

ANALYTICAL REPORT

Job Number: 720-18071-2
Job Description: Santa Cruz Rail Line

For:
AMEC Geomatrix Inc.
2101 Webster Street, 12th Floor
Oakland, CA 94612
Attention: Mr. Matt Goerz



Approved for release.
Afsaneh Salimpour
Project Manager I
2/26/2009 3:39 PM

Afsaneh Salimpour
Project Manager I
afsaneh.salimpour@testamericainc.com
02/26/2009

EXECUTIVE SUMMARY - Detections

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-18071-1 Arsenic	SB-77-0.5	2.0	1.0	mg/Kg	6010B
720-18071-2 Arsenic	SB-77-1.5	1.4	1.0	mg/Kg	6010B
720-18071-3 Arsenic	SB-77-3.0	3.3	1.0	mg/Kg	6010B
720-18071-4 Arsenic	SB-78-0.5	4.5	1.0	mg/Kg	6010B
720-18071-5 Arsenic	SB-78-1.5	2.2	1.0	mg/Kg	6010B
720-18071-6 Arsenic	SB-78-4.5	1.9	1.1	mg/Kg	6010B
720-18071-7 Arsenic	SB-79-0.5	3.2	0.98	mg/Kg	6010B
720-18071-8 Arsenic	SB-79-1.5	2.1	1.0	mg/Kg	6010B
720-18071-9 Arsenic	SB-79-4.5	28	1.0	mg/Kg	6010B
720-18071-10 Arsenic	SB-80-0.5	53	0.95	mg/Kg	6010B
720-18071-11 Arsenic	SB-80-4.5	2.6	1.1	mg/Kg	6010B

EXECUTIVE SUMMARY - Detections

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-18071-12 Arsenic	SB-80-5.5	2.1	0.97	mg/Kg	6010B
720-18071-13 Arsenic	SB-81-0.5	1.6	1.1	mg/Kg	6010B
720-18071-14 Arsenic	SB-81-1.5	50	0.98	mg/Kg	6010B
720-18071-15 Arsenic	SB-81-4.5	5.4	0.98	mg/Kg	6010B
720-18071-16 Arsenic	SB-82-0.5	14	0.99	mg/Kg	6010B
720-18071-17 Arsenic	SB-82-1.5	1.1	1.0	mg/Kg	6010B
720-18071-18 Arsenic	SB-82-4.5	2.5	1.1	mg/Kg	6010B

METHOD SUMMARY

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Description	Lab Location	Method	Preparation Method
--------------------	---------------------	---------------	---------------------------

Matrix: Solid

Metals (ICP)	TAL SF	SW846 6010B	
Preparation, Metals	TAL SF		SW846 3050B

Lab References:

TAL SF = TestAmerica San Francisco

Method References:

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

METHOD / ANALYST SUMMARY

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Method	Analyst	Analyst ID
SW846 6010B	Arndt, Christopher	CA

SAMPLE SUMMARY

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Client Matrix</u>	<u>Date/Time Sampled</u>	<u>Date/Time Received</u>
720-18071-1	SB-77-0.5	Solid	02/11/2009 1420	02/12/2009 1735
720-18071-2	SB-77-1.5	Solid	02/11/2009 1422	02/12/2009 1735
720-18071-3	SB-77-3.0	Solid	02/11/2009 1425	02/12/2009 1735
720-18071-4	SB-78-0.5	Solid	02/11/2009 1433	02/12/2009 1735
720-18071-5	SB-78-1.5	Solid	02/11/2009 1436	02/12/2009 1735
720-18071-6	SB-78-4.5	Solid	02/11/2009 1439	02/12/2009 1735
720-18071-7	SB-79-0.5	Solid	02/11/2009 1445	02/12/2009 1735
720-18071-8	SB-79-1.5	Solid	02/11/2009 1448	02/12/2009 1735
720-18071-9	SB-79-4.5	Solid	02/11/2009 1450	02/12/2009 1735
720-18071-10	SB-80-0.5	Solid	02/11/2009 1503	02/12/2009 1735
720-18071-11	SB-80-4.5	Solid	02/11/2009 1505	02/12/2009 1735
720-18071-12	SB-80-5.5	Solid	02/11/2009 1508	02/12/2009 1735
720-18071-13	SB-81-0.5	Solid	02/11/2009 1518	02/12/2009 1735
720-18071-14	SB-81-1.5	Solid	02/11/2009 1520	02/12/2009 1735
720-18071-15	SB-81-4.5	Solid	02/11/2009 1525	02/12/2009 1735
720-18071-16	SB-82-0.5	Solid	02/11/2009 1535	02/12/2009 1735
720-18071-17	SB-82-1.5	Solid	02/11/2009 1540	02/12/2009 1735
720-18071-18	SB-82-4.5	Solid	02/11/2009 1545	02/12/2009 1735

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-77-0.5

Lab Sample ID: 720-18071-1
Client Matrix: Solid

Date Sampled: 02/11/2009 1420
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 02/23/2009 1409
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		2.0		1.0

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-77-1.5

Lab Sample ID: 720-18071-2
Client Matrix: Solid

Date Sampled: 02/11/2009 1422
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 720-47057	Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 720-47021	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	0.98 g
Date Analyzed:	02/23/2009 1412		Final Weight/Volume:	50 mL
Date Prepared:	02/20/2009 1852			

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		1.4		1.0

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-77-3.0

Lab Sample ID: 720-18071-3
Client Matrix: Solid

Date Sampled: 02/11/2009 1425
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 02/23/2009 1416
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 0.97 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		3.3		1.0

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: **SB-78-0.5**

Lab Sample ID: 720-18071-4
Client Matrix: Solid

Date Sampled: 02/11/2009 1433
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 02/23/2009 1420
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		4.5		1.0

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-78-1.5

Lab Sample ID: 720-18071-5
Client Matrix: Solid

Date Sampled: 02/11/2009 1436
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 02/23/2009 1423
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 0.97 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		2.2		1.0

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-78-4.5

Lab Sample ID: 720-18071-6
Client Matrix: Solid

Date Sampled: 02/11/2009 1439
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 02/23/2009 1427
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 0.95 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		1.9		1.1

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-79-0.5

Lab Sample ID: 720-18071-7

Date Sampled: 02/11/2009 1445

Client Matrix: Solid

Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B

Analysis Batch: 720-47057

Instrument ID:

Varian ICP

Preparation: 3050B

Prep Batch: 720-47021

Lab File ID:

N/A

Dilution: 1.0

Initial Weight/Volume: 1.02 g

Date Analyzed: 02/23/2009 1431

Final Weight/Volume: 50 mL

Date Prepared: 02/20/2009 1852

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		3.2		0.98

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-79-1.5

Lab Sample ID: 720-18071-8
Client Matrix: Solid

Date Sampled: 02/11/2009 1448
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 02/23/2009 1434
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		2.1		1.0

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-79-4.5

Lab Sample ID: 720-18071-9
Client Matrix: Solid

Date Sampled: 02/11/2009 1450
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 02/23/2009 1449
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		28		1.0

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-80-0.5

Lab Sample ID: 720-18071-10
Client Matrix: Solid

Date Sampled: 02/11/2009 1503
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 720-47057	Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 720-47021	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	1.05 g
Date Analyzed:	02/23/2009 1453		Final Weight/Volume:	50 mL
Date Prepared:	02/20/2009 1852			

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		53		0.95

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-80-4.5

Lab Sample ID: 720-18071-11

Date Sampled: 02/11/2009 1505

Client Matrix: Solid

Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B

Analysis Batch: 720-47057

Instrument ID: Varian ICP

Preparation: 3050B

Prep Batch: 720-47021

Lab File ID: N/A

Dilution: 1.0

Initial Weight/Volume: 0.95 g

Date Analyzed: 02/23/2009 1456

Final Weight/Volume: 50 mL

Date Prepared: 02/20/2009 1852

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		2.6		1.1

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-80-5.5

Lab Sample ID: 720-18071-12
Client Matrix: Solid

Date Sampled: 02/11/2009 1508
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 02/23/2009 1500
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.03 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		2.1		0.97

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-81-0.5

Lab Sample ID: 720-18071-13

Date Sampled: 02/11/2009 1518

Client Matrix: Solid

Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B

Analysis Batch: 720-47057

Instrument ID:

Varian ICP

Preparation: 3050B

Prep Batch: 720-47021

Lab File ID:

N/A

Dilution: 1.0

Initial Weight/Volume: 0.95 g

Date Analyzed: 02/23/2009 1504

Final Weight/Volume: 50 mL

Date Prepared: 02/20/2009 1852

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		1.6		1.1

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-81-1.5

Lab Sample ID: 720-18071-14
Client Matrix: Solid

Date Sampled: 02/11/2009 1520
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 720-47057	Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 720-47021	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	1.02 g
Date Analyzed:	02/23/2009 1507		Final Weight/Volume:	50 mL
Date Prepared:	02/20/2009 1852			

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		50		0.98

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-81-4.5

Lab Sample ID: 720-18071-15

Date Sampled: 02/11/2009 1525

Client Matrix: Solid

Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B

Analysis Batch: 720-47057

Instrument ID:

Varian ICP

Preparation: 3050B

Prep Batch: 720-47021

Lab File ID:

N/A

Dilution: 1.0

Initial Weight/Volume: 1.02 g

Date Analyzed: 02/23/2009 1511

Final Weight/Volume: 50 mL

Date Prepared: 02/20/2009 1852

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		5.4		0.98

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-82-0.5

Lab Sample ID: 720-18071-16
Client Matrix: Solid

Date Sampled: 02/11/2009 1535
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method: 6010B
Preparation: 3050B
Dilution: 1.0
Date Analyzed: 02/23/2009 1515
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.01 g
Final Weight/Volume: 50 mL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		14		0.99

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-82-1.5

Lab Sample ID: 720-18071-17
Client Matrix: Solid

Date Sampled: 02/11/2009 1540
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 720-47122	Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 720-47062	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	0.96 g
Date Analyzed:	02/24/2009 1855		Final Weight/Volume:	50 mL
Date Prepared:	02/23/2009 1644			

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		1.1		1.0

Analytical Data

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Client Sample ID: SB-82-4.5

Lab Sample ID: 720-18071-18
Client Matrix: Solid

Date Sampled: 02/11/2009 1545
Date Received: 02/12/2009 1735

6010B Metals (ICP)

Method:	6010B	Analysis Batch: 720-47122	Instrument ID:	Varian ICP
Preparation:	3050B	Prep Batch: 720-47062	Lab File ID:	N/A
Dilution:	1.0		Initial Weight/Volume:	0.95 g
Date Analyzed:	02/24/2009 1859		Final Weight/Volume:	50 mL
Date Prepared:	02/23/2009 1644			

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL
Arsenic		2.5		1.1

DATA REPORTING QUALIFIERS

<u>Lab Section</u>	<u>Qualifier</u>	<u>Description</u>
--------------------	------------------	--------------------

Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 720-47021					
LCS 720-47021/2-A	Lab Control Spike	T	Solid	3050B	
LCSD 720-47021/3-A	Lab Control Spike Duplicate	T	Solid	3050B	
LCSSRM 720-47021/25-A	LCS-Standard Reference Material	T	Solid	3050B	
MB 720-47021/1-A	Method Blank	T	Solid	3050B	
720-18071-1	SB-77-0.5	T	Solid	3050B	
720-18071-2	SB-77-1.5	T	Solid	3050B	
720-18071-3	SB-77-3.0	T	Solid	3050B	
720-18071-4	SB-78-0.5	T	Solid	3050B	
720-18071-5	SB-78-1.5	T	Solid	3050B	
720-18071-6	SB-78-4.5	T	Solid	3050B	
720-18071-7	SB-79-0.5	T	Solid	3050B	
720-18071-8	SB-79-1.5	T	Solid	3050B	
720-18071-9	SB-79-4.5	T	Solid	3050B	
720-18071-10	SB-80-0.5	T	Solid	3050B	
720-18071-11	SB-80-4.5	T	Solid	3050B	
720-18071-12	SB-80-5.5	T	Solid	3050B	
720-18071-13	SB-81-0.5	T	Solid	3050B	
720-18071-14	SB-81-1.5	T	Solid	3050B	
720-18071-15	SB-81-4.5	T	Solid	3050B	
720-18071-16	SB-82-0.5	T	Solid	3050B	
720-18166-A-5-A MS	Matrix Spike	T	Solid	3050B	
720-18166-A-5-B MSD	Matrix Spike Duplicate	T	Solid	3050B	

Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

QC Association Summary

Lab Sample ID	Client Sample ID	Report		Method	Prep Batch
		Basis	Client Matrix		
Metals					
Analysis Batch:720-47057					
LCS 720-47021/2-A	Lab Control Spike	T	Solid	6010B	720-47021
LCSD 720-47021/3-A	Lab Control Spike Duplicate	T	Solid	6010B	720-47021
LCSSRM 720-47021/25-A	LCS-Standard Reference Material	T	Solid	6010B	720-47021
MB 720-47021/1-A	Method Blank	T	Solid	6010B	720-47021
720-18071-1	SB-77-0.5	T	Solid	6010B	720-47021
720-18071-2	SB-77-1.5	T	Solid	6010B	720-47021
720-18071-3	SB-77-3.0	T	Solid	6010B	720-47021
720-18071-4	SB-78-0.5	T	Solid	6010B	720-47021
720-18071-5	SB-78-1.5	T	Solid	6010B	720-47021
720-18071-6	SB-78-4.5	T	Solid	6010B	720-47021
720-18071-7	SB-79-0.5	T	Solid	6010B	720-47021
720-18071-8	SB-79-1.5	T	Solid	6010B	720-47021
720-18071-9	SB-79-4.5	T	Solid	6010B	720-47021
720-18071-10	SB-80-0.5	T	Solid	6010B	720-47021
720-18071-11	SB-80-4.5	T	Solid	6010B	720-47021
720-18071-12	SB-80-5.5	T	Solid	6010B	720-47021
720-18071-13	SB-81-0.5	T	Solid	6010B	720-47021
720-18071-14	SB-81-1.5	T	Solid	6010B	720-47021
720-18071-15	SB-81-4.5	T	Solid	6010B	720-47021
720-18071-16	SB-82-0.5	T	Solid	6010B	720-47021
720-18166-A-5-A MS	Matrix Spike	T	Solid	6010B	720-47021
720-18166-A-5-B MSD	Matrix Spike Duplicate	T	Solid	6010B	720-47021
Prep Batch: 720-47062					
LCS 720-47062/2-A	Lab Control Spike	T	Solid	3050B	
LCSD 720-47062/3-A	Lab Control Spike Duplicate	T	Solid	3050B	
LCSSRM 720-47062/22-A	LCS-Standard Reference Material	T	Solid	3050B	
MB 720-47062/1-A	Method Blank	T	Solid	3050B	
720-18071-17	SB-82-1.5	T	Solid	3050B	
720-18071-17MS	Matrix Spike	T	Solid	3050B	
720-18071-17MSD	Matrix Spike Duplicate	T	Solid	3050B	
720-18071-18	SB-82-4.5	T	Solid	3050B	
Analysis Batch:720-47122					
LCS 720-47062/2-A	Lab Control Spike	T	Solid	6010B	720-47062
LCSD 720-47062/3-A	Lab Control Spike Duplicate	T	Solid	6010B	720-47062
LCSSRM 720-47062/22-A	LCS-Standard Reference Material	T	Solid	6010B	720-47062
MB 720-47062/1-A	Method Blank	T	Solid	6010B	720-47062
720-18071-17	SB-82-1.5	T	Solid	6010B	720-47062
720-18071-17MS	Matrix Spike	T	Solid	6010B	720-47062
720-18071-17MSD	Matrix Spike Duplicate	T	Solid	6010B	720-47062
720-18071-18	SB-82-4.5	T	Solid	6010B	720-47062

Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

QC Association Summary

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Report Basis</u>	<u>Client Matrix</u>	<u>Method</u>	<u>Prep Batch</u>
----------------------	-------------------------	---------------------	----------------------	---------------	-------------------

Report Basis

T = Total

Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Method Blank - Batch: 720-47021

**Method: 6010B
Preparation: 3050B**

Lab Sample ID: MB 720-47021/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 02/23/2009 1327
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: .95 g
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Arsenic	ND		1.1

LCS-Standard Reference Material - Batch:

**Method: 6010B
Preparation: 3050B**

Lab Sample ID: LCSSRM 720-47021/25-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 02/23/2009 1518
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	22.7	21.3	94	69 - 119	

**Lab Control Spike/
Lab Control Spike Duplicate Recovery Report - Batch: 720-47021**

**Method: 6010B
Preparation: 3050B**

LCS Lab Sample ID: LCS 720-47021/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 02/23/2009 1331
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.02 g
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 720-47021/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 02/23/2009 1335
Date Prepared: 02/20/2009 1852

Analysis Batch: 720-47057
Prep Batch: 720-47021
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Arsenic	100	99	80 - 120	1	20		

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

Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

**Laboratory Control/
Laboratory Duplicate Data Report - Batch: 720-47021**

**Method: 6010B
Preparation: 3050B**

LCS Lab Sample ID: LCS 720-47021/2-A Units: mg/Kg
 Client Matrix: Solid
 Dilution: 1.0
 Date Analyzed: 02/23/2009 1331
 Date Prepared: 02/20/2009 1852

LCSD Lab Sample ID: LCSD 720-47021/3-A
 Client Matrix: Solid
 Dilution: 1.0
 Date Analyzed: 02/23/2009 1335
 Date Prepared: 02/20/2009 1852

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Arsenic	196	200	196	197

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-47021**

**Method: 6010B
Preparation: 3050B**

MS Lab Sample ID: 720-18166-A-5-A MS Analysis Batch: 720-47057
 Client Matrix: Solid Prep Batch: 720-47021
 Dilution: 1.0
 Date Analyzed: 02/23/2009 1340
 Date Prepared: 02/20/2009 1852

Instrument ID: Varian ICP
 Lab File ID: N/A
 Initial Weight/Volume: 1.03 g
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 720-18166-A-5-B MSD Analysis Batch: 720-47057
 Client Matrix: Solid Prep Batch: 720-47021
 Dilution: 1.0
 Date Analyzed: 02/23/2009 1343
 Date Prepared: 02/20/2009 1852

Instrument ID: Varian ICP
 Lab File ID: N/A
 Initial Weight/Volume: 1.02 g
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Arsenic	91	92	75 - 125	1	20		

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

Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

**Matrix Spike/
Matrix Spike Duplicate Data Report - Batch: 720-47021**

**Method: 6010B
Preparation: 3050B**

MS Lab Sample ID: 720-18166-A-5-A MS Units: mg/Kg
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 02/23/2009 1340
Date Prepared: 02/20/2009 1852

MSD Lab Sample ID: 720-18166-A-5-B MS
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 02/23/2009 1343
Date Prepared: 02/20/2009 1852

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Arsenic	2.2	194	196	180	182

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

Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Method Blank - Batch: 720-47062

Method: 6010B
Preparation: 3050B

Lab Sample ID: MB 720-47062/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 02/24/2009 1835
Date Prepared: 02/23/2009 1644

Analysis Batch: 720-47122
Prep Batch: 720-47062
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.04 g
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL
Arsenic	ND		0.96

LCS-Standard Reference Material - Batch:

Method: 6010B
Preparation: 3050B

Lab Sample ID: LCSSRM 720-47062/22-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 02/24/2009 2013
Date Prepared: 02/23/2009 1644

Analysis Batch: 720-47122
Prep Batch: 720-47062
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.00 g
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	22.7	18.4	81	69 - 119	

**Lab Control Spike/
Lab Control Spike Duplicate Recovery Report - Batch: 720-47062**

Method: 6010B
Preparation: 3050B

LCS Lab Sample ID: LCS 720-47062/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 02/24/2009 1840
Date Prepared: 02/23/2009 1644

Analysis Batch: 720-47122
Prep Batch: 720-47062
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 1.02 g
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 720-47062/3-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 02/24/2009 1844
Date Prepared: 02/23/2009 1644

Analysis Batch: 720-47122
Prep Batch: 720-47062
Units: mg/Kg

Instrument ID: Varian ICP
Lab File ID: N/A
Initial Weight/Volume: 0.97 g
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Que
	LCS	LCSD					
Arsenic	100	100	80 - 120	5	20		

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

Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

**Laboratory Control/
Laboratory Duplicate Data Report - Batch: 720-47062**

**Method: 6010B
Preparation: 3050B**

LCS Lab Sample ID: LCS 720-47062/2-A Units: mg/Kg
 Client Matrix: Solid
 Dilution: 1.0
 Date Analyzed: 02/24/2009 1840
 Date Prepared: 02/23/2009 1644

LCSD Lab Sample ID: LCSD 720-47062/3-A
 Client Matrix: Solid
 Dilution: 1.0
 Date Analyzed: 02/24/2009 1844
 Date Prepared: 02/23/2009 1644

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Arsenic	196	206	196	207

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-47062**

**Method: 6010B
Preparation: 3050B**

MS Lab Sample ID: 720-18071-17 Analysis Batch: 720-47122
 Client Matrix: Solid Prep Batch: 720-47062
 Dilution: 1.0
 Date Analyzed: 02/24/2009 1848
 Date Prepared: 02/23/2009 1644

Instrument ID: Varian ICP
 Lab File ID: N/A
 Initial Weight/Volume: 0.98 g
 Final Weight/Volume: 50 mL

MSD Lab Sample ID: 720-18071-17 Analysis Batch: 720-47122
 Client Matrix: Solid Prep Batch: 720-47062
 Dilution: 1.0
 Date Analyzed: 02/24/2009 1852
 Date Prepared: 02/23/2009 1644

Instrument ID: Varian ICP
 Lab File ID: N/A
 Initial Weight/Volume: 0.99 g
 Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Arsenic	95	95	75 - 125	1	20		

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

Quality Control Results

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

**Matrix Spike/
Matrix Spike Duplicate Data Report - Batch: 720-47062**

**Method: 6010B
Preparation: 3050B**

MS Lab Sample ID: 720-18071-17 Units: mg/Kg
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 02/24/2009 1848
Date Prepared: 02/23/2009 1644

MSD Lab Sample ID: 720-18071-17
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 02/24/2009 1852
Date Prepared: 02/23/2009 1644

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Arsenic	1.1	204	202	195	192

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

Salimpour, Afsaneh

From: Klitzke, Tiffany [Tiffany.Klitzke@amec.com]
Sent: Thursday, February 19, 2009 3:09 PM
To: Salimpour, Afsaneh
Subject: Santa Cruz Railroad-additional analysis

Hi Afsaneh,
Is it possible for you to test the following samples for Arsenic by 6010 in addition to the other requested analyses?

The samples are:

yes - SB-71 0.5 → 720 - 18061 - 1
yes - SB-72-0.5 - 4
yes - SB-73-0.5 720 - 18062 - 1
*Sample on HOLD should remain on hold for now

SB-77-0.5, 1.5, 3.0 18071 - 1, 2, 3
SB-78-0.5, 1.5, 4.5 4, 5, 6
SB-79-0.5, 1.5, 4.5 7, 8, 9
SB-80-0.5, 4.5, 5.5 10, 11, 12
SB-81-0.5, 1.5, 4.5 13, 14, 15
SB-82-0.5, 1.5, 4.5 16, 17, 18

yes - SB-95-0.5 18099 - 2
yes - SB-96-0.5 - 4
*Samples on HOLD should remain on hold for now

Please let me know if it will be possible to analyze these samples for Arsenic.
Thanks,

Tiffany Klitzke | Staff Geologist
AMEC Geomatrix | 2101 Webster St., 12th Fl. | Oakland, CA 94612

510.663.4144 (direct) | 510.663.4141 (fax) | Tiffany.Klitzke@amec.com

The materials transmitted by this electronic mail are confidential, and only for the use of the intended recipient, and may also be subject to applicable privileges. Any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please immediately notify the sender. Please also remove this message from your hard drive, diskette, and any other storage device.

P.S. Please update your address book with my new email: Tiffany.Klitzke@amec.com Thanks.

The information contained in this e-mail is intended only for the individual or entity to whom it is addressed.
Its contents (including any attachments) may contain confidential and/or privileged information.
If you are not an intended recipient you must not use, disclose, disseminate, copy or print its contents.
If you receive this e-mail in error, please notify the sender by reply e-mail and delete and destroy the message.

Login Sample Receipt Check List

Client: AMEC Geomatrix Inc.

Job Number: 720-18071-2

Login Number: 18071
Creator: Bullock, Tracy
List Number: 1

List Source: TestAmerica San Francisco

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

