Chloroethylvinylether	0.36	6.6	< 6.6 U
75-25-2	Bromoform	0.39	1.3	< 1.3 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.55	6.6	< 6.6 U
591-78-6	2-Hexanone	0.58	6.6	< 6.6 U
127-18-4	Tetrachloroethene	0.34	1.3	< 1.3 U
79-34-5	1,1,2,2-Tetrachloroethane	0.33	1.3	< 1.3 U
108-88-3	Toluene	0.20	1.3	< 1.3 U
108-90-7	Chlorobenzene	0.29	1.3	< 1.3 U
100-41-4	Ethylbenzene	0.27	1.3	< 1.3 U
100-42-5	Styrene	0.18	1.3	< 1.3 U
75-69-4	Trichlorofluoromethane	0.35	1.3	< 1.3 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.38	2.6	< 2.6 U
179601-23-1	m,p-Xylene	0.52	1.3	< 1.3 U
95-47-6	o-Xylene	0.30	1.3	< 1.3 U
95-50-1	1,2-Dichlorobenzene	0.39	1.3	< 1.3 U
541-73-1	1,3-Dichlorobenzene	0.30	1.3	< 1.3 U
106-46-7	1,4-Dichlorobenzene	0.31	1.3	< 1.3 U
107-02-8	Acrolein	5.0	66	< 66 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: FRP-083011-003
  SAMPLE

Lab Sample ID: TK50C QC Report No: TK50-AMEC Geomatrix
LIMS ID: 11-18871 Project: FRP Shoreline Investigation 2011
Matrix: Soil 8769
Date Analyzed: 09/06/11 15:54

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.28	1.3	< 1.3 U
74-96-4	Bromoethane	0.58	2.6	< 2.6 U
107-13-1	Acrylonitrile	1.4	6.6	< 6.6 U
563-58-6	1,1-Dichloropropene	0.41	1.3	< 1.3 U
74-95-3	Dibromomethane	0.19	1.3	< 1.3 U
630-20-6	1,1,1,2-Tetrachloroethane	0.31	1.3	< 1.3 U
96-12-8	1,2-Dibromo-3-chloropropane	0.77	6.6	< 6.6 U
96-18-4	1,2,3-Trichloropropane	0.68	2.6	< 2.6 U
110-57-6	trans-1,4-Dichloro-2-butene	0.58	6.6	< 6.6 U
108-67-8	1,3,5-Trimethylbenzene	0.34	1.3	< 1.3 U
95-63-6	1,2,4-Trimethylbenzene	0.30	1.3	< 1.3 U
87-68-3	Hexachlorobutadiene	0.54	6.6	< 6.6 U
106-93-4	Ethylene Dibromide	0.23	1.3	< 1.3 U
74-97-5	Bromochloromethane	0.43	1.3	< 1.3 U
594-20-7	2,2-Dichloropropane	0.39	1.3	< 1.3 U
142-28-9	1,3-Dichloropropane	0.28	1.3	< 1.3 U
98-82-8	Isopropylbenzene	0.31	1.3	< 1.3 U
103-65-1	n-Propylbenzene	0.36	1.3	< 1.3 U
108-86-1	Bromobenzene	0.20	1.3	< 1.3 U
95-49-8	2-Chlorotoluene	0.40	1.3	< 1.3 U
106-43-4	4-Chlorotoluene	0.37	1.3	< 1.3 U
98-06-6	tert-Butylbenzene	0.40	1.3	< 1.3 U
135-98-8	sec-Butylbenzene	0.32	1.3	< 1.3 U
99-87-6	4-Isopropyltoluene	0.31	1.3	< 1.3 U
104-51-8	n-Butylbenzene	0.35	1.3	< 1.3 U
120-82-1	1,2,4-Trichlorobenzene	0.44	6.6	< 6.6 U
91-20-3	Naphthalene	0.57	6.6	< 6.6 U
87-61-6	1,2,3-Trichlorobenzene	0.40	6.6	< 6.6 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	103%
Bromofluorobenzene	94.6%
d4-1,2-Dichlorobenzene	99.9%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-004
SAMPLE

Lab Sample ID: TK50D
LIMS ID: 11-18872
Matrix: Soil
Data Release Authorized:
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 16:21

Sample Amount: 4.04 g-dry-wt
Percent Moisture: 26.5%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.33	1.2	< 1.2 U
74-83-9	Bromomethane	0.23	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.29	1.2	< 1.2 U
75-00-3	Chloroethane	0.57	1.2	< 1.2 U
75-09-2	**Methylene Chloride**	**0.79**	**2.5**	**3.5**
67-64-1	**Acetone**	**0.60**	**6.2**	**20**
75-15-0	Carbon Disulfide	0.69	1.2	< 1.2 U
75-35-4	1,1-Dichloroethene	0.42	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.25	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.33	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.30	1.2	< 1.2 U
67-66-3	Chloroform	0.29	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.24	1.2	< 1.2 U
78-93-3	2-Butanone	0.63	6.2	< 6.2 U
71-55-6	1,1,1-Trichloroethane	0.28	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.26	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.47	6.2	< 6.2 U
75-27-4	Bromodichloromethane	0.31	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.20	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.28	1.2	< 1.2 U
79-01-6	Trichloroethene	0.26	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.33	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.35	1.2	< 1.2 U
71-43-2	Benzene	0.37	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.27	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.34	6.2	< 6.2 U
75-25-2	Bromoform	0.37	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.52	6.2	< 6.2 U
591-78-6	2-Hexanone	0.54	6.2	< 6.2 U
127-18-4	Tetrachloroethene	0.32	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.31	1.2	< 1.2 U
108-88-3	Toluene	0.19	1.2	< 1.2 U
108-90-7	Chlorobenzene	0.27	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.25	1.2	< 1.2 U
100-42-5	Styrene	0.17	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.33	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.36	2.5	< 2.5 U
179601-23-1	m,p-Xylene	0.49	1.2	< 1.2 U
95-47-6	o-Xylene	0.28	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.36	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.28	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.29	1.2	< 1.2 U
107-02-8	Acrolein	4.7	62	< 62 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-004
SAMPLE

Lab Sample ID: TK50D
LIMS ID: 11-18872
Matrix: Soil
Date Analyzed: 09/06/11 16:21

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.27	1.2	< 1.2 U
74-96-4	Bromoethane	0.54	2.5	< 2.5 U
107-13-1	Acrylonitrile	1.3	6.2	< 6.2 U
563-58-6	1,1-Dichloropropene	0.39	1.2	< 1.2 U
74-95-3	Dibromomethane	0.18	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.29	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.73	6.2	< 6.2 U
96-18-4	1,2,3-Trichloropropane	0.64	2.5	< 2.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.54	6.2	< 6.2 U
108-67-8	1,3,5-Trimethylbenzene	0.31	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.28	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.51	6.2	< 6.2 U
106-93-4	Ethylene Dibromide	0.22	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.40	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.36	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.26	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.29	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.34	1.2	< 1.2 U
108-86-1	Bromobenzene	0.19	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.37	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.34	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.38	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.30	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.29	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.32	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.41	6.2	< 6.2 U
91-20-3	Naphthalene	0.53	6.2	< 6.2 U
87-61-6	1,2,3-Trichlorobenzene	0.38	6.2	< 6.2 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	102%
Bromofluorobenzene	94.2%
d4-1,2-Dichlorobenzene	102%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-005**
 SAMPLE

Lab Sample ID: TK50E
LIMS ID: 11-18873
Matrix: Soil
Data Release Authorized: VN
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 16:49

Sample Amount: 4.15 g-dry-wt
Percent Moisture: 20.3%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.32	1.2	< 1.2 U
74-83-9	Bromomethane	0.23	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.28	1.2	< 1.2 U
75-00-3	Chloroethane	0.56	1.2	< 1.2 U
75-09-2	**Methylene Chloride**	**0.77**	**2.4**	**2.5**
67-64-1	**Acetone**	**0.58**	**6.0**	**11**
75-15-0	**Carbon Disulfide**	**0.67**	**1.2**	**2.6**
75-35-4	1,1-Dichloroethene	0.40	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.24	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.32	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.29	1.2	< 1.2 U
67-66-3	Chloroform	0.28	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.23	1.2	< 1.2 U
78-93-3	2-Butanone	0.62	6.0	< 6.0 U
71-55-6	1,1,1-Trichloroethane	0.27	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.26	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.46	6.0	< 6.0 U
75-27-4	Bromodichloromethane	0.31	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.20	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.27	1.2	< 1.2 U
79-01-6	Trichloroethene	0.26	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.32	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.34	1.2	< 1.2 U
71-43-2	Benzene	0.36	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.26	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.33	6.0	< 6.0 U
75-25-2	Bromoform	0.36	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.51	6.0	< 6.0 U
591-78-6	2-Hexanone	0.53	6.0	< 6.0 U
127-18-4	Tetrachloroethene	0.31	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.30	1.2	< 1.2 U
108-88-3	Toluene	0.18	1.2	< 1.2 U
108-90-7	Chlorobenzene	0.26	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.24	1.2	< 1.2 U
100-42-5	Styrene	0.17	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.32	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.35	2.4	< 2.4 U
179601-23-1	m,p-Xylene	0.47	1.2	< 1.2 U
95-47-6	o-Xylene	0.27	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.35	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.27	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.28	1.2	< 1.2 U
107-02-8	Acrolein	4.6	60	< 60 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-005
SAMPLE

Lab Sample ID: TK50E
LIMS ID: 11-18873
Matrix: Soil
Date Analyzed: 09/06/11 16:49

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.26	1.2	< 1.2 U
74-96-4	Bromoethane	0.53	2.4	< 2.4 U
107-13-1	Acrylonitrile	1.2	6.0	< 6.0 U
563-58-6	1,1-Dichloropropene	0.38	1.2	< 1.2 U
74-95-3	Dibromomethane	0.18	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.28	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.71	6.0	< 6.0 U
96-18-4	1,2,3-Trichloropropane	0.62	2.4	< 2.4 U
110-57-6	trans-1,4-Dichloro-2-butene	0.53	6.0	< 6.0 U
108-67-8	1,3,5-Trimethylbenzene	0.31	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.28	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.49	6.0	< 6.0 U
106-93-4	Ethylene Dibromide	0.21	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.39	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.35	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.25	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.28	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.33	1.2	< 1.2 U
108-86-1	Bromobenzene	0.18	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.36	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.33	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.37	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.29	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.28	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.32	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.40	6.0	< 6.0 U
91-20-3	Naphthalene	0.52	6.0	< 6.0 U
87-61-6	1,2,3-Trichlorobenzene	0.37	6.0	< 6.0 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	102%
Bromofluorobenzene	96.9%
d4-1,2-Dichlorobenzene	102%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-006
SAMPLE

Lab Sample ID: TK50F
LIMS ID: 11-18874
Matrix: Soil
Data Release Authorized: WD
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 17:16

Sample Amount: 3.58 g-dry-wt
Percent Moisture: 20.5%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.37	1.4	< 1.4 U
74-83-9	Bromomethane	0.26	1.4	< 1.4 U
75-01-4	Vinyl Chloride	0.33	1.4	< 1.4 U
75-00-3	Chloroethane	0.65	1.4	< 1.4 U
75-09-2	Methylene Chloride	0.89	2.8	< 2.8 U
67-64-1	**Acetone**	**0.67**	**7.0**	**19**
75-15-0	**Carbon Disulfide**	**0.78**	**1.4**	**7.8**
75-35-4	1,1-Dichloroethene	0.47	1.4	< 1.4 U
75-34-3	1,1-Dichloroethane	0.28	1.4	< 1.4 U
156-60-5	trans-1,2-Dichloroethene	0.37	1.4	< 1.4 U
156-59-2	cis-1,2-Dichloroethene	0.34	1.4	< 1.4 U
67-66-3	Chloroform	0.33	1.4	< 1.4 U
107-06-2	1,2-Dichloroethane	0.27	1.4	< 1.4 U
78-93-3	2-Butanone	0.72	7.0	< 7.0 U
71-55-6	1,1,1-Trichloroethane	0.32	1.4	< 1.4 U
56-23-5	Carbon Tetrachloride	0.30	1.4	< 1.4 U
108-05-4	Vinyl Acetate	0.53	7.0	< 7.0 U
75-27-4	Bromodichloromethane	0.35	1.4	< 1.4 U
78-87-5	1,2-Dichloropropane	0.23	1.4	< 1.4 U
10061-01-5	cis-1,3-Dichloropropene	0.32	1.4	< 1.4 U
79-01-6	Trichloroethene	0.30	1.4	< 1.4 U
124-48-1	Dibromochloromethane	0.37	1.4	< 1.4 U
79-00-5	1,1,2-Trichloroethane	0.40	1.4	< 1.4 U
71-43-2	Benzene	0.41	1.4	< 1.4 U
10061-02-6	trans-1,3-Dichloropropene	0.30	1.4	< 1.4 U
110-75-8	2-Chloroethylvinylether	0.39	7.0	< 7.0 U
75-25-2	Bromoform	0.41	1.4	< 1.4 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.59	7.0	< 7.0 U
591-78-6	2-Hexanone	0.61	7.0	< 7.0 U
127-18-4	Tetrachloroethene	0.36	1.4	< 1.4 U
79-34-5	1,1,2,2-Tetrachloroethane	0.35	1.4	< 1.4 U
108-88-3	**Toluene**	**0.21**	**1.4**	**2.7**
108-90-7	Chlorobenzene	0.31	1.4	< 1.4 U
100-41-4	Ethylbenzene	0.28	1.4	< 1.4 U
100-42-5	Styrene	0.19	1.4	< 1.4 U
75-69-4	Trichlorofluoromethane	0.37	1.4	< 1.4 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.40	2.8	< 2.8 U
179601-23-1	m,p-Xylene	0.55	1.4	< 1.4 U
95-47-6	o-Xylene	0.31	1.4	< 1.4 U
95-50-1	1,2-Dichlorobenzene	0.41	1.4	< 1.4 U
541-73-1	1,3-Dichlorobenzene	0.32	1.4	< 1.4 U
106-46-7	1,4-Dichlorobenzene	0.32	1.4	< 1.4 U
107-02-8	Acrolein	5.3	70	< 70 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-006
SAMPLE

Lab Sample ID: TK50F
LIMS ID: 11-18874
Matrix: Soil
Date Analyzed: 09/06/11 17:16

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.30	1.4	< 1.4 U
74-96-4	Bromoethane	0.61	2.8	< 2.8 U
107-13-1	Acrylonitrile	1.4	7.0	< 7.0 U
563-58-6	1,1-Dichloropropene	0.44	1.4	< 1.4 U
74-95-3	Dibromomethane	0.21	1.4	< 1.4 U
630-20-6	1,1,1,2-Tetrachloroethane	0.33	1.4	< 1.4 U
96-12-8	1,2-Dibromo-3-chloropropane	0.82	7.0	< 7.0 U
96-18-4	1,2,3-Trichloropropane	0.72	2.8	< 2.8 U
110-57-6	trans-1,4-Dichloro-2-butene	0.61	7.0	< 7.0 U
108-67-8	1,3,5-Trimethylbenzene	0.35	1.4	< 1.4 U
95-63-6	1,2,4-Trimethylbenzene	0.32	1.4	< 1.4 U
87-68-3	Hexachlorobutadiene	0.57	7.0	< 7.0 U
106-93-4	Ethylene Dibromide	0.25	1.4	< 1.4 U
74-97-5	Bromochloromethane	0.45	1.4	< 1.4 U
594-20-7	2,2-Dichloropropane	0.41	1.4	< 1.4 U
142-28-9	1,3-Dichloropropane	0.29	1.4	< 1.4 U
98-82-8	Isopropylbenzene	0.33	1.4	< 1.4 U
103-65-1	n-Propylbenzene	0.38	1.4	< 1.4 U
108-86-1	Bromobenzene	0.21	1.4	< 1.4 U
95-49-8	2-Chlorotoluene	0.42	1.4	< 1.4 U
106-43-4	4-Chlorotoluene	0.39	1.4	< 1.4 U
98-06-6	tert-Butylbenzene	0.43	1.4	< 1.4 U
135-98-8	sec-Butylbenzene	0.34	1.4	< 1.4 U
99-87-6	4-Isopropyltoluene	0.33	1.4	< 1.4 U
104-51-8	n-Butylbenzene	0.37	1.4	< 1.4 U
120-82-1	1,2,4-Trichlorobenzene	0.46	7.0	< 7.0 U
91-20-3	Naphthalene	0.60	7.0	< 7.0 U
87-61-6	1,2,3-Trichlorobenzene	0.43	7.0	< 7.0 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	102%
Bromofluorobenzene	96.4%
d4-1,2-Dichlorobenzene	99.4%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-007
SAMPLE

Lab Sample ID: TK50G
LIMS ID: 11-18875
Matrix: Soil
Data Release Authorized: VM
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 17:44

Sample Amount: 3.64 g-dry-wt
Percent Moisture: 20.3%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.36	1.4	< 1.4 U
74-83-9	Bromomethane	0.26	1.4	< 1.4 U
75-01-4	Vinyl Chloride	0.32	1.4	< 1.4 U
75-00-3	Chloroethane	0.63	1.4	< 1.4 U
75-09-2	**Methylene Chloride**	**0.87**	**2.7**	**3.4**
67-64-1	**Acetone**	**0.66**	**6.9**	**19**
75-15-0	**Carbon Disulfide**	**0.77**	**1.4**	**4.6**
75-35-4	1,1-Dichloroethene	0.46	1.4	< 1.4 U
75-34-3	1,1-Dichloroethane	0.28	1.4	< 1.4 U
156-60-5	trans-1,2-Dichloroethene	0.37	1.4	< 1.4 U
156-59-2	cis-1,2-Dichloroethene	0.33	1.4	< 1.4 U
67-66-3	Chloroform	0.32	1.4	< 1.4 U
107-06-2	1,2-Dichloroethane	0.26	1.4	< 1.4 U
78-93-3	2-Butanone	0.70	6.9	< 6.9 U
71-55-6	1,1,1-Trichloroethane	0.31	1.4	< 1.4 U
56-23-5	Carbon Tetrachloride	0.29	1.4	< 1.4 U
108-05-4	Vinyl Acetate	0.52	6.9	< 6.9 U
75-27-4	Bromodichloromethane	0.35	1.4	< 1.4 U
78-87-5	1,2-Dichloropropane	0.22	1.4	< 1.4 U
10061-01-5	cis-1,3-Dichloropropene	0.31	1.4	< 1.4 U
79-01-6	Trichloroethene	0.29	1.4	< 1.4 U
124-48-1	Dibromochloromethane	0.37	1.4	< 1.4 U
79-00-5	1,1,2-Trichloroethane	0.39	1.4	< 1.4 U
71-43-2	Benzene	0.41	1.4	< 1.4 U
10061-02-6	trans-1,3-Dichloropropene	0.30	1.4	< 1.4 U
110-75-8	2-Chloroethylvinylether	0.38	6.9	< 6.9 U
75-25-2	Bromoform	0.41	1.4	< 1.4 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.58	6.9	< 6.9 U
591-78-6	2-Hexanone	0.60	6.9	< 6.9 U
127-18-4	Tetrachloroethene	0.35	1.4	< 1.4 U
79-34-5	1,1,2,2-Tetrachloroethane	0.35	1.4	< 1.4 U
108-88-3	Toluene	0.21	1.4	< 1.4 U
108-90-7	Chlorobenzene	0.30	1.4	< 1.4 U
100-41-4	Ethylbenzene	0.28	1.4	< 1.4 U
100-42-5	Styrene	0.19	1.4	< 1.4 U
75-69-4	Trichlorofluoromethane	0.37	1.4	< 1.4 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.39	2.7	< 2.7 U
179601-23-1	m,p-Xylene	0.54	1.4	< 1.4 U
95-47-6	o-Xylene	0.31	1.4	< 1.4 U
95-50-1	1,2-Dichlorobenzene	0.40	1.4	< 1.4 U
541-73-1	1,3-Dichlorobenzene	0.31	1.4	< 1.4 U
106-46-7	1,4-Dichlorobenzene	0.32	1.4	< 1.4 U
107-02-8	Acrolein	5.2	69	< 69 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-007
SAMPLE

Lab Sample ID: TK50G
LIMS ID: 11-18875
Matrix: Soil
Date Analyzed: 09/06/11 17:44

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.30	1.4	< 1.4 U
74-96-4	Bromoethane	0.60	2.7	< 2.7 U
107-13-1	Acrylonitrile	1.4	6.9	< 6.9 U
563-58-6	1,1-Dichloropropene	0.43	1.4	< 1.4 U
74-95-3	Dibromomethane	0.20	1.4	< 1.4 U
630-20-6	1,1,1,2-Tetrachloroethane	0.32	1.4	< 1.4 U
96-12-8	1,2-Dibromo-3-chloropropane	0.80	6.9	< 6.9 U
96-18-4	1,2,3-Trichloropropane	0.71	2.7	< 2.7 U
110-57-6	trans-1,4-Dichloro-2-butene	0.60	6.9	< 6.9 U
108-67-8	1,3,5-Trimethylbenzene	0.35	1.4	< 1.4 U
95-63-6	1,2,4-Trimethylbenzene	0.32	1.4	< 1.4 U
87-68-3	Hexachlorobutadiene	0.56	6.9	< 6.9 U
106-93-4	Ethylene Dibromide	0.24	1.4	< 1.4 U
74-97-5	Bromochloromethane	0.44	1.4	< 1.4 U
594-20-7	2,2-Dichloropropane	0.40	1.4	< 1.4 U
142-28-9	1,3-Dichloropropane	0.29	1.4	< 1.4 U
98-82-8	Isopropylbenzene	0.32	1.4	< 1.4 U
103-65-1	n-Propylbenzene	0.37	1.4	< 1.4 U
108-86-1	Bromobenzene	0.21	1.4	< 1.4 U
95-49-8	2-Chlorotoluene	0.41	1.4	< 1.4 U
106-43-4	4-Chlorotoluene	0.38	1.4	< 1.4 U
98-06-6	tert-Butylbenzene	0.42	1.4	< 1.4 U
135-98-8	sec-Butylbenzene	0.33	1.4	< 1.4 U
99-87-6	4-Isopropyltoluene	0.32	1.4	< 1.4 U
104-51-8	n-Butylbenzene	0.36	1.4	< 1.4 U
120-82-1	1,2,4-Trichlorobenzene	0.46	6.9	< 6.9 U
91-20-3	Naphthalene	0.59	6.9	< 6.9 U
87-61-6	1,2,3-Trichlorobenzene	0.42	6.9	< 6.9 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	103%
Bromofluorobenzene	95.6%
d4-1,2-Dichlorobenzene	103%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: FRP-083011-008
  SAMPLE

Lab Sample ID: TK50H
LIMS ID: 11-18876
Matrix: Soil
Data Release Authorized:
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011 8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 18:11

Sample Amount: 4.38 g-dry-wt
Percent Moisture: 16.0%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.30	1.1	< 1.1 U
74-83-9	Bromomethane	0.21	1.1	< 1.1 U
75-01-4	Vinyl Chloride	0.27	1.1	< 1.1 U
75-00-3	Chloroethane	0.53	1.1	< 1.1 U
75-09-2	Methylene Chloride	0.72	2.3	< 2.3 U
67-64-1	**Acetone**	**0.55**	**5.7**	**11**
75-15-0	**Carbon Disulfide**	**0.64**	**1.1**	**5.9**
75-35-4	1,1-Dichloroethene	0.38	1.1	< 1.1 U
75-34-3	1,1-Dichloroethane	0.23	1.1	< 1.1 U
156-60-5	trans-1,2-Dichloroethene	0.30	1.1	< 1.1 U
156-59-2	cis-1,2-Dichloroethene	0.27	1.1	< 1.1 U
67-66-3	Chloroform	0.27	1.1	< 1.1 U
107-06-2	1,2-Dichloroethane	0.22	1.1	< 1.1 U
78-93-3	2-Butanone	0.59	5.7	< 5.7 U
71-55-6	1,1,1-Trichloroethane	0.26	1.1	< 1.1 U
56-23-5	Carbon Tetrachloride	0.24	1.1	< 1.1 U
108-05-4	Vinyl Acetate	0.43	5.7	< 5.7 U
75-27-4	Bromodichloromethane	0.29	1.1	< 1.1 U
78-87-5	1,2-Dichloropropane	0.18	1.1	< 1.1 U
10061-01-5	cis-1,3-Dichloropropene	0.26	1.1	< 1.1 U
79-01-6	Trichloroethene	0.24	1.1	< 1.1 U
124-48-1	Dibromochloromethane	0.30	1.1	< 1.1 U
79-00-5	1,1,2-Trichloroethane	0.33	1.1	< 1.1 U
71-43-2	Benzene	0.34	1.1	< 1.1 U
10061-02-6	trans-1,3-Dichloropropene	0.25	1.1	< 1.1 U
110-75-8	2-Chloroethylvinylether	0.32	5.7	< 5.7 U
75-25-2	Bromoform	0.34	1.1	< 1.1 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.48	5.7	< 5.7 U
591-78-6	2-Hexanone	0.50	5.7	< 5.7 U
127-18-4	Tetrachloroethene	0.29	1.1	< 1.1 U
79-34-5	1,1,2,2-Tetrachloroethane	0.29	1.1	< 1.1 U
108-88-3	Toluene	0.17	1.1	< 1.1 U
108-90-7	Chlorobenzene	0.25	1.1	< 1.1 U
100-41-4	Ethylbenzene	0.23	1.1	< 1.1 U
100-42-5	Styrene	0.16	1.1	< 1.1 U
75-69-4	Trichlorofluoromethane	0.30	1.1	< 1.1 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.33	2.3	< 2.3 U
179601-23-1	m,p-Xylene	0.45	1.1	< 1.1 U
95-47-6	o-Xylene	0.26	1.1	< 1.1 U
95-50-1	1,2-Dichlorobenzene	0.33	1.1	< 1.1 U
541-73-1	1,3-Dichlorobenzene	0.26	1.1	< 1.1 U
106-46-7	1,4-Dichlorobenzene	0.26	1.1	< 1.1 U
107-02-8	Acrolein	4.3	57	< 57 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-008
SAMPLE

Lab Sample ID: TK50H
LIMS ID: 11-18876
Matrix: Soil
Date Analyzed: 09/06/11 18:11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.25	1.1	< 1.1 U
74-96-4	Bromoethane	0.50	2.3	< 2.3 U
107-13-1	Acrylonitrile	1.2	5.7	< 5.7 U
563-58-6	1,1-Dichloropropene	0.36	1.1	< 1.1 U
74-95-3	Dibromomethane	0.17	1.1	< 1.1 U
630-20-6	1,1,1,2-Tetrachloroethane	0.27	1.1	< 1.1 U
96-12-8	1,2-Dibromo-3-chloropropane	0.67	5.7	< 5.7 U
96-18-4	1,2,3-Trichloropropane	0.59	2.3	< 2.3 U
110-57-6	trans-1,4-Dichloro-2-butene	0.50	5.7	< 5.7 U
108-67-8	1,3,5-Trimethylbenzene	0.29	1.1	< 1.1 U
95-63-6	1,2,4-Trimethylbenzene	0.26	1.1	< 1.1 U
87-68-3	Hexachlorobutadiene	0.47	5.7	< 5.7 U
106-93-4	Ethylene Dibromide	0.20	1.1	< 1.1 U
74-97-5	Bromochloromethane	0.37	1.1	< 1.1 U
594-20-7	2,2-Dichloropropane	0.33	1.1	< 1.1 U
142-28-9	1,3-Dichloropropane	0.24	1.1	< 1.1 U
98-82-8	Isopropylbenzene	0.27	1.1	< 1.1 U
103-65-1	n-Propylbenzene	0.31	1.1	< 1.1 U
108-86-1	Bromobenzene	0.17	1.1	< 1.1 U
95-49-8	2-Chlorotoluene	0.34	1.1	< 1.1 U
106-43-4	4-Chlorotoluene	0.32	1.1	< 1.1 U
98-06-6	tert-Butylbenzene	0.35	1.1	< 1.1 U
135-98-8	sec-Butylbenzene	0.27	1.1	< 1.1 U
99-87-6	4-Isopropyltoluene	0.27	1.1	< 1.1 U
104-51-8	n-Butylbenzene	0.30	1.1	< 1.1 U
120-82-1	1,2,4-Trichlorobenzene	0.38	5.7	< 5.7 U
91-20-3	Naphthalene	0.49	5.7	< 5.7 U
87-61-6	1,2,3-Trichlorobenzene	0.35	5.7	< 5.7 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	103%
Bromofluorobenzene	95.1%
d4-1,2-Dichlorobenzene	103%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-010
SAMPLE

Lab Sample ID: TK50I
LIMS ID: 11-18877
Matrix: Soil
Data Release Authorized: VD
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 18:38

Sample Amount: 4.30 g-dry-wt
Percent Moisture: 9.6%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.31	1.2	< 1.2 U
74-83-9	Bromomethane	0.22	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.27	1.2	< 1.2 U
75-00-3	Chloroethane	0.54	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.74	2.3	< 2.3 U
67-64-1	**Acetone**	**0.56**	**5.8**	**62**
75-15-0	**Carbon Disulfide**	**0.65**	**1.2**	**3.6**
75-35-4	1,1-Dichloroethene	0.39	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.24	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.31	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.28	1.2	< 1.2 U
67-66-3	Chloroform	0.27	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.22	1.2	< 1.2 U
78-93-3	2-Butanone	0.60	5.8	< 5.8 U
71-55-6	1,1,1-Trichloroethane	0.26	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.25	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.44	5.8	< 5.8 U
75-27-4	Bromodichloromethane	0.30	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.19	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.26	1.2	< 1.2 U
79-01-6	Trichloroethene	0.25	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.31	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.33	1.2	< 1.2 U
71-43-2	Benzene	0.34	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.25	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.32	5.8	< 5.8 U
75-25-2	Bromoform	0.35	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.49	5.8	< 5.8 U
591-78-6	2-Hexanone	0.51	5.8	< 5.8 U
127-18-4	Tetrachloroethene	0.30	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.29	1.2	< 1.2 U
108-88-3	**Toluene**	**0.18**	**1.2**	**66**
108-90-7	Chlorobenzene	0.25	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.23	1.2	< 1.2 U
100-42-5	Styrene	0.16	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.31	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.33	2.3	< 2.3 U
179601-23-1	m,p-Xylene	0.46	1.2	< 1.2 U
95-47-6	o-Xylene	0.26	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.34	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.26	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.27	1.2	< 1.2 U
107-02-8	Acrolein	4.4	58	< 58 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-010
SAMPLE

Lab Sample ID: TK50I
LIMS ID: 11-18877
Matrix: Soil
Date Analyzed: 09/06/11 18:38

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.25	1.2	< 1.2 U
74-96-4	Bromoethane	0.51	2.3	< 2.3 U
107-13-1	Acrylonitrile	1.2	5.8	< 5.8 U
563-58-6	1,1-Dichloropropene	0.36	1.2	< 1.2 U
74-95-3	Dibromomethane	0.17	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.27	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.68	5.8	< 5.8 U
96-18-4	1,2,3-Trichloropropane	0.60	2.3	< 2.3 U
110-57-6	trans-1,4-Dichloro-2-butene	0.51	5.8	< 5.8 U
108-67-8	1,3,5-Trimethylbenzene	0.30	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.27	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.48	5.8	< 5.8 U
106-93-4	Ethylene Dibromide	0.20	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.38	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.34	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.24	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.27	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.32	1.2	< 1.2 U
108-86-1	Bromobenzene	0.18	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.35	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.32	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.36	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.28	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.27	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.30	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.39	5.8	< 5.8 U
91-20-3	Naphthalene	0.50	5.8	< 5.8 U
87-61-6	1,2,3-Trichlorobenzene	0.35	5.8	< 5.8 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	114%
d8-Toluene	103%
Bromofluorobenzene	95.1%
d4-1,2-Dichlorobenzene	99.7%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: FRP-083011-011
  SAMPLE

Lab Sample ID: TK50J
LIMS ID: 11-18878
Matrix: Soil
Data Release Authorized: VD
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 19:06

Sample Amount: 3.60 g-dry-wt
Percent Moisture: 9.4%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.37	1.4	< 1.4 U
74-83-9	Bromomethane	0.26	1.4	< 1.4 U
75-01-4	Vinyl Chloride	0.33	1.4	< 1.4 U
75-00-3	Chloroethane	0.64	1.4	< 1.4 U
75-09-2	Methylene Chloride	0.88	2.8	< 2.8 U
67-64-1	**Acetone**	**0.67**	**6.9**	**43**
75-15-0	**Carbon Disulfide**	**0.78**	**1.4**	**3.3**
75-35-4	1,1-Dichloroethene	0.47	1.4	< 1.4 U
75-34-3	1,1-Dichloroethane	0.28	1.4	< 1.4 U
156-60-5	trans-1,2-Dichloroethene	0.37	1.4	< 1.4 U
156-59-2	cis-1,2-Dichloroethene	0.33	1.4	< 1.4 U
67-66-3	Chloroform	0.32	1.4	< 1.4 U
107-06-2	1,2-Dichloroethane	0.27	1.4	< 1.4 U
78-93-3	2-Butanone	0.71	6.9	< 6.9 U
71-55-6	1,1,1-Trichloroethane	0.31	1.4	< 1.4 U
56-23-5	Carbon Tetrachloride	0.30	1.4	< 1.4 U
108-05-4	Vinyl Acetate	0.53	6.9	< 6.9 U
75-27-4	Bromodichloromethane	0.35	1.4	< 1.4 U
78-87-5	1,2-Dichloropropane	0.22	1.4	< 1.4 U
10061-01-5	cis-1,3-Dichloropropene	0.31	1.4	< 1.4 U
79-01-6	Trichloroethene	0.29	1.4	< 1.4 U
124-48-1	Dibromochloromethane	0.37	1.4	< 1.4 U
79-00-5	1,1,2-Trichloroethane	0.40	1.4	< 1.4 U
71-43-2	Benzene	0.41	1.4	< 1.4 U
10061-02-6	trans-1,3-Dichloropropene	0.30	1.4	< 1.4 U
110-75-8	2-Chloroethylvinylether	0.38	6.9	< 6.9 U
75-25-2	Bromoform	0.41	1.4	< 1.4 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.58	6.9	< 6.9 U
591-78-6	2-Hexanone	0.61	6.9	< 6.9 U
127-18-4	Tetrachloroethene	0.36	1.4	< 1.4 U
79-34-5	1,1,2,2-Tetrachloroethane	0.35	1.4	< 1.4 U
108-88-3	**Toluene**	**0.21**	**1.4**	**5.8**
108-90-7	Chlorobenzene	0.30	1.4	< 1.4 U
100-41-4	Ethylbenzene	0.28	1.4	< 1.4 U
100-42-5	Styrene	0.19	1.4	< 1.4 U
75-69-4	Trichlorofluoromethane	0.37	1.4	< 1.4 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.40	2.8	< 2.8 U
179601-23-1	m,p-Xylene	0.54	1.4	< 1.4 U
95-47-6	o-Xylene	0.31	1.4	< 1.4 U
95-50-1	1,2-Dichlorobenzene	0.41	1.4	< 1.4 U
541-73-1	1,3-Dichlorobenzene	0.32	1.4	< 1.4 U
106-46-7	1,4-Dichlorobenzene	0.32	1.4	< 1.4 U
107-02-8	Acrolein	5.3	69	< 69 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-011
SAMPLE

Lab Sample ID: TK50J
LIMS ID: 11-18878
Matrix: Soil
Date Analyzed: 09/06/11 19:06

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.30	1.4	< 1.4 U
74-96-4	Bromoethane	0.61	2.8	< 2.8 U
107-13-1	Acrylonitrile	1.4	6.9	< 6.9 U
563-58-6	1,1-Dichloropropene	0.43	1.4	< 1.4 U
74-95-3	Dibromomethane	0.20	1.4	< 1.4 U
630-20-6	1,1,1,2-Tetrachloroethane	0.32	1.4	< 1.4 U
96-12-8	1,2-Dibromo-3-chloropropane	0.81	6.9	< 6.9 U
96-18-4	1,2,3-Trichloropropane	0.72	2.8	< 2.8 U
110-57-6	trans-1,4-Dichloro-2-butene	0.61	6.9	< 6.9 U
108-67-8	1,3,5-Trimethylbenzene	0.35	1.4	< 1.4 U
95-63-6	1,2,4-Trimethylbenzene	0.32	1.4	< 1.4 U
87-68-3	Hexachlorobutadiene	0.57	6.9	< 6.9 U
106-93-4	Ethylene Dibromide	0.24	1.4	< 1.4 U
74-97-5	Bromochloromethane	0.45	1.4	< 1.4 U
594-20-7	2,2-Dichloropropane	0.41	1.4	< 1.4 U
142-28-9	1,3-Dichloropropane	0.29	1.4	< 1.4 U
98-82-8	Isopropylbenzene	0.32	1.4	< 1.4 U
103-65-1	n-Propylbenzene	0.38	1.4	< 1.4 U
108-86-1	Bromobenzene	0.21	1.4	< 1.4 U
95-49-8	2-Chlorotoluene	0.42	1.4	< 1.4 U
106-43-4	4-Chlorotoluene	0.38	1.4	< 1.4 U
98-06-6	tert-Butylbenzene	0.42	1.4	< 1.4 U
135-98-8	sec-Butylbenzene	0.33	1.4	< 1.4 U
99-87-6	4-Isopropyltoluene	0.33	1.4	< 1.4 U
104-51-8	n-Butylbenzene	0.36	1.4	< 1.4 U
120-82-1	1,2,4-Trichlorobenzene	0.46	6.9	< 6.9 U
91-20-3	Naphthalene	0.60	6.9	< 6.9 U
87-61-6	1,2,3-Trichlorobenzene	0.42	6.9	< 6.9 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	113%
d8-Toluene	103%
Bromofluorobenzene	92.4%
d4-1,2-Dichlorobenzene	100%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: FRP-083011-012
  SAMPLE

Lab Sample ID: TK50K
LIMS ID: 11-18879
Matrix: Soil
Data Release Authorized: VD
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 19:34

Sample Amount: 4.27 g-dry-wt
Percent Moisture: 9.5%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.31	1.2	< 1.2 U
74-83-9	Bromomethane	0.22	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.28	1.2	< 1.2 U
75-00-3	Chloroethane	0.54	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.74	2.3	< 2.3 U
67-64-1	**Acetone**	**0.56**	**5.9**	**33**
75-15-0	Carbon Disulfide	0.65	1.2	< 1.2 U
75-35-4	1,1-Dichloroethene	0.39	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.24	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.31	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.28	1.2	< 1.2 U
67-66-3	Chloroform	0.27	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.22	1.2	< 1.2 U
78-93-3	2-Butanone	0.60	5.9	< 5.9 U
71-55-6	1,1,1-Trichloroethane	0.26	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.25	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.45	5.9	< 5.9 U
75-27-4	Bromodichloromethane	0.30	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.19	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.26	1.2	< 1.2 U
79-01-6	Trichloroethene	0.25	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.31	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.33	1.2	< 1.2 U
71-43-2	Benzene	0.35	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.25	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.32	5.9	< 5.9 U
75-25-2	Bromoform	0.35	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.49	5.9	< 5.9 U
591-78-6	2-Hexanone	0.51	5.9	< 5.9 U
127-18-4	Tetrachloroethene	0.30	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.30	1.2	< 1.2 U
108-88-3	Toluene	0.18	1.2	< 1.2 U
108-90-7	Chlorobenzene	0.26	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.24	1.2	< 1.2 U
100-42-5	Styrene	0.16	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.31	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.34	2.3	< 2.3 U
179601-23-1	m,p-Xylene	0.46	1.2	< 1.2 U
95-47-6	o-Xylene	0.26	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.34	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.27	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.27	1.2	< 1.2 U
107-02-8	Acrolein	4.5	59	< 59 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-012
SAMPLE

Lab Sample ID: TK50K
LIMS ID: 11-18879
Matrix: Soil
Date Analyzed: 09/06/11 19:34

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.25	1.2	< 1.2 U
74-96-4	Bromoethane	0.52	2.3	< 2.3 U
107-13-1	Acrylonitrile	1.2	5.9	< 5.9 U
563-58-6	1,1-Dichloropropene	0.37	1.2	< 1.2 U
74-95-3	Dibromomethane	0.17	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.27	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.69	5.9	< 5.9 U
96-18-4	1,2,3-Trichloropropane	0.61	2.3	< 2.3 U
110-57-6	trans-1,4-Dichloro-2-butene	0.51	5.9	< 5.9 U
108-67-8	1,3,5-Trimethylbenzene	0.30	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.27	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.48	5.9	< 5.9 U
106-93-4	Ethylene Dibromide	0.21	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.38	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.34	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.24	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.27	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.32	1.2	< 1.2 U
108-86-1	Bromobenzene	0.18	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.35	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.32	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.36	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.28	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.28	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.31	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.39	5.9	< 5.9 U
91-20-3	Naphthalene	0.50	5.9	< 5.9 U
87-61-6	1,2,3-Trichlorobenzene	0.36	5.9	< 5.9 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	99.4%
Bromofluorobenzene	81.2%
d4-1,2-Dichlorobenzene	96.7%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-013
SAMPLE

Lab Sample ID: TK50L
LIMS ID: 11-18880
Matrix: Soil
Data Release Authorized:
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 20:01

Sample Amount: 2.90 g-dry-wt
Percent Moisture: 9.5%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.45	1.7	< 1.7 U
74-83-9	Bromomethane	0.32	1.7	< 1.7 U
75-01-4	Vinyl Chloride	0.41	1.7	< 1.7 U
75-00-3	Chloroethane	0.80	1.7	< 1.7 U
75-09-2	Methylene Chloride	1.1	3.4	< 3.4 U
67-64-1	**Acetone**	**0.83**	**8.6**	**25**
75-15-0	Carbon Disulfide	0.96	1.7	< 1.7 U
75-35-4	1,1-Dichloroethene	0.58	1.7	< 1.7 U
75-34-3	1,1-Dichloroethane	0.35	1.7	< 1.7 U
156-60-5	trans-1,2-Dichloroethene	0.46	1.7	< 1.7 U
156-59-2	cis-1,2-Dichloroethene	0.41	1.7	< 1.7 U
67-66-3	Chloroform	0.40	1.7	< 1.7 U
107-06-2	1,2-Dichloroethane	0.33	1.7	< 1.7 U
78-93-3	2-Butanone	0.88	8.6	< 8.6 U
71-55-6	1,1,1-Trichloroethane	0.39	1.7	< 1.7 U
56-23-5	Carbon Tetrachloride	0.37	1.7	< 1.7 U
108-05-4	Vinyl Acetate	0.66	8.6	< 8.6 U
75-27-4	Bromodichloromethane	0.44	1.7	< 1.7 U
78-87-5	1,2-Dichloropropane	0.28	1.7	< 1.7 U
10061-01-5	cis-1,3-Dichloropropene	0.39	1.7	< 1.7 U
79-01-6	Trichloroethene	0.37	1.7	< 1.7 U
124-48-1	Dibromochloromethane	0.46	1.7	< 1.7 U
79-00-5	1,1,2-Trichloroethane	0.49	1.7	< 1.7 U
71-43-2	Benzene	0.51	1.7	< 1.7 U
10061-02-6	trans-1,3-Dichloropropene	0.37	1.7	< 1.7 U
110-75-8	2-Chloroethylvinylether	0.48	8.6	< 8.6 U
75-25-2	Bromoform	0.51	1.7	< 1.7 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.72	8.6	< 8.6 U
591-78-6	2-Hexanone	0.76	8.6	< 8.6 U
127-18-4	Tetrachloroethene	0.44	1.7	< 1.7 U
79-34-5	1,1,2,2-Tetrachloroethane	0.44	1.7	< 1.7 U
108-88-3	Toluene	0.26	1.7	< 1.7 U
108-90-7	Chlorobenzene	0.38	1.7	< 1.7 U
100-41-4	Ethylbenzene	0.35	1.7	< 1.7 U
100-42-5	Styrene	0.24	1.7	< 1.7 U
75-69-4	Trichlorofluoromethane	0.46	1.7	< 1.7 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.49	3.4	< 3.4 U
179601-23-1	m,p-Xylene	0.68	1.7	< 1.7 U
95-47-6	o-Xylene	0.39	1.7	< 1.7 U
95-50-1	1,2-Dichlorobenzene	0.51	1.7	< 1.7 U
541-73-1	1,3-Dichlorobenzene	0.39	1.7	< 1.7 U
106-46-7	1,4-Dichlorobenzene	0.40	1.7	< 1.7 U
107-02-8	Acrolein	6.6	86	< 86 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-013
SAMPLE

Lab Sample ID: TK50L
LIMS ID: 11-18880
Matrix: Soil
Date Analyzed: 09/06/11 20:01

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.37	1.7	< 1.7 U
74-96-4	Bromoethane	0.76	3.4	< 3.4 U
107-13-1	Acrylonitrile	1.8	8.6	< 8.6 U
563-58-6	1,1-Dichloropropene	0.54	1.7	< 1.7 U
74-95-3	Dibromomethane	0.25	1.7	< 1.7 U
630-20-6	1,1,1,2-Tetrachloroethane	0.40	1.7	< 1.7 U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	8.6	< 8.6 U
96-18-4	1,2,3-Trichloropropane	0.89	3.4	< 3.4 U
110-57-6	trans-1,4-Dichloro-2-butene	0.75	8.6	< 8.6 U
108-67-8	1,3,5-Trimethylbenzene	0.44	1.7	< 1.7 U
95-63-6	1,2,4-Trimethylbenzene	0.40	1.7	< 1.7 U
87-68-3	Hexachlorobutadiene	0.71	8.6	< 8.6 U
106-93-4	Ethylene Dibromide	0.30	1.7	< 1.7 U
74-97-5	Bromochloromethane	0.56	1.7	< 1.7 U
594-20-7	2,2-Dichloropropane	0.50	1.7	< 1.7 U
142-28-9	1,3-Dichloropropane	0.36	1.7	< 1.7 U
98-82-8	Isopropylbenzene	0.40	1.7	< 1.7 U
103-65-1	n-Propylbenzene	0.47	1.7	< 1.7 U
108-86-1	Bromobenzene	0.26	1.7	< 1.7 U
95-49-8	2-Chlorotoluene	0.52	1.7	< 1.7 U
106-43-4	4-Chlorotoluene	0.48	1.7	< 1.7 U
98-06-6	tert-Butylbenzene	0.53	1.7	< 1.7 U
135-98-8	sec-Butylbenzene	0.41	1.7	< 1.7 U
99-87-6	4-Isopropyltoluene	0.41	1.7	< 1.7 U
104-51-8	n-Butylbenzene	0.45	1.7	< 1.7 U
120-82-1	1,2,4-Trichlorobenzene	0.57	8.6	< 8.6 U
91-20-3	Naphthalene	0.74	8.6	< 8.6 U
87-61-6	1,2,3-Trichlorobenzene	0.53	8.6	< 8.6 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	114%
d8-Toluene	102%
Bromofluorobenzene	93.1%
d4-1,2-Dichlorobenzene	100%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: FRP-083011-014
  SAMPLE

Lab Sample ID: TK50M
LIMS ID: 11-18881
Matrix: Soil
Data Release Authorized: VB
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011 8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 20:29

Sample Amount: 3.97 g-dry-wt
Percent Moisture: 12.5%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.33	1.3	< 1.3 U
74-83-9	Bromomethane	0.24	1.3	< 1.3 U
75-01-4	Vinyl Chloride	0.30	1.3	< 1.3 U
75-00-3	Chloroethane	0.58	1.3	< 1.3 U
75-09-2	Methylene Chloride	0.80	2.5	< 2.5 U
67-64-1	**Acetone**	**0.61**	**6.3**	**49**
75-15-0	Carbon Disulfide	0.70	1.3	< 1.3 U
75-35-4	1,1-Dichloroethene	0.42	1.3	< 1.3 U
75-34-3	1,1-Dichloroethane	0.26	1.3	< 1.3 U
156-60-5	trans-1,2-Dichloroethene	0.34	1.3	< 1.3 U
156-59-2	cis-1,2-Dichloroethene	0.30	1.3	< 1.3 U
67-66-3	Chloroform	0.29	1.3	< 1.3 U
107-06-2	1,2-Dichloroethane	0.24	1.3	< 1.3 U
78-93-3	2-Butanone	0.65	6.3	< 6.3 U
71-55-6	1,1,1-Trichloroethane	0.28	1.3	< 1.3 U
56-23-5	Carbon Tetrachloride	0.27	1.3	< 1.3 U
108-05-4	Vinyl Acetate	0.48	6.3	< 6.3 U
75-27-4	Bromodichloromethane	0.32	1.3	< 1.3 U
78-87-5	1,2-Dichloropropane	0.20	1.3	< 1.3 U
10061-01-5	cis-1,3-Dichloropropene	0.28	1.3	< 1.3 U
79-01-6	Trichloroethene	0.27	1.3	< 1.3 U
124-48-1	Dibromochloromethane	0.34	1.3	< 1.3 U
79-00-5	1,1,2-Trichloroethane	0.36	1.3	< 1.3 U
71-43-2	Benzene	0.37	1.3	< 1.3 U
10061-02-6	trans-1,3-Dichloropropene	0.27	1.3	< 1.3 U
110-75-8	2-Chloroethylvinylether	0.35	6.3	< 6.3 U
75-25-2	Bromoform	0.37	1.3	< 1.3 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.53	6.3	< 6.3 U
591-78-6	2-Hexanone	0.55	6.3	< 6.3 U
127-18-4	Tetrachloroethene	0.32	1.3	< 1.3 U
79-34-5	1,1,2,2-Tetrachloroethane	0.32	1.3	< 1.3 U
108-88-3	Toluene	0.19	1.3	< 1.3 U
108-90-7	Chlorobenzene	0.28	1.3	< 1.3 U
100-41-4	Ethylbenzene	0.25	1.3	< 1.3 U
100-42-5	Styrene	0.17	1.3	< 1.3 U
75-69-4	Trichlorofluoromethane	0.34	1.3	< 1.3 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.36	2.5	< 2.5 U
179601-23-1	m,p-Xylene	0.49	1.3	< 1.3 U
95-47-6	o-Xylene	0.28	1.3	< 1.3 U
95-50-1	1,2-Dichlorobenzene	0.37	1.3	< 1.3 U
541-73-1	1,3-Dichlorobenzene	0.29	1.3	< 1.3 U
106-46-7	1,4-Dichlorobenzene	0.29	1.3	< 1.3 U
107-02-8	Acrolein	4.8	63	< 63 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-014
SAMPLE

Lab Sample ID: TK50M
LIMS ID: 11-18881
Matrix: Soil
Date Analyzed: 09/06/11 20:29

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.27	1.3	< 1.3 U
74-96-4	Bromoethane	0.55	2.5	< 2.5 U
107-13-1	Acrylonitrile	1.3	6.3	< 6.3 U
563-58-6	1,1-Dichloropropene	0.39	1.3	< 1.3 U
74-95-3	Dibromomethane	0.19	1.3	< 1.3 U
630-20-6	1,1,1,2-Tetrachloroethane	0.29	1.3	< 1.3 U
96-12-8	1,2-Dibromo-3-chloropropane	0.74	6.3	< 6.3 U
96-18-4	1,2,3-Trichloropropane	0.65	2.5	< 2.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.55	6.3	< 6.3 U
108-67-8	1,3,5-Trimethylbenzene	0.32	1.3	< 1.3 U
95-63-6	1,2,4-Trimethylbenzene	0.29	1.3	< 1.3 U
87-68-3	Hexachlorobutadiene	0.52	6.3	< 6.3 U
106-93-4	Ethylene Dibromide	0.22	1.3	< 1.3 U
74-97-5	Bromochloromethane	0.41	1.3	< 1.3 U
594-20-7	2,2-Dichloropropane	0.37	1.3	< 1.3 U
142-28-9	1,3-Dichloropropane	0.26	1.3	< 1.3 U
98-82-8	Isopropylbenzene	0.29	1.3	< 1.3 U
103-65-1	n-Propylbenzene	0.34	1.3	< 1.3 U
108-86-1	Bromobenzene	0.19	1.3	< 1.3 U
95-49-8	2-Chlorotoluene	0.38	1.3	< 1.3 U
106-43-4	4-Chlorotoluene	0.35	1.3	< 1.3 U
98-06-6	tert-Butylbenzene	0.39	1.3	< 1.3 U
135-98-8	sec-Butylbenzene	0.30	1.3	< 1.3 U
99-87-6	4-Isopropyltoluene	0.30	1.3	< 1.3 U
104-51-8	n-Butylbenzene	0.33	1.3	< 1.3 U
120-82-1	1,2,4-Trichlorobenzene	0.42	6.3	< 6.3 U
91-20-3	Naphthalene	0.54	6.3	< 6.3 U
87-61-6	1,2,3-Trichlorobenzene	0.38	6.3	< 6.3 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	117%
d8-Toluene	103%
Bromofluorobenzene	93.7%
d4-1,2-Dichlorobenzene	103%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: FRP-083011-015
  SAMPLE

Lab Sample ID: TK50N
LIMS ID: 11-18882
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 20:56

Sample Amount: 4.07 g-dry-wt
Percent Moisture: 24.0%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.32	1.2	< 1.2 U
74-83-9	Bromomethane	0.23	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.29	1.2	< 1.2 U
75-00-3	Chloroethane	0.57	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.78	2.5	< 2.5 U
67-64-1	**Acetone**	**0.59**	**6.1**	**31**
75-15-0	Carbon Disulfide	0.69	1.2	< 1.2 U
75-35-4	1,1-Dichloroethene	0.41	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.25	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.33	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.29	1.2	< 1.2 U
67-66-3	Chloroform	0.29	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.23	1.2	< 1.2 U
78-93-3	2-Butanone	0.63	6.1	< 6.1 U
71-55-6	1,1,1-Trichloroethane	0.28	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.26	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.47	6.1	< 6.1 U
75-27-4	Bromodichloromethane	0.31	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.20	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.28	1.2	< 1.2 U
79-01-6	Trichloroethene	0.26	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.33	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.35	1.2	< 1.2 U
71-43-2	Benzene	0.36	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.27	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.34	6.1	< 6.1 U
75-25-2	Bromoform	0.36	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.52	6.1	< 6.1 U
591-78-6	2-Hexanone	0.54	6.1	< 6.1 U
127-18-4	Tetrachloroethene	0.32	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.31	1.2	< 1.2 U
108-88-3	Toluene	0.19	1.2	< 1.2 U
108-90-7	Chlorobenzene	0.27	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.25	1.2	< 1.2 U
100-42-5	Styrene	0.17	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.33	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.35	2.5	< 2.5 U
179601-23-1	m,p-Xylene	0.48	1.2	< 1.2 U
95-47-6	o-Xylene	0.28	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.36	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.28	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.29	1.2	< 1.2 U
107-02-8	Acrolein	4.7	61	< 61 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-015
SAMPLE

Lab Sample ID: TK50N
LIMS ID: 11-18882
Matrix: Soil
Date Analyzed: 09/06/11 20:56

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.26	1.2	< 1.2 U
74-96-4	Bromoethane	0.54	2.5	< 2.5 U
107-13-1	Acrylonitrile	1.3	6.1	< 6.1 U
563-58-6	1,1-Dichloropropene	0.38	1.2	< 1.2 U
74-95-3	Dibromomethane	0.18	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.29	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.72	6.1	< 6.1 U
96-18-4	1,2,3-Trichloropropane	0.64	2.5	< 2.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.54	6.1	< 6.1 U
108-67-8	1,3,5-Trimethylbenzene	0.31	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.28	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.50	6.1	< 6.1 U
106-93-4	Ethylene Dibromide	0.22	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.40	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.36	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.26	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.29	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.33	1.2	< 1.2 U
108-86-1	Bromobenzene	0.19	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.37	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.34	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.38	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.29	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.29	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.32	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.41	6.1	< 6.1 U
91-20-3	Naphthalene	0.53	6.1	< 6.1 U
87-61-6	1,2,3-Trichlorobenzene	0.37	6.1	< 6.1 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	115%
d8-Toluene	103%
Bromofluorobenzene	91.9%
d4-1,2-Dichlorobenzene	100%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-016
SAMPLE

Lab Sample ID: TK50O
LIMS ID: 11-18883
Matrix: Soil
Data Release Authorized: VM
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/07/11 17:54

Sample Amount: 4.25 g-dry-wt
Percent Moisture: 18.0%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.31	1.2	< 1.2 U
74-83-9	Bromomethane	0.22	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.28	1.2	< 1.2 U
75-00-3	Chloroethane	0.54	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.75	2.4	< 2.4 U
67-64-1	**Acetone**	**0.57**	**5.9**	**14**
75-15-0	**Carbon Disulfide**	**0.66**	**1.2**	**6.0**
75-35-4	1,1-Dichloroethene	0.40	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.24	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.31	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.28	1.2	< 1.2 U
67-66-3	Chloroform	0.28	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.22	1.2	< 1.2 U
78-93-3	2-Butanone	0.60	5.9	< 5.9 U
71-55-6	1,1,1-Trichloroethane	0.27	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.25	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.45	5.9	< 5.9 U
75-27-4	Bromodichloromethane	0.30	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.19	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.27	1.2	< 1.2 U
79-01-6	Trichloroethene	0.25	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.31	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.34	1.2	< 1.2 U
71-43-2	Benzene	0.35	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.25	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.32	5.9	< 5.9 U
75-25-2	Bromoform	0.35	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.49	5.9	< 5.9 U
591-78-6	2-Hexanone	0.52	5.9	< 5.9 U
127-18-4	Tetrachloroethene	0.30	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.30	1.2	< 1.2 U
108-88-3	Toluene	0.18	1.2	< 1.2 U
108-90-7	Chlorobenzene	0.26	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.24	1.2	< 1.2 U
100-42-5	Styrene	0.16	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.31	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.34	2.4	< 2.4 U
179601-23-1	m,p-Xylene	0.46	1.2	< 1.2 U
95-47-6	o-Xylene	0.26	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.34	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.27	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.27	1.2	< 1.2 U
107-02-8	Acrolein	4.5	59	< 59 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-016
SAMPLE

Lab Sample ID: TK50O
LIMS ID: 11-18883
Matrix: Soil
Date Analyzed: 09/07/11 17:54

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.25	1.2	< 1.2 U
74-96-4	Bromoethane	0.52	2.4	< 2.4 U
107-13-1	Acrylonitrile	1.2	5.9	< 5.9 U
563-58-6	1,1-Dichloropropene	0.37	1.2	< 1.2 U
74-95-3	Dibromomethane	0.17	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.27	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.69	5.9	< 5.9 U
96-18-4	1,2,3-Trichloropropane	0.61	2.4	< 2.4 U
110-57-6	trans-1,4-Dichloro-2-butene	0.51	5.9	< 5.9 U
108-67-8	1,3,5-Trimethylbenzene	0.30	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.27	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.48	5.9	< 5.9 U
106-93-4	Ethylene Dibromide	0.21	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.38	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.34	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.25	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.27	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.32	1.2	< 1.2 U
108-86-1	Bromobenzene	0.18	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.35	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.33	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.36	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.28	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.28	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.31	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.39	5.9	< 5.9 U
91-20-3	Naphthalene	0.50	5.9	< 5.9 U
87-61-6	1,2,3-Trichlorobenzene	0.36	5.9	< 5.9 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	109%
d8-Toluene	103%
Bromofluorobenzene	95.8%
d4-1,2-Dichlorobenzene	100%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-017
SAMPLE

Lab Sample ID: TK50P
LIMS ID: 11-18884
Matrix: Soil
Data Release Authorized: VD
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/07/11 18:21

Sample Amount: 3.76 g-dry-wt
Percent Moisture: 20.7%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.35	1.3	< 1.3 U
74-83-9	Bromomethane	0.25	1.3	< 1.3 U
75-01-4	Vinyl Chloride	0.31	1.3	< 1.3 U
75-00-3	Chloroethane	0.61	1.3	< 1.3 U
75-09-2	Methylene Chloride	0.84	2.7	< 2.7 U
67-64-1	**Acetone**	**0.64**	**6.6**	**10**
75-15-0	**Carbon Disulfide**	**0.74**	**1.3**	**2.9**
75-35-4	1,1-Dichloroethene	0.45	1.3	< 1.3 U
75-34-3	1,1-Dichloroethane	0.27	1.3	< 1.3 U
156-60-5	trans-1,2-Dichloroethene	0.35	1.3	< 1.3 U
156-59-2	cis-1,2-Dichloroethene	0.32	1.3	< 1.3 U
67-66-3	Chloroform	0.31	1.3	< 1.3 U
107-06-2	1,2-Dichloroethane	0.25	1.3	< 1.3 U
78-93-3	2-Butanone	0.68	6.6	< 6.6 U
71-55-6	1,1,1-Trichloroethane	0.30	1.3	< 1.3 U
56-23-5	Carbon Tetrachloride	0.28	1.3	< 1.3 U
108-05-4	Vinyl Acetate	0.51	6.6	< 6.6 U
75-27-4	Bromodichloromethane	0.34	1.3	< 1.3 U
78-87-5	1,2-Dichloropropane	0.22	1.3	< 1.3 U
10061-01-5	cis-1,3-Dichloropropene	0.30	1.3	< 1.3 U
79-01-6	Trichloroethene	0.28	1.3	< 1.3 U
124-48-1	Dibromochloromethane	0.35	1.3	< 1.3 U
79-00-5	1,1,2-Trichloroethane	0.38	1.3	< 1.3 U
71-43-2	Benzene	0.39	1.3	< 1.3 U
10061-02-6	trans-1,3-Dichloropropene	0.29	1.3	< 1.3 U
110-75-8	2-Chloroethylvinylether	0.37	6.6	< 6.6 U
75-25-2	Bromoform	0.39	1.3	< 1.3 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.56	6.6	< 6.6 U
591-78-6	2-Hexanone	0.58	6.6	< 6.6 U
127-18-4	Tetrachloroethene	0.34	1.3	< 1.3 U
79-34-5	1,1,2,2-Tetrachloroethane	0.34	1.3	< 1.3 U
108-88-3	Toluene	0.20	1.3	< 1.3 U
108-90-7	Chlorobenzene	0.29	1.3	< 1.3 U
100-41-4	Ethylbenzene	0.27	1.3	< 1.3 U
100-42-5	Styrene	0.18	1.3	< 1.3 U
75-69-4	Trichlorofluoromethane	0.35	1.3	< 1.3 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.38	2.7	< 2.7 U
179601-23-1	m,p-Xylene	0.52	1.3	< 1.3 U
95-47-6	o-Xylene	0.30	1.3	< 1.3 U
95-50-1	1,2-Dichlorobenzene	0.39	1.3	< 1.3 U
541-73-1	1,3-Dichlorobenzene	0.30	1.3	< 1.3 U
106-46-7	1,4-Dichlorobenzene	0.31	1.3	< 1.3 U
107-02-8	Acrolein	5.1	66	< 66 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-017
SAMPLE

Lab Sample ID: TK50P
LIMS ID: 11-18884
Matrix: Soil
Date Analyzed: 09/07/11 18:21

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.29	1.3	< 1.3 U
74-96-4	Bromoethane	0.59	2.7	< 2.7 U
107-13-1	Acrylonitrile	1.4	6.6	< 6.6 U
563-58-6	1,1-Dichloropropene	0.41	1.3	< 1.3 U
74-95-3	Dibromomethane	0.20	1.3	< 1.3 U
630-20-6	1,1,1,2-Tetrachloroethane	0.31	1.3	< 1.3 U
96-12-8	1,2-Dibromo-3-chloropropane	0.78	6.6	< 6.6 U
96-18-4	1,2,3-Trichloropropane	0.69	2.7	< 2.7 U
110-57-6	trans-1,4-Dichloro-2-butene	0.58	6.6	< 6.6 U
108-67-8	1,3,5-Trimethylbenzene	0.34	1.3	< 1.3 U
95-63-6	1,2,4-Trimethylbenzene	0.31	1.3	< 1.3 U
87-68-3	Hexachlorobutadiene	0.55	6.6	< 6.6 U
106-93-4	Ethylene Dibromide	0.23	1.3	< 1.3 U
74-97-5	Bromochloromethane	0.43	1.3	< 1.3 U
594-20-7	2,2-Dichloropropane	0.39	1.3	< 1.3 U
142-28-9	1,3-Dichloropropane	0.28	1.3	< 1.3 U
98-82-8	Isopropylbenzene	0.31	1.3	< 1.3 U
103-65-1	n-Propylbenzene	0.36	1.3	< 1.3 U
108-86-1	Bromobenzene	0.20	1.3	< 1.3 U
95-49-8	2-Chlorotoluene	0.40	1.3	< 1.3 U
106-43-4	4-Chlorotoluene	0.37	1.3	< 1.3 U
98-06-6	tert-Butylbenzene	0.41	1.3	< 1.3 U
135-98-8	sec-Butylbenzene	0.32	1.3	< 1.3 U
99-87-6	4-Isopropyltoluene	0.31	1.3	< 1.3 U
104-51-8	n-Butylbenzene	0.35	1.3	< 1.3 U
120-82-1	1,2,4-Trichlorobenzene	0.44	6.6	< 6.6 U
91-20-3	Naphthalene	0.57	6.6	< 6.6 U
87-61-6	1,2,3-Trichlorobenzene	0.41	6.6	< 6.6 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	111%
d8-Toluene	102%
Bromofluorobenzene	96.6%
d4-1,2-Dichlorobenzene	101%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-018
SAMPLE

Lab Sample ID: TK50Q
LIMS ID: 11-18885
Matrix: Soil
Data Release Authorized: VD
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/07/11 18:49

Sample Amount: 4.32 g-dry-wt
Percent Moisture: 15.6%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.30	1.2	< 1.2 U
74-83-9	Bromomethane	0.22	1.2	< 1.2 U
75-01-4	Vinyl Chloride	0.27	1.2	< 1.2 U
75-00-3	Chloroethane	0.53	1.2	< 1.2 U
75-09-2	Methylene Chloride	0.73	2.3	< 2.3 U
67-64-1	**Acetone**	**0.56**	**5.8**	**12**
75-15-0	**Carbon Disulfide**	**0.65**	**1.2**	**4.7**
75-35-4	1,1-Dichloroethene	0.39	1.2	< 1.2 U
75-34-3	1,1-Dichloroethane	0.23	1.2	< 1.2 U
156-60-5	trans-1,2-Dichloroethene	0.31	1.2	< 1.2 U
156-59-2	cis-1,2-Dichloroethene	0.28	1.2	< 1.2 U
67-66-3	Chloroform	0.27	1.2	< 1.2 U
107-06-2	1,2-Dichloroethane	0.22	1.2	< 1.2 U
78-93-3	2-Butanone	0.59	5.8	< 5.8 U
71-55-6	1,1,1-Trichloroethane	0.26	1.2	< 1.2 U
56-23-5	Carbon Tetrachloride	0.25	1.2	< 1.2 U
108-05-4	Vinyl Acetate	0.44	5.8	< 5.8 U
75-27-4	Bromodichloromethane	0.29	1.2	< 1.2 U
78-87-5	1,2-Dichloropropane	0.19	1.2	< 1.2 U
10061-01-5	cis-1,3-Dichloropropene	0.26	1.2	< 1.2 U
79-01-6	Trichloroethene	0.25	1.2	< 1.2 U
124-48-1	Dibromochloromethane	0.31	1.2	< 1.2 U
79-00-5	1,1,2-Trichloroethane	0.33	1.2	< 1.2 U
71-43-2	Benzene	0.34	1.2	< 1.2 U
10061-02-6	trans-1,3-Dichloropropene	0.25	1.2	< 1.2 U
110-75-8	2-Chloroethylvinylether	0.32	5.8	< 5.8 U
75-25-2	Bromoform	0.34	1.2	< 1.2 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.49	5.8	< 5.8 U
591-78-6	2-Hexanone	0.51	5.8	< 5.8 U
127-18-4	Tetrachloroethene	0.30	1.2	< 1.2 U
79-34-5	1,1,2,2-Tetrachloroethane	0.29	1.2	< 1.2 U
108-88-3	Toluene	0.17	1.2	< 1.2 U
108-90-7	Chlorobenzene	0.25	1.2	< 1.2 U
100-41-4	Ethylbenzene	0.23	1.2	< 1.2 U
100-42-5	Styrene	0.16	1.2	< 1.2 U
75-69-4	Trichlorofluoromethane	0.31	1.2	< 1.2 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.33	2.3	< 2.3 U
179601-23-1	m,p-Xylene	0.45	1.2	< 1.2 U
95-47-6	o-Xylene	0.26	1.2	< 1.2 U
95-50-1	1,2-Dichlorobenzene	0.34	1.2	< 1.2 U
541-73-1	1,3-Dichlorobenzene	0.26	1.2	< 1.2 U
106-46-7	1,4-Dichlorobenzene	0.27	1.2	< 1.2 U
107-02-8	Acrolein	4.4	58	< 58 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-018
SAMPLE

Lab Sample ID: TK50Q
LIMS ID: 11-18885
Matrix: Soil
Date Analyzed: 09/07/11 18:49

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.25	1.2	< 1.2 U
74-96-4	Bromoethane	0.51	2.3	< 2.3 U
107-13-1	Acrylonitrile	1.2	5.8	< 5.8 U
563-58-6	1,1-Dichloropropene	0.36	1.2	< 1.2 U
74-95-3	Dibromomethane	0.17	1.2	< 1.2 U
630-20-6	1,1,1,2-Tetrachloroethane	0.27	1.2	< 1.2 U
96-12-8	1,2-Dibromo-3-chloropropane	0.68	5.8	< 5.8 U
96-18-4	1,2,3-Trichloropropane	0.60	2.3	< 2.3 U
110-57-6	trans-1,4-Dichloro-2-butene	0.51	5.8	< 5.8 U
108-67-8	1,3,5-Trimethylbenzene	0.29	1.2	< 1.2 U
95-63-6	1,2,4-Trimethylbenzene	0.27	1.2	< 1.2 U
87-68-3	Hexachlorobutadiene	0.47	5.8	< 5.8 U
106-93-4	Ethylene Dibromide	0.20	1.2	< 1.2 U
74-97-5	Bromochloromethane	0.37	1.2	< 1.2 U
594-20-7	2,2-Dichloropropane	0.34	1.2	< 1.2 U
142-28-9	1,3-Dichloropropane	0.24	1.2	< 1.2 U
98-82-8	Isopropylbenzene	0.27	1.2	< 1.2 U
103-65-1	n-Propylbenzene	0.31	1.2	< 1.2 U
108-86-1	Bromobenzene	0.18	1.2	< 1.2 U
95-49-8	2-Chlorotoluene	0.35	1.2	< 1.2 U
106-43-4	4-Chlorotoluene	0.32	1.2	< 1.2 U
98-06-6	tert-Butylbenzene	0.35	1.2	< 1.2 U
135-98-8	sec-Butylbenzene	0.28	1.2	< 1.2 U
99-87-6	4-Isopropyltoluene	0.27	1.2	< 1.2 U
104-51-8	n-Butylbenzene	0.30	1.2	< 1.2 U
120-82-1	1,2,4-Trichlorobenzene	0.38	5.8	< 5.8 U
91-20-3	Naphthalene	0.50	5.8	< 5.8 U
87-61-6	1,2,3-Trichlorobenzene	0.35	5.8	< 5.8 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	102%
Bromofluorobenzene	96.4%
d4-1,2-Dichlorobenzene	104%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: FRP-083011-019
SAMPLE

Lab Sample ID: TK50R
LIMS ID: 11-18886
Matrix: Soil
Data Release Authorized: VB
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/07/11 19:16

Sample Amount: 3.33 g-dry-wt
Percent Moisture: 18.5%

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.39	1.5	< 1.5 U
74-83-9	Bromomethane	0.28	1.5	< 1.5 U
75-01-4	Vinyl Chloride	0.35	1.5	< 1.5 U
75-00-3	Chloroethane	0.69	1.5	< 1.5 U
75-09-2	**Methylene Chloride**	**0.95**	**3.0**	**3.1**
67-64-1	**Acetone**	**0.72**	**7.5**	**12**
75-15-0	**Carbon Disulfide**	**0.84**	**1.5**	**3.3**
75-35-4	1,1-Dichloroethene	0.50	1.5	< 1.5 U
75-34-3	1,1-Dichloroethane	0.30	1.5	< 1.5 U
156-60-5	trans-1,2-Dichloroethene	0.40	1.5	< 1.5 U
156-59-2	cis-1,2-Dichloroethene	0.36	1.5	< 1.5 U
67-66-3	Chloroform	0.35	1.5	< 1.5 U
107-06-2	1,2-Dichloroethane	0.29	1.5	< 1.5 U
78-93-3	2-Butanone	0.77	7.5	< 7.5 U
71-55-6	1,1,1-Trichloroethane	0.34	1.5	< 1.5 U
56-23-5	Carbon Tetrachloride	0.32	1.5	< 1.5 U
108-05-4	Vinyl Acetate	0.57	7.5	< 7.5 U
75-27-4	Bromodichloromethane	0.38	1.5	< 1.5 U
78-87-5	1,2-Dichloropropane	0.24	1.5	< 1.5 U
10061-01-5	cis-1,3-Dichloropropene	0.34	1.5	< 1.5 U
79-01-6	Trichloroethene	0.32	1.5	< 1.5 U
124-48-1	Dibromochloromethane	0.40	1.5	< 1.5 U
79-00-5	1,1,2-Trichloroethane	0.43	1.5	< 1.5 U
71-43-2	Benzene	0.44	1.5	< 1.5 U
10061-02-6	trans-1,3-Dichloropropene	0.32	1.5	< 1.5 U
110-75-8	2-Chloroethylvinylether	0.41	7.5	< 7.5 U
75-25-2	Bromoform	0.45	1.5	< 1.5 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.63	7.5	< 7.5 U
591-78-6	2-Hexanone	0.66	7.5	< 7.5 U
127-18-4	Tetrachloroethene	0.39	1.5	< 1.5 U
79-34-5	1,1,2,2-Tetrachloroethane	0.38	1.5	< 1.5 U
108-88-3	**Toluene**	**0.23**	**1.5**	**2.4**
108-90-7	Chlorobenzene	0.33	1.5	< 1.5 U
100-41-4	Ethylbenzene	0.30	1.5	< 1.5 U
100-42-5	Styrene	0.21	1.5	< 1.5 U
75-69-4	Trichlorofluoromethane	0.40	1.5	< 1.5 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.43	3.0	< 3.0 U
179601-23-1	m,p-Xylene	0.59	1.5	< 1.5 U
95-47-6	o-Xylene	0.34	1.5	< 1.5 U
95-50-1	1,2-Dichlorobenzene	0.44	1.5	< 1.5 U
541-73-1	1,3-Dichlorobenzene	0.34	1.5	< 1.5 U
106-46-7	1,4-Dichlorobenzene	0.35	1.5	< 1.5 U
107-02-8	Acrolein	5.7	75	< 75 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: FRP-083011-019**
 SAMPLE

Lab Sample ID: TK50R
LIMS ID: 11-18886
Matrix: Soil
Date Analyzed: 09/07/11 19:16

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.32	1.5	< 1.5 U
74-96-4	Bromoethane	0.66	3.0	< 3.0 U
107-13-1	Acrylonitrile	1.5	7.5	< 7.5 U
563-58-6	1,1-Dichloropropene	0.47	1.5	< 1.5 U
74-95-3	Dibromomethane	0.22	1.5	< 1.5 U
630-20-6	1,1,1,2-Tetrachloroethane	0.35	1.5	< 1.5 U
96-12-8	1,2-Dibromo-3-chloropropane	0.88	7.5	< 7.5 U
96-18-4	1,2,3-Trichloropropane	0.78	3.0	< 3.0 U
110-57-6	trans-1,4-Dichloro-2-butene	0.66	7.5	< 7.5 U
108-67-8	1,3,5-Trimethylbenzene	0.38	1.5	< 1.5 U
95-63-6	1,2,4-Trimethylbenzene	0.35	1.5	< 1.5 U
87-68-3	Hexachlorobutadiene	0.62	7.5	< 7.5 U
106-93-4	Ethylene Dibromide	0.26	1.5	< 1.5 U
74-97-5	Bromochloromethane	0.48	1.5	< 1.5 U
594-20-7	2,2-Dichloropropane	0.44	1.5	< 1.5 U
142-28-9	1,3-Dichloropropane	0.31	1.5	< 1.5 U
98-82-8	Isopropylbenzene	0.35	1.5	< 1.5 U
103-65-1	n-Propylbenzene	0.41	1.5	< 1.5 U
108-86-1	Bromobenzene	0.23	1.5	< 1.5 U
95-49-8	2-Chlorotoluene	0.45	1.5	< 1.5 U
106-43-4	4-Chlorotoluene	0.42	1.5	< 1.5 U
98-06-6	tert-Butylbenzene	0.46	1.5	< 1.5 U
135-98-8	sec-Butylbenzene	0.36	1.5	< 1.5 U
99-87-6	4-Isopropyltoluene	0.35	1.5	< 1.5 U
104-51-8	n-Butylbenzene	0.39	1.5	< 1.5 U
120-82-1	1,2,4-Trichlorobenzene	0.50	7.5	< 7.5 U
91-20-3	Naphthalene	0.64	7.5	< 7.5 U
87-61-6	1,2,3-Trichlorobenzene	0.46	7.5	< 7.5 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	104%
Bromofluorobenzene	96.4%
d4-1,2-Dichlorobenzene	102%

FORM I

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-090611	Method Blank	Low	102%	102%	95.7%	99.4%	0
LCS-090611	Lab Control	Low	94.1%	101%	97.8%	102%	0
LCSD-090611	Lab Control Dup	Low	97.9%	104%	99.1%	102%	0
TK50A	FRP-083011-001	Low	113%	102%	96.7%	103%	0
TK50B	FRP-083011-002	Low	114%	101%	95.4%	100%	0
TK50C	FRP-083011-003	Low	112%	103%	94.6%	99.9%	0
TK50D	FRP-083011-004	Low	110%	102%	94.2%	102%	0
TK50E	FRP-083011-005	Low	111%	102%	96.9%	102%	0
TK50F	FRP-083011-006	Low	112%	102%	96.4%	99.4%	0
TK50G	FRP-083011-007	Low	111%	103%	95.6%	103%	0
TK50H	FRP-083011-008	Low	111%	103%	95.1%	103%	0
TK50I	FRP-083011-010	Low	114%	103%	95.1%	99.7%	0
TK50J	FRP-083011-011	Low	113%	103%	92.4%	100%	0
TK50K	FRP-083011-012	Low	112%	99.4%	81.2%	96.7%	0
TK50L	FRP-083011-013	Low	114%	102%	93.1%	100%	0
TK50M	FRP-083011-014	Low	117%	103%	93.7%	103%	0
TK50N	FRP-083011-015	Low	115%	103%	91.9%	100%	0
MB-090711	Method Blank	Low	97.3%	100%	92.9%	98.3%	0
LCS-090711	Lab Control	Low	94.4%	100%	96.1%	98.4%	0
LCSD-090711	Lab Control Dup	Low	97.3%	102%	96.0%	99.4%	0
TK50O	FRP-083011-016	Low	109%	103%	95.8%	100%	0
TK50P	FRP-083011-017	Low	111%	102%	96.6%	101%	0
TK50Q	FRP-083011-018	Low	110%	102%	96.4%	104%	0
TK50R	FRP-083011-019	Low	110%	104%	96.4%	102%	0

	LCS/MB LIMITS		QC LIMITS	
SW8260C	Low	Med	Low	Med
(DCE) = d4-1,2-Dichloroethane	79-121	76-120	75-152	69-120
(TOL) = d8-Toluene	80-120	80-120	82-115	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	64-120	76-128
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 11-18869 to 11-18886

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: LCS-090611
  LAB CONTROL SAMPLE

Lab Sample ID: LCS-090611
LIMS ID: 11-18869
Matrix: Soil
Data Release Authorized: VTS
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: FINN5/PAB
LCSD: FINN5/PAB
Date Analyzed LCS: 09/06/11 11:21
LCSD: 09/06/11 11:55

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	50.8	50.0	102%	50.9	50.0	102%	0.2%
Bromomethane	57.8	50.0	116%	58.1	50.0	116%	0.5%
Vinyl Chloride	47.6	50.0	95.2%	47.0	50.0	94.0%	1.3%
Chloroethane	55.3	50.0	111%	55.1	50.0	110%	0.4%
Methylene Chloride	53.0	50.0	106%	55.4	50.0	111%	4.4%
Acetone	231	250	92.4%	250	250	100%	7.9%
Carbon Disulfide	54.7	50.0	109%	54.0	50.0	108%	1.3%
1,1-Dichloroethene	52.7	50.0	105%	52.3	50.0	105%	0.8%
1,1-Dichloroethane	53.3	50.0	107%	53.0	50.0	106%	0.6%
trans-1,2-Dichloroethene	52.3	50.0	105%	52.4	50.0	105%	0.2%
cis-1,2-Dichloroethene	54.9	50.0	110%	55.2	50.0	110%	0.5%
Chloroform	50.8	50.0	102%	51.5	50.0	103%	1.4%
1,2-Dichloroethane	41.8	50.0	83.6%	43.6	50.0	87.2%	4.2%
2-Butanone	247	250	98.8%	274	250	110%	10.4%
1,1,1-Trichloroethane	49.0	50.0	98.0%	48.7	50.0	97.4%	0.6%
Carbon Tetrachloride	45.6	50.0	91.2%	44.4	50.0	88.8%	2.7%
Vinyl Acetate	52.8	50.0	106%	50.4	50.0	101%	4.7%
Bromodichloromethane	48.5	50.0	97.0%	48.8	50.0	97.6%	0.6%
1,2-Dichloropropane	50.1	50.0	100%	50.1	50.0	100%	0.0%
cis-1,3-Dichloropropene	50.4	50.0	101%	51.7	50.0	103%	2.5%
Trichloroethene	49.8	50.0	99.6%	48.8	50.0	97.6%	2.0%
Dibromochloromethane	50.6	50.0	101%	49.1	50.0	98.2%	3.0%
1,1,2-Trichloroethane	48.9	50.0	97.8%	51.8	50.0	104%	5.8%
Benzene	50.4	50.0	101%	50.6	50.0	101%	0.4%
trans-1,3-Dichloropropene	49.1	50.0	98.2%	50.9	50.0	102%	3.6%
2-Chloroethylvinylether	106 Q	50.0	212%	110 Q	50.0	220%	3.7%
Bromoform	49.6	50.0	99.2%	50.4	50.0	101%	1.6%
4-Methyl-2-Pentanone (MIBK)	237	250	94.8%	256	250	102%	7.7%
2-Hexanone	236	250	94.4%	258	250	103%	8.9%
Tetrachloroethene	50.9	50.0	102%	47.9	50.0	95.8%	6.1%
1,1,2,2-Tetrachloroethane	48.5	50.0	97.0%	50.5	50.0	101%	4.0%
Toluene	50.6	50.0	101%	50.4	50.0	101%	0.4%
Chlorobenzene	51.5	50.0	103%	50.4	50.0	101%	2.2%
Ethylbenzene	51.1	50.0	102%	49.5	50.0	99.0%	3.2%
Styrene	51.2	50.0	102%	50.0	50.0	100%	2.4%
Trichlorofluoromethane	55.9	50.0	112%	54.9	50.0	110%	1.8%
1,1,2-Trichloro-1,2,2-trifluoroetha	61.0 Q	50.0	122%	59.4 Q	50.0	119%	2.7%
m,p-Xylene	104	100	104%	96.5	100	96.5%	7.5%
o-Xylene	51.5	50.0	103%	50.4	50.0	101%	2.2%

TK50 : 00057

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-090611
LAB CONTROL SAMPLE

Lab Sample ID: LCS-090611
LIMS ID: 11-18869
Matrix: Soil

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,2-Dichlorobenzene	50.9	50.0	102%	49.7	50.0	99.4%	2.4%
1,3-Dichlorobenzene	51.9	50.0	104%	49.4	50.0	98.8%	4.9%
1,4-Dichlorobenzene	52.5	50.0	105%	49.7	50.0	99.4%	5.5%
Acrolein	266	250	106%	298	250	119%	11.3%
Methyl Iodide	57.0 Q	50.0	114%	57.2 Q	50.0	114%	0.4%
Bromoethane	53.7	50.0	107%	53.5	50.0	107%	0.4%
Acrylonitrile	50.7	50.0	101%	56.6	50.0	113%	11.0%
1,1-Dichloropropene	48.5	50.0	97.0%	46.3	50.0	92.6%	4.6%
Dibromomethane	49.5	50.0	99.0%	50.5	50.0	101%	2.0%
1,1,1,2-Tetrachloroethane	47.8	50.0	95.6%	46.8	50.0	93.6%	2.1%
1,2-Dibromo-3-chloropropane	44.3	50.0	88.6%	48.2	50.0	96.4%	8.4%
1,2,3-Trichloropropane	45.5	50.0	91.0%	47.6	50.0	95.2%	4.5%
trans-1,4-Dichloro-2-butene	48.3	50.0	96.6%	50.1	50.0	100%	3.7%
1,3,5-Trimethylbenzene	50.5	50.0	101%	47.8	50.0	95.6%	5.5%
1,2,4-Trimethylbenzene	51.3	50.0	103%	49.1	50.0	98.2%	4.4%
Hexachlorobutadiene	46.1	50.0	92.2%	43.4	50.0	86.8%	6.0%
Ethylene Dibromide	50.3	50.0	101%	52.3	50.0	105%	3.9%
Bromochloromethane	54.4	50.0	109%	56.0	50.0	112%	2.9%
2,2-Dichloropropane	50.7	50.0	101%	49.9	50.0	99.8%	1.6%
1,3-Dichloropropane	49.3	50.0	98.6%	50.1	50.0	100%	1.6%
Isopropylbenzene	50.7	50.0	101%	47.8	50.0	95.6%	5.9%
n-Propylbenzene	53.6	50.0	107%	50.3	50.0	101%	6.4%
Bromobenzene	49.7	50.0	99.4%	47.8	50.0	95.6%	3.9%
2-Chlorotoluene	50.6	50.0	101%	45.4	50.0	90.8%	10.8%
4-Chlorotoluene	50.2	50.0	100%	50.7	50.0	101%	1.0%
tert-Butylbenzene	49.2	50.0	98.4%	46.5	50.0	93.0%	5.6%
sec-Butylbenzene	52.7	50.0	105%	49.1	50.0	98.2%	7.1%
4-Isopropyltoluene	51.5	50.0	103%	48.1	50.0	96.2%	6.8%
n-Butylbenzene	54.4	50.0	109%	50.5	50.0	101%	7.4%
1,2,4-Trichlorobenzene	51.7	50.0	103%	48.6	50.0	97.2%	6.2%
Naphthalene	45.9	50.0	91.8%	46.9	50.0	93.8%	2.2%
1,2,3-Trichlorobenzene	48.2	50.0	96.4%	47.3	50.0	94.6%	1.9%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	94.1%	97.9%
d8-Toluene	101%	104%
Bromofluorobenzene	97.8%	99.1%
d4-1,2-Dichlorobenzene	102%	102%

FORM III

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: LCS-090711
  LAB CONTROL SAMPLE

Lab Sample ID: LCS-090711
LIMS ID: 11-18883
Matrix: Soil
Data Release Authorized: VB
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: FINN5/PAB
LCSD: FINN5/PAB
Date Analyzed LCS: 09/07/11 14:29
LCSD: 09/07/11 15:04

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	47.2	50.0	94.4%	51.5	50.0	103%	8.7%
Bromomethane	49.2	50.0	98.4%	56.3	50.0	113%	13.5%
Vinyl Chloride	43.6	50.0	87.2%	46.9	50.0	93.8%	7.3%
Chloroethane	54.2	50.0	108%	56.5	50.0	113%	4.2%
Methylene Chloride	51.5	50.0	103%	55.2	50.0	110%	6.9%
Acetone	235	250	94.0%	246	250	98.4%	4.6%
Carbon Disulfide	51.4	50.0	103%	54.8	50.0	110%	6.4%
1,1-Dichloroethene	49.1	50.0	98.2%	53.2	50.0	106%	8.0%
1,1-Dichloroethane	48.4	50.0	96.8%	52.6	50.0	105%	8.3%
trans-1,2-Dichloroethene	48.5	50.0	97.0%	53.0	50.0	106%	8.9%
cis-1,2-Dichloroethene	53.0	50.0	106%	57.0	50.0	114%	7.3%
Chloroform	48.3	50.0	96.6%	51.2	50.0	102%	5.8%
1,2-Dichloroethane	41.1	50.0	82.2%	43.6	50.0	87.2%	5.9%
2-Butanone	250	250	100%	269	250	108%	7.3%
1,1,1-Trichloroethane	45.5	50.0	91.0%	49.1	50.0	98.2%	7.6%
Carbon Tetrachloride	42.1	50.0	84.2%	45.3	50.0	90.6%	7.3%
Vinyl Acetate	46.8	50.0	93.6%	50.1	50.0	100%	6.8%
Bromodichloromethane	45.9	50.0	91.8%	49.6	50.0	99.2%	7.7%
1,2-Dichloropropane	47.9	50.0	95.8%	51.5	50.0	103%	7.2%
cis-1,3-Dichloropropene	50.0	50.0	100%	53.0	50.0	106%	5.8%
Trichloroethene	46.9	50.0	93.8%	48.9	50.0	97.8%	4.2%
Dibromochloromethane	49.5	50.0	99.0%	52.0	50.0	104%	4.9%
1,1,2-Trichloroethane	49.5	50.0	99.0%	53.1	50.0	106%	7.0%
Benzene	48.0	50.0	96.0%	51.3	50.0	103%	6.6%
trans-1,3-Dichloropropene	49.6	50.0	99.2%	51.2	50.0	102%	3.2%
2-Chloroethylvinylether	105 Q	50.0	210%	109 Q	50.0	218%	3.7%
Bromoform	50.3	50.0	101%	53.8	50.0	108%	6.7%
4-Methyl-2-Pentanone (MIBK)	237	250	94.8%	258	250	103%	8.5%
2-Hexanone	237	250	94.8%	256	250	102%	7.7%
Tetrachloroethene	47.0	50.0	94.0%	50.0	50.0	100%	6.2%
1,1,2,2-Tetrachloroethane	48.7	50.0	97.4%	52.3	50.0	105%	7.1%
Toluene	48.0	50.0	96.0%	51.7	50.0	103%	7.4%
Chlorobenzene	48.3	50.0	96.6%	51.1	50.0	102%	5.6%
Ethylbenzene	47.8	50.0	95.6%	50.1	50.0	100%	4.7%
Styrene	47.3	50.0	94.6%	48.3	50.0	96.6%	2.1%
Trichlorofluoromethane	51.5	50.0	103%	55.5	50.0	111%	7.5%
1,1,2-Trichloro-1,2,2-trifluoroetha	55.2	50.0	110%	61.3	50.0	123%	10.5%
m,p-Xylene	96.8	100	96.8%	96.9	100	96.9%	0.1%
o-Xylene	48.1	50.0	96.2%	49.1	50.0	98.2%	2.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: LCS-090711
  LAB CONTROL SAMPLE

Lab Sample ID: LCS-090711 QC Report No: TK50-AMEC Geomatrix
LIMS ID: 11-18883 Project: FRP Shoreline Investigation 2011
Matrix: Soil 8769

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
1,2-Dichlorobenzene	47.5	50.0	95.0%	47.1	50.0	94.2%	0.8%
1,3-Dichlorobenzene	48.2	50.0	96.4%	47.8	50.0	95.6%	0.8%
1,4-Dichlorobenzene	47.6	50.0	95.2%	48.2	50.0	96.4%	1.3%
Acrolein	274	250	110%	291	250	116%	6.0%
Methyl Iodide	52.6	50.0	105%	56.0	50.0	112%	6.3%
Bromoethane	50.0	50.0	100%	54.0	50.0	108%	7.7%
Acrylonitrile	50.4	50.0	101%	55.2	50.0	110%	9.1%
1,1-Dichloropropene	45.2	50.0	90.4%	48.8	50.0	97.6%	7.7%
Dibromomethane	47.6	50.0	95.2%	51.6	50.0	103%	8.1%
1,1,1,2-Tetrachloroethane	45.8	50.0	91.6%	48.6	50.0	97.2%	5.9%
1,2-Dibromo-3-chloropropane	43.5	50.0	87.0%	47.6	50.0	95.2%	9.0%
1,2,3-Trichloropropane	46.5	50.0	93.0%	49.4	50.0	98.8%	6.0%
trans-1,4-Dichloro-2-butene	47.8	50.0	95.6%	51.4	50.0	103%	7.3%
1,3,5-Trimethylbenzene	46.3	50.0	92.6%	46.6	50.0	93.2%	0.6%
1,2,4-Trimethylbenzene	46.4	50.0	92.8%	46.0	50.0	92.0%	0.9%
Hexachlorobutadiene	40.2	50.0	80.4%	38.4	50.0	76.8%	4.6%
Ethylene Dibromide	51.3	50.0	103%	53.9	50.0	108%	4.9%
Bromochloromethane	53.6	50.0	107%	56.9	50.0	114%	6.0%
2,2-Dichloropropane	46.2	50.0	92.4%	50.1	50.0	100%	8.1%
1,3-Dichloropropane	48.7	50.0	97.4%	50.0	50.0	100%	2.6%
Isopropylbenzene	46.9	50.0	93.8%	49.1	50.0	98.2%	4.6%
n-Propylbenzene	49.2	50.0	98.4%	50.0	50.0	100%	1.6%
Bromobenzene	47.1	50.0	94.2%	49.2	50.0	98.4%	4.4%
2-Chlorotoluene	45.0	50.0	90.0%	46.0	50.0	92.0%	2.2%
4-Chlorotoluene	48.0	50.0	96.0%	48.5	50.0	97.0%	1.0%
tert-Butylbenzene	43.9	50.0	87.8%	45.0	50.0	90.0%	2.5%
sec-Butylbenzene	47.2	50.0	94.4%	48.1	50.0	96.2%	1.9%
4-Isopropyltoluene	46.3	50.0	92.6%	45.9	50.0	91.8%	0.9%
n-Butylbenzene	47.9	50.0	95.8%	46.0	50.0	92.0%	4.0%
1,2,4-Trichlorobenzene	44.6	50.0	89.2%	38.0	50.0	76.0%	16.0%
Naphthalene	39.9	50.0	79.8%	33.3	50.0	66.6%	18.0%
1,2,3-Trichlorobenzene	41.9	50.0	83.8%	34.9	50.0	69.8%	18.2%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	94.4%	97.3%
d8-Toluene	100%	102%
Bromofluorobenzene	96.1%	96.0%
d4-1,2-Dichlorobenzene	98.4%	99.4%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0906

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: TK50

Project: FRP SHORELINE INVESTIGA

Lab File ID: MB0906

Lab Sample ID: MB0906

Date Analyzed: 09/06/11

Time Analyzed: 1222

Instrument ID: FINN5

Heated Purge: (Y/N) Y

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0906	LCS0906	LCS0906	1121
02	LCS0906	LCS0906	LCS0906A	1155
03	FRP-083011-0	TK50A	TK50A	1459
04	FRP-083011-0	TK50B	TK50B	1526
05	FRP-083011-0	TK50C	TK50C	1554
06	FRP-083011-0	TK50D	TK50D	1621
07	FRP-083011-0	TK50E	TK50E	1649
08	FRP-083011-0	TK50F	TK50F	1716
09	FRP-083011-0	TK50G	TK50G	1744
10	FRP-083011-0	TK50H	TK50H	1811
11	FRP-083011-0	TK50I	TK50I	1838
12	FRP-083011-0	TK50J	TK50J	1906
13	FRP-083011-0	TK50K	TK50K	1934
14	FRP-083011-0	TK50L	TK50L	2001
15	FRP-083011-0	TK50M	TK50M	2029
16	FRP-083011-0	TK50N	TK50N	2056
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COMMENTS:

FORM IV VOA

OLM3.2M

TK50:00061

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-090611
METHOD BLANK

Lab Sample ID: MB-090611
LIMS ID: 11-18869
Matrix: Soil
Data Release Authorized: VTB
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/06/11 12:22

Sample Amount: 5.00 g-dry-wt
Percent Moisture: NA

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.26	1.0	< 1.0 U
74-83-9	Bromomethane	0.19	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.24	1.0	< 1.0 U
75-00-3	Chloroethane	0.46	1.0	< 1.0 U
75-09-2	Methylene Chloride	0.64	2.0	< 2.0 U
67-64-1	Acetone	0.48	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.56	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	0.34	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	0.20	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	0.27	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	0.24	1.0	< 1.0 U
67-66-3	Chloroform	0.23	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.19	1.0	< 1.0 U
78-93-3	2-Butanone	0.51	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.23	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.21	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.38	5.0	< 5.0 U
75-27-4	Bromodichloromethane	0.25	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	0.16	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	0.23	1.0	< 1.0 U
79-01-6	Trichloroethene	0.21	1.0	< 1.0 U
124-48-1	Dibromochloromethane	0.27	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	0.29	1.0	< 1.0 U
71-43-2	Benzene	0.30	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	0.22	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.28	5.0	< 5.0 U
75-25-2	Bromoform	0.30	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.42	5.0	< 5.0 U
591-78-6	2-Hexanone	0.44	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.26	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.25	1.0	< 1.0 U
108-88-3	Toluene	0.15	1.0	< 1.0 U
108-90-7	Chlorobenzene	0.22	1.0	< 1.0 U
100-41-4	Ethylbenzene	0.20	1.0	< 1.0 U
100-42-5	Styrene	0.14	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	0.27	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.29	2.0	< 2.0 U
179601-23-1	m,p-Xylene	0.39	1.0	< 1.0 U
95-47-6	o-Xylene	0.22	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	0.29	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.23	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.23	1.0	< 1.0 U
107-02-8	Acrolein	3.8	50	< 50 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-090611
METHOD BLANK

Lab Sample ID: MB-090611
LIMS ID: 11-18869
Matrix: Soil
Date Analyzed: 09/06/11 12:22

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.22	1.0	< 1.0 U
74-96-4	Bromoethane	0.44	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	5.0	< 5.0 U
563-58-6	1,1-Dichloropropene	0.31	1.0	< 1.0 U
74-95-3	Dibromomethane	0.15	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	0.23	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	0.59	5.0	< 5.0 U
96-18-4	1,2,3-Trichloropropane	0.52	2.0	< 2.0 U
110-57-6	trans-1,4-Dichloro-2-butene	0.44	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	0.25	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	0.23	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	0.41	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	0.18	1.0	< 1.0 U
74-97-5	Bromochloromethane	0.32	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	0.29	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	0.21	1.0	< 1.0 U
98-82-8	Isopropylbenzene	0.23	1.0	< 1.0 U
103-65-1	n-Propylbenzene	0.27	1.0	< 1.0 U
108-86-1	Bromobenzene	0.15	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	0.30	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	0.28	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	0.31	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	0.24	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	0.24	1.0	< 1.0 U
104-51-8	n-Butylbenzene	0.26	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	0.33	5.0	< 5.0 U
91-20-3	Naphthalene	0.43	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	0.30	5.0	< 5.0 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	102%
Bromofluorobenzene	95.7%
d4-1,2-Dichlorobenzene	99.4%

FORM I

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0907

Lab Name: ANALYTICAL RESOURCES INC

Client: AMEC GEOMATRIX

ARI Job No: TK50

Project: FRP SHORELINE INVESTIGA

Lab File ID: MB0907

Lab Sample ID: MB0907

Date Analyzed: 09/07/11

Time Analyzed: 1531

Instrument ID: FINN5

Heated Purge: (Y/N) Y

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0907	LCS0907	LCS0907	1429
02	LCS0907	LCS0907	LCS0907A	1504
03	FRP-083011-0	TK50O	TK50O	1754
04	FRP-083011-0	TK50P	TK50P	1821
05	FRP-083011-0	TK50Q	TK50Q	1849
06	FRP-083011-0	TK50R	TK50R	1916
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COMMENTS:

FORM IV VOA

OLM3.2M

TK50:0006H

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C Sample ID: MB-090711
  METHOD BLANK

Lab Sample ID: MB-090711
LIMS ID: 11-18883
Matrix: Soil
Data Release Authorized: VN
Reported: 09/10/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

Instrument/Analyst: FINN5/PAB
Date Analyzed: 09/07/11 15:31

Sample Amount: 5.00 g-dry-wt
Percent Moisture: NA

CAS Number	Analyte	MDL	RL	Result
74-87-3	Chloromethane	0.26	1.0	< 1.0 U
74-83-9	Bromomethane	0.19	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.24	1.0	< 1.0 U
75-00-3	Chloroethane	0.46	1.0	< 1.0 U
75-09-2	Methylene Chloride	0.64	2.0	< 2.0 U
67-64-1	Acetone	0.48	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.56	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	0.34	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	0.20	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	0.27	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	0.24	1.0	< 1.0 U
67-66-3	Chloroform	0.23	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.19	1.0	< 1.0 U
78-93-3	2-Butanone	0.51	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.23	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.21	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.38	5.0	< 5.0 U
75-27-4	Bromodichloromethane	0.25	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	0.16	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	0.23	1.0	< 1.0 U
79-01-6	Trichloroethene	0.21	1.0	< 1.0 U
124-48-1	Dibromochloromethane	0.27	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	0.29	1.0	< 1.0 U
71-43-2	Benzene	0.30	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	0.22	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.28	5.0	< 5.0 U
75-25-2	Bromoform	0.30	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.42	5.0	< 5.0 U
591-78-6	2-Hexanone	0.44	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.26	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.25	1.0	< 1.0 U
108-88-3	Toluene	0.15	1.0	< 1.0 U
108-90-7	Chlorobenzene	0.22	1.0	< 1.0 U
100-41-4	Ethylbenzene	0.20	1.0	< 1.0 U
100-42-5	Styrene	0.14	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	0.27	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.29	2.0	< 2.0 U
179601-23-1	m,p-Xylene	0.39	1.0	< 1.0 U
95-47-6	o-Xylene	0.22	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	0.29	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.23	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.23	1.0	< 1.0 U
107-02-8	Acrolein	3.8	50	< 50 U

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: MB-090711
METHOD BLANK

Lab Sample ID: MB-090711
LIMS ID: 11-18883
Matrix: Soil
Date Analyzed: 09/07/11 15:31

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

CAS Number	Analyte	MDL	RL	Result
74-88-4	Methyl Iodide	0.22	1.0	< 1.0 U
74-96-4	Bromoethane	0.44	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	5.0	< 5.0 U
563-58-6	1,1-Dichloropropene	0.31	1.0	< 1.0 U
74-95-3	Dibromomethane	0.15	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	0.23	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	0.59	5.0	< 5.0 U
96-18-4	1,2,3-Trichloropropane	0.52	2.0	< 2.0 U
110-57-6	trans-1,4-Dichloro-2-butene	0.44	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	0.25	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	0.23	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	0.41	5.0	< 5.0 U
106-93-4	Ethylene Dibromide	0.18	1.0	< 1.0 U
74-97-5	Bromochloromethane	0.32	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	0.29	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	0.21	1.0	< 1.0 U
98-82-8	Isopropylbenzene	0.23	1.0	< 1.0 U
103-65-1	n-Propylbenzene	0.27	1.0	< 1.0 U
108-86-1	Bromobenzene	0.15	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	0.30	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	0.28	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	0.31	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	0.24	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	0.24	1.0	< 1.0 U
104-51-8	n-Butylbenzene	0.26	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	0.33	5.0	< 5.0 U
91-20-3	Naphthalene	0.43	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	0.30	5.0	< 5.0 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.3%
d8-Toluene	100%
Bromofluorobenzene	92.9%
d4-1,2-Dichlorobenzene	98.3%

FORM I

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP SHORELINE INVESTIGATION SDG No.: TK50

Lab File ID: BFB0817A BFB Injection Date: 08/17/11

Instrument ID: FINN5 BFB Injection Time: 1806

GC Column: RTX502.2 ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	26.4
75	30.0 - 66.0% of mass 95	52.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.8 (0.9)1
174	50.0 - 101.0% of mass 95	94.0
175	4.0 - 9.0% of mass 174	6.9 (7.3)1
176	93.0 - 101.0% of mass 174	90.9 (96.7)1
177	5.0 - 9.0% of mass 176	5.4 (5.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD1	IC0817	0010817	08/17/11	1842
02	VSTD5	IC0817	0050817	08/17/11	1932
03	VSTD200	IC0817	2000817	08/17/11	1959
04	VSTD150	IC0817	1500817	08/17/11	2027
05	VSTD100	IC0817	1000817	08/17/11	2054
06	VSTD50	IC0817	0500817	08/17/11	2122
07	VSTD10	IC0817	0100817	08/17/11	2149
08	VSTD2	IC0817	0020817	08/17/11	2244
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FORM V VOA OLM3.2M

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP SHORELINE INVESTIGATION SDG No.: TK50

Lab File ID: BFB09060 BFB Injection Date: 09/06/11

Instrument ID: FINN5 BFB Injection Time: 0913

GC Column: RTX502.2 ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	25.6
75	30.0 - 66.0% of mass 95	49.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 101.0% of mass 95	92.8
175	4.0 - 9.0% of mass 174	5.7 (6.2)1
176	93.0 - 101.0% of mass 174	89.2 (96.1)1
177	5.0 - 9.0% of mass 176	5.1 (5.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	CC0906	0500906A	09/06/11	1041
02	LCS0906	LCS0906	LCS0906	09/06/11	1121
03	LCS0906	LCS0906	LCS0906A	09/06/11	1155
04	MB0906	MB0906	MB0906	09/06/11	1222
05	FRP-083011-001	TK50A	TK50A	09/06/11	1459
06	FRP-083011-002	TK50B	TK50B	09/06/11	1526
07	FRP-083011-003	TK50C	TK50C	09/06/11	1554
08	FRP-083011-004	TK50D	TK50D	09/06/11	1621
09	FRP-083011-005	TK50E	TK50E	09/06/11	1649
10	FRP-083011-006	TK50F	TK50F	09/06/11	1716
11	FRP-083011-007	TK50G	TK50G	09/06/11	1744
12	FRP-083011-008	TK50H	TK50H	09/06/11	1811
13	FRP-083011-010	TK50I	TK50I	09/06/11	1838
14	FRP-083011-011	TK50J	TK50J	09/06/11	1906
15	FRP-083011-012	TK50K	TK50K	09/06/11	1934
16	FRP-083011-013	TK50L	TK50L	09/06/11	2001
17	FRP-083011-014	TK50M	TK50M	09/06/11	2029
18	FRP-083011-015	TK50N	TK50N	09/06/11	2056
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FORM V VOA OLM3.2M

TK50:00068

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: AMEC GEOMATRIX

Lab Code: ARI Case No.: FRP SHORELINE INVESTIGATION SDG No.: TK50

Lab File ID: BFB0907 BFB Injection Date: 09/07/11

Instrument ID: FINN5 BFB Injection Time: 1320

GC Column: RTX502.2 ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	26.7
75	30.0 - 66.0% of mass 95	50.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 101.0% of mass 95	81.1
175	4.0 - 9.0% of mass 174	3.6 (4.4)1
176	93.0 - 101.0% of mass 174	79.7 (98.3)1
177	5.0 - 9.0% of mass 176	4.0 (5.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	CC0907	0500907	09/07/11	1347
02	LCS0907	LCS0907	LCS0907	09/07/11	1429
03	LCS0907	LCS0907	LCS0907A	09/07/11	1504
04	MB0907	MB0907	MB0907	09/07/11	1531
05	FRP-083011-016	TK50O	TK50O	09/07/11	1754
06	FRP-083011-017	TK50P	TK50P	09/07/11	1821
07	FRP-083011-018	TK50Q	TK50Q	09/07/11	1849
08	FRP-083011-019	TK50R	TK50R	09/07/11	1916
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FORM V VOA OLM3.2M

TK50:00065

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK50 Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 Calibration Date: 08/17/11

LAB FILE ID: RF1: 0010817 RF2: 0020817 RF5: 0050817
RF10: 0100817 RF50: 0500817

COMPOUND	RF1	RF2	RF5	RF10	RF50
Chloromethane	1.220	0.918	0.947	0.990	0.997
Vinyl Chloride	0.915	0.804	0.996	1.151	1.086
Bromomethane	0.452	0.456	0.384	0.483	0.469
Chloroethane	0.446	0.508	0.455	0.515	0.457
Trichlorofluoromethane	0.864	0.785	0.885	0.973	0.951
Acrolein		0.093	0.090	0.095	0.091
112Trichloro122Trifluoroetha	0.525	0.454	0.515	0.548	0.528
Acetone	0.274	0.203	0.225	0.221	0.200
1,1-Dichloroethene	0.461	0.432	0.456	0.482	0.472
Bromoethane	0.335	0.325	0.352	0.391	0.376
Iodomethane	0.638	0.555	0.683	0.630	0.810
Methylene Chloride		0.898	0.735	0.690	0.555
Acrylonitrile		0.168	0.188	0.206	0.197
Carbon Disulfide	1.991	1.688	1.817	1.851	1.822
Trans-1,2-Dichloroethene	0.522	0.486	0.503	0.532	0.503
Vinyl Acetate		1.046	0.938	0.967	0.851
1,1-Dichloroethane	1.143	1.042	1.102	1.186	1.130
2-Butanone	0.282	0.294	0.272	0.327	0.312
2,2-Dichloropropane	0.758	0.646	0.709	0.736	0.741
Cis-1,2-Dichloroethene	0.504	0.496	0.522	0.572	0.535
Chloroform	1.025	0.943	0.985	1.050	1.007
Bromochloromethane	0.216	0.238	0.260	0.274	0.273
1,1,1-Trichloroethane	0.822	0.723	0.774	0.831	0.830
1,1-Dichloropropene	0.613	0.580	0.606	0.659	0.610
Carbon Tetrachloride	0.590	0.527	0.590	0.630	0.591
1,2-Dichloroethane	0.598	0.585	0.621	0.681	0.616
Benzene	1.584	1.460	1.557	1.668	1.477
Trichloroethene	0.486	0.417	0.474	0.485	0.453
1,2-Dichloropropane	0.536	0.495	0.529	0.558	0.514
Bromodichloromethane	0.568	0.526	0.580	0.587	0.568
Dibromomethane	0.244	0.264	0.275	0.288	0.271
2-Chloroethyl Vinyl Ether			0.063	0.087	0.082
4-Methyl-2-Pentanone	0.118	0.126	0.128	0.156	0.142
Cis 1,3-dichloropropene	0.573	0.529	0.574	0.623	0.624
Toluene	0.882	0.761	0.856	0.902	0.826
Trans 1,3-Dichloropropene	0.464	0.424	0.465	0.517	0.521
2-Hexanone	0.337	0.422	0.370	0.521	0.441

TK50:00070

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK50 Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 Calibration Date: 08/17/11

LAB FILE ID: RF1: 0010817 RF2: 0020817 RF5: 0050817
RF10: 0100817 RF50: 0500817

COMPOUND	RF1	RF2	RF5	RF10	RF50
1,1,2-Trichloroethane	0.296	0.276	0.295	0.322	0.295
1,3-Dichloropropane	0.574	0.569	0.609	0.673	0.634
Tetrachloroethene	0.568	0.439	0.544	0.544	0.516
Chlorodibromomethane	0.453	0.412	0.443	0.484	0.489
1,2-Dibromoethane	0.306	0.292	0.318	0.357	0.340
Chlorobenzene	0.951	0.955	1.032	1.124	1.020
Ethyl Benzene	1.853	1.704	1.854	1.987	1.779
1,1,1,2-Tetrachloroethane	0.478	0.370	0.409	0.427	0.400
m,p-xylene	0.658	0.599	0.658	0.701	0.637
o-Xylene	0.599	0.575	0.632	0.700	0.645
Styrene	1.042	0.960	1.035	1.137	1.031
Bromoform	0.618	0.547	0.646	0.661	0.690
1,1,2,2-Tetrachloroethane	0.902	0.866	0.886	1.000	0.953
1,2,3-Trichloropropane		0.160	0.183	0.213	0.209
Trans-1,4-Dichloro 2-Butene		0.272	0.311	0.346	0.346
N-Propyl Benzene	4.185	3.727	4.026	4.221	4.044
Bromobenzene	0.940	0.860	0.983	1.018	0.975
Isopropyl Benzene	3.438	3.036	3.345	3.553	3.468
2-Chloro Toluene	2.665	2.299	2.543	2.763	2.455
4-Chloro Toluene	2.736	2.568	2.645	2.735	2.654
T-Butyl Benzene	2.642	2.169	2.458	2.563	2.524
1,3,5-Trimethyl Benzene	2.764	2.479	2.741	2.948	2.800
1,2,4-Trimethylbenzene	2.755	2.428	2.706	2.862	2.748
S-Butyl Benzene	3.658	3.272	3.617	3.755	3.759
4-Isopropyl Toluene	2.789	2.454	2.655	2.844	2.791
1,3-Dichlorobenzene	1.706	1.512	1.623	1.665	1.579
1,4-Dichlorobenzene	1.609	1.461	1.592	1.620	1.534
N-Butyl Benzene	3.138	2.713	2.940	3.017	2.983
1,2-Dichlorobenzene	1.446	1.348	1.470	1.586	1.460
1,2-Dibromo 3-Chloropropane		0.168	0.166	0.214	0.200
1,2,4-Trichlorobenzene		1.154	1.187	1.261	1.127
Hexachloro 1,3-Butadiene	0.826	0.939	0.904	1.008	0.894
Naphthalene		2.139	1.756	2.364	2.035
1,2,3-Trichlorobenzene		1.142	1.063	1.252	1.053
Dichlorodifluoromethane	0.614	0.407	0.498	0.564	0.658
Methyl tert-Butyl Ether	1.226	1.088	1.171	1.282	1.236

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK50 Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 Calibration Date: 08/17/11

LAB FILE ID: RF1: 0010817 RF2: 0020817 RF5: 0050817
RF10: 0100817 RF50: 0500817

COMPOUND	RF1	RF2	RF5	RF10	RF50
d4-1,2-Dichloroethane	0.646	0.688	0.648	0.671	0.680
d8-Toluene	1.172	1.214	1.191	1.202	1.194
4-Bromofluorobenzene	0.536	0.554	0.545	0.562	0.558
d4-1,2-Dichlorobenzene	0.885	0.897	0.894	0.890	0.913
Dibromofluoromethane	0.545	0.547	0.526	0.529	0.544

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK50 Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 Calibration Date: 08/17/11

LAB FILE ID: RF100: 1000817 RF150: 1500817 RF200: 2000817

COMPOUND	RF100	RF150	RF200
Chloromethane	0.992	0.994	0.916
Vinyl Chloride	1.147	1.064	0.983
Bromomethane	0.443	0.434	0.392
Chloroethane	0.444	0.440	0.427
Trichlorofluoromethane	0.955	0.949	0.921
Acrolein	0.092	0.089	0.088
112Trichloro122Trifluoroetha	0.523	0.523	0.512
Acetone	0.200	0.192	0.188
1,1-Dichloroethene	0.460	0.469	0.455
Bromoethane	0.375	0.377	0.367
Iodomethane	0.812	0.830	0.818
Methylene Chloride	0.548	0.546	0.531
Acrylonitrile	0.200	0.199	0.199
Carbon Disulfide	1.791	1.788	1.695
Trans-1,2-Dichloroethene	0.500	0.502	0.498
Vinyl Acetate	0.849	0.842	0.838
1,1-Dichloroethane	1.134	1.144	1.116
2-Butanone	0.318	0.315	0.311
2,2-Dichloropropane	0.759	0.760	0.738
Cis-1,2-Dichloroethene	0.529	0.539	0.523
Chloroform	1.003	1.013	0.974
Bromochloromethane	0.275	0.283	0.274
1,1,1-Trichloroethane	0.831	0.830	0.811
1,1-Dichloropropene	0.600	0.586	0.579
Carbon Tetrachloride	0.594	0.577	0.577
1,2-Dichloroethane	0.616	0.607	0.602
Benzene	1.440	1.382	1.236
Trichloroethene	0.453	0.443	0.440
1,2-Dichloropropane	0.505	0.496	0.489
Bromodichloromethane	0.572	0.562	0.568
Dibromomethane	0.269	0.261	0.263
2-Chloroethyl Vinyl Ether	0.094	0.097	0.104
4-Methyl-2-Pentanone	0.143	0.138	0.136
Cis 1,3-dichloropropene	0.639	0.647	0.648
Toluene	0.823	0.829	0.810
Trans 1,3-Dichloropropene	0.559	0.566	0.563
2-Hexanone	0.416	0.346	0.277

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK50 Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 Calibration Date: 08/17/11

LAB FILE ID: RF100: 1000817 RF150: 1500817 RF200: 2000817

COMPOUND	RF100	RF150	RF200
1,1,2-Trichloroethane	0.295	0.291	0.289
1,3-Dichloropropane	0.615	0.613	0.588
Tetrachloroethene	0.512	0.510	0.484
Chlorodibromomethane	0.490	0.489	0.477
1,2-Dibromoethane	0.349	0.359	0.354
Chlorobenzene	1.005	1.004	0.956
Ethyl Benzene	1.755	1.679	1.406
1,1,1,2-Tetrachloroethane	0.390	0.380	0.375
m,p-xylene	0.613	0.614	0.573
o-Xylene	0.633	0.640	0.614
Styrene	1.004	1.015	0.962
Bromoform	0.701	0.707	0.691
1,1,2,2-Tetrachloroethane	0.956	0.932	0.871
1,2,3-Trichloropropane	0.209	0.202	0.192
Trans-1,4-Dichloro 2-Butene	0.353	0.345	0.328
N-Propyl Benzene	3.899	3.569	2.917
Bromobenzene	0.955	0.971	0.943
Isopropyl Benzene	3.380	3.400	2.890
2-Chloro Toluene	2.402	2.584	2.213
4-Chloro Toluene	2.483	2.508	2.492
T-Butyl Benzene	2.452	2.528	2.347
1,3,5-Trimethyl Benzene	2.771	2.765	2.502
1,2,4-Trimethylbenzene	2.659	2.725	2.456
S-Butyl Benzene	3.533	3.427	2.925
4-Isopropyl Toluene	2.712	2.812	2.510
1,3-Dichlorobenzene	1.543	1.572	1.520
1,4-Dichlorobenzene	1.495	1.515	1.480
N-Butyl Benzene	2.921	2.889	2.643
1,2-Dichlorobenzene	1.427	1.421	1.385
1,2-Dibromo 3-Chloropropane	0.196	0.190	0.187
1,2,4-Trichlorobenzene	1.041	1.084	1.097
Hexachloro 1,3-Butadiene	0.816	0.865	0.866
Naphthalene	1.831	1.806	1.789
1,2,3-Trichlorobenzene	0.959	0.978	0.979
Dichlorodifluoromethane	0.650	0.632	0.599
Methyl tert-Butyl Ether	1.237	1.236	1.197

TK50:00074

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: AMEC GEOMATRIX

ARI Job No: TK50 Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 Calibration Date: 08/17/11

LAB FILE ID: RF100: 1000817 RF150: 1500817 RF200: 2000817

COMPOUND	RF100	RF150	RF200
d4-1,2-Dichloroethane	0.677	0.670	0.673
d8-Toluene	1.210	1.180	1.225
4-Bromofluorobenzene	0.554	0.550	0.546
d4-1,2-Dichlorobenzene	0.920	0.896	0.913
Dibromofluoromethane	0.540	0.536	0.539

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC | Client: AMEC GEOMATRIX

ARI Job No: TK50 | Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 | Calibration Date: 08/17/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
Chloromethane	AVRG	0.997	9.7
Vinyl Chloride	AVRG	1.018	11.7
Bromomethane	AVRG	0.439	7.9
Chloroethane	AVRG	0.461	7.0
Trichlorofluoromethane	AVRG	0.910	6.9
Acrolein	AVRG	0.091	2.6
112Trichloro122Trifluoroetha	AVRG	0.516	5.3
Acetone	AVRG	0.213	13.1
1,1-Dichloroethene	AVRG	0.461	3.2
Bromoethane	AVRG	0.362	6.3
Iodomethane	AVRG	0.722	15.0
Methylene Chloride	LINR		0.9991
Acrylonitrile	AVRG	0.194	6.4
Carbon Disulfide	AVRG	1.805	5.3
Trans-1,2-Dichloroethene	AVRG	0.506	2.9
Vinyl Acetate	AVRG	0.904	8.9
1,1-Dichloroethane	AVRG	1.125	3.7
2-Butanone	AVRG	0.304	6.3
2,2-Dichloropropane	AVRG	0.731	5.2
Cis-1,2-Dichloroethene	AVRG	0.528	4.4
Chloroform	AVRG	1.000	3.3
Bromochloromethane	AVRG	0.262	8.8
1,1,1-Trichloroethane	AVRG	0.806	4.8
1,1-Dichloropropene	AVRG	0.604	4.3
Carbon Tetrachloride	AVRG	0.584	4.9
1,2-Dichloroethane	AVRG	0.616	4.7
Benzene	AVRG	1.476	9.0
Trichloroethene	AVRG	0.456	5.3
1,2-Dichloropropane	AVRG	0.515	4.6
Bromodichloromethane	AVRG	0.566	3.2
Dibromomethane	AVRG	0.267	4.8
2-Chloroethyl Vinyl Ether	AVRG	0.088	16.3
4-Methyl-2-Pentanone	AVRG	0.136	8.8
Cis 1,3-dichloropropene	AVRG	0.607	7.1
Toluene	AVRG	0.836	5.3
Trans 1,3-Dichloropropene	AVRG	0.510	10.5
2-Hexanone	AVRG	0.391	19.2

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK50 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Calibration Date: 08/17/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
1,1,2-Trichloroethane	AVRG	0.295	4.3
1,3-Dichloropropane	AVRG	0.609	5.6
Tetrachloroethene	AVRG	0.515	7.8
Chlorodibromomethane	AVRG	0.467	6.1
1,2-Dibromoethane	AVRG	0.334	7.7
Chlorobenzene	AVRG	1.006	5.7
Ethyl Benzene	AVRG	1.752	9.7
1,1,1,2-Tetrachloroethane	AVRG	0.404	8.8
m,p-xylene	AVRG	0.632	6.4
o-Xylene	AVRG	0.630	5.8
Styrene	AVRG	1.023	5.4
Bromoform	AVRG	0.658	8.2
1,1,2,2-Tetrachloroethane	AVRG	0.921	5.2
1,2,3-Trichloropropane	AVRG	0.195	9.8
Trans-1,4-Dichloro 2-Butene	AVRG	0.329	8.7
N-Propyl Benzene	AVRG	3.824	11.2
Bromobenzene	AVRG	0.956	4.8
Isopropyl Benzene	AVRG	3.314	6.9
2-Chloro Toluene	AVRG	2.491	7.4
4-Chloro Toluene	AVRG	2.603	4.0
T-Butyl Benzene	AVRG	2.460	6.0
1,3,5-Trimethyl Benzene	AVRG	2.721	5.7
1,2,4-Trimethylbenzene	AVRG	2.667	5.6
S-Butyl Benzene	AVRG	3.493	8.1
4-Isopropyl Toluene	AVRG	2.696	5.4
1,3-Dichlorobenzene	AVRG	1.590	4.4
1,4-Dichlorobenzene	AVRG	1.538	4.0
N-Butyl Benzene	AVRG	2.906	5.5
1,2-Dichlorobenzene	AVRG	1.443	4.9
1,2-Dibromo 3-Chloropropane	AVRG	0.189	9.2
1,2,4-Trichlorobenzene	AVRG	1.136	6.4
Hexachloro 1,3-Butadiene	AVRG	0.890	7.0
Naphthalene	AVRG	1.960	11.6
1,2,3-Trichlorobenzene	AVRG	1.061	10.0
Dichlorodifluoromethane	AVRG	0.578	14.9
Methyl tert-Butyl Ether	AVRG	1.209	4.8

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

TK50:00077

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC | Client: AMEC GEOMATRIX

ARI Job No: TK50 | Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 | Calibration Date: 08/17/11

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
d4-1,2-Dichloroethane	AVRG	0.669	2.2
d8-Toluene	AVRG	1.198	1.5
4-Bromofluorobenzene	AVRG	0.550	1.5
d4-1,2-Dichlorobenzene	AVRG	0.901	1.4
Dibromofluoromethane	AVRG	0.538	1.4

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK50 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Cont. Calib. Date: 09/06/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1041

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
Chloromethane	0.997	1.056	0.100	AVRG	5.9	
Vinyl Chloride	1.018	0.999	0.010	AVRG	-1.9	
Bromomethane	0.439	0.519	0.010	AVRG	18.2	
Chloroethane	0.462	0.525	0.010	AVRG	13.6	
Trichlorofluoromethane	0.910	1.061	0.010	AVRG	16.6	
Acrolein	0.091	0.101	0.010	AVRG	11.0	
112Trichloro122Trifluoroetha	0.516	0.658	0.010	AVRG	27.5	<-
Acetone	0.213	0.206	0.010	AVRG	-3.3	
1,1-Dichloroethene	0.461	0.503	0.010	AVRG	9.1	
Bromoethane	0.362	0.408	0.010	AVRG	12.7	
Iodomethane	0.722	0.878	0.010	AVRG	21.6	<-
Methylene Chloride	50.000	55.882	0.010	LINR	11.8	
Acrylonitrile	0.194	0.208	0.010	AVRG	7.2	
Carbon Disulfide	1.805	2.067	0.010	AVRG	14.5	
Trans-1,2-Dichloroethene	0.506	0.555	0.010	AVRG	9.7	
Vinyl Acetate	0.904	0.976	0.010	AVRG	8.0	
1,1-Dichloroethane	1.125	1.252	0.100	AVRG	11.3	
2-Butanone	0.304	0.316	0.010	AVRG	3.9	
2,2-Dichloropropane	0.731	0.775	0.010	AVRG	6.0	
Cis-1,2-Dichloroethene	0.528	0.623	0.010	AVRG	18.0	
Chloroform	1.000	1.035	0.010	AVRG	3.5	
Bromochloromethane	0.262	0.299	0.010	AVRG	14.1	
1,1,1-Trichloroethane	0.806	0.835	0.010	AVRG	3.6	
1,1-Dichloropropene	0.604	0.605	0.010	AVRG	0.2	
Carbon Tetrachloride	0.584	0.552	0.010	AVRG	-5.5	
1,2-Dichloroethane	0.616	0.538	0.010	AVRG	-12.7	
Benzene	1.476	1.543	0.010	AVRG	4.5	
Trichloroethene	0.456	0.471	0.010	AVRG	3.3	
1,2-Dichloropropane	0.515	0.538	0.010	AVRG	4.5	
Bromodichloromethane	0.566	0.575	0.010	AVRG	1.6	
Dibromomethane	0.267	0.264	0.010	AVRG	-1.1	
2-Chloroethyl Vinyl Ether	0.088	0.192	0.010	AVRG	118.2	<-
4-Methyl-2-Pentanone	0.136	0.134	0.010	AVRG	-1.5	
Cis 1,3-dichloropropene	0.607	0.658	0.010	AVRG	8.4	
Toluene	0.836	0.884	0.010	AVRG	5.7	
Trans 1,3-Dichloropropene	0.510	0.546	0.010	AVRG	7.0	
2-Hexanone	0.391	0.384	0.010	AVRG	-1.8	

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK50 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Cont. Calib. Date: 09/06/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1041

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
1,1,2-Trichloroethane	0.295	0.307	0.010	AVRG	4.1
1,3-Dichloropropane	0.609	0.624	0.010	AVRG	2.5
Tetrachloroethene	0.515	0.544	0.010	AVRG	5.6
Chlorodibromomethane	0.467	0.493	0.010	AVRG	5.6
1,2-Dibromoethane	0.334	0.348	0.010	AVRG	4.2
Chlorobenzene	1.006	1.083	0.300	AVRG	7.6
Ethyl Benzene	1.752	1.842	0.010	AVRG	5.1
1,1,1,2-Tetrachloroethane	0.404	0.408	0.010	AVRG	1.0
m,p-xylene	0.632	0.657	0.010	AVRG	4.0
o-Xylene	0.630	0.664	0.010	AVRG	5.4
Styrene	1.023	1.082	0.010	AVRG	5.8
Bromoform	0.658	0.690	0.100	AVRG	4.9
1,1,2,2-Tetrachloroethane	0.921	0.942	0.300	AVRG	2.3
1,2,3-Trichloropropane	0.195	0.186	0.010	AVRG	-4.6
Trans-1,4-Dichloro 2-Butene	0.329	0.326	0.010	AVRG	-0.9
N-Propyl Benzene	3.824	4.276	0.010	AVRG	11.8
Bromobenzene	0.956	0.980	0.010	AVRG	2.5
Isopropyl Benzene	3.314	3.512	0.010	AVRG	6.0
2-Chloro Toluene	2.490	2.655	0.010	AVRG	6.6
4-Chloro Toluene	2.603	2.695	0.010	AVRG	3.5
T-Butyl Benzene	2.460	2.523	0.010	AVRG	2.6
1,3,5-Trimethyl Benzene	2.721	2.884	0.010	AVRG	6.0
1,2,4-Trimethylbenzene	2.667	2.822	0.010	AVRG	5.8
S-Butyl Benzene	3.493	3.808	0.010	AVRG	9.0
4-Isopropyl Toluene	2.696	2.876	0.010	AVRG	6.7
1,3-Dichlorobenzene	1.590	1.716	0.010	AVRG	7.9
1,4-Dichlorobenzene	1.538	1.671	0.010	AVRG	8.6
N-Butyl Benzene	2.906	3.236	0.010	AVRG	11.4
1,2-Dichlorobenzene	1.443	1.510	0.010	AVRG	4.6
1,2-Dibromo 3-Chloropropane	0.189	0.171	0.010	AVRG	-9.5
1,2,4-Trichlorobenzene	1.136	1.164	0.010	AVRG	2.5
Hexachloro 1,3-Butadiene	0.890	0.830	0.010	AVRG	-6.7
Naphthalene	1.960	1.729	0.010	AVRG	-11.8
1,2,3-Trichlorobenzene	1.061	0.993	0.010	AVRG	-6.4
Dichlorodifluoromethane	0.578	0.476	0.010	AVRG	-17.6
Methyl tert-Butyl Ether	1.209	1.173	0.010	AVRG	-3.0

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

TK50:00086

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK50 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Cont. Calib. Date: 09/06/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1041

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.669	0.649	0.010	AVRG	-3.0
d8-Toluene	1.198	1.235	0.010	AVRG	3.1
4-Bromofluorobenzene	0.551	0.544	0.010	AVRG	-1.3
d4-1,2-Dichlorobenzene	0.901	0.905	0.010	AVRG	0.4
Dibromofluoromethane	0.538	0.585	0.010	AVRG	8.7

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK50 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Cont. Calib. Date: 09/07/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1347

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
Chloromethane	0.997	1.005	0.100	AVRG	0.8	
Vinyl Chloride	1.018	0.941	0.010	AVRG	-7.6	
Bromomethane	0.439	0.409	0.010	AVRG	-6.8	
Chloroethane	0.462	0.517	0.010	AVRG	11.9	
Trichlorofluoromethane	0.910	1.014	0.010	AVRG	11.4	
Acrolein	0.091	0.099	0.010	AVRG	8.8	
112Trichloro122Trifluoroetha	0.516	0.618	0.010	AVRG	19.8	
Acetone	0.213	0.201	0.010	AVRG	-5.6	
1,1-Dichloroethene	0.461	0.478	0.010	AVRG	3.7	
Bromoethane	0.362	0.390	0.010	AVRG	7.7	
Iodomethane	0.722	0.758	0.010	AVRG	5.0	
Methylene Chloride	50.000	54.708	0.010	LINR	9.4	
Acrylonitrile	0.194	0.208	0.010	AVRG	7.2	
Carbon Disulfide	1.805	1.960	0.010	AVRG	8.6	
Trans-1,2-Dichloroethene	0.506	0.519	0.010	AVRG	2.6	
Vinyl Acetate	0.904	0.891	0.010	AVRG	-1.4	
1,1-Dichloroethane	1.125	1.198	0.100	AVRG	6.5	
2-Butanone	0.304	0.308	0.010	AVRG	1.3	
2,2-Dichloropropane	0.731	0.724	0.010	AVRG	-1.0	
Cis-1,2-Dichloroethene	0.528	0.581	0.010	AVRG	10.0	
Chloroform	1.000	1.028	0.010	AVRG	2.8	
Bromochloromethane	0.262	0.295	0.010	AVRG	12.6	
1,1,1-Trichloroethane	0.806	0.791	0.010	AVRG	-1.9	
1,1-Dichloropropene	0.604	0.553	0.010	AVRG	-8.4	
Carbon Tetrachloride	0.584	0.528	0.010	AVRG	-9.6	
1,2-Dichloroethane	0.616	0.530	0.010	AVRG	-14.0	
Benzene	1.476	1.486	0.010	AVRG	0.7	
Trichloroethene	0.456	0.449	0.010	AVRG	-1.5	
1,2-Dichloropropane	0.515	0.520	0.010	AVRG	1.0	
Bromodichloromethane	0.566	0.560	0.010	AVRG	-1.1	
Dibromomethane	0.267	0.264	0.010	AVRG	-1.1	
2-Chloroethyl Vinyl Ether	0.088	0.189	0.010	AVRG	114.8	<-
4-Methyl-2-Pentanone	0.136	0.134	0.010	AVRG	-1.5	
Cis 1,3-dichloropropene	0.607	0.626	0.010	AVRG	3.1	
Toluene	0.836	0.851	0.010	AVRG	1.8	
Trans 1,3-Dichloropropene	0.510	0.509	0.010	AVRG	-0.2	
2-Hexanone	0.391	0.365	0.010	AVRG	-6.6	

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

TK50:00082

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK50 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Cont. Calib. Date: 09/07/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1347

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
1,1,2-Trichloroethane	0.295	0.303	0.010	AVRG	2.7	
1,3-Dichloropropane	0.609	0.607	0.010	AVRG	-0.3	
Tetrachloroethene	0.515	0.507	0.010	AVRG	-1.6	
Chlorodibromomethane	0.467	0.479	0.010	AVRG	2.6	
1,2-Dibromoethane	0.334	0.349	0.010	AVRG	4.5	
Chlorobenzene	1.006	1.035	0.300	AVRG	2.9	
Ethyl Benzene	1.752	1.765	0.010	AVRG	0.7	
1,1,1,2-Tetrachloroethane	0.404	0.384	0.010	AVRG	-5.0	
m,p-xylene	0.632	0.649	0.010	AVRG	2.7	
o-Xylene	0.630	0.644	0.010	AVRG	2.2	
Styrene	1.023	1.030	0.010	AVRG	0.7	
Bromoform	0.658	0.647	0.100	AVRG	-1.7	
1,1,2,2-Tetrachloroethane	0.921	0.888	0.300	AVRG	-3.6	
1,2,3-Trichloropropane	0.195	0.178	0.010	AVRG	-8.7	
Trans-1,4-Dichloro 2-Butene	0.329	0.302	0.010	AVRG	-8.2	
N-Propyl Benzene	3.824	3.798	0.010	AVRG	-0.7	
Bromobenzene	0.956	0.901	0.010	AVRG	-5.8	
Isopropyl Benzene	3.314	3.148	0.010	AVRG	-5.0	
2-Chloro Toluene	2.490	2.280	0.010	AVRG	-8.4	
4-Chloro Toluene	2.603	2.520	0.010	AVRG	-3.2	
T-Butyl Benzene	2.460	2.248	0.010	AVRG	-8.6	
1,3,5-Trimethyl Benzene	2.721	2.556	0.010	AVRG	-6.1	
1,2,4-Trimethylbenzene	2.667	2.570	0.010	AVRG	-3.6	
S-Butyl Benzene	3.493	3.416	0.010	AVRG	-2.2	
4-Isopropyl Toluene	2.696	2.532	0.010	AVRG	-6.1	
1,3-Dichlorobenzene	1.590	1.542	0.010	AVRG	-3.0	
1,4-Dichlorobenzene	1.538	1.502	0.010	AVRG	-2.3	
N-Butyl Benzene	2.906	2.822	0.010	AVRG	-2.9	
1,2-Dichlorobenzene	1.443	1.416	0.010	AVRG	-1.9	
1,2-Dibromo 3-Chloropropane	0.189	0.165	0.010	AVRG	-12.7	
1,2,4-Trichlorobenzene	1.136	1.057	0.010	AVRG	-7.0	
Hexachloro 1,3-Butadiene	0.890	0.744	0.010	AVRG	-16.4	
Naphthalene	1.960	1.745	0.010	AVRG	-11.0	
1,2,3-Trichlorobenzene	1.061	0.950	0.010	AVRG	-10.5	
Dichlorodifluoromethane	0.578	0.432	0.010	AVRG	-25.2	<-
Methyl tert-Butyl Ether	1.209	1.132	0.010	AVRG	-6.4	

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

TK50:00083

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK50 — Project: FRP SHORELINE INVESTIGATION

Instrument ID: FINN5 — Cont. Calib. Date: 09/07/11

Init. Calib. Date: 08/17/11 — Cont. Calib. Time: 1347

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.669	0.642	0.010	AVRG	-4.0
d8-Toluene	1.198	1.231	0.010	AVRG	2.8
4-Bromofluorobenzene	0.551	0.548	0.010	AVRG	-0.5
d4-1,2-Dichlorobenzene	0.901	0.914	0.010	AVRG	1.4
Dibromofluoromethane	0.538	0.586	0.010	AVRG	8.9

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

TK50:00084

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK50 — Project: FRP SHORELINE INVESTIGATION

Ical Midpoint ID: 0500817 — Ical Date: 08/17/11

Instrument ID: FINN5 — Project Run Date: 09/06/11

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	102251	6.44	137593	7.45	119527	10.59
	UPPER LIMIT	204502	6.94	275186	7.95	239054	11.09
	LOWER LIMIT	51126	5.94	68796	6.95	59764	10.09
	Sample ID						
01	LCS0906	119914	6.44	174356	7.45	155649	10.58
02	LCS0906	116492	6.44	171754	7.44	157567	10.58
03	MB0906	113564	6.43	162940	7.44	150296	10.57
04	FRP-083011-0	109117	6.43	161240	7.44	150175	10.57
05	FRP-083011-0	109829	6.44	163104	7.45	151863	10.59
06	FRP-083011-0	109890	6.43	159842	7.43	149285	10.57
07	FRP-083011-0	109881	6.44	162132	7.45	150072	10.58
08	FRP-083011-0	108540	6.42	160089	7.43	148913	10.57
09	FRP-083011-0	111664	6.43	165997	7.43	155019	10.57
10	FRP-083011-0	111643	6.44	162931	7.45	151090	10.58
11	FRP-083011-0	111062	6.42	162734	7.43	151329	10.57
12	FRP-083011-0	113300	6.44	165345	7.45	151434	10.58
13	FRP-083011-0	115543	6.44	167353	7.45	151565	10.59
14	FRP-083011-0	105493	6.42	155488	7.43	126099	10.57
15	FRP-083011-0	107540	6.43	158770	7.44	145890	10.58
16	FRP-083011-0	105518	6.44	159427	7.45	148210	10.59
17	FRP-083011-0	106536	6.43	159238	7.43	143793	10.57
18							
19							
20							
21							
22							

IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK50 — Project: FRP SHORELINE INVESTIGATION

Ical Midpoint ID: 0500817 — Ical Date: 08/17/11

Instrument ID: FINN5 — Project Run Date: 09/06/11

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	61044	13.27				
	UPPER LIMIT	122088	13.77				
	LOWER LIMIT	30522	12.77				
	Sample ID						
01	LCS0906	81426	13.27				
02	LCS0906	84406	13.27				
03	MB0906	77312	13.26				
04	FRP-083011-0	77723	13.26				
05	FRP-083011-0	77395	13.28				
06	FRP-083011-0	75935	13.26				
07	FRP-083011-0	74504	13.27				
08	FRP-083011-0	78324	13.26				
09	FRP-083011-0	82412	13.26				
10	FRP-083011-0	76465	13.27				
11	FRP-083011-0	77079	13.26				
12	FRP-083011-0	67176	13.27				
13	FRP-083011-0	69065	13.27				
14	FRP-083011-0	46445	13.25				
15	FRP-083011-0	69255	13.26				
16	FRP-083011-0	69955	13.27				
17	FRP-083011-0	65487	13.26				
18							
19							
20							
21							
22							

IS4 (DCB) = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK50 — Project: FRP SHORELINE INVESTIGATION

Ical Midpoint ID: 0500817 — Ical Date: 08/17/11

Instrument ID: FINN5 — Project Run Date: 09/07/11

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	102251	6.44	137593	7.45	119527	10.59
	UPPER LIMIT	204502	6.94	275186	7.95	239054	11.09
	LOWER LIMIT	51126	5.94	68796	6.95	59764	10.09
	Sample ID						
01	LCS0907	119620	6.42	174025	7.43	155888	10.57
02	LCS0907	120444	6.43	176270	7.44	160536	10.58
03	MB0907	115132	6.45	164415	7.45	146896	10.59
04	FRP-083011-0	113695	6.44	163203	7.45	150655	10.58
05	FRP-083011-0	111257	6.42	163511	7.43	152257	10.57
06	FRP-083011-0	107182	6.45	156089	7.46	143961	10.59
07	FRP-083011-0	110944	6.43	159612	7.44	150128	10.58
08							
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19							
20							
21							
22							

IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC — Client: AMEC GEOMATRIX

ARI Job No: TK50 — Project: FRP SHORELINE INVESTIGATION

Ical Midpoint ID: 0500817 — Ical Date: 08/17/11

Instrument ID: FINN5 — Project Run Date: 09/07/11

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	61044	13.27				
	UPPER LIMIT	122088	13.77				
	LOWER LIMIT	30522	12.77				
	Sample ID						
01	LCS0907	81253	13.26				
02	LCS0907	82615	13.27				
03	MB0907	71040	13.28				
04	FRP-083011-0	77103	13.27				
05	FRP-083011-0	78582	13.25				
06	FRP-083011-0	74298	13.28				
07	FRP-083011-0	77379	13.26				
08							
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17							
18							
19							
20							
21							
22							

IS4 (DCB) = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

Metals Analysis
Report and Summary QC Forms

ARI Job ID: TK50

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK50

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
FRP-083011-001	TK50A	11-18869	
FRP-083011-001D	TK50ADUP	11-18869	
FRP-083011-001S	TK50ASPK	11-18869	
FRP-083011-002	TK50B	11-18870	
PBS	TK50MB1	11-18870	
LCSS	TK50MB1SPK	11-18870	
FRP-083011-003	TK50C	11-18871	
FRP-083011-004	TK50D	11-18872	
FRP-083011-005	TK50E	11-18873	
FRP-083011-006	TK50F	11-18874	
FRP-083011-007	TK50G	11-18875	
FRP-083011-008	TK50H	11-18876	
FRP-083011-010	TK50I	11-18877	
FRP-083011-011	TK50J	11-18878	
FRP-083011-012	TK50K	11-18879	
FRP-083011-013	TK50L	11-18880	
FRP-083011-014	TK50M	11-18881	
FRP-083011-015	TK50N	11-18882	
FRP-083011-016	TK50O	11-18883	
FRP-083011-017	TK50P	11-18884	
FRP-083011-018	TK50Q	11-18885	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 9/12/11 Title: Inorganics Director

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK50

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
FRP-083011-019	TK50R	11-18886	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 9/12/11 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-001
SAMPLE

Lab Sample ID: TK50A
LIMS ID: 11-18869
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 92.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	3.6	5	**9,590**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.089	0.2	**1.5**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.11	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.27	0.5	**30.0**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.050	0.2	**11.8**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.13	2	2	U
CLP	09/06/11	7471A	09/08/11	**7439-97-6**	**Mercury**	0.0013	0.02	**0.03**	
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.30	1	**40**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.65	5	5	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.53	5	5	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.060	0.3	**32.9**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.12	1	**28**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-002
SAMPLE

Lab Sample ID: TK50B
LIMS ID: 11-18870
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 90.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	3.8	5	**7,340**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.093	0.2	**1.7**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.12	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.29	0.5	**9.9**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.054	0.2	**10.4**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.14	2	2	U
CLP	09/06/11	7471A	09/08/11	7439-97-6	Mercury	0.0013	0.02	0.02	U
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.32	1	**7**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.70	5	5	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.57	5	5	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.065	0.3	**37.5**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.13	1	**20**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-003
SAMPLE

Lab Sample ID: TK50C
LIMS ID: 11-18871
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 85.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	4.0	6	**9,460**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.10	0.2	**2.0**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.12	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.31	0.6	**12.8**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.057	0.2	**12.2**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.15	2	2	U
CLP	09/06/11	7471A	09/08/11	7439-97-6	Mercury	0.0014	0.03	0.03	U
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.34	1	**8**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.74	6	6	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.60	6	6	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.068	0.3	**50.0**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.14	1	**22**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

TK50:00094

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-004
SAMPLE

Lab Sample ID: TK50D
LIMS ID: 11-18872
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 73.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	4.5	6	**11,900**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.11	0.3	**3.2**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.14	0.3	0.3	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.34	0.6	**15.0**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.063	0.3	**18.0**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.16	3	3	U
CLP	09/06/11	7471A	09/08/11	7439-97-6	Mercury	0.0016	0.03	0.03	U
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.38	1	**9**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.82	6	6	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.67	6	6	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.076	0.4	**53.5**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.15	1	**22**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-005
SAMPLE

Lab Sample ID: TK50E
LIMS ID: 11-18873
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 79.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	4.2	6	**6,790**	
3050B	09/06/11	200.8	09/09/11	**7440-38-2**	**Arsenic**	0.11	0.2	**1.8**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.32	0.6	**10.1**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.060	0.2	**10.2**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.15	2	2	U
CLP	09/06/11	7471A	09/08/11	7439-97-6	Mercury	0.0012	0.02	0.02	U
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.36	1	**7**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.77	6	6	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.63	6	6	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.072	0.4	**36.3**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.14	1	**19**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-006
SAMPLE

Lab Sample ID: TK50F
LIMS ID: 11-18874
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 79.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	4.2	6	**8,460**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.11	0.2	**1.9**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.32	0.6	**11.3**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.060	0.2	**15.7**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.16	2	2	U
CLP	09/06/11	7471A	09/08/11	7439-97-6	Mercury	0.0012	0.02	0.02	U
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.36	1	**11**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.78	6	6	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.63	6	6	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.072	0.4	**38.1**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.14	1	**27**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-007
SAMPLE

Lab Sample ID: TK50G
LIMS ID: 11-18875
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 79.7%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	4.3	6	**7,540**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.10	0.2	**1.3**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.32	0.6	**9.5**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.060	0.2	**9.9**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.16	2	2	U
CLP	09/06/11	7471A	09/08/11	7439-97-6	Mercury	0.0012	0.02	0.02	U
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.36	1	**7**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.78	6	6	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.64	6	6	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.072	0.4	**38.1**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.14	1	**22**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-008
SAMPLE

Lab Sample ID: TK50H
LIMS ID: 11-18876
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 84.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	4.0	6	**9,040**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.10	0.2	**1.3**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.12	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.30	0.6	**15.8**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.056	0.2	**11.8**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.15	2	2	U
CLP	09/06/11	7471A	09/08/11	7439-97-6	Mercury	0.0011	0.02	0.02	U
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.34	1	**11**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.73	6	6	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.60	6	6	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.067	0.3	**43.9**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.13	1	**25**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-010
SAMPLE

Lab Sample ID: TK50I
LIMS ID: 11-18877
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 90.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	3.8	5	**11,500**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.095	0.2	**3.3**	
3050B	09/06/11	6010B	09/08/11	**7440-43-9**	**Cadmium**	0.12	0.2	**0.3**	
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.29	0.5	**17.3**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.053	0.2	**352**	
3050B	09/06/11	6010B	09/08/11	**7439-92-1**	**Lead**	0.14	2	**15**	
CLP	09/06/11	7471A	09/08/11	**7439-97-6**	**Mercury**	0.13	3	**74**	
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.32	1	**14**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.70	5	5	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.57	5	5	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.064	0.3	**49.7**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.13	1	**58**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

TK50 : 00100

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-011
SAMPLE

Lab Sample ID: TK50J
LIMS ID: 11-18878
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 90.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	3.8	5	**11,100**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.093	0.2	**3.2**	
3050B	09/06/11	6010B	09/08/11	**7440-43-9**	**Cadmium**	0.12	0.2	**0.3**	
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.29	0.5	**15.8**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.054	0.2	**349**	
3050B	09/06/11	6010B	09/08/11	**7439-92-1**	**Lead**	0.14	2	**17**	
CLP	09/06/11	7471A	09/08/11	**7439-97-6**	**Mercury**	0.12	2	**83**	
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.32	1	**13**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.70	5	5	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.57	5	5	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.064	0.3	**46.6**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.13	1	**58**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-012
SAMPLE

Lab Sample ID: TK50K
LIMS ID: 11-18879
Matrix: Soil
Data Release Authorized
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 90.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	3.8	5	**9,970**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.090	0.2	**2.0**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.12	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.29	0.5	**11.9**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.054	0.2	**18.2**	
3050B	09/06/11	6010B	09/08/11	**7439-92-1**	**Lead**	0.14	2	**2**	
CLP	09/06/11	7471A	09/08/11	**7439-97-6**	**Mercury**	0.0011	0.02	**0.22**	
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.32	1	**9**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.70	5	5	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.57	5	5	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.065	0.3	**36.6**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.13	1	**28**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-013
SAMPLE

Lab Sample ID: TK50L
LIMS ID: 11-18880
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 90.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	3.9	5	**10,500**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.095	0.2	**2.0**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.12	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.29	0.5	**12.5**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.055	0.2	**20.5**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.14	2	2	U
CLP	09/06/11	7471A	09/08/11	**7439-97-6**	**Mercury**	0.0013	0.02	**0.21**	
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.33	1	**10**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.71	5	5	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.58	5	5	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.065	0.3	**37.5**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.13	1	**28**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-014
SAMPLE

Lab Sample ID: TK50M
LIMS ID: 11-18881
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 87.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	3.8	5	**10,400**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.092	0.2	**2.4**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.12	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.29	0.5	**14.7**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.054	0.2	**20.8**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.14	2	2	U
CLP	09/06/11	7471A	09/08/11	**7439-97-6**	**Mercury**	0.0022	0.04	**2.45**	
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.32	1	**9**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.70	5	5	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.57	5	5	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.065	0.3	**43.3**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.13	1	**25**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-015
SAMPLE

Lab Sample ID: TK50N
LIMS ID: 11-18882
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 76.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	4.6	7	**12,100**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.10	0.2	**1.7**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.14	0.3	0.3	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.35	0.7	**14.9**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.065	0.3	**16.1**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.17	3	3	U
CLP	09/06/11	7471A	09/08/11	**7439-97-6**	**Mercury**	0.0013	0.03	**0.03**	
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.39	1	**8**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.85	7	7	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.69	7	7	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.078	0.4	**45.4**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.16	1	**26**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-016
SAMPLE

Lab Sample ID: TK50O
LIMS ID: 11-18883
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 82.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	4.3	6	**8,320**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.10	0.2	**1.1**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.32	0.6	**12.1**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.060	0.2	**8.5**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.16	2	2	U
CLP	09/06/11	7471A	09/08/11	7439-97-6	Mercury	0.0013	0.03	0.03	U
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.36	1	**7**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.78	6	6	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.63	6	6	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.072	0.4	**31.3**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.14	1	**23**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-017
SAMPLE

Lab Sample ID: TK50P
LIMS ID: 11-18884
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 79.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	4.3	6	**7,030**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.11	0.2	**0.8**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.13	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.33	0.6	**9.7**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.061	0.2	**9.0**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.16	2	2	U
CLP	09/06/11	7471A	09/08/11	7439-97-6	Mercury	0.0013	0.03	0.03	U
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.36	1	**7**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.79	6	6	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.64	6	6	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.073	0.4	**36.9**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.15	1	**21**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-018
SAMPLE

Lab Sample ID: TK50Q
LIMS ID: 11-18885
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 84.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	4.0	6	**7,300**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.095	0.2	**2.1**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.12	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.31	0.6	**8.4**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.057	0.2	**10.6**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.15	2	2	U
CLP	09/06/11	7471A	09/08/11	7439-97-6	Mercury	0.0012	0.02	0.02	U
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.34	1	**8**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.74	6	6	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.60	6	6	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.068	0.3	**35.5**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.14	1	**22**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

TK50:00168

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-019
SAMPLE

Lab Sample ID: TK50R
LIMS ID: 11-18886
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Percent Total Solids: 81.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	**7429-90-5**	**Aluminum**	4.0	6	**6,080**	
3050B	09/06/11	200.8	09/08/11	**7440-38-2**	**Arsenic**	0.10	0.2	**1.7**	
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.12	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	**7440-47-3**	**Chromium**	0.30	0.6	**8.5**	
3050B	09/06/11	6010B	09/08/11	**7440-50-8**	**Copper**	0.056	0.2	**9.0**	
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.15	2	2	U
CLP	09/06/11	7471A	09/08/11	7439-97-6	Mercury	0.0012	0.02	0.02	U
3050B	09/06/11	6010B	09/08/11	**7440-02-0**	**Nickel**	0.34	1	**7**	
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.73	6	6	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.60	6	6	U
3050B	09/06/11	6010B	09/08/11	**7440-62-2**	**Vanadium**	0.068	0.3	**32.6**	
3050B	09/06/11	6010B	09/08/11	**7440-66-6**	**Zinc**	0.14	1	**20**	

Reported in mg/kg-dry (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-001
MATRIX SPIKE

Lab Sample ID: TK50A
LIMS ID: 11-18869
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Aluminum	6010B	9,590	10,300	200	355%	H
Arsenic	200.8	1.5	27.7	25.5	103%	
Cadmium	6010B	0.2 U	52.3	49.9	105%	
Chromium	6010B	30.0	82.3	49.9	105%	
Copper	6010B	11.8	62.8	49.9	102%	
Lead	6010B	2 U	197	200	98.5%	
Mercury	7471A	0.03	0.22	0.240	79.2%	
Nickel	6010B	40	88	49.9	96.2%	
Selenium	6010B	5 U	198	200	99.0%	
Thallium	6010B	5 U	193	200	96.5%	
Vanadium	6010B	32.9	81.1	49.9	96.6%	
Zinc	6010B	28	81	49.9	106%	

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: FRP-083011-001
DUPLICATE

Lab Sample ID: TK50A
LIMS ID: 11-18869
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: 08/30/11
Date Received: 08/30/11

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Aluminum	6010B	9,590	10,100	5.2%	+/- 20%	
Arsenic	200.8	1.5	1.5	0.0%	+/- 20%	
Cadmium	6010B	0.2 U	0.2 U	0.0%	+/- 0.2	L
Chromium	6010B	30.0	29.3	2.4%	+/- 20%	
Copper	6010B	11.8	11.7	0.9%	+/- 20%	
Lead	6010B	2 U	2 U	0.0%	+/- 2	L
Mercury	7471A	0.03	0.04	28.6%	+/- 0.02	L
Nickel	6010B	40	40	0.0%	+/- 20%	
Selenium	6010B	5 U	5 U	0.0%	+/- 5	L
Thallium	6010B	5 U	5 U	0.0%	+/- 5	L
Vanadium	6010B	32.9	34.0	3.3%	+/- 20%	
Zinc	6010B	28	29	3.5%	+/- 20%	

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: TK50LCS
LIMS ID: 11-18870
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Aluminum	6010B	204	200	102%	
Arsenic	200.8	26.3	25.0	105%	
Cadmium	6010B	50.5	50.0	101%	
Chromium	6010B	50.9	50.0	102%	
Copper	6010B	47.9	50.0	95.8%	
Lead	6010B	193	200	96.5%	
Mercury	7471A	0.52	0.50	104%	
Nickel	6010B	48	50	96.0%	
Selenium	6010B	197	200	98.5%	
Thallium	6010B	194	200	97.0%	
Vanadium	6010B	50.5	50.0	101%	
Zinc	6010B	48	50	96.0%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

TK50: 111A

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: METHOD BLANK

Lab Sample ID: TK50MB
LIMS ID: 11-18870
Matrix: Soil
Data Release Authorized:
Reported: 09/12/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	MDL	RL	Result	Q
3050B	09/06/11	6010B	09/08/11	7429-90-5	Aluminum	3.6	5	5	U
3050B	09/06/11	200.8	09/08/11	7440-38-2	Arsenic	0.087	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	7440-43-9	Cadmium	0.11	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	7440-47-3	Chromium	0.27	0.5	0.5	U
3050B	09/06/11	6010B	09/08/11	7440-50-8	Copper	0.050	0.2	0.2	U
3050B	09/06/11	6010B	09/08/11	7439-92-1	Lead	0.13	2	2	U
CLP	09/06/11	7471A	09/08/11	7439-97-6	Mercury	0.0013	0.02	0.02	U
3050B	09/06/11	6010B	09/08/11	7440-02-0	Nickel	0.30	1	1	U
3050B	09/06/11	6010B	09/08/11	7782-49-2	Selenium	0.65	5	5	U
3050B	09/06/11	6010B	09/08/11	7440-28-0	Thallium	0.53	5	5	U
3050B	09/06/11	6010B	09/08/11	7440-62-2	Vanadium	0.060	0.3	0.3	U
3050B	09/06/11	6010B	09/08/11	7440-66-6	Zinc	0.12	1	1	U

Reported in mg/kg (ppm).
U-Analyte undetected at given RL
RL-Reporting Limit

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: TK50

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Aluminum	AL	ICP	IP090871	2000.0	2010.08	100.5	2000.0	2043.40	102.2	2021.94	101.1	2008.76	100.4	1989.76	99.5	1975.54	98.8
Arsenic	AS	PMS	MS090881	50.0	50.26	100.5	50.0	50.26	100.5	49.98	100.0	49.50	99.0	49.32	98.6	49.07	98.1
Cadmium	CD	ICP	IP090871	1000.0	1033.45	103.3	1000.0	1037.42	103.7	1038.41	103.8	1015.62	101.6	1016.71	101.7	1009.39	100.9
Chromium	CR	ICP	IP090871	1000.0	1025.91	102.6	1000.0	1028.05	102.8	1018.99	101.9	1017.96	101.8	1006.18	100.6	999.28	99.9
Copper	CU	ICP	IP090871	1000.0	1019.93	102.0	1000.0	1018.92	101.9	1027.88	102.8	1003.78	100.4	1005.40	100.5	998.72	99.9
Lead	PB	ICP	IP090871	2000.0	1975.96	98.8	2000.0	1925.58	96.3	1963.18	98.2	1876.78	93.8	1879.45	94.0	1913.39	95.7
Mercury	HG	CVA	HG090801	8.0	7.91	98.9	4.0	4.04	101.0	3.99	99.8	4.08	102.0	4.08	102.0	4.10	102.5
Nickel	NI	ICP	IP090871	1000.0	994.38	99.4	1000.0	991.44	99.1	969.04	96.9	965.85	96.6	948.62	94.9	941.95	94.2
Selenium	SE	ICP	IP090871	2000.0	2006.02	100.3	2000.0	2002.43	100.1	1968.56	98.4	1921.93	96.1	1866.15	93.3	1910.85	95.5
Thallium	TL	ICP	IP090871	2000.0	1979.59	99.0	2000.0	1974.85	98.7	1944.87	97.2	1888.09	94.4	1849.17	92.5	1890.82	94.5
Vanadium	V	ICP	IP090871	1000.0	994.40	99.4	1000.0	994.96	99.5	1004.77	100.5	980.47	98.0	986.16	98.6	977.77	97.8
Zinc	ZN	ICP	IP090871	1000.0	981.32	98.1	1000.0	981.03	98.1	973.49	97.3	979.22	97.9	965.79	96.6	957.00	95.7

Control Limits: Mercury 80-120; Other Metals 90-110

TK50:00113

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: TK50

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Aluminum	AL	ICP	IP090871	2000.0	2000.70	100.0										
Arsenic	AS	PMS	MS090881	50.0	48.83	97.7	49.45	98.9	49.59	99.2	48.84	97.7	49.36	98.7	48.85	97.7
Cadmium	CD	ICP	IP090871	1000.0	1018.94	101.9										
Chromium	CR	ICP	IP090871	1000.0	1007.95	100.8										
Copper	CU	ICP	IP090871	1000.0	1005.83	100.6										
Lead	PB	ICP	IP090871	2000.0	1905.47	95.3										
Mercury	HG	CVA	HG090801	4.0	4.16	104.0	4.07	101.8	4.17	104.3	4.18	104.5				
Nickel	NI	ICP	IP090871	1000.0	948.36	94.8										
Selenium	SE	ICP	IP090871	2000.0	1904.72	95.2										
Thallium	TL	ICP	IP090871	2000.0	1876.50	93.8										
Vanadium	V	ICP	IP090871	1000.0	983.63	98.4										
Zinc	ZN	ICP	IP090871	1000.0	963.44	96.3										

Control Limits: Mercury 80-120; Other Metals 90-110

TK50:00114

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: TK50

ANALYTE	EL	M	RUN	CCVTV	CCV12	%R	CCV13	%R	CCV14	%R	CCV15	%R	CCV16	%R	CCV17	%R
Aluminum	AL	ICP	IP090871	2000.0												
Arsenic	AS	PMS	MS090881	50.0	49.79	99.6	49.38	98.8								
Cadmium	CD	ICP	IP090871	1000.0												
Chromium	CR	ICP	IP090871	1000.0												
Copper	CU	ICP	IP090871	1000.0												
Lead	PB	ICP	IP090871	2000.0												
Mercury	HG	CVA	HG090801	4.0												
Nickel	NI	ICP	IP090871	1000.0												
Selenium	SE	ICP	IP090871	2000.0												
Thallium	TL	ICP	IP090871	2000.0												
Vanadium	V	ICP	IP090871	1000.0												
Zinc	ZN	ICP	IP090871	1000.0												

Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (1)

TK50.00115

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: TK50

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Arsenic	AS	PMS	MS090981	50.0	50.04	100.1	50.0	50.17	100.3	49.18	98.4	49.43	98.9	48.90	97.8	48.44	96.9

Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (1)

TK50:00116

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: TK50

ANALYTE	EL	M	RUN	CRA/I TV	CR-1	%R	CR-2	%R	CR-3	%R	CR-4	%R	CR-5	%R	CR-6	%R
Aluminum	AL	ICP	IP090871	50.0	63.43	126.9	71.22	142.4								
Arsenic	AS	PMS	MS090881	0.2	0.19	95.0										
Cadmium	CD	ICP	IP090871	2.0	2.02	101.0	1.97	98.5								
Chromium	CR	ICP	IP090871	5.0	4.77	95.4	6.49	129.8								
Copper	CU	ICP	IP090871	2.0	2.21	110.5	2.57	128.5								
Lead	PB	ICP	IP090871	20.0	21.39	107.0	19.10	95.5								
Mercury	HG	CVA	HG090801	0.1	0.11	110.0										
Nickel	NI	ICP	IP090871	10.0	10.13	101.3	9.89	98.9								
Selenium	SE	ICP	IP090871	50.0	57.52	115.0	56.49	113.0								
Thallium	TL	ICP	IP090871	50.0	53.47	106.9	50.25	100.5								
Vanadium	V	ICP	IP090871	3.0	2.91	97.0	2.97	99.0								
Zinc	ZN	ICP	IP090871	10.0	10.83	108.3	10.53	105.3								

Control Limits: no control limits have been established by the EPA at this time.

FORM II (2)

TK50-00513

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: TK50

ANALYTE	EL	M	RUN	CRA/I	TV	CR-1	%R	CR-2	%R	CR-3	%R	CR-4	%R	CR-5	%R	CR-6	%R
Arsenic	AS	PMS	MS090981		0.2	0.20	100.0										

Control Limits: no control limits have been established by the EPA at this time.

TK50:00118

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS: ug/L

SDG: TK50

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Aluminum	AL	ICP	IP090871	200.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Arsenic	AS	PMS	MS090881	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Cadmium	CD	ICP	IP090871	5.0	2.0	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chromium	CR	ICP	IP090871	10.0	5.0	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Copper	CU	ICP	IP090871	25.0	2.0	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Lead	PB	ICP	IP090871	3.0	20.0	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U
Mercury	HG	CVA	HG090801	0.2	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	NI	ICP	IP090871	40.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U
Selenium	SE	ICP	IP090871	5.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Thallium	TL	ICP	IP090871	10.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Vanadium	V	ICP	IP090871	50.0	3.0	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
Zinc	ZN	ICP	IP090871	20.0	10.0	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U	10.0	U

TK50:00119

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: TK50

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Aluminum	AL	ICP	IP090871	200.0	50.0	50.0	U										
Arsenic	AS	PMS	MS090881	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Cadmium	CD	ICP	IP090871	5.0	2.0	2.0	U										
Chromium	CR	ICP	IP090871	10.0	5.0	5.0	U										
Copper	CU	ICP	IP090871	25.0	2.0	2.0	U										
Lead	PB	ICP	IP090871	3.0	20.0	20.0	U										
Mercury	HG	CVA	HG090801	0.2	0.1	0.1	U	0.1	U	0.1	U	0.1	U				
Nickel	NI	ICP	IP090871	40.0	10.0	10.0	U										
Selenium	SE	ICP	IP090871	5.0	50.0	50.0	U										
Thallium	TL	ICP	IP090871	10.0	50.0	50.0	U										
Vanadium	V	ICP	IP090871	50.0	3.0	3.0	U										
Zinc	ZN	ICP	IP090871	20.0	10.0	10.0	U										

TK50:00120

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: TK50

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB12	C	CCB13	C	CCB14	C	CCB15	C	CCB16	C	CCB17	C
Aluminum	AL	ICP	IP090871	200.0	50.0												
Arsenic	AS	PMS	MS090881	10.0	0.2	0.2	U	0.2	U								
Cadmium	CD	ICP	IP090871	5.0	2.0												
Chromium	CR	ICP	IP090871	10.0	5.0												
Copper	CU	ICP	IP090871	25.0	2.0												
Lead	PB	ICP	IP090871	3.0	20.0												
Mercury	HG	CVA	HG090801	0.2	0.1												
Nickel	NI	ICP	IP090871	40.0	10.0												
Selenium	SE	ICP	IP090871	5.0	50.0												
Thallium	TL	ICP	IP090871	10.0	50.0												
Vanadium	V	ICP	IP090871	50.0	3.0												
Zinc	ZN	ICP	IP090871	20.0	10.0												

TK50 : 00121

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

UNITS:ug/L

SDG: TK50

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Arsenic	AS	PMS	MS090981	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U

TK50.00122

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK50

ICS SOURCE: I.V.

RUNID: IP090871

INSTRUMENT ID: OPTIMA ICP 2

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Aluminum	200000	200000	199048.5	201254.4	**100.6**	195230.7	194370.4	**97.2**			
Antimony		1000	-3.3	957.5	**95.8**	-6.4	924.6	**92.5**			
Arsenic		1000	13.2	1021.6	**102.2**	13.5	982.7	**98.3**			
Barium		1000	2.3	988.7	**98.9**	1.4	944.9	**94.5**			
Beryllium		1000	0.1	997.4	**99.7**	0.0	939.2	**93.9**			
Boron			-5.9	-6.8		-12.8	-12.6				
Cadmium		1000	1.3	1020.7	**102.1**	1.4	989.1	**98.9**			
Calcium	100000	100000	101400.3	102484.4	**102.5**	100530.4	99358.8	**99.4**			
Chromium		1000	-0.2	1007.4	**100.7**	0.3	982.7	**98.3**			
Cobalt		1000	0.8	984.0	**98.4**	0.8	967.0	**96.7**			
Copper		1000	-0.1	1035.0	**103.5**	1.1	1015.8	**101.6**			
Iron	200000	200000	196969.9	196240.0	**98.1**	189037.5	184597.6	**92.3**			
Lead		1000	-5.0	973.4	**97.3**	-4.8	940.8	**94.1**			
Magnesium	100000	100000	102313.4	99557.1	**99.6**	100569.6	96116.3	**96.1**			
Manganese		1000	-0.2	960.4	**96.0**	-0.1	895.1	**89.5**			
Molybdenum			0.3	0.1		0.2	0.8				
Nickel		1000	0.0	938.8	**93.9**	-0.8	891.4	**89.1**			
Potassium			24.9	271.8		51.2	283.3				
Selenium		1000	14.7	1016.4	**101.6**	20.7	983.4	**98.3**			
Silicon			-0.8	-6.6		-0.2	-0.7				
Silver		1000	-0.5	1027.6	**102.8**	-0.1	974.0	**97.4**			
Sodium			10.1	8.5		20.6	15.4				
Strontium			10.3	10.3		10.0	9.9				
Thallium		1000	17.1	974.2	**97.4**	16.7	929.0	**92.9**			
Tin			-9.0	-9.8		-10.6	-12.1				
Titanium			5.8	6.2		6.0	5.9				
Vanadium		1000	-0.2	971.9	**97.2**	-2.1	957.2	**95.7**			
Zinc		1000	0.6	933.2	**93.3**	2.2	911.9	**91.2**			

TK50.001.23

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

ICS SOURCE: I.V.

PROJECT: FRP Shoreline Invest

RUNID: MS090881

SDG: TK50

INSTRUMENT ID: PE ELAN 6000

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Antimony			0.1	0.1							
Cadmium		20	0.0	20.0	**100.0**						
Iron	20000	20000	20167.9	20414.6	**102.1**						
Silver		20	0.0	19.4	**97.0**						

TK50.003 24

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK50

ICS SOURCE: I.V.

RUNID: MS090981

INSTRUMENT ID: PE ELAN 6000

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Cadmium		20	0.0	19.5	**97.5**						
Chromium		20	0.7	20.1	**100.5**						
Cobalt		20	0.0	19.1	**95.5**						
Copper		20	0.4	19.6	**98.0**						
Manganese		20	0.5	20.1	**100.5**						
Molybdenum	400	400	400.8	392.6	**98.2**						
Nickel		20	0.5	18.9	**94.5**						
Silver		20	0.0	19.1	**95.5**						
Vanadium			0.0	-0.4							
Zinc		20	0.9	19.9	**99.5**						

TK50.00325

ICP Serial Dilutions

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

ANALYSIS METHOD: ICP

SDG: TK50

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	MATRIX	RUNID	INITIAL SAMPLE RESULT (I)	C	SERIAL DILUTION RESULT (S)	C	% DIFFER-ENCE	Q
Aluminum	FRP-083011-001L	TK50A-L	Soil	IP090871	95845.50		94862.55		1.0	
Cadmium	FRP-083011-001L	TK50A-L	Soil	IP090871	1.50	U	10.00	U		
Chromium	FRP-083011-001L	TK50A-L	Soil	IP090871	299.41		309.60		3.4	
Copper	FRP-083011-001L	TK50A-L	Soil	IP090871	117.72		117.85	B	0.1	
Lead	FRP-083011-001L	TK50A-L	Soil	IP090871	14.88	U	100.00	U		
Nickel	FRP-083011-001L	TK50A-L	Soil	IP090871	397.13		407.10		2.5	
Selenium	FRP-083011-001L	TK50A-L	Soil	IP090871	14.03	U	250.00	U		
Thallium	FRP-083011-001L	TK50A-L	Soil	IP090871	16.83	U	250.00	U		
Vanadium	FRP-083011-001L	TK50A-L	Soil	IP090871	328.48		331.35		0.9	
Zinc	FRP-083011-001L	TK50A-L	Soil	IP090871	275.97		289.30		4.8	

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK50 UNITS: ug/L

ANALYTE	EL	METH	INSTRUMENT	WAVELENTH (nm)	GFA BACK-GROUND	CLP CRDL	RL	RL DATE	ICP LINEAR RANGE (ug/L)	ICP LR DATE
Aluminum	AL	ICP	OPTIMA ICP 2	308.22		200	50.0	4/1/2011	250000.0	8/3/2011
Arsenic	AS	PMS	PE ELAN 6000 MS	0.00		10	0.2	4/1/2011		
Cadmium	CD	ICP	OPTIMA ICP 2	228.80		5	2.0	4/1/2011	20000.0	8/3/2011
Chromium	CR	ICP	OPTIMA ICP 2	267.72		10	5.0	4/1/2011	100000.0	8/3/2011
Copper	CU	ICP	OPTIMA ICP 2	324.75		25	2.0	4/1/2011	40000.0	8/3/2011
Lead	PB	ICP	OPTIMA ICP 2	220.35		3	20.0	4/1/2011	300000.0	8/3/2011
Mercury	HG	CVA	CETAC MERCURY	253.70		0.2	0.1	4/1/2011		
Nickel	NI	ICP	OPTIMA ICP 2	231.60		40	10.0	4/1/2011	100000.0	8/3/2011
Selenium	SE	ICP	OPTIMA ICP 2	196.02		5	50.0	4/1/2011	20000.0	8/3/2011
Thallium	TL	ICP	OPTIMA ICP 2	190.86		10	50.0	4/1/2011	30000.0	8/3/2011
Vanadium	V	ICP	OPTIMA ICP 2	292.40		50	3.0	4/1/2011	50000.0	8/3/2011
Zinc	ZN	ICP	OPTIMA ICP 2	213.86		20	10.0	4/1/2011	100000.0	8/3/2011

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

IEC DATE: 9/7/2011

SDG: TK50

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	AL	AS	BA	BE	CA	CD	CO	CR	CU	FE
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	10.6149000	0.0000000	0.0000000
Arsenic	188.98	0.0000000	0.0000000	0.0000000	0.0000000	0.0773398	0.0000000	-0.8345790	1.1215100	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1892080	0.0000000	0.0000000	0.0622379
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	5.2418600	0.0000000	0.0000000	0.0000000	0.0000000	0.1195910	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.5252460	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0187178	0.0000000	0.0000000	0.0000000	0.0000000	-0.0439811
Cobalt	228.62	0.0000000	0.0000000	0.1238430	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.2279050	-0.0318969	0.0000000	-0.0695283
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-1.6163900	0.0000000	0.0000000
Lead	220.35	-0.1778670	0.0000000	0.0000000	0.0000000	-0.0252598	0.0000000	0.0000000	-2.3072100	1.2452600	0.0570036
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.1525560	0.0000000	-1.6380600	-1.2519300	0.0000000	0.6727000
Manganese	257.61	0.0051426	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.0048944
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0228298	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0634207	0.0000000	0.3514040	0.0000000	0.0000000	0.0000000
Silicon	288.16	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-3.4885200	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	6.5805300	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0678735	0.0000000	1.7836600	0.3510820	0.0000000	-0.1294840
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	-0.1147000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.0000000	0.0000000	0.1641450	0.0000000	0.0000000	0.1632010	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-3.9361800	0.0000000	0.1100040
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1475900	0.0000000	0.0000000

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

IEC DATE: 9/7/2011

SDG: TK50

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	MG	MN	MO	NI	PB	SB	TI	TL	V	ZN
Aluminum	308.22	0.0000000	0.0000000	15.3131000	0.0000000	0.0000000	0.0000000	1.5167500	0.0000000	17.6996000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	-0.4730780	0.0000000	0.0000000	-0.8897510	0.0000000	-3.3546800	0.0000000
Arsenic	188.98	0.0000000	0.0000000	2.3330800	0.0000000	0.0000000	0.0000000	-5.4412000	0.0000000	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0766262	0.0000000	0.0000000	0.0000000	0.0000000	0.6419380	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.2960780	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	-0.7324130	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0581570	0.0000000	0.1395070	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.2773470	0.0000000
Cobalt	228.62	0.0000000	0.0000000	-0.1579570	0.1588330	0.0000000	0.0000000	1.8115900	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0080384	0.0000000	0.2688440	0.0000000	0.0000000	0.0000000	0.2461180	0.0000000	0.0000000	0.0000000
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	8.4403600	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	-4.6256200	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0048376	0.0000000	0.0000000	0.0000000	-0.2175850	0.0000000	0.0000000	0.0000000	-0.0271775	0.0000000
Molybdenum	202.03	0.0148620	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.7744280	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0735290	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silicon	288.16	-0.1460000	0.0000000	-2.7358100	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.2442620	0.2419260	0.0000000	0.0000000	0.0000000	-0.0470302	0.0000000	-0.2758080	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	242.4230000	0.0000000	0.0000000	318.1570000
Thallium	190.80	0.0000000	-1.4179000	1.9562000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	1.2892100	0.0000000
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.5848020	-0.3044710	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.9873960	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	-0.1398510	-0.6804250	0.0000000	0.0000000	0.0000000	0.6004670	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.2377960	0.0000000	-0.0708227	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

TK50.001125

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK50

ANALYSIS METHOD: ICP

ARI PREP CODE: SWC

PREPDATE: 9/6/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-083011-001	TK50A	1.078	0.0	50.0
FRP-083011-001D	TK50ADUP	1.078	0.0	50.0
FRP-083011-001S	TK50ASPK	1.081	0.0	50.0
FRP-083011-002	TK50B	1.023	0.0	50.0
FRP-083011-003	TK50C	1.040	0.0	50.0
FRP-083011-004	TK50D	1.074	0.0	50.0
FRP-083011-005	TK50E	1.052	0.0	50.0
FRP-083011-006	TK50F	1.052	0.0	50.0
FRP-083011-007	TK50G	1.043	0.0	50.0
FRP-083011-008	TK50H	1.059	0.0	50.0
FRP-083011-010	TK50I	1.034	0.0	50.0
FRP-083011-011	TK50J	1.028	0.0	50.0
FRP-083011-012	TK50K	1.026	0.0	50.0
FRP-083011-013	TK50L	1.014	0.0	50.0
FRP-083011-014	TK50M	1.059	0.0	50.0
PBS	TK50MB1	1.000	0.0	50.0
LCSS	TK50MB1SPK	1.000	0.0	50.0
FRP-083011-015	TK50N	1.008	0.0	50.0
FRP-083011-016	TK50O	1.018	0.0	50.0
FRP-083011-017	TK50P	1.037	0.0	50.0
FRP-083011-018	TK50Q	1.045	0.0	50.0
FRP-083011-019	TK50R	1.085	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK50

ANALYSIS METHOD: PMS

ARI PREP CODE: SWN

PREPDATE: 9/6/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-083011-001	TK50A	1.055	0.0	50.0
FRP-083011-001D	TK50ADUP	1.057	0.0	50.0
FRP-083011-001S	TK50ASPK	1.056	0.0	50.0
FRP-083011-002	TK50B	1.036	0.0	50.0
FRP-083011-003	TK50C	1.015	0.0	50.0
FRP-083011-004	TK50D	1.062	0.0	50.0
FRP-083011-005	TK50E	1.019	0.0	50.0
FRP-083011-006	TK50F	1.039	0.0	50.0
FRP-083011-007	TK50G	1.072	0.0	50.0
FRP-083011-008	TK50H	1.032	0.0	50.0
FRP-083011-010	TK50I	1.013	0.0	50.0
FRP-083011-011	TK50J	1.036	0.0	50.0
FRP-083011-012	TK50K	1.066	0.0	50.0
FRP-083011-013	TK50L	1.012	0.0	50.0
FRP-083011-014	TK50M	1.081	0.0	50.0
PBS	TK50MB1	1.000	0.0	50.0
LCSS	TK50MB1SPK	1.000	0.0	50.0
FRP-083011-015	TK50N	1.092	0.0	50.0
FRP-083011-016	TK50O	1.051	0.0	50.0
FRP-083011-017	TK50P	1.034	0.0	50.0
FRP-083011-018	TK50Q	1.082	0.0	50.0
FRP-083011-019	TK50R	1.063	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest

SDG: TK50

ANALYSIS METHOD: CVA

ARI PREP CODE: SMM

PREPDATE: 9/6/2011

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
FRP-083011-001	TK50A	0.224	0.0	50.0
FRP-083011-001D	TK50ADUP	0.225	0.0	50.0
FRP-083011-001S	TK50ASPK	0.225	0.0	50.0
FRP-083011-002	TK50B	0.228	0.0	50.0
FRP-083011-003	TK50C	0.219	0.0	50.0
FRP-083011-004	TK50D	0.228	0.0	50.0
FRP-083011-005	TK50E	0.278	0.0	50.0
FRP-083011-006	TK50F	0.277	0.0	50.0
FRP-083011-007	TK50G	0.276	0.0	50.0
FRP-083011-008	TK50H	0.281	0.0	50.0
FRP-083011-010	TK50I	0.215	0.0	50.0
FRP-083011-011	TK50J	0.248	0.0	50.0
FRP-083011-012	TK50K	0.267	0.0	50.0
FRP-083011-013	TK50L	0.229	0.0	50.0
FRP-083011-014	TK50M	0.271	0.0	50.0
PBS	TK50MB1	0.200	0.0	50.0
LCSW	TK50MB1SPK	0.200	0.0	50.0
FRP-083011-015	TK50N	0.263	0.0	50.0
FRP-083011-016	TK50O	0.242	0.0	50.0
FRP-083011-017	TK50P	0.247	0.0	50.0
FRP-083011-018	TK50Q	0.248	0.0	50.0
FRP-083011-019	TK50R	0.267	0.0	50.0

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/8/2011

SDG: TK50 RUNID: IP090871 METHOD: ICP END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	10263			X						X		X	X								X	X		X				X		X	X
S2	S2	1.00	10304									X		X	X																	X	
S3	S3	1.00	10322																				X	X		X				X			X
S4	S4	1.00	10345																														
S5	S5	1.00	10370			X																											
ICV	ICV	1.00	10415			X						X		X	X								X	X		X				X		X	X
ICB	ICB	1.00	10455			X						X		X	X								X	X		X				X		X	X
CRI	CRII	1.00	10500			X						X		X	X								X	X		X				X		X	X
ICSA	ICSAI	1.00	10541			X						X		X	X								X	X		X				X		X	X
ICSAB	ICSABI	1.00	10583			X						X		X	X								X	X		X				X		X	X
CCV	CCV1	1.00	11021			X						X		X	X								X	X		X				X		X	X
CCB	CCB1	1.00	11061			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TL07MB	1.00	11102																														
ZZZZZZ	TL07A	1.00	11143																														
FRP-083011-001L	TK50A-L	10.00	11184			X						X		X	X								X	X		X				X		X	X
FRP-083011-001	TK50A	2.00	11224			X						X		X	X								X	X		X				X		X	X
FRP-083011-001D	TK50ADUP	2.00	11263			X						X		X	X								X	X		X				X		X	X
FRP-083011-001S	TK50ASPK	2.00	11303			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	ZZZZZZ	2.00	11341																														
FRP-083011-002	TK50B	2.00	11380			X						X		X	X								X	X		X				X		X	X
FRP-083011-003	TK50C	2.00	11420			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TL07MBSPK	1.00	11455																														
CCV	CCV2	1.00	11495			X						X		X	X								X	X		X				X		X	X
CCB	CCB2	1.00	11535			X						X		X	X								X	X		X				X		X	X
PBS	TK50MB1	2.00	11580			X						X		X	X								X	X		X				X		X	X
FRP-083011-004	TK50D	2.00	12021			X						X		X	X								X	X		X				X		X	X
FRP-083011-005	TK50E	2.00	12061			X						X		X	X								X	X		X				X		X	X
FRP-083011-006	TK50F	2.00	12100			X						X		X	X								X	X		X				X		X	X
FRP-083011-007	TK50G	2.00	12140			X						X		X	X								X	X		X				X		X	X
FRP-083011-008	TK50H	2.00	12180			X						X		X	X								X	X		X				X		X	X
FRP-083011-010	TK50I	2.00	12215			X						X		X	X								X	X		X				X		X	X
FRP-083011-011	TK50J	2.00	12255			X						X		X	X								X	X		X				X		X	X
FRP-083011-012	TK50K	2.00	12295			X						X		X	X								X	X		X				X		X	X
LCSS	TK50MB1SPK	2.00	12334			X						X		X	X								X	X		X				X		X	X
CCV	CCV3	1.00	12374			X						X		X	X								X	X		X				X		X	X

FORM XIV

TK50 : 000123

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: OPTIMA ICP 2 START DATE: 9/8/2011

SDG: TK50 RUNID: IP090871 METHOD: ICP END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
CCB	CCB3	1.00	12414			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK70B	1.00	12455																														
ZZZZZZ	TK70C	1.00	12500																														
ZZZZZZ	TK70D	1.00	12543																														
FRP-083011-013	TK50L	2.00	12585			X						X		X	X								X	X		X				X		X	X
FRP-083011-014	TK50M	2.00	13025			X						X		X	X								X	X		X				X		X	X
FRP-083011-015	TK50N	2.00	13064			X						X		X	X								X	X		X				X		X	X
FRP-083011-016	TK50O	2.00	13104			X						X		X	X								X	X		X				X		X	X
FRP-083011-017	TK50P	2.00	13144			X						X		X	X								X	X		X				X		X	X
FRP-083011-018	TK50Q	2.00	13183			X						X		X	X								X	X		X				X		X	X
FRP-083011-019	TK50R	2.00	13223			X						X		X	X								X	X		X				X		X	X
CCV	CCV4	1.00	13262			X						X		X	X								X	X		X				X		X	X
CCB	CCB4	1.00	13302			X						X		X	X								X	X		X				X		X	X
ZZZZZZ	TK70MB1	1.00	13343																														
ZZZZZZ	TK70A-L	5.00	13385																														
ZZZZZZ	TK70A	1.00	13430																														
ZZZZZZ	TK70ADUP	1.00	13471																														
ZZZZZZ	TK70ASPK	1.00	13512																														
ZZZZZZ	TK70E	1.00	13552																														
ZZZZZZ	TK70F	1.00	13594																														
ZZZZZZ	TK70G	1.00	14035																														
ZZZZZZ	TK70H	1.00	14080																														
ZZZZZZ	TK70MB1SPK	1.00	14123																														
CCV	CCV5	1.00	14163			X						X		X	X								X	X		X				X		X	X
CCB	CCB5	1.00	14203			X						X		X	X								X	X		X				X		X	X
CRI	CRIF	1.00	14244			X						X		X	X								X	X		X				X		X	X
ICSA	ICSAF	1.00	14285			X						X		X	X								X	X		X				X		X	X
ICSAB	ICSABF	1.00	14330			X						X		X	X								X	X		X				X		X	X
CCV	CCV6	1.00	14365			X						X		X	X								X	X		X				X		X	X
CCB	CCB6	1.00	14404			X						X		X	X								X	X		X				X		X	X

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/8/2011

SDG: TK50 RUNID: MS090881 METHOD: PMS END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	08420				X																										
S1	S1	1.00	08480				X																										
S2	S2	1.00	08550				X																										
S3	S3	1.00	09020				X																										
S4	S4	1.00	09080				X																										
ZZZZZZ	Rinse Sampl	1.00	09150																														
ICV	MICV	1.00	09210				X																										
ICB	ICB	1.00	09270				X																										
CCV	MCCV1	1.00	09340				X																										
CCB	CCB1	1.00	09440				X																										
CRI	MCRI	1.00	09500				X																										
ICSA	ICSAI	1.00	09570				X																										
ICSAB	ICSABI	1.00	10030				X																										
CCV	MCCV2	1.00	10100				X																										
CCB	CCB2	1.00	10160				X																										
ZZZZZZ	TJ71RMB2	1.00	10220																														
ZZZZZZ	TJ71RMB2SPK	1.00	10280																														
ZZZZZZ	TJ71RF	1.00	10330																														
ZZZZZZ	TJ71RG	1.00	10390																														
ZZZZZZ	TJ71RH	1.00	10450																														
ZZZZZZ	TJ71RI	1.00	10500																														
ZZZZZZ	TJ71RJ	1.00	10560																														
CCV	MCCV3	1.00	11020				X																										
CCB	CCB3	1.00	11080				X																										
ZZZZZZ	TK57MB1	2.00	11140																														
ZZZZZZ	TK57MB1SPK	2.00	11200																														
ZZZZZZ	TK57A-L	10.00	11250																														
ZZZZZZ	TK57A	2.00	11310																														
ZZZZZZ	TK57ADUP	2.00	11370																														
ZZZZZZ	TK57ASPK	2.00	11420																														
ZZZZZZ	TK70A-L	10.00	11480																														
ZZZZZZ	TK70A	2.00	11540																														
ZZZZZZ	TK70ADUP	2.00	12000																														
ZZZZZZ	TK70ASPK	2.00	12050																														
CCV	MCCV4	1.00	12110				X																										

FORM XIV

TK50 : 00135

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/8/2011

SDG: TK50 RUNID: MS090881 METHOD: PMS END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
CCB	CCB4	1.00	12170				X																										
ZZZZZZ	TK70MB1	2.00	12230																														
ZZZZZZ	TK70MB1SPK	2.00	12290																														
ZZZZZZ	TK88A-L	10.00	12350																														
ZZZZZZ	TK88A	2.00	12400																														
ZZZZZZ	TK88ADUP	2.00	12460																														
ZZZZZZ	TK88ASPK	2.00	12510																														
ZZZZZZ	TK57B	2.00	12570																														
ZZZZZZ	TK57C	2.00	13030																														
ZZZZZZ	TK57D	2.00	13080																														
ZZZZZZ	TK57E	2.00	13140																														
CCV	MCCV5	1.00	13200				X																										
CCB	CCB5	1.00	13260				X																										
S0	S0	1.00	13330				X																										
CCV	MCCV6	1.00	13390				X																										
CCB	CCB6	1.00	13450				X																										
ZZZZZZ	TK57F	2.00	13520																														
ZZZZZZ	TK70B	2.00	13570																														
ZZZZZZ	TK70C	2.00	14030																														
ZZZZZZ	TK70D	2.00	14080																														
ZZZZZZ	TK70E	2.00	14140																														
ZZZZZZ	TK70F	2.00	14200																														
ZZZZZZ	TK70G	2.00	14250																														
ZZZZZZ	TK70H	2.00	14310																														
ZZZZZZ	TK88B	2.00	14360																														
ZZZZZZ	TK88C	2.00	14420																														
CCV	MCCV7	1.00	14480				X																										
CCB	CCB7	1.00	14540				X																										
S0	S0	1.00	15000				X																										
CCV	MCCV8	1.00	15230				X																										
CCB	CCB8	1.00	15290				X																										
ZZZZZZ	TK88B	5.00	15350																														
ZZZZZZ	TK88C	5.00	15410																														
ZZZZZZ	TK57F	2.00	15470																														
ZZZZZZ	TK70B	2.00	15520																														

FORM XIV

TK50:00136

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/8/2011

SDG: TK50 RUNID: MS090881 METHOD: PMS END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	TK70C	5.00	15580																														
ZZZZZZ	TK70D	2.00	16030																														
ZZZZZZ	TK70E	5.00	16090																														
ZZZZZZ	TK70F	2.00	16150																														
ZZZZZZ	TK70G	2.00	16200																														
ZZZZZZ	TK70H	2.00	16260																														
CCV	MCCV9	1.00	16310				X																										
CCB	CCB9	1.00	16380				X																										
ZZZZZZ	TK70D	5.00	16440																														
ZZZZZZ	TK70F	5.00	16490																														
ZZZZZZ	TK70G	5.00	16550																														
ZZZZZZ	TK70H	5.00	17010																														
CCV	MCCV10	1.00	17060				X																										
CCB	CCB10	1.00	17130				X																										
ZZZZZZ	TK88MB1	2.00	17190																														
PBS	TK50MB1	20.00	17240				X																										
LCSS	TK50MB1SPK	20.00	17300				X																										
ZZZZZZ	TK88MB1SPK	2.00	17360																														
ZZZZZZ	TK57D	2.00	17410																														
FRP-083011-001D	TK50ADUP	20.00	17470				X																										
FRP-083011-001	TK50A	20.00	17530				X																										
FRP-083011-001S	TK50ASPK	20.00	17580				X																										
FRP-083011-002	TK50B	20.00	18040				X																										
FRP-083011-003	TK50C	20.00	18090				X																										
CCV	MCCV11	1.00	18150				X																										
CCB	CCB11	1.00	18210				X																										
ZZZZZZ	ZZZZZZ	10.00	18280																														
ZZZZZZ	TK88A	2.00	18330																														
ZZZZZZ	TK88ADUP	2.00	18390																														
ZZZZZZ	TK88ASPK	2.00	18440																														
FRP-083011-005	TK50E	20.00	18500																														
FRP-083011-006	TK50F	20.00	18550				X																										
FRP-083011-007	TK50G	20.00	19010				X																										
FRP-083011-008	TK50H	20.00	19070				X																										
FRP-083011-010	TK50I	20.00	19120				X																										

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/8/2011

SDG: TK50 RUNID: MS090881 METHOD: PMS END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
FRP-083011-011	TK50J	20.00	19180				X																										
CCV	MCCV12	1.00	19230				X																										
CCB	CCB12	1.00	19300				X																										
FRP-083011-016	TK50O	20.00	19360				X																										
FRP-083011-017	TK50P	20.00	19420				X																										
FRP-083011-018	TK50Q	20.00	19470				X																										
FRP-083011-019	TK50R	20.00	19530				X																										
FRP-083011-004	TK50D	20.00	19580				X																										
FRP-083011-012	TK50K	20.00	20040				X																										
FRP-083011-013	TK50L	20.00	20100				X																										
FRP-083011-014	TK50M	20.00	20150				X																										
FRP-083011-015	TK50N	20.00	20210				X																										
CCV	MCCV13	1.00	20260				X																										
CCB	CCB13	1.00	20330				X																										

TK50 : 00136

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: PE ELAN 6000 MS START DATE: 9/9/2011

SDG: TK50 RUNID: MS090981 METHOD: PMS END DATE: 9/9/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	09330				X																										
S1	S1	1.00	09410				X																										
S2	S2	1.00	09490				X																										
S3	S3	1.00	09560				X																										
S4	S4	1.00	10040				X																										
ZZZZZZ	Rinse Sampl	1.00	10120																														
ICV	MICV	1.00	10190				X																										
ICB	ICB	1.00	10270				X																										
CCV	MCCV1	1.00	10340				X																										
CCB	CCB1	1.00	10410				X																										
ZZZZZZ	ZZZZZZ	1.00	10480																														
ZZZZZZ	ZZZZZZ	1.00	10560																														
ZZZZZZ	ZZZZZZ	1.00	11030																														
ZZZZZZ	LR200	1.00	11110																														
ZZZZZZ	LR300	1.00	11180																														
CCV	MCCV2	1.00	11260				X																										
CCB	CCB2	1.00	11330				X																										
S0	S0	1.00	11540				X																										
CCV	MCCV3	1.00	12010				X																										
CCB	CCB3	1.00	12090				X																										
CRI	MCRI	1.00	12170				X																										
ICSA	ICSAI	1.00	12240				X																										
ICSAB	ICSABI	1.00	12320				X																										
CCV	MCCV4	1.00	12410				X																										
CCB	CCB4	1.00	12480				X																										
ZZZZZZ	TL12MB1	2.00	12550																														
ZZZZZZ	TL12MB2	2.00	13010																														
ZZZZZZ	TL12MB1SPK	2.00	13080																														
ZZZZZZ	TL12MB2SPK	2.00	13150																														
ZZZZZZ	TL12A	2.00	13210																														
ZZZZZZ	TL12B	2.00	13280																														
ZZZZZZ	TK57D	2.00	13340																														
FRP-083011-005	TK50E	20.00	13410				X																										
ZZZZZZ	TL08B	20.00	13480																														
ZZZZZZ	TL08C	20.00	13540																														

FORM XIV

TK50-00135

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest | INSTRUMENT ID: PE ELAN 6000 MS | START DATE: 9/9/2011

SDG: TK50 | RUNID: MS090981 METHOD: PMS | END DATE: 9/9/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
CCV	MCCV5	1.00	14010				X																										
CCB	CCB5	1.00	14080				X																										

TK50 : 001140

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: CETAC MERCURY START DATE: 9/8/2011

SDG: TK50 RUNID: HG090801 METHOD: CVA END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	11354														X																
S0.1	S0.1	1.00	11371														X																
S0.5	S0.5	1.00	11385														X																
S1	S1	1.00	11403														X																
S2	S2	1.00	11420														X																
S5	S5	1.00	11434														X																
S10	S10	1.00	11452														X																
ICV	AICV	1.00	11481														X																
ICB	ICB	1.00	11495														X																
CCV	ACCV1	1.00	11513														X																
CCB	CCB1	1.00	11531														X																
CRA	CRA	1.00	11544														X																
PBW	TK50MB1	1.00	11562														X																
LCSW	TK50MB1SPK	1.00	11580														X																
FRP-083011-001	TK50A	1.00	11593														X																
FRP-083011-001D	TK50ADUP	1.00	12011														X																
FRP-083011-001S	TK50ASPK	1.00	12024														X																
FRP-083011-002	TK50B	1.00	12042														X																
FRP-083011-003	TK50C	1.00	12060														X																
FRP-083011-004	TK50D	1.00	12074														X																
FRP-083011-005	TK50E	1.00	12091														X																
CCV	ACCV2	1.00	12105														X																
CCB	CCB2	1.00	12123														X																
FRP-083011-006	TK50F	1.00	12141														X																
FRP-083011-007	TK50G	1.00	12155														X																
FRP-083011-008	TK50H	1.00	12172														X																
FRP-083011-010	TK50I	1.00	12190																														
FRP-083011-011	TK50J	1.00	12242																														
FRP-083011-012	TK50K	1.00	12305														X																
FRP-083011-013	TK50L	1.00	12323														X																
FRP-083011-014	TK50M	1.00	12341																														
FRP-083011-015	TK50N	1.00	12354														X																
FRP-083011-016	TK50O	1.00	12372														X																
CCV	ACCV3	1.00	12390														X																
CCB	CCB3	1.00	12404														X																

FORM XIV

TK50:00141

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest INSTRUMENT ID: CETAC MERCURY START DATE: 9/8/2011

SDG: TK50 RUNID: HG090801 METHOD: CVA END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
FRP-083011-017	TK50P	1.00	12422														X																
FRP-083011-018	TK50Q	1.00	12440														X																
FRP-083011-019	TK50R	1.00	12454														X																
ZZZZZZ	TL17MB1	1.00	12471																														
ZZZZZZ	TL17MB1SPK	1.00	12485																														
ZZZZZZ	TL17A	1.00	12502																														
ZZZZZZ	TL17ADUP	1.00	12520																														
ZZZZZZ	TL17ASPK	1.00	12534																														
ZZZZZZ	TL17B	1.00	12551																														
ZZZZZZ	TL17C	1.00	12565																														
CCV	ACCV4	1.00	12583														X																
CCB	CCB4	1.00	13001														X																
ZZZZZZ	TL17D	1.00	13015																														
ZZZZZZ	TL17E	1.00	13033																														
CCV	ACCV5	1.00	13051														X																
CCB	CCB5	1.00	13065														X																
ZZZZZZ	TL27MB	1.00	13083																														
ZZZZZZ	TL27MBSPK	1.00	13101																														
ZZZZZZ	TL27A	1.00	13114																														
ZZZZZZ	TL25MB1	1.00	13132																														
ZZZZZZ	TL25MB1SPK	1.00	13145																														
ZZZZZZ	TL25A	1.00	13163																														
ZZZZZZ	TL25B	1.00	13181																														
ZZZZZZ	TL25C	1.00	13195																														
ZZZZZZ	TL25D	1.00	13212																														
ZZZZZZ	TL25E	1.00	13230																														
CCV	ACCV6	1.00	13244														X																
CCB	CCB6	1.00	13262														X																
ZZZZZZ	TL25F	1.00	13280																														
ZZZZZZ	TL11MB	1.00	13294																														
ZZZZZZ	TL11MBSPK	1.00	13312																														
ZZZZZZ	TL11F	1.00	13330																														
ZZZZZZ	TL11G	1.00	13343																														
ZZZZZZ	TL11H	1.00	13361																														
ZZZZZZ	TL09MB	1.00	13375																														

FORM XIV

TK50 : 00142

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: AMEC Geomatrix

PROJECT: FRP Shoreline Invest | INSTRUMENT ID: CETAC MERCURY | START DATE: 9/8/2011

SDG: TK50 | RUNID: HG090801 METHOD: CVA | END DATE: 9/8/2011

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	TL09MBSPK	1.00	13392																														
ZZZZZZ	TL09A	1.00	13410																														
CCV	ACCV7	1.00	13424														X																
CCB	CCB7	1.00	13442														X																
ZZZZZZ	TK54MB	1.00	13461																														
ZZZZZZ	TK54MBSPK	1.00	13475																														
ZZZZZZ	TK54A	1.00	13492																														
ZZZZZZ	TK74MB	1.00	13510																														
ZZZZZZ	TK74MBSPK	1.00	13523																														
ZZZZZZ	TK74A	1.00	13541																														
ZZZZZZ	TK74B	1.00	13555																														
ZZZZZZ	TK74C	1.00	13572																														
ZZZZZZ	TK74D	1.00	13590																														
ZZZZZZ	TK74E	1.00	14004																														
CCV	ACCV8	1.00	14022														X																
CCB	CCB8	1.00	14040														X																
ZZZZZZ	TK74F	1.00	14054																														
ZZZZZZ	TK74G	1.00	14071																														
ZZZZZZ	TK74H	1.00	14085																														
ZZZZZZ	TK74I	1.00	14103																														
ZZZZZZ	TK74IDUP	1.00	14120																														
ZZZZZZ	TK74ISPK	1.00	14134																														
FRP-083011-010	TK50I	100.00	14151														X																
FRP-083011-011	TK50J	100.00	14165														X																
FRP-083011-014	TK50M	2.00	14183														X																
ZZZZZZ	TL08MB1	1.00	14200																														
CCV	ACCV9	1.00	14214														X																
CCB	CCB9	1.00	14232														X																

General Chemistry Analysis
Report and Summary QC Forms

ARI Job ID: TK50

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
pH by Method SW9045

Data Release Authorized:
Reported: 09/01/11
Date Received: 08/30/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	RL	Result
FRP-083011-001 TK50A 11-18869	08/30/11	Soil	08/31/11	0.01	6.55
FRP-083011-002 TK50B 11-18870	08/30/11	Soil	08/31/11	0.01	7.02
FRP-083011-003 TK50C 11-18871	08/30/11	Soil	08/31/11	0.01	6.64
FRP-083011-004 TK50D 11-18872	08/30/11	Soil	08/31/11	0.01	6.09
FRP-083011-005 TK50E 11-18873	08/30/11	Soil	08/31/11	0.01	6.91
FRP-083011-006 TK50F 11-18874	08/30/11	Soil	08/31/11	0.01	7.28
FRP-083011-007 TK50G 11-18875	08/30/11	Soil	08/31/11	0.01	7.66
FRP-083011-008 TK50H 11-18876	08/30/11	Soil	08/31/11	0.01	8.86
FRP-083011-010 TK50I 11-18877	08/30/11	Soil	08/31/11	0.01	8.09
FRP-083011-011 TK50J 11-18878	08/30/11	Soil	08/31/11	0.01	8.08
FRP-083011-012 TK50K 11-18879	08/30/11	Soil	08/31/11	0.01	8.00
FRP-083011-013 TK50L 11-18880	08/30/11	Soil	08/31/11	0.01	7.77
FRP-083011-014 TK50M 11-18881	08/30/11	Soil	08/31/11	0.01	7.78
FRP-083011-015 TK50N 11-18882	08/30/11	Soil	08/31/11	0.01	7.22
FRP-083011-016 TK50O 11-18883	08/30/11	Soil	08/31/11	0.01	6.11
FRP-083011-017 TK50P 11-18884	08/30/11	Soil	08/31/11	0.01	8.24
FRP-083011-018 TK50Q 11-18885	08/30/11	Soil	08/31/11	0.01	8.93

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
pH by Method SW9045

Data Release Authorized:
Reported: 09/01/11
Date Received: 08/30/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	RL	Result
FRP-083011-019 TK50R 11-18886	08/30/11	Soil	08/31/11	0.01	9.84

Reported in std units

RL-Analytical reporting limit
U-Undetected at reported detection limit

REPLICATE RESULTS-CONVENTIONALS
TK50-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 09/01/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: 08/30/11
Date Received: 08/30/11

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: TK50A Client ID: FRP-083011-001					
pH	08/31/11	std units	6.55	6.59	0.04

pH is evaluated as the Absolute Difference between the values rather than Relative Percent Difference

LAB CONTROL RESULTS-CONVENTIONALS
TK50-AMEC Geomatrix

ANALYTICAL RESOURCES INCORPORATED

Matrix: Soil
Data Release Authorized:
Reported: 09/01/11

Project: FRP Shoreline Investigation
Event: 8769
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	LCS	Spike Added	Recovery
pH	08/31/11	std units	7.00	7.00	0.00

pH is evaluated as the Absolute Difference between the values rather than Percent Recovery.

Geotechnical Analysis
Report and Summary QC Forms

ARI Job ID: TK50

TK50: 00143

ANALYTICAL RESOURCES INCORPORATED

GEOTECHNICAL ANALYSIS DATA SHEET
Moisture Content by Method ASTM D2216

Data Release Authorized: gb
Reported: 09/08/11
Date Received: 08/30/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	Result
FRP-083011-009 TK50S 11-18887	08/30/11	Soil	09/02/11 16:43	24.41
FRP-083011-020 TK50T 11-18888	08/30/11	Soil	09/02/11 16:43	30.98

Reported in Percent

ANALYTICAL RESOURCES INCORPORATED

GEOTECHNICAL ANALYSIS DATA SHEET
Wet Density by Method ASTM D7263

Data Release Authorized:
Reported: 09/08/11
Date Received: 08/30/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	Result
FRP-083011-009 TK50S 11-18887	08/30/11	Soil	09/02/11 16:43	118.8
FRP-083011-020 TK50T 11-18888	08/30/11	Soil	09/02/11 16:43	118.1

Reported in lb/ft3

ANALYTICAL RESOURCES INCORPORATED

GEOTECHNICAL ANALYSIS DATA SHEET
Dry Density by Method ASTM D7263

Data Release Authorized:
Reported: 09/08/11
Date Received: 08/30/11

QC Report No: TK50-AMEC Geomatrix
Project: FRP Shoreline Investigation 2011
8769

Client/ ARI ID	Date Sampled	Matrix	Analysis Date	Result
FRP-083011-009 TK50S 11-18887	08/30/11	Soil	09/02/11 16:43	95.5
FRP-083011-020 TK50T 11-18888	08/30/11	Soil	09/02/11 16:43	90.2

Reported in lb/ft3

AMEC Geomatrix
8789
FRP Shoreline Investigation 2011

Percent Finer (Passing) Than the Indicated Size

Sieve Size (microns)	3"	2"	1 1/2"	1"	3/4"	1/2"	3/8"	#4 (4750)	#10 (2000)	#20 (850)	#40 (425)	#60 (250)	#100 (150)	#200 (75)	32	22	13	9	7	3.2	1.3
FRP-082911-005	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	92.2	61.6	22.9	6.9	6.0	4.1	3.7	2.8	1.8	1.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.6	92.2	61.1	21.4	6.9	6.0	4.6	3.7	3.2	1.8	1.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	91.8	81.2	23.3	7.8	6.4	4.6	4.6	3.2	1.8	1.4
FRP-083011-009	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.9	86.3	64.9	30.3	12.2	9.4	6.7	5.5	5.0	2.2	1.7
FRP-083011-020	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.4	95.4	71.8	34.9	25.6	18.5	15.0	12.8	7.1	5.0

Testing performed according to ASTM D421/D422

TK50 : 00153

AMEC Geomatrix
8769
FRP Shoreline Investigation 2011

Percent Retained in Each Size Fraction

Description	%Coarse Gravel				% Gravel			% Coarse Sand	% Medium Sand		% Fine Sand			% Very Coarse Silt	% Coarse Silt	% Medium Silt	% Fine Silt	% Fine Silt	% Very Fine Silt	% Clay
Particle Size (microns)	3-2"	2-1 1/2"	1 1/2"-1"	1-3/4"	3/4-1/2"	1/2-3/8"	3/8"-4750	4750-2000	2000-850	850-425	425-250	250-150	150-75	75-32	32-22	22-13	13-9	9-7	7-3.2	<3.2
FRP-082911-005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	7.6	30.4	38.8	16.1	0.9	1.8	0.5	0.9	0.9	1.8
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	7.5	31.1	39.7	14.6	0.9	1.4	0.9	0.5	1.4	1.8
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	8.0	30.5	37.9	15.5	1.4	1.8	0.0	1.4	1.4	1.8
FRP-083011-009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	10.6	23.4	34.6	18.1	2.8	2.8	1.1	0.6	2.8	2.2
FRP-083011-020	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	4.1	23.6	36.9	9.3	7.1	3.6	2.1	5.7	7.1

TK50

TK50 : 00154

Client:	AMEC Geomatrix	Project No.:	8769
		Project:	FRP Shoreline Investigation 2011
ARI Triplicate Sample ID:	TK35S	Batch No.:	TK50-01
Client Triplicate Sample ID:	FRP-082911-005	Page:	1 of 1

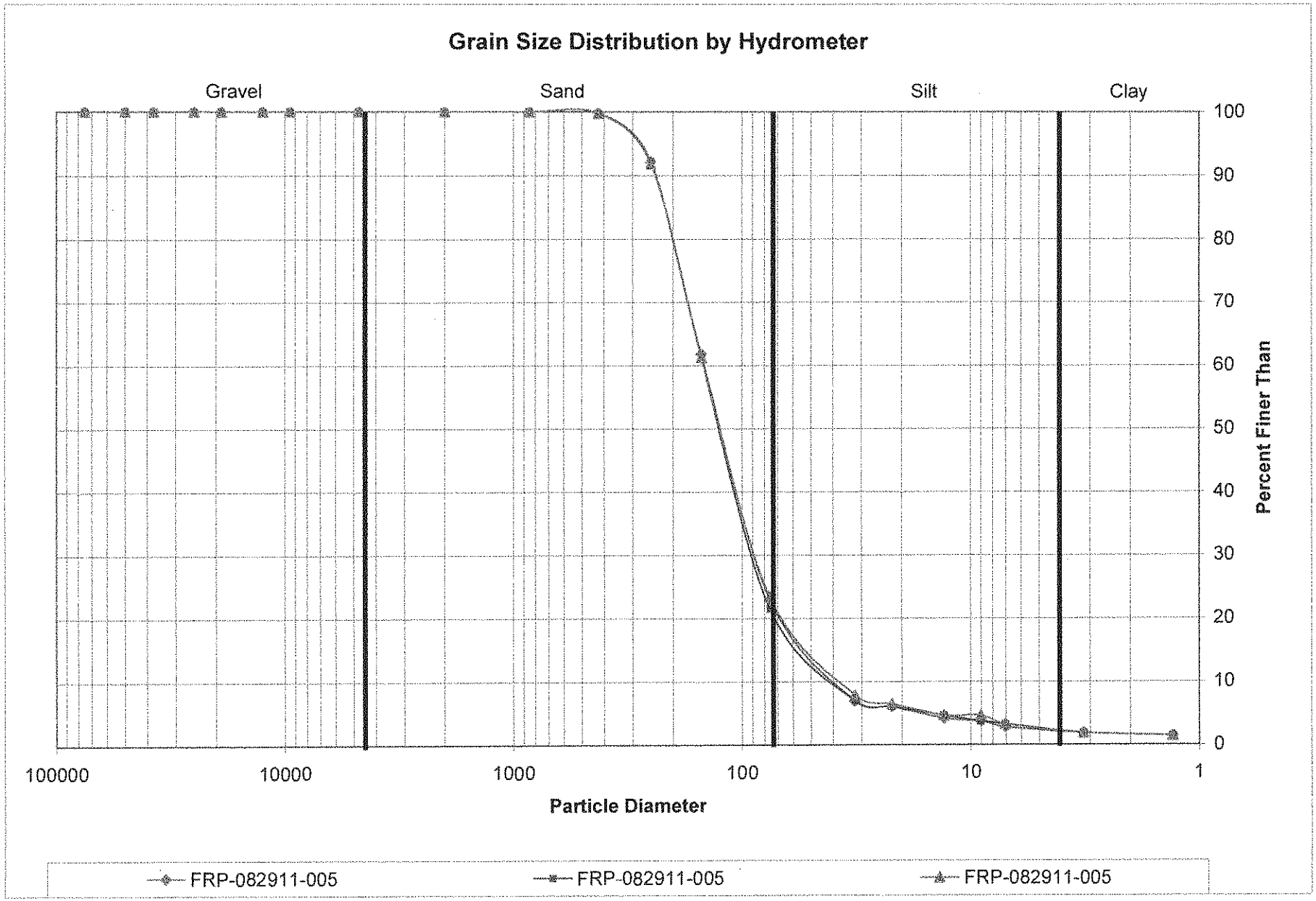
Relative Standard Deviation, By Size

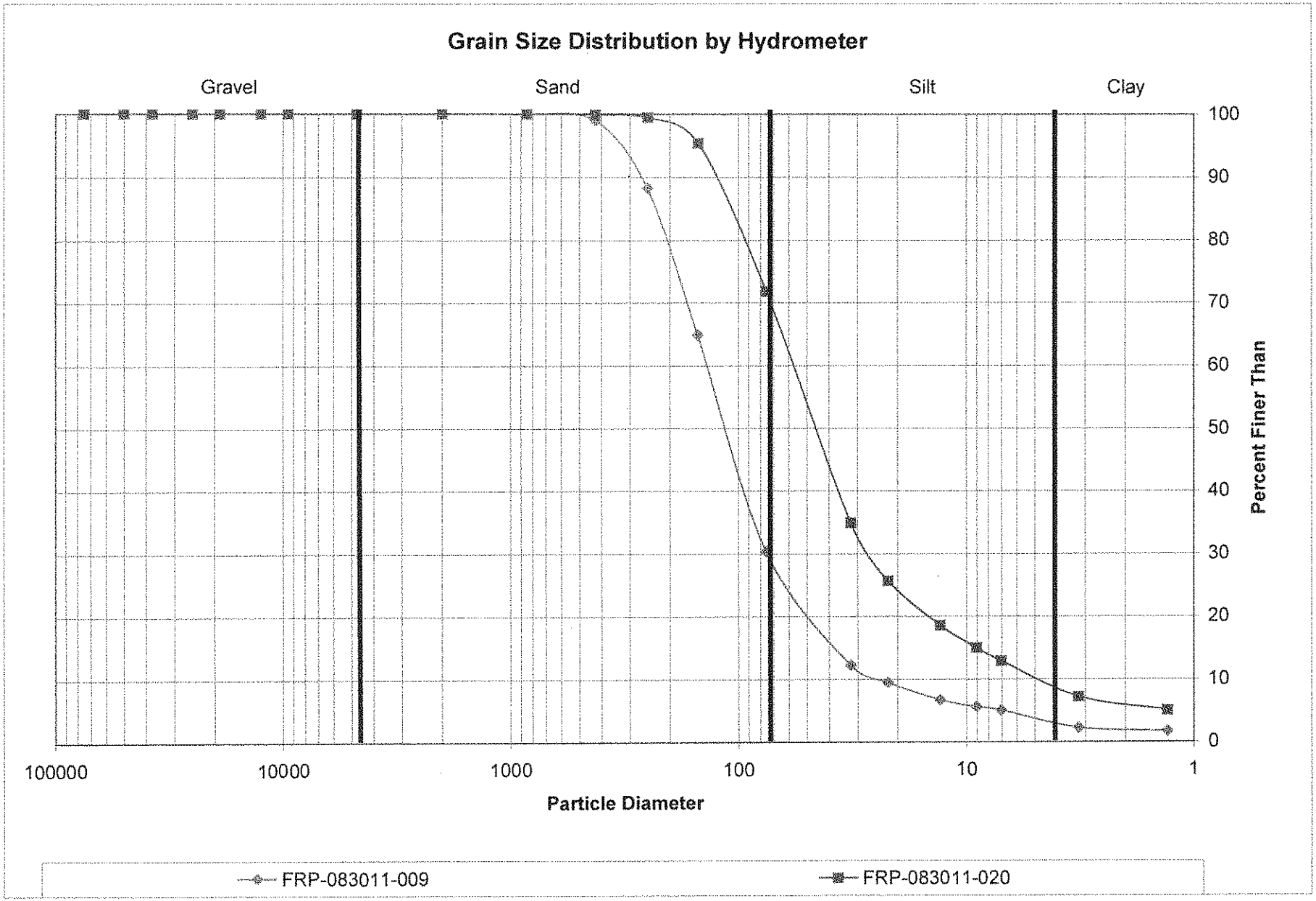
Sample ID	75000	50000	37500	25000	19000	12500	9500	4750	2000	850	425	250	150	75	32	22	13	9	7	3.2	1.3
FRP-082911-005	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	92.2	81.8	22.9	8.9	6.0	4.1	3.7	2.8	1.8	1.4
FRP-082911-005	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	92.2	81.1	21.4	6.9	6.0	4.6	3.7	3.2	1.8	1.4
FRP-082911-005	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.8	91.8	61.2	23.3	7.8	6.4	4.6	4.6	3.2	1.8	1.4
AVE	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	99.99	99.77	92.06	61.37	22.57	7.20	6.13	4.44	3.98	3.06	1.84	1.38
STDEV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.24	0.34	1.00	0.54	0.27	0.26	0.54	0.26	0.00	0.00
%RSD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.26	0.56	4.44	7.49	4.45	5.90	13.45	8.59	0.19	0.19

This Triplicate applies to the Batch Conteining the Following Samples

Sample ID	Date Sampled	Date Set up	Date Started	Date Complete	Data Qualifiers
FRP-082911-005	8/29/2011	9/1/2011	9/6/2011	9/8/2011	
	8/29/2011	9/1/2011	9/6/2011	9/8/2011	
	8/29/2011	9/1/2011	8/6/2011	9/8/2011	
FRP-083011-009	8/30/2011	9/2/2011	9/6/2011	9/8/2011	
FRP-083011-020	8/30/2011	9/2/2011	9/6/2011	9/8/2011	

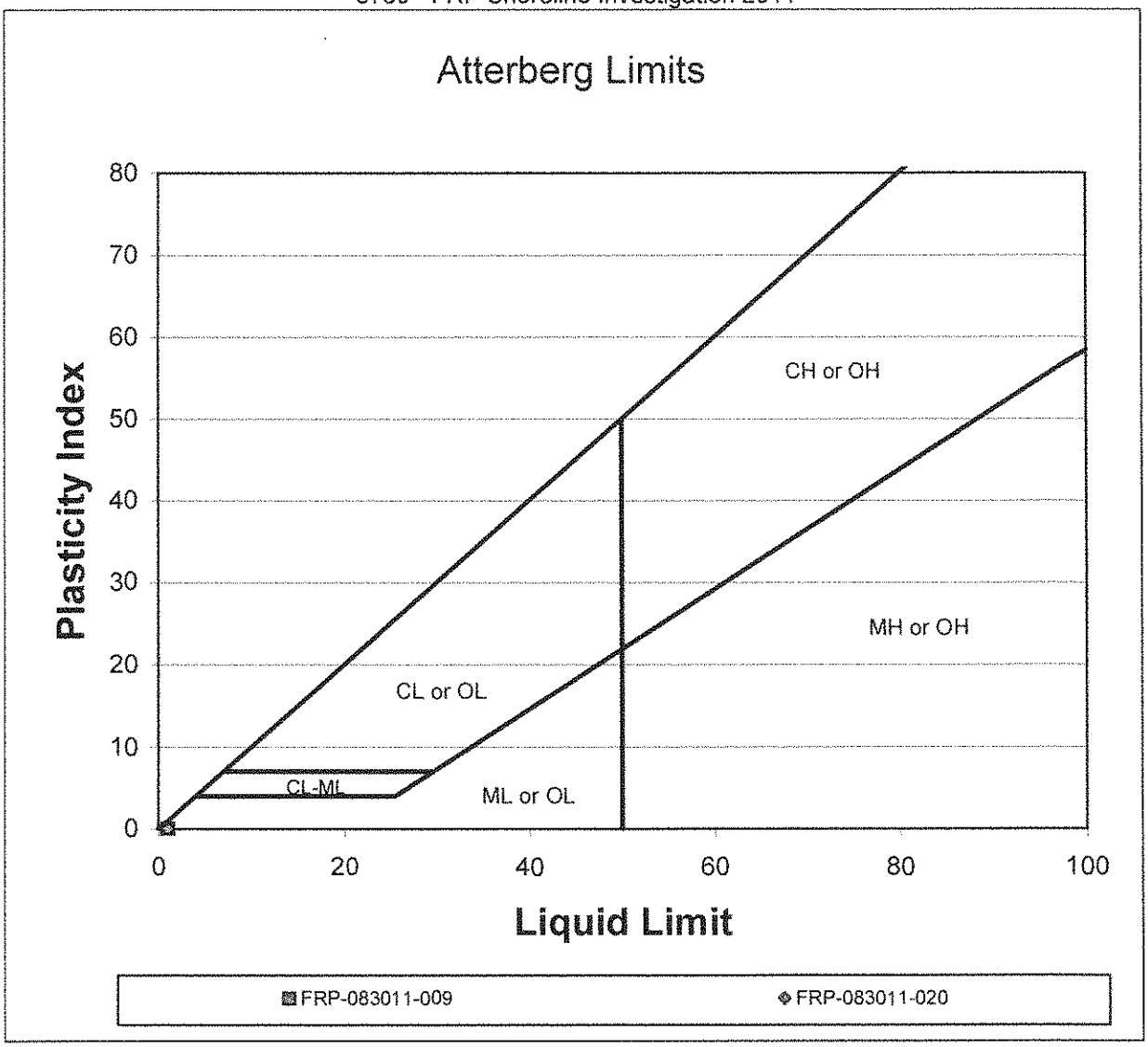
TK50:00155


Grain Size Distribution by Hydrometer
Gravel
Sand
Silt
Clay
100
90
80
70
60
50
40
30
20
10
0
Percent Finer Than
100000
10000
1000
100
10
1
Particle Diameter
FRP-082911-005
FRP-082911-005
FRP-082911-005


Grain Size Distribution by Hydrometer
Gravel
Sand
Silt
Clay
100
90
80
70
60
50
40
30
20
10
0
Percent Finer Than
100000
10000
1000
100
10
1
Particle Diameter
FRP-083011-009
FRP-083011-020

TKS0 : 00157

AMEC Geomatrix
8769 FRP Shoreline Investigation 2011



Sample Identification	As-Received Moisture Content	Plasticity Index	Liquid Limit	Plastic Limit	USCS
FRP-083011-009	24.41	NA	NA	NA	Non-Plastic
FRP-083011-020	30.98	NA	NA	NA	Non-Plastic

TK50

Total Solids

ARI Job ID: TK50

Volatiles Total Solids-voats
Data By: Pat Basilio
Created: 9/ 7/11

Worklist: 3951
Analyst: PAB
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

ARI ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids
1. TK50A 11-18869	1.00	10.73	10.02	92.70
2. TK50B 11-18870	0.98	10.18	9.32	90.65
3. TK50C 11-18871	0.97	10.34	8.94	85.06
4. TK50D 11-18872	1.00	10.52	8.00	73.53
5. TK50E 11-18873	0.97	10.14	8.28	79.72
6. TK50F 11-18874	1.00	10.36	8.44	79.49
7. TK50G 11-18875	0.96	10.31	8.41	79.68
8. TK50H 11-18876	0.95	10.57	9.03	83.99
9. TK50I 11-18877	0.98	10.60	9.68	90.44
10. TK50J 11-18878	1.02	10.45	9.56	90.56
11. TK50K 11-18879	0.97	10.11	9.24	90.48
12. TK50L 11-18880	0.97	10.12	9.25	90.49
13. TK50M 11-18881	0.95	10.65	9.44	87.53
14. TK50N 11-18882	0.98	10.90	8.52	76.01
15. TK50O 11-18883	0.95	10.24	8.57	82.02
16. TK50P 11-18884	1.00	10.09	8.21	79.32
17. TK50Q 11-18885	1.00	10.10	8.68	84.40

Worklist ID: 3951 Page: 1
* - VOA TS Copied From BETX TS
% - VOA TS Copied From Metals TS
$ - VOA TS Copied From Extraction TS

Volatiles Total Solids-voats
Data By: Pat Basilio
Created: 9/ 7/11

Worklist: 3951
Analyst: PAB
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

ARI ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids
18. TK50R 11-18886	0.98	10.40	8.66	81.53

* - VOA TS Copied From BETX TS
% - VOA TS Copied From Metals TS
$ - VOA TS Copied From Extraction TS

Solids Data Entry Report Checked by: KM Date: 9/07/11
Date: 09/07/11 Data Analyst: MJ

Solids Determination performed on 09/06/11 by MJ

JOB	SAMPLE	CLIENTID	TAREWEIGHT	SAMPDISH	DRYWEIGHT	SOLIDS
TK50	A	FRP-083011-001	1.005	10.728	10.016	92.68
TK50	B	FRP-083011-002	0.985	10.182	9.324	90.67
TK50	C	FRP-083011-003	0.971	10.342	8.938	85.02
TK50	D	FRP-083011-004	1.001	10.521	7.998	73.50
TK50	E	FRP-083011-005	0.973	10.141	8.284	79.74
TK50	F	FRP-083011-006	0.995	10.358	8.445	79.57
TK50	G	FRP-083011-007	0.956	10.314	8.411	79.66
TK50	H	FRP-083011-008	0.982	10.568	9.030	83.96
TK50	I	FRP-083011-010	0.985	10.596	9.676	90.43
TK50	J	FRP-083011-011	1.021	10.449	9.560	90.57
TK50	K	FRP-083011-012	0.974	10.114	9.239	90.43
TK50	L	FRP-083011-013	0.970	10.125	9.249	90.43
TK50	M	FRP-083011-014	0.954	10.649	9.435	87.48
TK50	N	FRP-083011-015	0.985	10.899	8.523	76.03
TK50	O	FRP-083011-016	0.952	10.241	8.571	82.02
TK50	P	FRP-083011-017	0.998	10.093	8.209	79.29
TK50	Q	FRP-083011-018	0.997	10.098	8.684	84.46
TK50	R	FRP-083011-019	0.977	10.399	8.665	81.60

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Total Solids Bench Sheet

Laboratory Section Metals

Oven Identification: 07 **Balance ID:** B116132369

Samples in Oven: Date: 09.06.11 Time: 1555 Temp: 102°C Analyst: MJ

Removed from Oven: Date: 09.07.11 Time: 0900 Temp: 101°C Analyst: MJ

ARI Sample ID	Tare Weight (g)	Tare + Sample Wet (g)	Tare + Sample Dry (g)	Date & Time Last Weight	Final Weighting >12 hrs[1]
TK50 A	1.005	10.728	10.016	—	✓
" B	0.985	10.182	9.324	—	✓
" C	0.971	10.342	8.938	—	✓
" D	1.001	10.521	7.998	—	✓
" E	0.973	10.141	8.284	—	✓
" F	0.995	10.358	8.445	—	✓
" G	0.956	10.314	8.411	—	✓
" H	0.982	10.568	9.030	—	✓
" I	0.985	10.596	9.676	—	✓
" J	1.021	10.449	9.560	—	✓
" K	0.974	10.114	9.239	—	✓
" L	0.970	10.125	9.249	—	✓
" M	0.954	10.649	9.435	—	✓
" N	0.985	10.899	8.523	—	✓
" O	0.952	10.241	8.571	—	✓
" P	0.998	10.093	8.209	—	✓
" Q	0.997	10.098	8.684	—	✓
" R	0.977	10.399	8.665	—	✓
TK85 A	0.988	10.328	10.094	—	✓
" B	1.010	10.478	10.237	—	✓
" C	1.000	10.139	9.929	—	✓
			09.06.11 MJ		

1) Place a check mark in this column if samples have dried > 12 but < 24 hours. When samples have been at 104°C < 12 hours, constant weight must be verified as described in SOP 10023S. Use a 2nd bench sheet for additional weightings.

TK50 : 00163

Volatile Raw Data
Preparation Log

ARI Job ID: TK50

TK50:0016K

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Volatile Organics Extraction Bench Sheet

(8260B, 8260B-SIM, 8021, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

ARI Project No.: TKSO
Client ID/Project:
Extraction Date: 1st Extraction:
2nd Extraction:
MeOH Lot No.:
Analyst: 9/6/9

	Lab ID	Vial No.	Preservative: $NaHSO_3$	Preservative: CH_3OH	Method 5035 Sample Weight: Vial Weight	Tare (from vial)	Sample Weight	Extract Volume	MeOH Spilt Volume	Comments
	MB:									
	LCS:									
	LCSD:									
1	TKSO A	2	—		36.87	32.079	4.791			
2	B	2	—		36.63	32.091	4.539			
3	C	1	—		36.40	31.941	4.459			
4	D	2	—		37.36	31.873	5.487			
5	E	3	—		37.26	32.061	5.199			
6	F	3	—		36.59	32.034	4.506			
7	G	1	—		36.73	32.158	4.572			
8	H	3	—		37.50	32.280	5.220			
9	I	1	—		37.05	32.299	4.751			
10	J	2	—		36.09	32.109	3.981			
11	K	1	—		36.70	31.985	4.715			
12	L	1	—		35.48	32.268	3.212			
13	M	3	—		36.69	32.185	4.505			
14	N	3	—		37.46	32.110	5.350			
15										
16										
17										
18										
19										
20										
	Balance ID:									

	Solution ID	Concentration	Amount Spiked	Analyst	Witness
Surrogate:					
Spike:					

TKSO : 00355

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Volatile Organics Extraction Bench Sheet

(8260B, 8260B-SIM, 8021, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

ARI Project No. TK50 | Client ID/Project | Extraction Date | MeOH Lot No. | Analyst

1st Extraction:
2nd Extraction:

	Lab ID	Vial No.	Preservative		Method 5035 Sample Weight					Comments
			$NaHSO_3$	CH_3OH	Vial Weight	Tare (from vial)	Sample Weight	Extract Volume	MeOH Spilt Volume	
	MB:									
	LCS:									
	LCSD:									
1	TK50 O	1	—		37.08	31.905	5.175			
2	P	1	—		36.64	31.898	4.742			
3	Q	1	—		37.00	31.883	5.117			
4	R	1	—		36.15	32.060	4.090			
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
	Balance ID:									

	Solution ID	Concentration	Amount Spiked	Analyst	Witness
Surrogate:					
Spike:					

TK50 : 00166