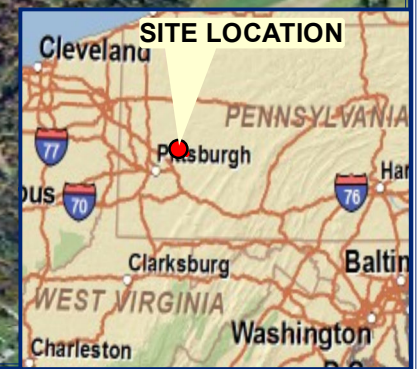


ATTACHMENT 1:
FIGURES



Residential/Site Area



TDD No. TL03-11-03-003
START Contract No. EP-S3-10-04

Figure 1: Site Location Map
Kiskimere Groundwater Well Investigation Site
Kiskimere, Armstrong County, Pennsylvania

0 650 1,300 2,600 Feet

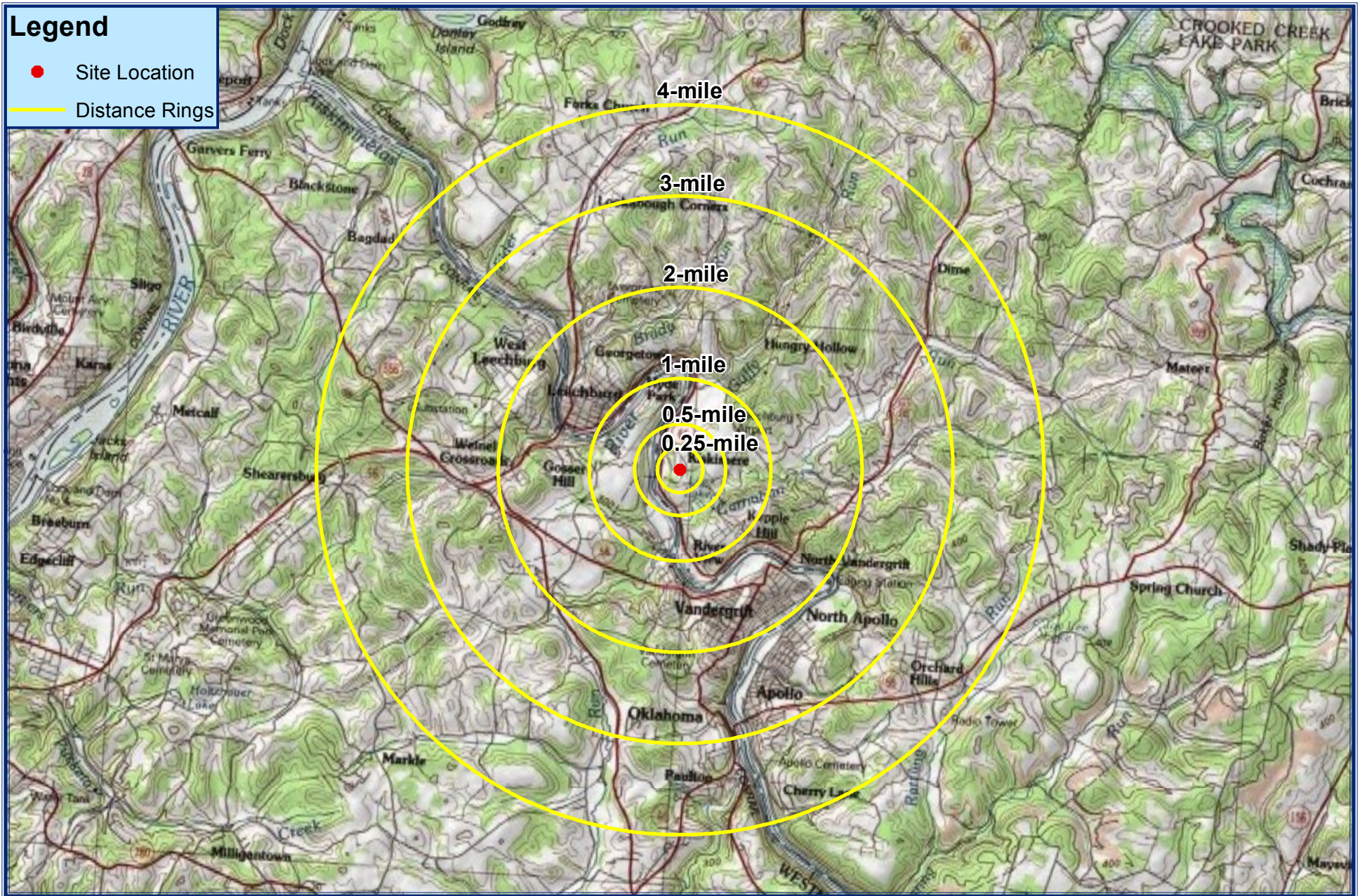
Map By:
WFH

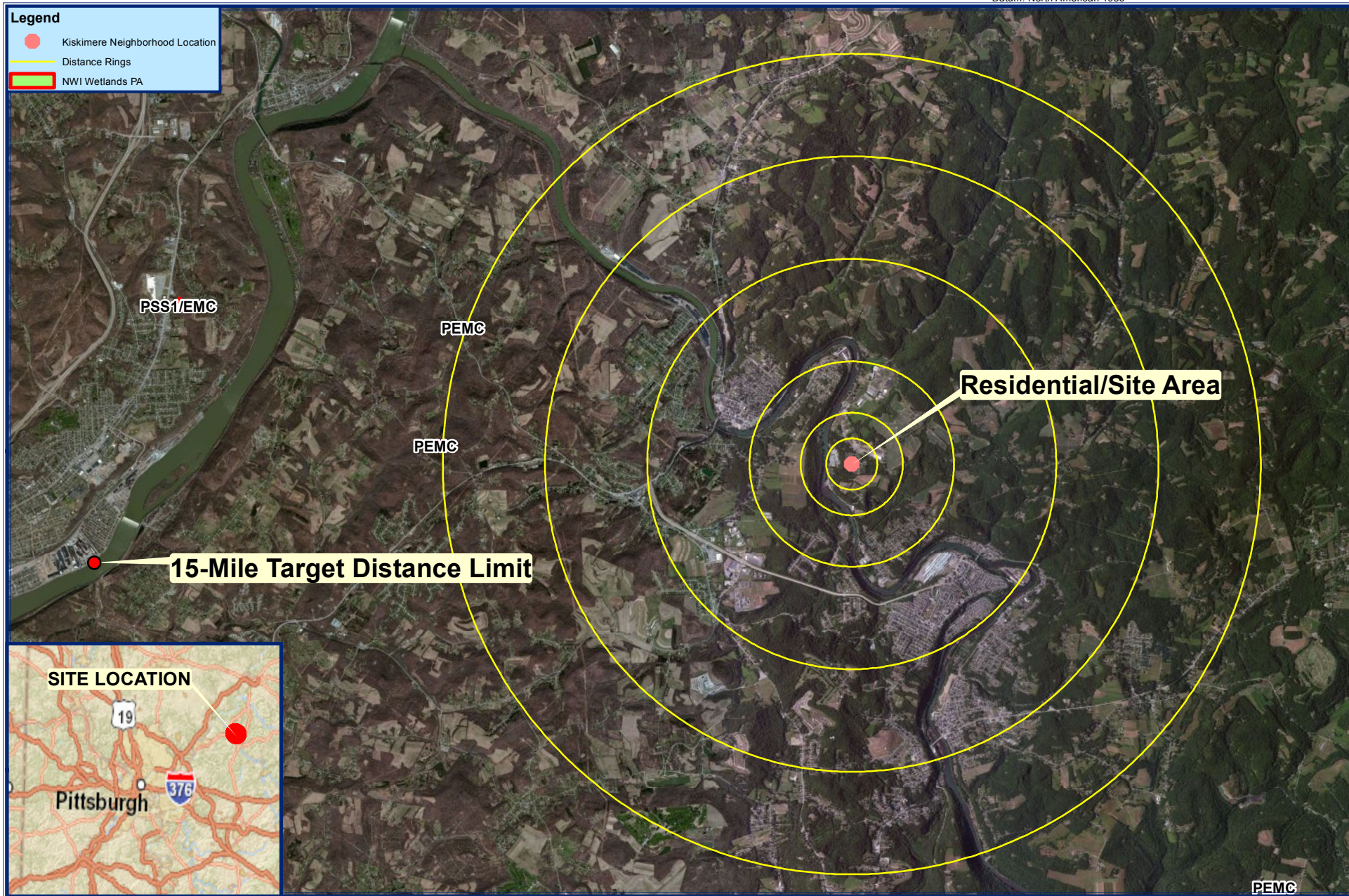
Date Modified:
6/12/2011

Scale: 1:11,907






Source:
Bing Maps Online Services for ESRI -
Bing Maps Aerial Layer

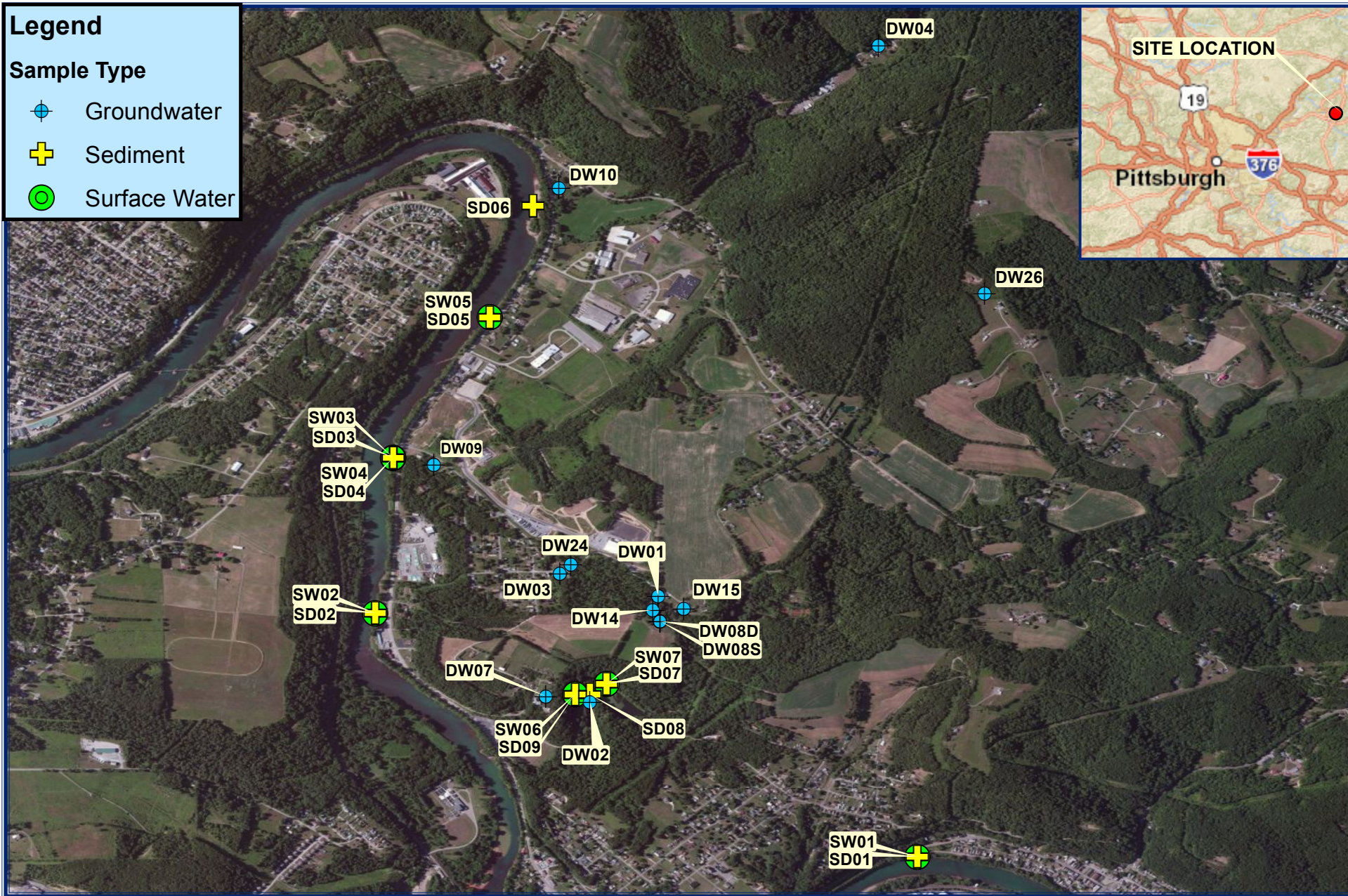




Legend

Sample Type

-  Groundwater
-  Sediment
-  Surface Water



TDD No. TL03-11-03-003
START Contract No. EP-S3-10-04

Figure 4: Sample Location Map
Kiskimere Groundwater Well Investigation Site
Kiskimere, Armstrong County, Pennsylvania

0 1,250 2,500 5,000 Feet

Map By:
WFH

Date Modified:
6/15/2012

Scale: 1:23,465






Source:

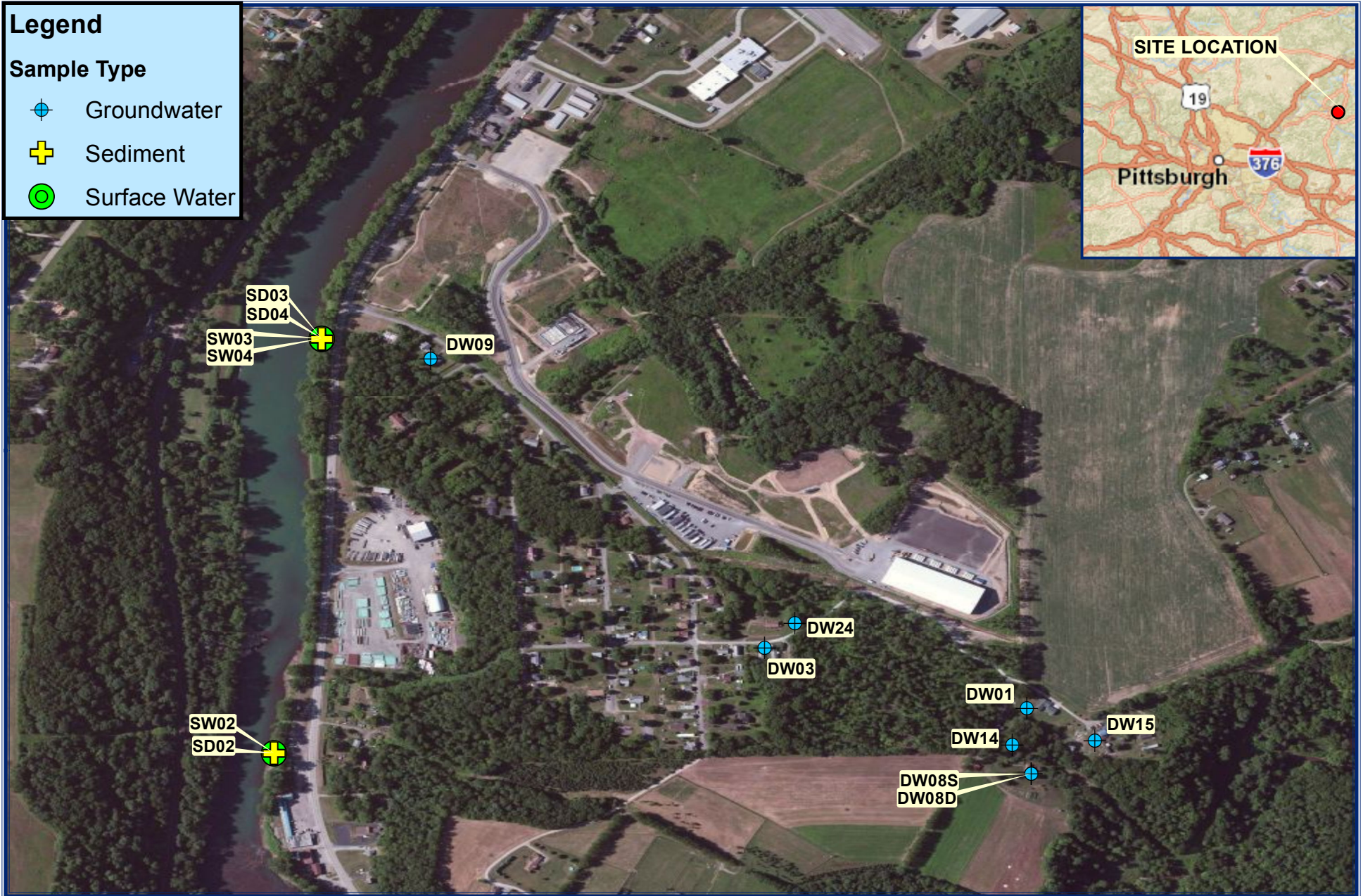
Bing Maps Online Services for ESRI -
Bing Maps Aerial Layer

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

Legend

Sample Type

-  Groundwater
-  Sediment
-  Surface Water



TDD No. TL03-11-03-003
START Contract No. EP-S3-10-04

Figure 5: Kiskimere Area Sample Location Map
Kiskimere Groundwater Well Investigation Site
Kiskimere, Armstrong County, Pennsylvania

0 480 960 1,920 Feet

Map By:
WFH

Date Modified:
6/15/2012

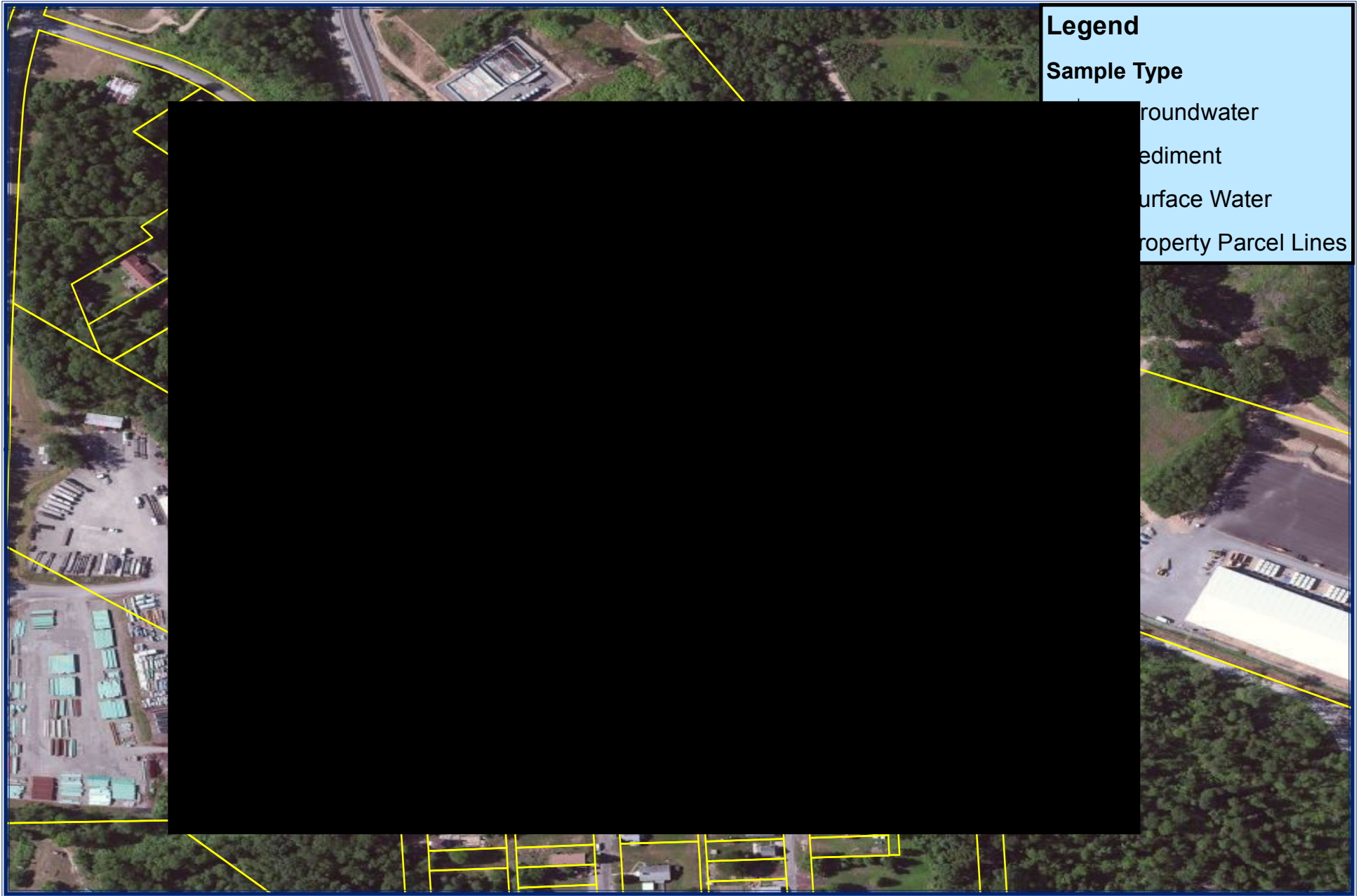
Scale: 1:8,843



Source:

Bing Maps Online Services for ESRI -
Bing Maps Aerial Layer

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree



Legend

Sample Type

- Groundwater
- Sediment
- Surface Water
- Property Parcel Lines



TechLaw

TDD No. TL03-11-03-003
START Contract No. EP-S3-10-04

Figure 5A: Kiskimere Residential Area Sample Location Map
Kiskimere Groundwater Well Investigation Site
Kiskimere, Armstrong County, Pennsylvania

0 220 440 880 Feet

Map By:
WFH

Date Modified:
11/15/2012

Scale: 1:4,069






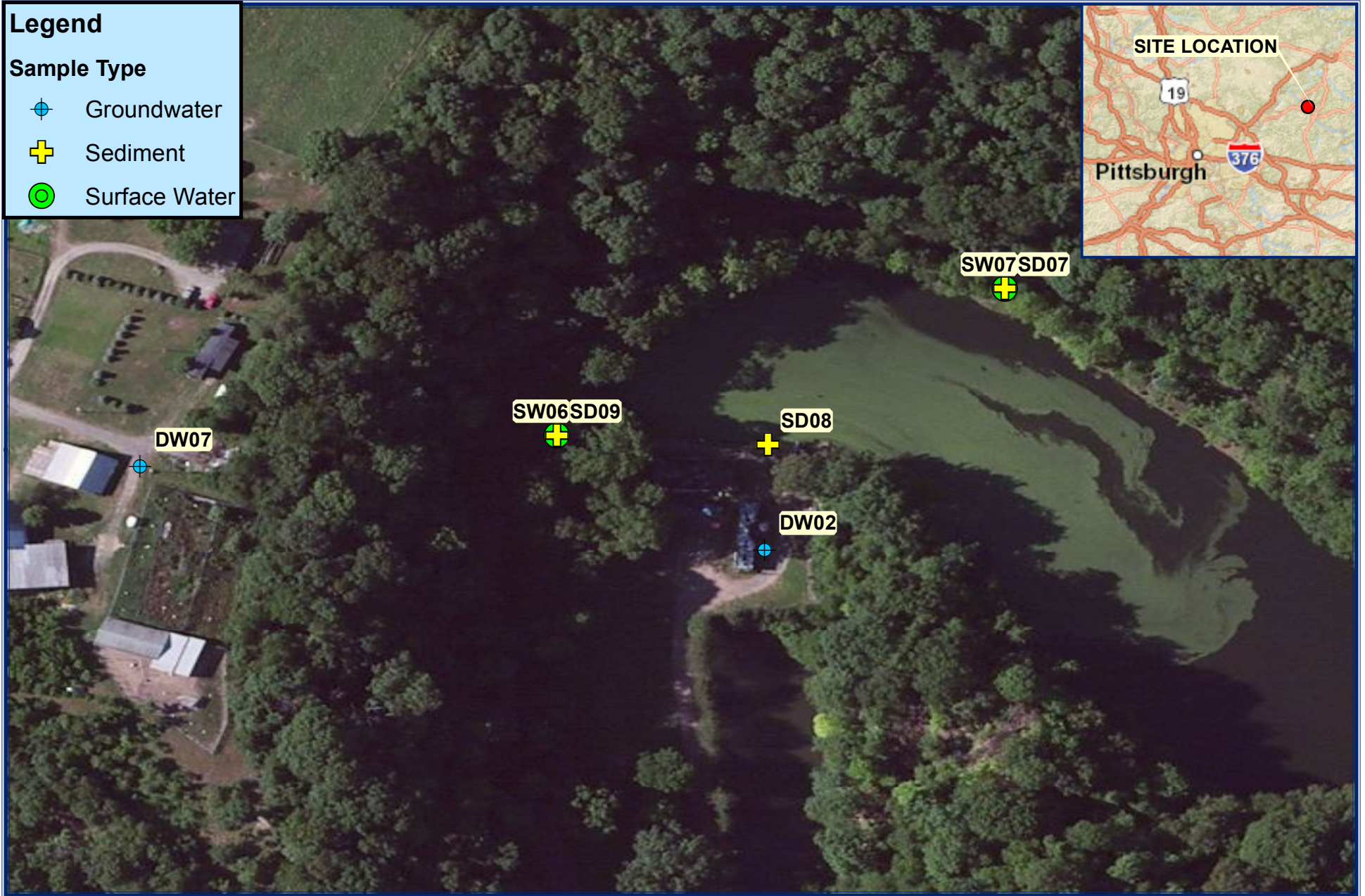
Source:

Bing Maps Online Services for ESRI -
Bing Maps Aerial Layer
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

Legend

Sample Type

-  Groundwater
-  Sediment
-  Surface Water



TDD No. TL03-11-03-003
START Contract No. EP-S3-10-04

Figure 6: Lee's Lake Area Sample Location Map
Kiskimere Groundwater Well Investigation Site
Kiskimere, Armstrong County, Pennsylvania

0 87.5 175 350 Feet

Map By:
WFH

Date Modified:
6/15/2012

Scale: 1:1,649



Source:

Bing Maps Online Services for ESRI -
Bing Maps Aerial Layer

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

APPENDICES

APPENDIX A:
SAMPLE LOCATIONS SUMMARY

Kiskimere Groundwater Well Investigation Site

Cerclis ID: PAN000306740

Site Assessment August 30-31, 2011

SURFACE WATER

CLP Sample ID	DAS Sample ID	NAREL ID	Sample Designation	Duplicate/MS/MSD	Sample Location	Sample Collection Date	Sample Collection Time
C0074/MC0074	R33812-27	B1.11087A	SW01		Background- Kiskimere River, upstream	8/31/2011	1525
C0075/MC0075	R33812-28	B1.11088B	SW02	MS/MSD	Kiskimere River, upstream of SLDA	8/31/2011	1100
C0076/MC0076	R33812-29	B1.11089C	SW03	Duplicate of SW04	Kiskimere River, adjacent to Kiskimere Road/River Road	8/31/2011	1510
C0077/MC0077	R33812-30	B1.11090V	SW04	Duplicate of SW03	Kiskimere River, adjacent to Kiskimere Road/River Road	8/31/2011	1520
C0078/MC0078	R33812-31	B1.11091W	SW05		Kiskimere River, downstream of SLDA	8/30/2011	1650
C0079/MC0079	R33812-32	B1.11092X	SW06		Mine Seepage ()	8/30/2011	1130
C0080/MC0080	R33812-33	B1.11064T	SW07		Carnahan Run ()	8/31/2011	1310

SEDIMENT

CLP Sample ID	DAS Sample ID	NAREL ID	Sample Designation	Duplicate/MS/MSD	Sample Location	Sample Collection Date	Sample Collection Time
C0065/MC0065	R33812-18	B1.11078Z	SD01		Background- Kiskimere River, upstream	8/31/2011	1555
C0066/MC0066	R33812-19	B1.11079A	SD02		Kiskimere River, upstream of SLDA	8/31/2011	1100
C0067/MC0067	R33812-20	B1.11080T	SD03	Duplicate of SD04	Kiskimere River, adjacent to Kiskimere Road/River Road	8/31/2011	1545
C0068/MC0068	R33812-21	B1.11081U	SD04	Duplicate of SD03	Kiskimere River, adjacent to Kiskimere Road/River Road	8/31/2011	1555
C0069/MC0069	R33812-22	B1.11082V	SD05		Kiskimere River, downstream of SLDA	8/30/2011	1650
C0070/MC0070	R33812-23	B1.11083W	SD06	MS/MSD	Kiskimere River, downstream of SD06	8/30/2011	1635
C0071/MC0071	R33812-24	B1.11084X	SD07		Carnahan Run ()	8/31/2011	1310
C0072/MC0072	R33812-25	B1.11085Y	SD08		Lee's Lake	8/30/2011	1104
C0073/MC0073	R33812-26	B1.11086Z	SD09		below Mine Seepage (Lee's Lake Property)	8/30/2011	1140

GROUNDWATER

CLP Sample ID	DAS Sample ID	NAREL ID	Sample Designation	Duplicate/MS/MSD	Address/Sample Location	Sample Collection Date	Sample Collection Time
C0047/MC0047	R33812-03	B1.11062Q	GW01		Booker Lane	8/30/2011	945
C0048/MC0048	R33812-04	B1.11063R	GW02		Lee's Lake Lane	8/30/2011	1014
C0050/MC0050	R33812-05	B1.11065U	GW03	MS/MSD	Clyde Street	8/30/2011	1035
C0051/MC0051	R33812-06	B1.11066V	GW04		Hungry Hollow Road/Background	8/30/2011	1536
C0052/MC0052	R33812-07	B1.11067W	GW07		Monheim Lane	8/30/2011	1300
C0053/MC0053	R33812-08	B1.11069Y	GW08D		Mosley Lane	8/30/2011	1650
C0062/MC0062	R33812-17	B1.11068X	GW08S		Mosley Lane	8/30/2011	1710
C0054/MC0054	R33812-09	B1.11070Q	GW09		Kiskimere Road	8/30/2011	1645
C0055/MC0055	R33812-10	B1.11071R	GW10		River Road	8/30/2011	1500
C0056/MC0056	R33812-11	B1.11072T	GW14		Booker Lane	8/30/2011	1041
C0057/MC0057	R33812-12	B1.11073U	GW15	Duplicate of GW27	Booker Lane	8/30/2011	1125
C0058/MC0058	R33812-13	B1.11074V	GW24		Eisenhower Street	8/31/2011	1305
C0059/MC0059	R33812-14	B1.11075W	GW26	Duplicate of GW28	Watkins Lane	8/31/2011	1040
C0060/MC0060	R33812-15	B1.11076X	GW27	Duplicate of GW15	Booker Lane	8/30/2011	1135
C0061/MC0061	R33812-16	B1.11077Y	GW28	Duplicate of GW26	Watkins Lane	8/31/2011	1050

TRIP AND FIELD BLANKS

CLP Sample ID	DAS Sample ID	NAREL ID	Sample Designation	Blank Type	Sample Collection Date	Sample Collection Time
C0083	N/A		TB01	Trip Blank	8/30/2011	810
C0082	N/A		TB02	Trip Blank	8/30/2011	815
MC0063	R33812-01	B1.11060N	FB01	Field Blank	8/30/2011	1820
MC0064	R33812-02	B1.11061P	FB02	Field Blank	8/31/2011	1730

APPENDIX B:
RESIDENTIAL AREA GROUNDWATER SAMPLING RECORD



Residential Groundwater Sampling Record

Kiskimere GW Well Investigation Site

Sampling Team: [REDACTED]

Well Depth to Bottom (ft TOC): _____

Sample Depth (ft TOC):

Water Qual Probe

YSI 556

Volume Purged

Sample Method

Direct Collection -Spigot

<u>Typ. Stabilization Criteria</u>	
<u>Collect at 3-5 Min Interval</u>	
Temp	+/- 3%
SpC	+/- 3%
pH	+/- 0.1 unit
ORP	+/- 10 mV

Well ID:

Sample No(s).: GW01

Sample Date: 8/30/2011

Sample Time: 09:45

[illegible]



Kiskimere GW Well Investigation Site

Sample Depth (ft TOC):

Direct Collection -Spigot

Sample Time: 10:14

Superfund Technical Assessment and Response Team (START-III)
Contract No.: EP-S3-10-04
TDD: TL03-11-03-003



Residential Groundwater Sampling Record

Kiskimere GW Well Investigation Site

Sampling Team: [REDACTED]

Well Depth to Bottom (ft TOC): 37.8'

Sample Depth (ft TOC): UNK DTW 15.66 (TOC)

Water Qual Probe

YSI 556

Volume Purged

Sample Method

Direct Collection -Spigot

Typ. Stabilization Criteria
Collect at 3-5 Min Interval
Temp +/- 3%
SpC +/- 3%
pH +/- 0.1 unit
ORP +/- 10 mV

Well ID: _____

Sample No(s).: GW03

Sample Date: 8/30/2011

Sample Time: 10:35

Time	Temp (°C)	SpC (mS/cm)	pH (units)	ORP (mv)			Comments
10:01 (Begin Purge)							Water appears clear
10:02 (1st Measurement)	14.76	0.211	7.33	80.9			
10:05	15.32	0.208	6.93	73.5			
10:09	12.60	0.195	6.85	71.7			
10:13	14.38	0.201	6.38	79.5			
10:16	13.44	0.197	6.73	76.0			
10:20	12.64	0.193	6.81	81.1			
10:22	12.42	0.192	6.71	76.5			
10:24	12.59	0.191	6.71	76.8			
10:26	12.53	0.191	6.70	72.9			
10:28	12.39	0.190	6.69	72.2			
10:30	12.43	0.191	6.63	69.7			



Residential Groundwater Sampling Record

Kiskimere GW Well Investigation Site

Sampling Team: [REDACTED]

Well Depth to Bottom (ft TOC): 8.15' T.D.

Sample Depth (ft TOC): 2' Water Height

Water Qual Probe YSI 556

Volume Purged

Sample Method	<u>Direct Collection -Spigot</u>
---------------	----------------------------------

Typ. Stabilization Criteria	
Collect at 3-5 Min Interval	
Temp	+/- 3%
SpC	+/- 3%
pH	+/- 0.1 unit
ORP	+/- 10 mV

Well ID:

Sample No(s).: GW04

Sample Date: 8/30/2011

Sample Time: 17:36

[illegible]



Residential Groundwater Sampling Record

Kiskimere GW Well Investigation Site

Sampling Team: _____

Well Depth to Bottom (ft TOC): _____

Sample Depth (ft TOC):

Water Qual Probe YSI 556

Volume Purged

Sample Method Direct Collection -Spigot

<u>Typ. Stabilization Criteria</u> <u>Collect at 3-5 Min Interval</u>	
Temp	+/- 3%
SpC	+/- 3%
pH	+/- 0.1 unit
ORP	+/- 10 mV

Well ID:

Sample No(s).: GW06

Sample Date: 8/30/2011

Sample Time: No sample

[illegible]



Kiskimere GW Well Investigation Site

Sample Depth (ft TOC):

Sample Method

Direct Collection - Pump jack

Sample Time: 13:00

Superfund Technical Assessment and Response Team (START-III)
Contract No.: EP-S3-10-04
TDD: TL03-11-03-003



Kiskimere GW Well Investigation Site

<u>Typ. Stabilization Criteria</u>	
<u>Collect at 3-5 Min Interval</u>	
Temp	+/- 3%
SpC	+/- 3%
pH	+/- 0.1 unit
ORP	+/- 10 mV

Sample Time: 17:10

Superfund Technical Assessment and Response Team (START-III)
Contract No.: EP-S3-10-04
TDD: TL03-11-03-003



Kiskimere GW Well Investigation Site

Typ. Stabilization Criteria	
Collect at 3-5 Min Interval	
Temp	+/- 3%
SpC	+/- 3%
pH	+/- 0.1 unit
ORP	+/- 10 mV

Sample Time: 16:50

Sample Depth (ft TOC):

Superfund Technical Assessment and Response Team (START-III)
Contract No.: EP-S3-10-04
TDD: TL03-11-03-003



Kiskimere GW Well Investigation Site

Typ. Stabilization Criteria	
Collect at 3-5 Min Interval	
Temp	+/- 3%
SpC	+/- 3%
pH	+/- 0.1 unit
ORP	+/- 10 mV

Sample Time: 16:45

Superfund Technical Assessment and Response Team (START-III)
Contract No.: EP-S3-10-04
TDD: TL03-11-03-003



Kiskimere GW Well Investigation Site

<u>Typ. Stabilization Criteria</u>	
<u>Collect at 3-5 Min Interval</u>	
Temp	+/- 3%
SpC	+/- 3%
pH	+/- 0.1 unit
ORP	+/- 10 mV

Sample Time: 15:00

Superfund Technical Assessment and Response Team (START-III)
Contract No.: EP-S3-10-04
TDD: TL03-11-03-003



Kiskimere GW Well Investigation Site

Typ. Stabilization Criteria	
Collect at 3-5 Min Interval	
Temp	+/- 3%
SpC	+/- 3%
pH	+/- 0.1 unit
ORP	+/- 10 mV

Sample Time: 10:41

Superfund Technical Assessment and Response Team (START-III)
Contract No.: EP-S3-10-04
TDD: TL03-11-03-003



Kiskimere GW Well Investigation Site

<u>Typ. Stabilization Criteria</u>	
<u>Collect at 3-5 Min Interval</u>	
Temp	+/- 3%
SpC	+/- 3%
pH	+/- 0.1 unit
ORP	+/- 10 mV

Sample Time: 11:25

Superfund Technical Assessment and Response Team (START-III)
Contract No.: EP-S3-10-04
TDD: TL03-11-03-003



Kiskimere GW Well Investigation Site

Direct Collection - Spigot

Superfund Technical Assessment and Response Team (START-III)
Contract No.: EP-S3-10-04
TDD: TL03-11-03-003



Kiskimere GW Well Investigation Site

Typ. Stabilization Criteria	
Collect at 3-5 Min Interval	
Temp	+/- 3%
SpC	+/- 3%
pH	+/- 0.1 unit
ORP	+/- 10 mV

Sample Time: 10:40/10:50

Sample Depth (ft TOC):

Superfund Technical Assessment and Response Team (START-III)
Contract No.: EP-S3-10-04
TDD: TL03-11-03-003

APPENDIX C:
PHOTOGRAPHIC DOCUMENTATION



Photograph 1: Hose utilized for purging from the well at GW01 location

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 2: Monitoring water quality parameters at GW01

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 3: Location of GW02 collection

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 4: Collection of GW02 samples for VOC analysis

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 5: Well house at GW03 location

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 6: Monitoring water quality readings for GW03

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 7: Purge location of GW04 (background sample)

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 8: Well at GW04 location

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 9: Location of collection point for GW07.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 10: Tank associated with GW08D.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 11: Collection of GW08D.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 12: Water quality monitoring for GW09.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 13: Well water system in basement: location GW10

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 14: Collection spigot for GW10.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 15: Monitoring water quality parameters for GW14.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 16: Collection spigot for GW15/GW27.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 17: Location of the well in the basement of the house (GW24)

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 18: Location of the spigot, outside the house (GW24)

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 19: Collection of GW24

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 20: GW26/GW28 well system.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 21: Location of the well for GW26/GW28.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 22: Collection of GW26/GW28.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 23: Location of GW05/SD05.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 24: Access to GW05/SD05.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 25: Collection of sediment at SD05.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 26: Collection location of SW03/SW04 and SD03/SD04.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 27: Collection and location of SW03/SW04 and SD03/SD04.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 28: Location of SW02.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 29: Collection of sediment for SD02.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 30: Collection of sediment for SD01 (background).

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 31: Collection of surface water for GW01 (background).

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 32: Location of SW06, the mine seepage into Carnahan Run

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 33: Location of SW07

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 34: Collection of SW07

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 35: Collection of sediment from Lee's Lake, SD08.

Site Identification: Kiskimere Groundwater Well Investigation



Photograph 36: Lee's Lake sediment sample SD08.

Site Identification: Kiskimere Groundwater Well Investigation

APPENDIX D:

SUMMARY OF RADIOCHEMISTRY DATA FROM NAREL

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11060N	KISKIMERE GRND WATER	WATER - GROUND	R33812-01			8/30/2011 18:20:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		6.10E+01	PCI/L		8/30/2011
B1.11060N	KISKIMERE GRND WATER	WATER - GROUND	R33812-01			8/30/2011 18:20:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		5.19E+00	PCI/L		8/30/2011
B1.11060N	KISKIMERE GRND WATER	WATER - GROUND	R33812-01			8/30/2011 18:20:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		4.54E+00	PCI/L		8/30/2011
B1.11060N	KISKIMERE GRND WATER	WATER - GROUND	R33812-01			8/30/2011 18:20:00 PM EDT	NAREL GAM-01	ANA	I131	ND		4.34E+01	PCI/L		8/30/2011
B1.11060N	KISKIMERE GRND WATER	WATER - GROUND	R33812-01			8/30/2011 18:20:00 PM EDT	NAREL GAM-01	ANA	K40	ND		5.77E+01	PCI/L		8/30/2011
B1.11060N	KISKIMERE GRND WATER	WATER - GROUND	R33812-01			8/30/2011 18:20:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		8.72E+01	PCI/L		8/30/2011
B1.11060N	KISKIMERE GRND WATER	WATER - GROUND	R33812-01			8/30/2011 18:20:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		3.21E+01	PCI/L		8/30/2011
B1.11060N	KISKIMERE GRND WATER	WATER - GROUND	R33812-01			8/30/2011 18:20:00 PM EDT	NAREL GR- 01	ANA	Alpha	2.50E-01	8.60E-01	7.63E-01	PCI/L		10/3/2011
B1.11060N	KISKIMERE GRND WATER	WATER - GROUND	R33812-01			8/30/2011 18:20:00 PM EDT	NAREL GR- 01	ANA	Beta	3.20E-01	8.60E-01	1.33E+00	PCI/L		10/3/2011
B1.11060N	KISKIMERE GRND WATER	WATER - GROUND	R33812-01			8/30/2011 18:20:00 PM EDT	NAREL RA- 05	ANA	Ra228	5.50E-01	4.40E-01	6.93E-01	PCI/L		11/17/2011
B1.11060N	KISKIMERE GRND WATER	WATER - GROUND	R33812-01			8/30/2011 18:20:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	5.50E-02	6.90E-02	8.57E-02	PCI/L		11/28/2011
B1.11060N	KISKIMERE GRND WATER	WATER - GROUND	R33812-01			8/30/2011 18:20:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	9.57E+01	8.00E+00		%		11/28/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11061P	KISKIMERE GRND WATER	WATER - GROUND	R33812-02			8/31/2011 17:30:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		6.24E+01	PCI/L		8/31/2011
B1.11061P	KISKIMERE GRND WATER	WATER - GROUND	R33812-02			8/31/2011 17:30:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		3.95E+00	PCI/L		8/31/2011
B1.11061P	KISKIMERE GRND WATER	WATER - GROUND	R33812-02			8/31/2011 17:30:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		4.90E+00	PCI/L		8/31/2011
B1.11061P	KISKIMERE GRND WATER	WATER - GROUND	R33812-02			8/31/2011 17:30:00 PM EDT	NAREL GAM-01	ANA	I131	ND		4.33E+01	PCI/L		8/31/2011
B1.11061P	KISKIMERE GRND WATER	WATER - GROUND	R33812-02			8/31/2011 17:30:00 PM EDT	NAREL GAM-01	ANA	K40	ND		5.02E+01	PCI/L		8/31/2011
B1.11061P	KISKIMERE GRND WATER	WATER - GROUND	R33812-02			8/31/2011 17:30:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		8.67E+01	PCI/L		8/31/2011
B1.11061P	KISKIMERE GRND WATER	WATER - GROUND	R33812-02			8/31/2011 17:30:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		3.26E+01	PCI/L		8/31/2011
B1.11061P	KISKIMERE GRND WATER	WATER - GROUND	R33812-02			8/31/2011 17:30:00 PM EDT	NAREL GR- 01	ANA	Alpha	-4.00E-02	8.10E-01	7.33E-01	PCI/L		10/3/2011
B1.11061P	KISKIMERE GRND WATER	WATER - GROUND	R33812-02			8/31/2011 17:30:00 PM EDT	NAREL GR- 01	ANA	Beta	3.80E-01	9.20E-01	1.43E+00	PCI/L		10/3/2011
B1.11061P	KISKIMERE GRND WATER	WATER - GROUND	R33812-02			8/31/2011 17:30:00 PM EDT	NAREL RA- 05	ANA	Ra228	1.09E+00	5.10E-01	7.28E-01	PCI/L		11/17/2011
B1.11061P	KISKIMERE GRND WATER	WATER - GROUND	R33812-02			8/31/2011 17:30:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	3.10E-02	5.40E-02	6.59E-02	PCI/L		11/28/2011
B1.11061P	KISKIMERE GRND WATER	WATER - GROUND	R33812-02			8/31/2011 17:30:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	8.93E+01	7.50E+00		%		11/28/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		7.53E+01	PCI/L		8/30/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		6.35E+00	PCI/L		8/30/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GAM-01	ANA	Cs137	ND		4.90E+00	PCI/L		8/30/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GAM-01	ANA	I131	ND		4.70E+01	PCI/L		8/30/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GAM-01	ANA	K40	ND		6.76E+01	PCI/L		8/30/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GAM-01	ANA	Ra226	ND		7.40E+01	PCI/L		8/30/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GAM-01	ANA	Ra228	ND		3.61E+01	PCI/L		8/30/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GR- 01	ANA	Alpha	1.00E+00	1.80E+00	1.47E+00	PCI/L		10/3/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GR- 01	ANA	Beta	1.50E+00	1.40E+00	2.11E+00	PCI/L		10/3/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GR- 01	DUP	Alpha	7.00E-01	1.70E+00	1.54E+00	PCI/L		10/3/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GR- 01	DUP	Beta	1.70E+00	1.50E+00	2.24E+00	PCI/L		10/3/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GR- 01	MS	Alpha	7.80E+01	1.70E+01	1.29E+00	PCI/L		10/3/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL GR- 01	MS	Beta	9.50E+01	1.10E+01	5.56E+00	PCI/L		10/3/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL RA- 05	ANA	Ra228	8.60E-01	5.30E-01	7.91E-01	PCI/L		11/17/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL RA226- EICHROM	ANA	Ra226	1.03E-01	9.70E-02	1.29E-01	PCI/L		11/28/2011
B1.11062Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-03			8/30/2011 9:45:00 AM EDT	NAREL RA226- EICHROM	ANA	Yield	9.22E+01	7.70E+00		%		11/28/2011
B1.11063R	KISKIMERE GRND WATER	WATER - GROUND	R33812-04			8/30/2011 10:14:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		6.13E+01	PCI/L		8/30/2011
B1.11063R	KISKIMERE GRND WATER	WATER - GROUND	R33812-04			8/30/2011 10:14:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		4.50E+00	PCI/L		8/30/2011
B1.11063R	KISKIMERE GRND WATER	WATER - GROUND	R33812-04			8/30/2011 10:14:00 AM EDT	NAREL GAM-01	ANA	Cs137	ND		4.45E+00	PCI/L		8/30/2011
B1.11063R	KISKIMERE GRND WATER	WATER - GROUND	R33812-04			8/30/2011 10:14:00 AM EDT	NAREL GAM-01	ANA	I131	ND		4.35E+01	PCI/L		8/30/2011
B1.11063R	KISKIMERE GRND WATER	WATER - GROUND	R33812-04			8/30/2011 10:14:00 AM EDT	NAREL GAM-01	ANA	K40	ND		4.75E+01	PCI/L		8/30/2011
B1.11063R	KISKIMERE GRND WATER	WATER - GROUND	R33812-04			8/30/2011 10:14:00 AM EDT	NAREL GAM-01	ANA	Ra226	ND		7.35E+01	PCI/L		8/30/2011
B1.11063R	KISKIMERE GRND WATER	WATER - GROUND	R33812-04			8/30/2011 10:14:00 AM EDT	NAREL GAM-01	ANA	Ra228	ND		2.71E+01	PCI/L		8/30/2011
B1.11063R	KISKIMERE GRND WATER	WATER - GROUND	R33812-04			8/30/2011 10:14:00 AM EDT	NAREL GR- 01	ANA	Alpha	2.00E-01	1.20E+00	1.11E+00	PCI/L		10/3/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11063R	KISKIMERE GRND WATER	WATER - GROUND	R33812-04			8/30/2011 10:14:00 AM EDT	NAREL GR- 01	ANA	Beta	1.90E+00	1.10E+00	1.55E+00	PCI/L		10/3/2011
B1.11063R	KISKIMERE GRND WATER	WATER - GROUND	R33812-04			8/30/2011 10:14:00 AM EDT	NAREL RA- 05	ANA	Ra228	8.10E-01	4.90E-01	7.32E-01	PCI/L		11/17/2011
B1.11063R	KISKIMERE GRND WATER	WATER - GROUND	R33812-04			8/30/2011 10:14:00 AM EDT	NAREL RA226- EICHROM	ANA	Ra226	8.20E-02	7.80E-02	8.28E-02	PCI/L		11/28/2011
B1.11063R	KISKIMERE GRND WATER	WATER - GROUND	R33812-04			8/30/2011 10:14:00 AM EDT	NAREL RA226- EICHROM	ANA	Yield	9.82E+01	8.10E+00		%		11/28/2011
B1.11064T	KISKIMERE GRND WATER	WATER - SURFACE	R33812-33			8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		7.20E+01	PCI/L		8/31/2011
B1.11064T	KISKIMERE GRND WATER	WATER - SURFACE	R33812-33			8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		6.61E+00	PCI/L		8/31/2011
B1.11064T	KISKIMERE GRND WATER	WATER - SURFACE	R33812-33			8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		4.76E+00	PCI/L		8/31/2011
B1.11064T	KISKIMERE GRND WATER	WATER - SURFACE	R33812-33			8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	I131	ND		4.66E+01	PCI/L		8/31/2011
B1.11064T	KISKIMERE GRND WATER	WATER - SURFACE	R33812-33			8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	K40	ND		5.44E+01	PCI/L		8/31/2011
B1.11064T	KISKIMERE GRND WATER	WATER - SURFACE	R33812-33			8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		7.69E+01	PCI/L		8/31/2011
B1.11064T	KISKIMERE GRND WATER	WATER - SURFACE	R33812-33			8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		2.74E+01	PCI/L		8/31/2011
B1.11064T	KISKIMERE GRND WATER	WATER - SURFACE	R33812-33			8/31/2011 13:10:00 PM EDT	NAREL GR- 01	ANA	Alpha	5.00E-01	1.80E+00	1.50E+00	PCI/L		10/3/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11064T	KISKIMERE GRND WATER	WATER - SURFACE	R33812-33			8/31/2011 13:10:00 PM EDT	NAREL GR- 01	ANA	Beta	1.70E+00	1.60E+00	2.38E+00	PCI/L		10/3/2011
B1.11064T	KISKIMERE GRND WATER	WATER - SURFACE	R33812-33			8/31/2011 13:10:00 PM EDT	NAREL RA- 05	ANA	Ra228	3.10E-01	3.90E-01	6.44E-01	PCI/L		11/17/2011
B1.11064T	KISKIMERE GRND WATER	WATER - SURFACE	R33812-33			8/31/2011 13:10:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	3.90E-02	6.10E-02	8.41E-02	PCI/L		11/28/2011
B1.11064T	KISKIMERE GRND WATER	WATER - SURFACE	R33812-33			8/31/2011 13:10:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	9.10E+01	7.60E+00		%		11/28/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		5.99E+01	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		5.64E+00	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	ANA	Cs137	ND		4.44E+00	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	ANA	I131	ND		3.93E+01	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	ANA	K40	ND		5.27E+01	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	ANA	Ra226	ND		6.49E+01	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	ANA	Ra228	ND		2.83E+01	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	DUP	Ba140	ND		8.46E+01	PCI/L		8/30/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	DUP	Co60	ND		7.51E+00	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	DUP	Cs137	ND		6.00E+00	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	DUP	I131	ND		5.51E+01	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	DUP	K40	ND		7.09E+01	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	DUP	Ra226	ND		9.07E+01	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GAM-01	DUP	Ra228	ND		4.08E+01	PCI/L		8/30/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GR- 01	ANA	Alpha	4.00E-01	1.90E+00	1.68E+00	PCI/L		10/3/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL GR- 01	ANA	Beta	2.00E+00	1.50E+00	2.19E+00	PCI/L		10/3/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL RA- 05	MS	Ra228	1.39E+01	1.40E+00	7.19E-01	PCI/L		11/17/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL RA- 05	DUP	Ra228	4.60E-01	5.30E-01	8.62E-01	PCI/L		11/17/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL RA- 05	ANA	Ra228	7.90E-01	4.60E-01	6.97E-01	PCI/L		11/17/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL RA226- EICHROM	ANA	Ra226	9.00E-02	8.00E-02	6.47E-02	PCI/L		11/28/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL RA226- EICHROM	ANA	Yield	9.05E+01	7.60E+00		%		11/28/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL RA226- EICHROM	DUP	Ra226	8.10E-02	8.80E-02	1.16E-01	PCI/L		11/28/2011
B1.11065U	KISKIMERE GRND WATER	WATER - GROUND	R33812-05			8/30/2011 10:35:00 AM EDT	NAREL RA226- EICHROM	DUP	Yield	8.68E+01	7.40E+00		%		11/28/2011
B1.11066V	KISKIMERE GRND WATER	WATER - GROUND	R33812-06			8/30/2011 15:36:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		6.64E+01	PCI/L		8/30/2011
B1.11066V	KISKIMERE GRND WATER	WATER - GROUND	R33812-06			8/30/2011 15:36:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		5.18E+00	PCI/L		8/30/2011
B1.11066V	KISKIMERE GRND WATER	WATER - GROUND	R33812-06			8/30/2011 15:36:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		4.74E+00	PCI/L		8/30/2011
B1.11066V	KISKIMERE GRND WATER	WATER - GROUND	R33812-06			8/30/2011 15:36:00 PM EDT	NAREL GAM-01	ANA	I131	ND		4.71E+01	PCI/L		8/30/2011
B1.11066V	KISKIMERE GRND WATER	WATER - GROUND	R33812-06			8/30/2011 15:36:00 PM EDT	NAREL GAM-01	ANA	K40	ND		5.58E+01	PCI/L		8/30/2011
B1.11066V	KISKIMERE GRND WATER	WATER - GROUND	R33812-06			8/30/2011 15:36:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		8.67E+01	PCI/L		8/30/2011
B1.11066V	KISKIMERE GRND WATER	WATER - GROUND	R33812-06			8/30/2011 15:36:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		3.20E+01	PCI/L		8/30/2011
B1.11066V	KISKIMERE GRND WATER	WATER - GROUND	R33812-06			8/30/2011 15:36:00 PM EDT	NAREL GR- 01	ANA	Alpha	5.00E-01	1.90E+00	1.58E+00	PCI/L		10/3/2011
B1.11066V	KISKIMERE GRND WATER	WATER - GROUND	R33812-06			8/30/2011 15:36:00 PM EDT	NAREL GR- 01	ANA	Beta	2.60E+00	1.70E+00	2.41E+00	PCI/L		10/3/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11066V	KISKIMERE GRND WATER	WATER - GROUND	R33812-06			8/30/2011 15:36:00 PM EDT	NAREL RA-05	ANA	Ra228	3.10E-01	4.10E-01	6.76E-01	PCI/L		11/17/2011
B1.11066V	KISKIMERE GRND WATER	WATER - GROUND	R33812-06			8/30/2011 15:36:00 PM EDT	NAREL RA226-EICHROM	ANA	Ra226	5.40E-02	6.80E-02	8.46E-02	PCI/L		11/29/2011
B1.11066V	KISKIMERE GRND WATER	WATER - GROUND	R33812-06			8/30/2011 15:36:00 PM EDT	NAREL RA226-EICHROM	ANA	Yield	9.69E+01	8.20E+00		%		11/29/2011
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		6.75E+01	PCI/L		8/30/2011
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		5.71E+00	PCI/L		8/30/2011
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		4.84E+00	PCI/L		8/30/2011
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL GAM-01	ANA	I131	ND		4.51E+01	PCI/L		8/30/2011
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL GAM-01	ANA	K40	ND		5.86E+01	PCI/L		8/30/2011
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL GAM-01	ANA	Pb212	4.00E+00	4.30E+00		PCI/L		8/30/2011
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		7.12E+01	PCI/L		8/30/2011
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		3.11E+01	PCI/L		8/30/2011
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL GR-01	ANA	Alpha	0.00E+00	1.20E+00	1.12E+00	PCI/L		10/3/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL GR- 01	ANA	Beta	1.70E+00	1.10E+00	1.54E+00	PCI/L		10/3/2011
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL RA- 05	ANA	Ra228	5.60E-01	4.20E-01	6.43E-01	PCI/L		11/17/2011
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	1.50E-01	1.10E-01	7.10E-02	PCI/L		11/29/2011
B1.11067W	KISKIMERE GRND WATER	WATER - GROUND	R33812-07			8/30/2011 13:00:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	8.30E+01	7.20E+00		%		11/29/2011
B1.11068X	KISKIMERE GRND WATER	WATER - GROUND	R33812-17			8/30/2011 17:10:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		6.24E+01	PCI/L		8/30/2011
B1.11068X	KISKIMERE GRND WATER	WATER - GROUND	R33812-17			8/30/2011 17:10:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		4.64E+00	PCI/L		8/30/2011
B1.11068X	KISKIMERE GRND WATER	WATER - GROUND	R33812-17			8/30/2011 17:10:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		3.87E+00	PCI/L		8/30/2011
B1.11068X	KISKIMERE GRND WATER	WATER - GROUND	R33812-17			8/30/2011 17:10:00 PM EDT	NAREL GAM-01	ANA	I131	ND		4.54E+01	PCI/L		8/30/2011
B1.11068X	KISKIMERE GRND WATER	WATER - GROUND	R33812-17			8/30/2011 17:10:00 PM EDT	NAREL GAM-01	ANA	K40	ND		4.59E+01	PCI/L		8/30/2011
B1.11068X	KISKIMERE GRND WATER	WATER - GROUND	R33812-17			8/30/2011 17:10:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		7.48E+01	PCI/L		8/30/2011
B1.11068X	KISKIMERE GRND WATER	WATER - GROUND	R33812-17			8/30/2011 17:10:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		2.71E+01	PCI/L		8/30/2011
B1.11068X	KISKIMERE GRND WATER	WATER - GROUND	R33812-17			8/30/2011 17:10:00 PM EDT	NAREL GR- 01	ANA	Alpha	2.00E-01	1.10E+00	9.57E-01	PCI/L		10/3/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11068X	KISKIMERE GRND WATER	WATER - GROUND	R33812-17			8/30/2011 17:10:00 PM EDT	NAREL GR- 01	ANA	Beta	4.20E+00	1.30E+00	1.69E+00	PCI/L		10/3/2011
B1.11068X	KISKIMERE GRND WATER	WATER - GROUND	R33812-17			8/30/2011 17:10:00 PM EDT	NAREL RA- 05	ANA	Ra228	1.50E-01	4.20E-01	7.16E-01	PCI/L		11/17/2011
B1.11068X	KISKIMERE GRND WATER	WATER - GROUND	R33812-17			8/30/2011 17:10:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	1.40E-01	1.10E-01	1.38E-01	PCI/L		11/29/2011
B1.11068X	KISKIMERE GRND WATER	WATER - GROUND	R33812-17			8/30/2011 17:10:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	8.58E+01	7.40E+00		%		11/29/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		5.38E+01	PCI/L		8/30/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		3.75E+00	PCI/L		8/30/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		3.65E+00	PCI/L		8/30/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	I131	ND		3.31E+01	PCI/L		8/30/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	K40	ND		3.62E+01	PCI/L		8/30/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Pb212	3.60E+00	4.80E+00		PCI/L		8/30/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		5.37E+01	PCI/L		8/30/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		2.85E+01	PCI/L		8/30/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Tl208	2.50E+00	3.50E+00		PCI/L		8/30/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL GR- 01	ANA	Alpha	2.00E-01	1.90E+00	1.71E+00	PCI/L		10/3/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL GR- 01	ANA	Beta	1.70E+00	1.50E+00	2.19E+00	PCI/L		10/3/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL RA- 05	ANA	Ra228	1.60E-01	3.50E-01	6.00E-01	PCI/L		11/17/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	2.00E-01	1.20E-01	9.01E-02	PCI/L		11/29/2011
B1.11069Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-08			8/30/2011 16:50:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	9.03E+01	7.70E+00		%		11/29/2011
B1.11070Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-09			8/30/2011 16:45:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		7.04E+01	PCI/L		8/30/2011
B1.11070Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-09			8/30/2011 16:45:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		4.96E+00	PCI/L		8/30/2011
B1.11070Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-09			8/30/2011 16:45:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		4.66E+00	PCI/L		8/30/2011
B1.11070Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-09			8/30/2011 16:45:00 PM EDT	NAREL GAM-01	ANA	I131	ND		5.22E+01	PCI/L		8/30/2011
B1.11070Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-09			8/30/2011 16:45:00 PM EDT	NAREL GAM-01	ANA	K40	3.70E+01	3.70E+01		PCI/L		8/30/2011
B1.11070Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-09			8/30/2011 16:45:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		9.29E+01	PCI/L		8/30/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11070Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-09			8/30/2011 16:45:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		3.08E+01	PCI/L		8/30/2011
B1.11070Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-09			8/30/2011 16:45:00 PM EDT	NAREL GR- 01	ANA	Alpha	-5.00E-01	3.50E+00	3.20E+00	PCI/L		10/3/2011
B1.11070Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-09			8/30/2011 16:45:00 PM EDT	NAREL GR- 01	ANA	Beta	1.10E+01	3.80E+00	5.06E+00	PCI/L		10/3/2011
B1.11070Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-09			8/30/2011 16:45:00 PM EDT	NAREL RA- 05	ANA	Ra228	5.80E-01	3.90E-01	5.94E-01	PCI/L		11/17/2011
B1.11070Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-09			8/30/2011 16:45:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	1.80E-01	1.10E-01	8.82E-02	PCI/L		11/29/2011
B1.11070Q	KISKIMERE GRND WATER	WATER - GROUND	R33812-09			8/30/2011 16:45:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	8.68E+01	7.40E+00		%		11/29/2011
B1.11071R	KISKIMERE GRND WATER	WATER - GROUND	R33812-10			8/30/2011 15:00:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		6.89E+01	PCI/L		8/30/2011
B1.11071R	KISKIMERE GRND WATER	WATER - GROUND	R33812-10			8/30/2011 15:00:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		4.35E+00	PCI/L		8/30/2011
B1.11071R	KISKIMERE GRND WATER	WATER - GROUND	R33812-10			8/30/2011 15:00:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		4.04E+00	PCI/L		8/30/2011
B1.11071R	KISKIMERE GRND WATER	WATER - GROUND	R33812-10			8/30/2011 15:00:00 PM EDT	NAREL GAM-01	ANA	I131	ND		4.61E+01	PCI/L		8/30/2011
B1.11071R	KISKIMERE GRND WATER	WATER - GROUND	R33812-10			8/30/2011 15:00:00 PM EDT	NAREL GAM-01	ANA	K40	ND		4.95E+01	PCI/L		8/30/2011
B1.11071R	KISKIMERE GRND WATER	WATER - GROUND	R33812-10			8/30/2011 15:00:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		6.80E+01	PCI/L		8/30/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11071R	KISKIMERE GRND WATER	WATER - GROUND	R33812-10			8/30/2011 15:00:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		2.57E+01	PCI/L		8/30/2011
B1.11071R	KISKIMERE GRND WATER	WATER - GROUND	R33812-10			8/30/2011 15:00:00 PM EDT	NAREL GR- 01	ANA	Alpha	-2.00E-01	1.70E+00	1.65E+00	PCI/L		10/3/2011
B1.11071R	KISKIMERE GRND WATER	WATER - GROUND	R33812-10			8/30/2011 15:00:00 PM EDT	NAREL GR- 01	ANA	Beta	8.00E-01	1.40E+00	2.21E+00	PCI/L		10/3/2011
B1.11071R	KISKIMERE GRND WATER	WATER - GROUND	R33812-10			8/30/2011 15:00:00 PM EDT	NAREL RA- 05	ANA	Ra228	3.20E-01	3.90E-01	6.32E-01	PCI/L		11/17/2011
B1.11071R	KISKIMERE GRND WATER	WATER - GROUND	R33812-10			8/30/2011 15:00:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	8.80E-02	7.80E-02	6.33E-02	PCI/L		11/29/2011
B1.11071R	KISKIMERE GRND WATER	WATER - GROUND	R33812-10			8/30/2011 15:00:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	9.25E+01	7.80E+00		%		11/29/2011
B1.11072T	KISKIMERE GRND WATER	WATER - GROUND	R33812-11			8/30/2011 10:41:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		7.38E+01	PCI/L		8/30/2011
B1.11072T	KISKIMERE GRND WATER	WATER - GROUND	R33812-11			8/30/2011 10:41:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		5.31E+00	PCI/L		8/30/2011
B1.11072T	KISKIMERE GRND WATER	WATER - GROUND	R33812-11			8/30/2011 10:41:00 AM EDT	NAREL GAM-01	ANA	Cs137	ND		4.60E+00	PCI/L		8/30/2011
B1.11072T	KISKIMERE GRND WATER	WATER - GROUND	R33812-11			8/30/2011 10:41:00 AM EDT	NAREL GAM-01	ANA	I131	ND		5.31E+01	PCI/L		8/30/2011
B1.11072T	KISKIMERE GRND WATER	WATER - GROUND	R33812-11			8/30/2011 10:41:00 AM EDT	NAREL GAM-01	ANA	K40	ND		5.08E+01	PCI/L		8/30/2011
B1.11072T	KISKIMERE GRND WATER	WATER - GROUND	R33812-11			8/30/2011 10:41:00 AM EDT	NAREL GAM-01	ANA	Ra226	ND		8.80E+01	PCI/L		8/30/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11072T	KISKIMERE GRND WATER	WATER - GROUND	R33812-11			8/30/2011 10:41:00 AM EDT	NAREL GAM-01	ANA	Ra228	ND		3.26E+01	PCI/L		8/30/2011
B1.11072T	KISKIMERE GRND WATER	WATER - GROUND	R33812-11			8/30/2011 10:41:00 AM EDT	NAREL GR- 01	ANA	Alpha	1.10E+00	2.90E+00	2.49E+00	PCI/L		10/6/2011
B1.11072T	KISKIMERE GRND WATER	WATER - GROUND	R33812-11			8/30/2011 10:41:00 AM EDT	NAREL GR- 01	ANA	Beta	2.90E+00	2.00E+00	2.85E+00	PCI/L		10/6/2011
B1.11072T	KISKIMERE GRND WATER	WATER - GROUND	R33812-11			8/30/2011 10:41:00 AM EDT	NAREL RA- 05	ANA	Ra228	2.20E-01	4.00E-01	6.72E-01	PCI/L		10/28/2011
B1.11072T	KISKIMERE GRND WATER	WATER - GROUND	R33812-11			8/30/2011 10:41:00 AM EDT	NAREL RA226- EICHROM	ANA	Ra226	1.03E-01	8.90E-02	8.83E-02	PCI/L		1/18/2012
B1.11072T	KISKIMERE GRND WATER	WATER - GROUND	R33812-11			8/30/2011 10:41:00 AM EDT	NAREL RA226- EICHROM	ANA	Yield	9.17E+01	7.80E+00		%		1/18/2012
B1.11073U	KISKIMERE GRND WATER	WATER - GROUND	R33812-12			8/30/2011 11:25:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		8.90E+01	PCI/L		8/30/2011
B1.11073U	KISKIMERE GRND WATER	WATER - GROUND	R33812-12			8/30/2011 11:25:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		6.72E+00	PCI/L		8/30/2011
B1.11073U	KISKIMERE GRND WATER	WATER - GROUND	R33812-12			8/30/2011 11:25:00 AM EDT	NAREL GAM-01	ANA	Cs137	ND		6.00E+00	PCI/L		8/30/2011
B1.11073U	KISKIMERE GRND WATER	WATER - GROUND	R33812-12			8/30/2011 11:25:00 AM EDT	NAREL GAM-01	ANA	I131	ND		5.93E+01	PCI/L		8/30/2011
B1.11073U	KISKIMERE GRND WATER	WATER - GROUND	R33812-12			8/30/2011 11:25:00 AM EDT	NAREL GAM-01	ANA	K40	ND		6.82E+01	PCI/L		8/30/2011
B1.11073U	KISKIMERE GRND WATER	WATER - GROUND	R33812-12			8/30/2011 11:25:00 AM EDT	NAREL GAM-01	ANA	Ra226	ND		8.82E+01	PCI/L		8/30/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11073U	KISKIMERE GRND WATER	WATER - GROUND	R33812-12			8/30/2011 11:25:00 AM EDT	NAREL GAM-01	ANA	Ra228	ND		3.90E+01	PCI/L		8/30/2011
B1.11073U	KISKIMERE GRND WATER	WATER - GROUND	R33812-12			8/30/2011 11:25:00 AM EDT	NAREL GR- 01	ANA	Alpha	1.00E-01	1.20E+00	1.16E+00	PCI/L		10/6/2011
B1.11073U	KISKIMERE GRND WATER	WATER - GROUND	R33812-12			8/30/2011 11:25:00 AM EDT	NAREL GR- 01	ANA	Beta	1.95E+00	8.70E-01	1.17E+00	PCI/L		10/6/2011
B1.11073U	KISKIMERE GRND WATER	WATER - GROUND	R33812-12			8/30/2011 11:25:00 AM EDT	NAREL RA- 05	ANA	Ra228	6.30E-01	4.60E-01	7.02E-01	PCI/L		10/28/2011
B1.11073U	KISKIMERE GRND WATER	WATER - GROUND	R33812-12			8/30/2011 11:25:00 AM EDT	NAREL RA226- EICHROM	ANA	Ra226	3.00E-01	1.40E-01	8.62E-02	PCI/L		1/18/2012
B1.11073U	KISKIMERE GRND WATER	WATER - GROUND	R33812-12			8/30/2011 11:25:00 AM EDT	NAREL RA226- EICHROM	ANA	Yield	9.32E+01	7.90E+00		%		1/18/2012
B1.11074V	KISKIMERE GRND WATER	WATER - GROUND	R33812-13			8/31/2011 13:05:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		7.05E+01	PCI/L		8/31/2011
B1.11074V	KISKIMERE GRND WATER	WATER - GROUND	R33812-13			8/31/2011 13:05:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		4.92E+00	PCI/L		8/31/2011
B1.11074V	KISKIMERE GRND WATER	WATER - GROUND	R33812-13			8/31/2011 13:05:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		5.09E+00	PCI/L		8/31/2011
B1.11074V	KISKIMERE GRND WATER	WATER - GROUND	R33812-13			8/31/2011 13:05:00 PM EDT	NAREL GAM-01	ANA	I131	ND		4.49E+01	PCI/L		8/31/2011
B1.11074V	KISKIMERE GRND WATER	WATER - GROUND	R33812-13			8/31/2011 13:05:00 PM EDT	NAREL GAM-01	ANA	K40	ND		5.74E+01	PCI/L		8/31/2011
B1.11074V	KISKIMERE GRND WATER	WATER - GROUND	R33812-13			8/31/2011 13:05:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		7.27E+01	PCI/L		8/31/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11074V	KISKIMERE GRND WATER	WATER - GROUND	R33812-13			8/31/2011 13:05:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		3.25E+01	PCI/L		8/31/2011
B1.11074V	KISKIMERE GRND WATER	WATER - GROUND	R33812-13			8/31/2011 13:05:00 PM EDT	NAREL GR- 01	ANA	Alpha	7.00E-01	1.10E+00	8.47E-01	PCI/L		10/6/2011
B1.11074V	KISKIMERE GRND WATER	WATER - GROUND	R33812-13			8/31/2011 13:05:00 PM EDT	NAREL GR- 01	ANA	Beta	2.15E+00	8.30E-01	1.09E+00	PCI/L		10/6/2011
B1.11074V	KISKIMERE GRND WATER	WATER - GROUND	R33812-13			8/31/2011 13:05:00 PM EDT	NAREL RA- 05	ANA	Ra228	6.80E-01	4.50E-01	6.77E-01	PCI/L		10/28/2011
B1.11074V	KISKIMERE GRND WATER	WATER - GROUND	R33812-13			8/31/2011 13:05:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	1.00E-01	9.20E-02	1.04E-01	PCI/L		1/18/2012
B1.11074V	KISKIMERE GRND WATER	WATER - GROUND	R33812-13			8/31/2011 13:05:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	8.95E+01	7.70E+00		%		1/18/2012
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		6.81E+01	PCI/L		8/31/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		4.62E+00	PCI/L		8/31/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GAM-01	ANA	Cs137	ND		4.97E+00	PCI/L		8/31/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GAM-01	ANA	I131	ND		4.82E+01	PCI/L		8/31/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GAM-01	ANA	K40	ND		4.35E+01	PCI/L		8/31/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GAM-01	ANA	Ra226	ND		9.03E+01	PCI/L		8/31/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GAM-01	ANA	Ra228	ND		3.49E+01	PCI/L		8/31/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GR- 01	ANA	Alpha	2.00E+00	2.60E+00	2.14E+00	PCI/L		10/6/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GR- 01	ANA	Beta	4.10E+00	1.70E+00	2.27E+00	PCI/L		10/6/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GR- 01	DUP	Alpha	3.20E+00	2.80E+00	1.85E+00	PCI/L		10/6/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GR- 01	DUP	Beta	4.40E+00	1.70E+00	2.31E+00	PCI/L		10/6/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GR- 01	MS	Alpha	5.20E+01	1.20E+01	2.04E+00	PCI/L		10/6/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL GR- 01	MS	Beta	8.16E+01	9.60E+00	5.04E+00	PCI/L		10/6/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL RA- 05	ANA	Ra228	4.90E-01	4.50E-01	7.08E-01	PCI/L		10/28/2011
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL RA226- EICHROM	ANA	Ra226	1.60E-01	1.10E-01	6.90E-02	PCI/L		1/18/2012
B1.11075W	KISKIMERE GRND WATER	WATER - GROUND	R33812-14			8/31/2011 10:40:00 AM EDT	NAREL RA226- EICHROM	ANA	Yield	8.96E+01	7.70E+00		%		1/18/2012
B1.11076X	KISKIMERE GRND WATER	WATER - GROUND	R33812-15			8/30/2011 11:35:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		8.71E+01	PCI/L		8/30/2011
B1.11076X	KISKIMERE GRND WATER	WATER - GROUND	R33812-15			8/30/2011 11:35:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		7.26E+00	PCI/L		8/30/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11076X	KISKIMERE GRND WATER	WATER - GROUND	R33812-15			8/30/2011 11:35:00 AM EDT	NAREL GAM-01	ANA	Cs137	ND		5.00E+00	PCI/L		8/30/2011
B1.11076X	KISKIMERE GRND WATER	WATER - GROUND	R33812-15			8/30/2011 11:35:00 AM EDT	NAREL GAM-01	ANA	I131	ND		5.68E+01	PCI/L		8/30/2011
B1.11076X	KISKIMERE GRND WATER	WATER - GROUND	R33812-15			8/30/2011 11:35:00 AM EDT	NAREL GAM-01	ANA	K40	3.00E+01	4.40E+01		PCI/L		8/30/2011
B1.11076X	KISKIMERE GRND WATER	WATER - GROUND	R33812-15			8/30/2011 11:35:00 AM EDT	NAREL GAM-01	ANA	Ra226	ND		7.38E+01	PCI/L		8/30/2011
B1.11076X	KISKIMERE GRND WATER	WATER - GROUND	R33812-15			8/30/2011 11:35:00 AM EDT	NAREL GAM-01	ANA	Ra228	ND		3.42E+01	PCI/L		8/30/2011
B1.11076X	KISKIMERE GRND WATER	WATER - GROUND	R33812-15			8/30/2011 11:35:00 AM EDT	NAREL GR- 01	ANA	Alpha	0.00E+00	2.80E+00	2.63E+00	PCI/L		10/6/2011
B1.11076X	KISKIMERE GRND WATER	WATER - GROUND	R33812-15			8/30/2011 11:35:00 AM EDT	NAREL GR- 01	ANA	Beta	1.30E+00	1.80E+00	2.75E+00	PCI/L		10/6/2011
B1.11076X	KISKIMERE GRND WATER	WATER - GROUND	R33812-15			8/30/2011 11:35:00 AM EDT	NAREL RA- 05	ANA	Ra228	4.90E-01	4.20E-01	6.56E-01	PCI/L		10/28/2011
B1.11076X	KISKIMERE GRND WATER	WATER - GROUND	R33812-15			8/30/2011 11:35:00 AM EDT	NAREL RA226- EICHROM	ANA	Ra226	2.20E-01	1.30E-01	1.19E-01	PCI/L		1/18/2012
B1.11076X	KISKIMERE GRND WATER	WATER - GROUND	R33812-15			8/30/2011 11:35:00 AM EDT	NAREL RA226- EICHROM	ANA	Yield	9.35E+01	8.00E+00		%		1/18/2012
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		6.85E+01	PCI/L		8/31/2011
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		5.50E+00	PCI/L		8/31/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL GAM-01	ANA	Cs137	ND		4.39E+00	PCI/L		8/31/2011
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL GAM-01	ANA	I131	ND		4.79E+01	PCI/L		8/31/2011
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL GAM-01	ANA	K40	ND		4.95E+01	PCI/L		8/31/2011
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL GAM-01	ANA	Ra226	ND		7.36E+01	PCI/L		8/31/2011
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL GAM-01	ANA	Ra228	ND		2.98E+01	PCI/L		8/31/2011
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL GR- 01	ANA	Alpha	5.00E-01	7.30E+00	6.68E+00	PCI/L		10/6/2011
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL GR- 01	ANA	Beta	2.10E+00	5.20E+00	7.94E+00	PCI/L		10/6/2011
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL RA- 05	ANA	Ra228	3.70E-01	4.20E-01	6.84E-01	PCI/L		10/28/2011
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL RA226- EICHROM	ANA	Ra226	1.50E-01	1.20E-01	1.37E-01	PCI/L		1/18/2012
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL RA226- EICHROM	ANA	Yield	8.80E+01	7.70E+00		%		1/18/2012
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL RA226- EICHROM	DUP	Ra226	7.80E-02	9.30E-02	1.31E-01	PCI/L		1/18/2012
B1.11077Y	KISKIMERE GRND WATER	WATER - GROUND	R33812-16			8/31/2011 10:50:00 AM EDT	NAREL RA226- EICHROM	DUP	Yield	8.50E+01	7.40E+00		%		1/18/2012

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		1.64E+00	PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Be7	6.42E+00	8.00E-01		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Bi212	1.34E+00	2.60E-01		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Bi214	1.02E+00	1.30E-01		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		4.09E-02	PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Cs137	5.70E-02	2.00E-02		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	I131	ND		1.94E+00	PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	K40	1.26E+01	1.50E+00		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Pa234m	2.40E+00	1.70E+00		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Pb210	2.02E+00	4.10E-01		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Pb212	1.22E+00	1.50E-01		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Pb214	1.12E+00	1.30E-01		PCI/GDRY		8/31/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Ra223	3.10E-01	8.30E-02		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Ra226	2.10E+00	4.70E-01		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Ra228	1.30E+00	1.60E-01		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Th234	1.09E+00	2.20E-01		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Ti208	3.90E-01	5.10E-02		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	U235	1.32E-01	2.90E-02		PCI/GDRY		8/31/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GR- 03	ANA	Alpha	1.54E+01	6.80E+00	3.74E+00	PCI/GASH		11/9/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL GR- 03	ANA	Beta	2.97E+01	5.70E+00	5.94E+00	PCI/GASH		11/9/2011
B1.11078Z	KISKIMERE GRND WATER	SEDIMENT	R33812-18	0.20938	0.86724	8/31/2011 15:55:00 PM EDT	NAREL RA- 05	ANA	Ra228	2.00E+00	1.00E+00	1.43E+00	PCI/GASH		11/8/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		8.97E-01	PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Be7	9.40E-01	1.60E-01		PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Bi212	1.21E+00	1.80E-01		PCI/GDRY		8/31/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Bi214	9.70E-01	1.10E-01		PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		2.05E-02	PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Cs137	4.70E-02	1.20E-02		PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	I131	ND		1.26E+00	PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	K40	1.42E+01	1.70E+00		PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Pa234m	9.90E-01	9.60E-01		PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Pb212	1.15E+00	1.30E-01		PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Pb214	1.06E+00	1.20E-01		PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Ra223	2.98E-01	5.90E-02		PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Ra226	1.77E+00	3.00E-01		PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Ra228	1.22E+00	1.50E-01		PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Th234	7.80E-01	2.20E-01		PCI/GDRY		8/31/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Ti208	3.70E-01	4.50E-02		PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	U235	1.11E-01	1.90E-02		PCI/GDRY		8/31/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GR- 03	ANA	Alpha	8.30E+00	5.30E+00	3.30E+00	PCI/GASH		11/9/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL GR- 03	ANA	Beta	2.01E+01	4.80E+00	5.65E+00	PCI/GASH		11/9/2011
B1.11079A	KISKIMERE GRND WATER	SEDIMENT	R33812-19	0.73811	0.92516	8/31/2011 11:00:00 AM EDT	NAREL RA- 05	ANA	Ra228	1.49E+00	9.20E-01	1.37E+00	PCI/GASH		11/8/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		9.44E-01	PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Be7	1.30E-01	1.20E-01		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Bi212	1.05E+00	1.90E-01		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Bi214	9.30E-01	1.10E-01		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		2.08E-02	PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Cs137	7.60E-02	1.40E-02		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	I131	ND		1.27E+00	PCI/GDRY		8/31/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	K40	9.00E+00	1.10E+00		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Pb212	9.80E-01	1.20E-01		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Pb214	9.60E-01	1.10E-01		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Ra223	2.54E-01	6.10E-02		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Ra226	1.95E+00	3.20E-01		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Ra228	1.00E+00	1.20E-01		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Th234	6.30E-01	1.90E-01		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	Tl208	3.13E-01	3.90E-02		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GAM-01	ANA	U235	1.19E-01	1.90E-02		PCI/GDRY		8/31/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GR- 03	ANA	Alpha	6.80E+00	5.20E+00	3.76E+00	PCI/GASH		11/9/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL GR- 03	ANA	Beta	2.24E+01	4.90E+00	5.61E+00	PCI/GASH		11/9/2011
B1.11080T	KISKIMERE GRND WATER	SEDIMENT	R33812-20	0.66836	0.89407	8/31/2011 15:45:00 PM EDT	NAREL RA- 05	ANA	Ra228	1.72E+00	8.20E-01	1.14E+00	PCI/GASH		11/8/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		9.40E-01	PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Be7	1.60E-01	1.10E-01		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Bi212	1.14E+00	1.80E-01		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Bi214	9.10E-01	1.10E-01		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		2.24E-02	PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Cs137	6.90E-02	1.30E-02		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	I131	ND		1.33E+00	PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	K40	9.40E+00	1.10E+00		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Pa234m	1.70E+00	1.00E+00		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Pb212	9.70E-01	1.10E-01		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Pb214	9.50E-01	1.10E-01		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Ra223	2.99E-01	5.90E-02		PCI/GDRY		8/31/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Ra226	2.07E+00	3.30E-01		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Ra228	9.80E-01	1.20E-01		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Th234	6.70E-01	1.90E-01		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	Tl208	3.13E-01	3.90E-02		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GAM-01	ANA	U235	1.27E-01	2.00E-02		PCI/GDRY		8/31/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GR- 03	ANA	Alpha	6.30E+00	5.20E+00	4.16E+00	PCI/GASH		11/9/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL GR- 03	ANA	Beta	1.76E+01	4.60E+00	5.64E+00	PCI/GASH		11/9/2011
B1.11081U	KISKIMERE GRND WATER	SEDIMENT	R33812-21	0.6603	0.9179	8/31/2011 15:55:00 PM EDT	NAREL RA- 05	ANA	Ra228	5.00E-01	7.20E-01	1.19E+00	PCI/GASH		11/8/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		1.26E+00	PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Bi212	1.63E+00	2.40E-01		PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Bi214	1.58E+00	1.80E-01		PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		2.57E-02	PCI/GDRY		8/30/2011

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Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		2.37E-02	PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	I131	ND		1.86E+00	PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	K40	1.61E+01	1.90E+00		PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Pa234m	3.20E+00	1.00E+00		PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Pb212	1.57E+00	1.80E-01		PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Pb214	1.71E+00	2.00E-01		PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Ra226	2.76E+00	4.10E-01		PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Ra228	1.58E+00	1.90E-01		PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Th234	7.00E-01	1.60E-01		PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Tl208	4.88E-01	5.80E-02		PCI/GDRY		8/30/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GR- 03	ANA	Alpha	1.09E+01	6.00E+00	3.74E+00	PCI/GASH		11/9/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GR- 03	ANA	Beta	3.35E+01	6.00E+00	6.00E+00	PCI/GASH		11/9/2011

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Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GR-03	DUP	Alpha	1.61E+01	6.80E+00	3.31E+00	PCI/GASH		11/9/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL GR-03	DUP	Beta	3.26E+01	6.00E+00	6.24E+00	PCI/GASH		11/9/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL RA-05	ANA	Ra228	2.00E+00	1.00E+00	1.46E+00	PCI/GASH		11/9/2011
B1.11082V	KISKIMERE GRND WATER	SEDIMENT	R33812-22	0.53739	0.8886	8/30/2011 16:50:00 PM EDT	NAREL RA-05	DUP	Ra228	1.47E+00	9.50E-01	1.43E+00	PCI/GASH		11/9/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		7.19E-01	PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Be7	6.90E-01	1.30E-01		PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Bi212	1.02E+00	1.70E-01		PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Bi214	8.42E-01	9.90E-02		PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		1.58E-02	PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Cs137	3.17E-02	8.00E-03		PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	I131	ND		9.21E-01	PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	K40	9.60E+00	1.10E+00		PCI/GDRY		8/31/2011

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Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Pa234m	7.50E-01	7.90E-01		PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Pb212	9.30E-01	1.10E-01		PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Pb214	8.90E-01	1.00E-01		PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Ra223	2.62E-01	4.50E-02		PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Ra226	1.57E+00	2.30E-01		PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Ra228	1.01E+00	1.20E-01		PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	Tl208	2.89E-01	3.50E-02		PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GAM-01	ANA	U235	9.90E-02	1.40E-02		PCI/GDRY		8/31/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GR- 03	ANA	Alpha	4.30E+00	4.70E+00	3.74E+00	PCI/GASH		11/9/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL GR- 03	ANA	Beta	1.66E+01	4.30E+00	5.20E+00	PCI/GASH		11/9/2011
B1.11083W	KISKIMERE GRND WATER	SEDIMENT	R33812-23	0.74312	0.94412	8/31/2011 16:35:00 PM EDT	NAREL RA- 05	ANA	Ra228	2.10E+00	1.00E+00	1.51E+00	PCI/GASH		11/9/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		1.20E+00	PCI/GDRY		8/31/2011

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Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Be7	6.80E-01	1.60E-01		PCI/GDRY		8/31/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Bi212	1.22E+00	1.90E-01		PCI/GDRY		8/31/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Bi214	7.90E-01	9.50E-02		PCI/GDRY		8/31/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		2.32E-02	PCI/GDRY		8/31/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Cs137	3.02E-02	9.50E-03		PCI/GDRY		8/31/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	I131	ND		1.65E+00	PCI/GDRY		8/31/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	K40	1.08E+01	1.30E+00		PCI/GDRY		8/31/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Pb212	9.60E-01	1.10E-01		PCI/GDRY		8/31/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Pb214	8.40E-01	1.00E-01		PCI/GDRY		8/31/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Ra226	1.47E+00	3.00E-01		PCI/GDRY		8/31/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Ra228	9.60E-01	1.20E-01		PCI/GDRY		8/31/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	Ti208	3.23E-01	4.00E-02		PCI/GDRY		8/31/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GAM-01	ANA	U235	9.20E-02	1.90E-02		PCI/GDRY		8/31/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GR- 03	ANA	Alpha	2.90E+00	4.30E+00	3.31E+00	PCI/GASH		11/9/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL GR- 03	ANA	Beta	1.44E+01	4.20E+00	5.34E+00	PCI/GASH		11/9/2011
B1.11084X	KISKIMERE GRND WATER	SEDIMENT	R33812-24	0.76227	0.94465	8/31/2011 13:10:00 PM EDT	NAREL RA- 05	ANA	Ra228	1.48E+00	9.30E-01	1.39E+00	PCI/GASH		11/9/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		5.65E-01	PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Be7	2.33E-01	6.90E-02		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Bi212	7.80E-01	1.20E-01		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Bi214	6.42E-01	7.60E-02		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		1.20E-02	PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Cs137	3.37E-02	6.70E-03		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	I131	ND		8.25E-01	PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	K40	9.90E+00	1.10E+00		PCI/GDRY		8/30/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Pa234m	8.00E-01	5.30E-01		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Pb212	8.06E-01	9.40E-02		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Pb214	6.96E-01	8.10E-02		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Ra223	1.84E-01	3.00E-02		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Ra226	1.30E+00	1.90E-01		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Ra228	7.90E-01	9.40E-02		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Th234	4.29E-01	8.70E-02		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	Tl208	2.44E-01	2.90E-02		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GAM-01	ANA	U235	7.90E-02	1.20E-02		PCI/GDRY		8/30/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GR- 03	ANA	Alpha	8.20E+00	5.50E+00	3.77E+00	PCI/GASH		11/9/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL GR- 03	ANA	Beta	1.45E+01	4.20E+00	5.32E+00	PCI/GASH		11/9/2011
B1.11085Y	KISKIMERE GRND WATER	SEDIMENT	R33812-25	0.74235	0.95831	8/30/2011 11:04:00 AM EDT	NAREL RA- 05	ANA	Ra228	2.04E+00	9.60E-01	1.34E+00	PCI/GASH		11/9/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		1.43E+00	PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Be7	2.50E-01	1.60E-01		PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Bi212	1.41E+00	2.60E-01		PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Bi214	1.05E+00	1.30E-01		PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		2.48E-02	PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Cs137	6.80E-02	1.50E-02		PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	I131	ND		2.28E+00	PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	K40	1.44E+01	1.70E+00		PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Pa234m	1.70E+00	1.30E+00		PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Pb212	1.33E+00	1.60E-01		PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Pb214	1.10E+00	1.30E-01		PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Ra226	1.86E+00	3.60E-01		PCI/GDRY		8/30/2011

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Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Ra228	1.34E+00	1.60E-01		PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Th227	8.70E-02	7.30E-02		PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	Tl208	4.33E-01	5.30E-02		PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GAM-01	ANA	U235	1.17E-01	2.20E-02		PCI/GDRY		8/30/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GR- 03	ANA	Alpha	9.50E+00	5.80E+00	4.23E+00	PCI/GASH		11/9/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL GR- 03	ANA	Beta	2.19E+01	5.10E+00	5.94E+00	PCI/GASH		11/9/2011
B1.11086Z	KISKIMERE GRND WATER	SEDIMENT	R33812-26	0.7002	0.91834	8/30/2011 11:40:00 AM EDT	NAREL RA- 05	ANA	Ra228	1.87E+00	9.30E-01	1.32E+00	PCI/GASH		11/9/2011
B1.11087A	KISKIMERE GRND WATER	WATER - SURFACE	R33812-27			8/31/2011 15:25:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		6.32E+01	PCI/L		8/31/2011
B1.11087A	KISKIMERE GRND WATER	WATER - SURFACE	R33812-27			8/31/2011 15:25:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		5.21E+00	PCI/L		8/31/2011
B1.11087A	KISKIMERE GRND WATER	WATER - SURFACE	R33812-27			8/31/2011 15:25:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		4.24E+00	PCI/L		8/31/2011
B1.11087A	KISKIMERE GRND WATER	WATER - SURFACE	R33812-27			8/31/2011 15:25:00 PM EDT	NAREL GAM-01	ANA	I131	ND		4.25E+01	PCI/L		8/31/2011
B1.11087A	KISKIMERE GRND WATER	WATER - SURFACE	R33812-27			8/31/2011 15:25:00 PM EDT	NAREL GAM-01	ANA	K40	ND		5.02E+01	PCI/L		8/31/2011

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Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11087A	KISKIMERE GRND WATER	WATER - SURFACE	R33812-27			8/31/2011 15:25:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		6.57E+01	PCI/L		8/31/2011
B1.11087A	KISKIMERE GRND WATER	WATER - SURFACE	R33812-27			8/31/2011 15:25:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		2.59E+01	PCI/L		8/31/2011
B1.11087A	KISKIMERE GRND WATER	WATER - SURFACE	R33812-27			8/31/2011 15:25:00 PM EDT	NAREL GR- 01	ANA	Alpha	4.30E+00	8.20E+00	7.26E+00	PCI/L		10/6/2011
B1.11087A	KISKIMERE GRND WATER	WATER - SURFACE	R33812-27			8/31/2011 15:25:00 PM EDT	NAREL GR- 01	ANA	Beta	9.00E-01	5.00E+00	7.80E+00	PCI/L		10/6/2011
B1.11087A	KISKIMERE GRND WATER	WATER - SURFACE	R33812-27			8/31/2011 15:25:00 PM EDT	NAREL RA- 05	ANA	Ra228	9.00E-02	5.00E-01	8.67E-01	PCI/L		10/28/2011
B1.11087A	KISKIMERE GRND WATER	WATER - SURFACE	R33812-27			8/31/2011 15:25:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	7.50E-02	8.00E-02	9.16E-02	PCI/L		1/19/2012
B1.11087A	KISKIMERE GRND WATER	WATER - SURFACE	R33812-27			8/31/2011 15:25:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	8.83E+01	7.80E+00		%		1/19/2012
B1.11088B	KISKIMERE GRND WATER	WATER - SURFACE	R33812-28			8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		8.01E+01	PCI/L		8/31/2011
B1.11088B	KISKIMERE GRND WATER	WATER - SURFACE	R33812-28			8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		5.44E+00	PCI/L		8/31/2011
B1.11088B	KISKIMERE GRND WATER	WATER - SURFACE	R33812-28			8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Cs137	ND		4.87E+00	PCI/L		8/31/2011
B1.11088B	KISKIMERE GRND WATER	WATER - SURFACE	R33812-28			8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	I131	ND		5.53E+01	PCI/L		8/31/2011
B1.11088B	KISKIMERE GRND WATER	WATER - SURFACE	R33812-28			8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	K40	ND		5.08E+01	PCI/L		8/31/2011

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Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11088B	KISKIMERE GRND WATER	WATER - SURFACE	R33812-28			8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Ra226	ND		8.76E+01	PCI/L		8/31/2011
B1.11088B	KISKIMERE GRND WATER	WATER - SURFACE	R33812-28			8/31/2011 11:00:00 AM EDT	NAREL GAM-01	ANA	Ra228	ND		3.24E+01	PCI/L		8/31/2011
B1.11088B	KISKIMERE GRND WATER	WATER - SURFACE	R33812-28			8/31/2011 11:00:00 AM EDT	NAREL GR- 01	ANA	Alpha	-1.20E+00	7.10E+00	6.20E+00	PCI/L		10/6/2011
B1.11088B	KISKIMERE GRND WATER	WATER - SURFACE	R33812-28			8/31/2011 11:00:00 AM EDT	NAREL GR- 01	ANA	Beta	-5.00E-01	4.80E+00	7.53E+00	PCI/L		10/6/2011
B1.11088B	KISKIMERE GRND WATER	WATER - SURFACE	R33812-28			8/31/2011 11:00:00 AM EDT	NAREL RA- 05	ANA	Ra228	4.10E-01	4.90E-01	8.00E-01	PCI/L		10/28/2011
B1.11088B	KISKIMERE GRND WATER	WATER - SURFACE	R33812-28			8/31/2011 11:00:00 AM EDT	NAREL RA226- EICHROM	ANA	Ra226	-6.00E-03	3.80E-02	9.72E-02	PCI/L		1/19/2012
B1.11088B	KISKIMERE GRND WATER	WATER - SURFACE	R33812-28			8/31/2011 11:00:00 AM EDT	NAREL RA226- EICHROM	ANA	Yield	8.28E+01	7.40E+00		%		1/19/2012
B1.11089C	KISKIMERE GRND WATER	WATER - SURFACE	R33812-29			8/31/2011 15:10:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		1.10E+02	PCI/L		8/31/2011
B1.11089C	KISKIMERE GRND WATER	WATER - SURFACE	R33812-29			8/31/2011 15:10:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		7.95E+00	PCI/L		8/31/2011
B1.11089C	KISKIMERE GRND WATER	WATER - SURFACE	R33812-29			8/31/2011 15:10:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		5.55E+00	PCI/L		8/31/2011
B1.11089C	KISKIMERE GRND WATER	WATER - SURFACE	R33812-29			8/31/2011 15:10:00 PM EDT	NAREL GAM-01	ANA	I131	ND		8.11E+01	PCI/L		8/31/2011
B1.11089C	KISKIMERE GRND WATER	WATER - SURFACE	R33812-29			8/31/2011 15:10:00 PM EDT	NAREL GAM-01	ANA	K40	ND		6.54E+01	PCI/L		8/31/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11089C	KISKIMERE GRND WATER	WATER - SURFACE	R33812-29			8/31/2011 15:10:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		9.10E+01	PCI/L		8/31/2011
B1.11089C	KISKIMERE GRND WATER	WATER - SURFACE	R33812-29			8/31/2011 15:10:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		3.71E+01	PCI/L		8/31/2011
B1.11089C	KISKIMERE GRND WATER	WATER - SURFACE	R33812-29			8/31/2011 15:10:00 PM EDT	NAREL GR- 01	ANA	Alpha	5.00E+00	2.50E+00	1.50E+00	PCI/L		10/6/2011
B1.11089C	KISKIMERE GRND WATER	WATER - SURFACE	R33812-29			8/31/2011 15:10:00 PM EDT	NAREL GR- 01	ANA	Beta	4.80E+00	1.40E+00	1.78E+00	PCI/L		10/6/2011
B1.11089C	KISKIMERE GRND WATER	WATER - SURFACE	R33812-29			8/31/2011 15:10:00 PM EDT	NAREL RA- 05	ANA	Ra228	7.60E-01	5.10E-01	7.75E-01	PCI/L		10/28/2011
B1.11089C	KISKIMERE GRND WATER	WATER - SURFACE	R33812-29			8/31/2011 15:10:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	8.80E-02	8.90E-02	1.08E-01	PCI/L		1/19/2012
B1.11089C	KISKIMERE GRND WATER	WATER - SURFACE	R33812-29			8/31/2011 15:10:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	8.63E+01	7.70E+00		%		1/19/2012
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		7.28E+01	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		5.24E+00	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		4.56E+00	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	ANA	I131	ND		4.96E+01	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	ANA	K40	ND		5.55E+01	PCI/L		8/31/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		7.39E+01	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		2.62E+01	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	DUP	Ba140	ND		9.01E+01	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	DUP	Co60	ND		5.79E+00	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	DUP	Cs137	ND		4.76E+00	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	DUP	I131	ND		6.97E+01	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	DUP	K40	ND		4.84E+01	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	DUP	Ra226	ND		9.02E+01	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GAM-01	DUP	Ra228	ND		3.65E+01	PCI/L		8/31/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GR- 01	ANA	Alpha	3.00E-01	3.90E+00	3.56E+00	PCI/L		10/6/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL GR- 01	ANA	Beta	2.60E+00	2.80E+00	4.10E+00	PCI/L		10/6/2011
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL RA- 05	ANA	Ra228	6.00E-01	4.80E-01	7.58E-01	PCI/L		10/28/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	1.30E-01	1.00E-01	7.25E-02	PCI/L		1/19/2012
B1.11090V	KISKIMERE GRND WATER	WATER - SURFACE	R33812-30			8/31/2011 15:20:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	8.53E+01	7.60E+00		%		1/19/2012
B1.11091W	KISKIMERE GRND WATER	WATER - SURFACE	R33812-31			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Ba140	ND		1.06E+02	PCI/L		8/30/2011
B1.11091W	KISKIMERE GRND WATER	WATER - SURFACE	R33812-31			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Co60	ND		6.28E+00	PCI/L		8/30/2011
B1.11091W	KISKIMERE GRND WATER	WATER - SURFACE	R33812-31			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Cs137	ND		5.29E+00	PCI/L		8/30/2011
B1.11091W	KISKIMERE GRND WATER	WATER - SURFACE	R33812-31			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	I131	ND		7.68E+01	PCI/L		8/30/2011
B1.11091W	KISKIMERE GRND WATER	WATER - SURFACE	R33812-31			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	K40	ND		5.44E+01	PCI/L		8/30/2011
B1.11091W	KISKIMERE GRND WATER	WATER - SURFACE	R33812-31			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Ra226	ND		7.27E+01	PCI/L		8/30/2011
B1.11091W	KISKIMERE GRND WATER	WATER - SURFACE	R33812-31			8/30/2011 16:50:00 PM EDT	NAREL GAM-01	ANA	Ra228	ND		3.26E+01	PCI/L		8/30/2011
B1.11091W	KISKIMERE GRND WATER	WATER - SURFACE	R33812-31			8/30/2011 16:50:00 PM EDT	NAREL GR- 01	ANA	Alpha	4.00E-01	3.00E+00	2.86E+00	PCI/L		10/6/2011
B1.11091W	KISKIMERE GRND WATER	WATER - SURFACE	R33812-31			8/30/2011 16:50:00 PM EDT	NAREL GR- 01	ANA	Beta	3.90E+00	2.10E+00	2.91E+00	PCI/L		10/6/2011
B1.11091W	KISKIMERE GRND WATER	WATER - SURFACE	R33812-31			8/30/2011 16:50:00 PM EDT	NAREL RA- 05	ANA	Ra228	2.70E-01	4.50E-01	7.59E-01	PCI/L		10/28/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11091W	KISKIMERE GRND WATER	WATER - SURFACE	R33812-31			8/30/2011 16:50:00 PM EDT	NAREL RA226- EICHROM	ANA	Ra226	1.10E-02	6.00E-02	1.24E-01	PCI/L		1/19/2012
B1.11091W	KISKIMERE GRND WATER	WATER - SURFACE	R33812-31			8/30/2011 16:50:00 PM EDT	NAREL RA226- EICHROM	ANA	Yield	8.99E+01	7.90E+00		%		1/19/2012
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL GAM-01	ANA	Ba140	ND		9.25E+01	PCI/L		8/30/2011
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL GAM-01	ANA	Co60	ND		4.36E+00	PCI/L		8/30/2011
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL GAM-01	ANA	Cs137	ND		4.38E+00	PCI/L		8/30/2011
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL GAM-01	ANA	I131	ND		8.02E+01	PCI/L		8/30/2011
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL GAM-01	ANA	K40	ND		4.37E+01	PCI/L		8/30/2011
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL GAM-01	ANA	Pb212	3.70E+00	4.90E+00		PCI/L		8/30/2011
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL GAM-01	ANA	Ra226	ND		7.65E+01	PCI/L		8/30/2011
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL GAM-01	ANA	Ra228	ND		2.79E+01	PCI/L		8/30/2011
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL GR- 01	ANA	Alpha	8.00E-01	7.70E+00	6.39E+00	PCI/L		10/6/2011
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL GR- 01	ANA	Beta	5.90E+00	5.50E+00	7.94E+00	PCI/L		10/6/2011

Kiskimere Groundwater Well Investigation Site
Summary of Radiochemistry Data from NAREL

Sample ID	Project ID	Matrix	Client ID	Dry / Wet	Ash / Dry	Coll. Begin / End	Procedure	QC	Analyte	Result	2*u	MDC	Unit	B	Date
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL RA- 05	ANA	Ra228	8.50E-01	5.00E-01	7.39E-01	PCI/L		10/28/2011
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL RA226- EICHROM	ANA	Ra226	4.30E-02	8.90E-02	1.54E-01	PCI/L		1/19/2012
B1.11092X	KISKIMERE GRND WATER	WATER - SURFACE	R33812-32			8/30/2011 11:30:00 AM EDT	NAREL RA226- EICHROM	ANA	Yield	7.83E+01	7.30E+00		%		1/19/2012

APPENDIX E:
INORGANIC VALIDATION REPORTS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE : October 27, 2011

SUBJECT: Region III Data QA Review

FROM: Colleen Walling *Colleen K. Walling*
Region III ESAT RPO (3EA20)

TO: Lisa Johnson
Remedial Project Manager (3HS12)

Attached is the inorganic data validation report for the Kiskimere Groundwater Well (Case#41667; SDG#: MC0047) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachment

cc: [REDACTED] (TechLaw, Inc.)

TO #0037 TDF: #10029

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

Lockheed Martin IS&GS – Civil
Energy & Environment
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597



Date: October 26, 2011

Subject: Inorganic Data Validation (IM2 Level)
Case: 41667
SDG: MC0047
Site: Kiskimere Groundwater Well

From: Kurt Roby *KR*
Inorganic Data Reviewer

Mahboobeh Mecanic *MM*
Senior Oversight Chemist

To: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 41667, Sample Delivery Group (SDG) MC0047, consisted of twenty (20) aqueous samples including two (2) field blanks and three (3) field duplicate pairs analyzed for mercury (Hg) by cold vapor technique, for aluminum (Al), calcium (Ca), iron (Fe), magnesium (Mg), potassium (K) and sodium (Na) by ICP-AES and for all remaining analytes by ICP-MS. Samples were analyzed by A4 Scientific, Inc. (A4) according to Contract Laboratory Program (CLP) Statement of Work (SOW) ISM01.2 (modified) through the Routine Analytical Services (RAS) program. Modification reference number 2183.0 details the specifications and reporting requirements for the addition of uranium (U) to the target analyte list.

SUMMARY

Data were validated according to Region 3 Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2, and is assigned the Superfund Data Validation Label S4VM (Stage_4_Validation_Manual). Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by outliers present in a laboratory blank as well as the ICP serial dilution analysis. Details of these outliers are discussed under "Minor Problems," specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on Data Summary Forms (DSFs).

MINOR PROBLEMS

A Continuing Calibration Blank (CCB) had a reported result greater than the Method Detection Limit (MDL) for Fe. Positive results for this analyte in affected samples which are less than five times (<5X) the blank concentration may be biased high and have been qualified "B" on the DSF.

Percent Difference (%D) in the ICP serial dilution analysis was outside the control limit (>10%) for manganese (Mn). Positive results for this analyte are estimated due to possible matrix interferences and have been qualified "J" on the DSFs.

NOTES

Reported results between MDLs and Contract Required Quantitation Limits (CRQLs) were qualified "J" unless superseded by "B" on the DSFs.

Reported results for field duplicate pairs MC0057/MC0060, MC0059/MC0061 and MC0076/MC0077 were within 20% Relative Percent Difference (RPD), \pm CRQL for all analytes except copper (Cu) in field duplicate pair MC0059/MC0061.

ATTACHMENTS**INFORMATION REGARDING REPORT CONTENT**

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

Table 1A	Summary of qualifiers on data summary forms after data validation
Table 1B	Codes used in comments column of Table 1A
Appendix A	Glossary of Data Qualifier Codes
Appendix B	Data Summary Form(s)
Appendix C	Chain of Custody Records
Appendix D	Laboratory Case Narrative

DCN: 41667_ MC0047

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY
FORM AFTER DATA VALIDATION

Case 41667, SDG MC0047

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON- DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Fe	MC0052, MC0053, MC0056	B		High	CCB (41.0 J ug/L)
Mn	All samples except MC0063, MC0064	J			ISD (19%)

* See explanation of comments in Table 1B

TABLE 1B
CODES USED IN COMMENTS COLUMN

CCB	=	Continuing calibration blank had a result >MDL [result is in parenthesis]. Positive results which are <5X the blank concentration may be biased high.
ISD	=	Percent difference (%D) in the ICP serial dilution analysis was outside the control limit (>10%) [%D is in parenthesis]. Positive results are estimated.

Appendix A.

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Appendix B

Data Summary Forms

DATA SUMMARY FORM: INORGANIC

Page 1 of 6

Case #: 41667

SDG : MC0047

Number of Soil Samples : 0

Site :

KISKIMERE GROUNDWATER WELL

Number of Water Samples : 20

Lab. :

A4

Sample Number :		MC0047		MC0048		MC0050		MC0051		MC0052	
Sampling Location :		GW01		GW02		GW03		GW04		GW07	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		08/30/2011		08/30/2011		08/30/2011		08/30/2011		08/30/2011	
Time Sampled :		09:45		10:14		10:35		15:36		13:00	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200										
CALCIUM	5000	10600		9770		33100		17400		13300	
IRON	100					812		298		59.5	B
MAGNESIUM	5000	3010	J	7260		7470		6040		6810	
MERCURY	0.2										
POTASSIUM	5000									2890	J
SODIUM	5000	4080	J	1890	J	4960	J	31100		2790	J

Sample Number :		MC0053		MC0054		MC0055		MC0056		MC0057	
Sampling Location :		GW08D		GW09		GW10		GW14		GW15	
Field QC :										Dup. of MC0060	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		08/30/2011		08/30/2011		08/30/2011		08/30/2011		08/30/2011	
Time Sampled :		16:50		16:45		15:00		10:41		11:25	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200										
CALCIUM	5000	17400		47300		13500		38100		43300	
IRON	100	76.3	B			2350		33.8	B		
MAGNESIUM	5000	6000		9920		6900		8610		8250	
MERCURY	0.2										
POTASSIUM	5000			9760							
SODIUM	5000	14600		41200		20700		2010	J	4650	J

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Page 2 of 6

Case #: 41667

SDG : MC0047

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

A4

Sample Number :		MC0058		MC0059		MC0060		MC0061		MC0062	
Sampling Location :		GW24		GW26		GW27		GW28		GW8S	
Field QC :				Dup. of MC0061		Dup. of MC0057		Dup. of MC0059			
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		08/31/2011		08/31/2011		08/30/2011		08/31/2011		08/30/2011	
Time Sampled :		13:05		10:40		11:35		10:50		17:10	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200										
CALCIUM	5000	7540		47800		43000		46400		16400	
IRON	100									1190	
MAGNESIUM	5000	5630		10900		8150		10600		4080	J
MERCURY	0.2										
POTASSIUM	5000									2960	J
SODIUM	5000	3510	J	5380		4550	J	5180		1850	J

Sample Number :		MC0063		MC0064		MC0074		MC0076		MC0077	
Sampling Location :		FB01		FB02		SW01		SW03		SW04	
Field QC :		Field Blank		Field Blank				Dup. of MC0077		Dup. of MC0076	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		08/30/2011		08/31/2011		08/31/2011		08/31/2011		08/31/2011	
Time Sampled :		18:20		17:30		15:25		15:10		15:20	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200					98.7	J	92.2	J	87.6	J
CALCIUM	5000					60100		61400		60400	
IRON	100					256		223		242	
MAGNESIUM	5000					18100		18500		18100	
MERCURY	0.2										
POTASSIUM	5000					3200	J	3160	J	3090	J
SODIUM	5000					41100		41600		41300	

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Page 3 of 6

Case #: 41667 SDG : MC0047
 Site : KISKIMERE GROUNDWATER WELL
 Lab. : A4

Sample Number :		MC0047		MC0048		MC0050		MC0051		MC0052	
Sampling Location :		GW01		GW02		GW03		GW04		GW07	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		08/30/2011		08/30/2011		08/30/2011		08/30/2011		08/30/2011	
Time Sampled :		09:45		10:14		10:35		15:36		13:00	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	2										
ARSENIC	1										
BARIUM	10	42.6		80.6		154		81.7		72.2	
BERYLLIUM	1										
CADMIUM	1										
CHROMIUM	2	1.3	J			2.6		1.6	J		
COBALT	1					1.1					
COPPER	2	34.1		1.4	J	17.2		0.93	J	60.2	
LEAD	1	2.2				0.84	J			1.7	
MANGANESE	1	4.1	J	2.7	J	305	J	8.9	J	10.6	J
NICKEL	1	4.5		9.7		0.83	J	0.83	J	12.6	
SELENIUM	5										
SILVER	1										
THALLIUM	1										
URANIUM	1										
VANADIUM	5										
ZINC	2	28.4		6.6		27.7		1.4	J	44.6	

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

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DATA SUMMARY FORM: INORGANIC

Page 4 of 6

Case #: 41667

SDG : MC0047

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

A4

Sample Number :		MC0053		MC0054		MC0055		MC0056		MC0057	
Sampling Location :		GW08D		GW09		GW10		GW14		GW15	
Field QC :										Dup. of MC0060	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		08/30/2011		08/30/2011		08/30/2011		08/30/2011		08/30/2011	
Time Sampled :		16:50		16:45		15:00		10:41		11:25	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	2										
ARSENIC	1			0.49	J						
BARIUM	10	284		49.8		68.1		66.5		251	
BERYLLIUM	1										
CADMIUM	1										
CHROMIUM	2	1.1	J	1.7	J	1.5	J	2.2		2.7	
COBALT	1										
COPPER	2	55.0		23.0		240		11.6		4.9	
LEAD	1	9.6		2.5		3.9		0.49	J		
MANGANESE	1	30.9	J	2.3	J	58.4	J	0.95	J	0.93	J
NICKEL	1	0.72	J	8.7		5.6		1.1			
SELENIUM	5										
SILVER	1			0.39	J						
THALLIUM	1										
URANIUM	1										
VANADIUM	5										
ZINC	2	95.9		59.7		173		16.0		20.3	

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

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DATA SUMMARY FORM: INORGANIC

Page 5 of 6

Case #: 41667 SDG : MC0047
 Site : KISKIMERE GROUNDWATER WELL
 Lab. : A4

Sample Number :		MC0058		MC0059		MC0060		MC0061		MC0062	
Sampling Location :		GW24		GW26		GW27		GW28		GW8S	
Field QC :				Dup. of MC0061		Dup. of MC0057		Dup. of MC0059			
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		08/31/2011		08/31/2011		08/30/2011		08/31/2011		08/30/2011	
Time Sampled :		13:05		10:40		11:35		10:50		17:10	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	2										
ARSENIC	1										
BARIUM	10	35.6		65.9		253		66.6		57.2	
BERYLLIUM	1										
CADMIUM	1										
CHROMIUM	2	1.5	J	2.4		2.6		2.2		1.5	J
COBALT	1										
COPPER	2	86.7		8.0		5.4		14.4		24.1	
LEAD	1	3.5		1.1				1.3		5.1	
MANGANESE	1	17.2	J	1.7	J	1.1	J	2.7	J	28.7	J
NICKEL	1	9.8								5.6	
SELENIUM	5										
SILVER	1										
THALLIUM	1										
URANIUM	1			0.85	J			0.81	J		
VANADIUM	5										
ZINC	2	255		2.5		19.3		2.0	J	16.1	

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Page 6 of 6

Case #: 41667

SDG : MC0047

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

A4

Sample Number :	MC0063	MC0064	MC0074	MC0076	MC0077						
Sampling Location :	FB01	FB02	SW01	SW03	SW04						
Field QC :	Field Blank	Field Blank		Dup. of MC0077	Dup. of MC0076						
Matrix :	Water	Water	Water	Water	Water						
Units :	ug/L	ug/L	ug/L	ug/L	ug/L						
Date Sampled :	08/30/2011	08/31/2011	08/31/2011	08/31/2011	08/31/2011						
Time Sampled :	18:20	17:30	15:25	15:10	15:20						
Dilution Factor :	1.0	1.0	1.0	1.0	1.0						
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	2										
ARSENIC	1										
BARIUM	10					53.0		54.1		53.2	
BERYLLIUM	1										
CADMIUM	1										
CHROMIUM	2										
COBALT	1					0.56	J	0.45	J	0.48	J
COPPER	2										
LEAD	1										
MANGANESE	1					80.5	J	60.5	J	61.2	J
NICKEL	1					3.2		3.2		3.3	
SELENIUM	5										
SILVER	1										
THALLIUM	1										
URANIUM	1										
VANADIUM	5										
ZINC	2					2.2		2.1		1.9	J

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

Appendix C

Chain of Custody Records



USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 41667
DAS No:

R

Region: 3	Date Shipped: 9/1/2011	Carrier Name: FedEx	Airbill: 8768 8339 7326	Shipped to: A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277
Project Code: CT5653	Account Code: 2011T03N302DD2C03ZZQB00	CERCLIS ID: PAN000306740	Spill ID: ARL	Site Name/State: Kiskimere GW Well Investigation/WV
Project Leader: [Redacted]	Action: Site Evaluation	Sampling Co: TechLaw, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Sampler Signature	Received By	(Date / Time)
1 [Redacted]	9/1/11/1900			
2				
3				
4				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNOVER	PRESERVATIVE/ Bottles	TAG No/	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC0047	Ground Water/ John Elson	L/G	TAL + U (21)	224 (HNO3) (1)		GW01	S: 8/30/2011 9:45		
MC0048	Ground Water/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	225 (HNO3) (1)		GW02	S: 8/30/2011 10:14		
MC0050	Ground Water/ Dan Buckley	L/G	TAL + U (21)	227 (HNO3), 228 (HNO3), 229 (HNO3) (3)		GW03	S: 8/30/2011 10:35		Lab QC
MC0051	Ground Water/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	230 (HNO3) (1)		GW04	S: 8/30/2011 15:36		
MC0074	Surface Water/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	254 (HNO3) (1)		SW01	S: 8/31/2011 15:25		
MC0075	Surface Water/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	255 (HNO3) (1)		SW02	S: 8/31/2011 11:00		Lab QC
MC0076	Surface Water/ John Elson	L/G	TAL + U (21)	256 (HNO3) (1)		SW03	S: 8/31/2011 15:10		Field Duplicate of SW04
MC0077	Surface Water/ John Elson	L/G	TAL + U (21)	257 (HNO3) (1)		SW04	S: 8/31/2011 15:20		Field Duplicate of SW03

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: MC0050, MC0075	Additional Sampler Signature(s): [Redacted]	Chain of Custody Seal Number:
Analysis Key: TAL + U = CLP TAL Metals + U	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-043013577-090111-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY



USEPA Contract Laboratory Program Inorganic Traffic Report & Chain of Custody Record

Case No: 41667
DAS No: R

Region: 3	Date Shipped: 9/1/2011	Carrier Name: FedEx	Airbill: 8768 8339 7337	Shipped to: A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277
Project Code: CT5653	Carrier Name: FedEx	Airbill: 8768 8339 7337	Shipped to: A4 Scientific	
Account Code: 2011T03N302DD2C03ZZQB00	Carrier Name: FedEx	Airbill: 8768 8339 7337	Shipped to: A4 Scientific	
CERCLIS ID: PAN000306740	Carrier Name: FedEx	Airbill: 8768 8339 7337	Shipped to: A4 Scientific	
Spill ID: ARL	Carrier Name: FedEx	Airbill: 8768 8339 7337	Shipped to: A4 Scientific	
Site Name/State: Kiskimere GW-Well Investigation/WV	Carrier Name: FedEx	Airbill: 8768 8339 7337	Shipped to: A4 Scientific	
Project Leader: [REDACTED]	Carrier Name: FedEx	Airbill: 8768 8339 7337	Shipped to: A4 Scientific	
Action: Site Evaluation	Carrier Name: FedEx	Airbill: 8768 8339 7337	Shipped to: A4 Scientific	
Sampling Co: TechLaw, Inc.	Carrier Name: FedEx	Airbill: 8768 8339 7337	Shipped to: A4 Scientific	

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNOVER	TAG No/ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC0052	Ground Water/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	231 (HNO3) (1)	GW07	S: 8/30/2011 13:00		
MC0053	Ground Water/ Dan Buckley	L/G	TAL + U (21)	232 (HNO3) (1)	GW08D	S: 8/30/2011 16:50		
MC0054	Ground Water/ John Elson	L/G	TAL + U (21)	233 (HNO3) (1)	GW09	S: 8/30/2011 16:45		
MC0055	Ground Water/ John Elson	L/G	TAL + U (21)	234 (HNO3) (1)	GW10	S: 8/30/2011 15:00		
MC0056	Ground Water/ John Elson	L/G	TAL + U (21)	235 (HNO3) (1)	GW14	S: 8/30/2011 10:41		
MC0057	Ground Water/ John Elson	L/G	TAL + U (21)	236 (HNO3) (1)	GW15	S: 8/30/2011 11:25		Field Duplicate of GW27
MC0058	Ground Water/ John Elson	L/G	TAL + U (21)	237 (HNO3) (1)	GW24	S: 8/31/2011 13:05		
MC0059	Ground Water/ Dan Buckley	L/G	TAL + U (21)	238 (HNO3) (1)	GW26	S: 8/31/2011 10:40		Field Duplicate of GW28
MC0060	Ground Water/ John Elson	L/G	TAL + U (21)	239 (HNO3) (1)	GW27	S: 8/30/2011 11:35		Field Duplicate of GW15
MC0061	Ground Water/ Dan Buckley	L/G	TAL + U (21)	240 (HNO3) (1)	GW28	S: 8/31/2011 10:50		Field Duplicate of GW26

Shipment for Case Complete: 7Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signatures(s):	Chain of Custody Seal Number:
Analysis Key: TAL + U = CLP TAL Metals + U	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Issued?

TR Number: 3-043013577-090111-0003

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602.

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USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 41667
DAS No: R

Region: 3		Date Shipped: 9/1/2011		Chain of Custody Record	
Project Code: CT5653		Carrier Name: FedEx		Relinquished By: [Signature] (Date / Time)	
Account Code: 2011T03N302DD2C03ZZQB00		Airbill: 8768 8339 7337		Received By: [Signature] (Date / Time)	
CERCLIS ID: PAN000306740		Shipped to: A4 Scientific 1544 Sawdust Road Suite 505 The Woodlands TX 77380 (281) 292-5277			
Spill ID: ARL					
Site Name/State: Kiskimere GW Well Investigation/WV					
Project Leader: [Signature]					
Action: Site Evaluation					
Sampling Co: TechLaw, Inc.					

INORGANIC SAMPLE NO.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC0062	Ground Water/ Dan Buckley	L/G	TAL + U (21)	241 (HNO3) (1)	GW8S	S: 8/30/2011 17:10		
MC0063	Ground Water/ Dan Buckley	L/G	TAL + U (21)	242 (HNO3) (1)	FB01	S: 8/30/2011 18:20		Field Blank
MC0064	Ground Water/ Dan Buckley	L/G	TAL + U (21)	243 (HNO3) (1)	FB02	S: 8/31/2011 17:30		Field Blank

Shipment for Case Complete?	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
		[Signature]	
Analysis Key: TAL + U = CLP TAL Metals + U	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

TR Number: 3-043013577-090111-0003

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

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U.S EPA Region III Analytical Request Form

Revision 11.09

Control #		CT5653		OASQA USE ONLY	
DAS#				RAS # 41667	
PES #				NSF #	
				Analytical TAT 21 days	

41667

Date: 08/10/11		Site Activity: Site Assessment	
Site Name: Kiskimere Groundwater Well Investigation			
City: Parks Township, Armstrong Co.		State: PA	
Program: Superfund		Latitude: 40 degrees 37'11.24" Longitude: -079 degrees 35'01.16"	
Site ID: 0306740		Acct. #: 2011T03N302DD2CA3RLQB00 CERCLIS #: PAN000306740	
Site Specific QA Plan Submitted: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		Spill ID: A3RL Operable Unit:	
EPA Project Leader: Lisa Johnson		Title: Sampling QA/QC Work Plan	
Request Preparer: [REDACTED]		Phone#: 215-814-3314 Cell Phone #: NA	
Site Leader: [REDACTED]		Phone#: 740-867-0968 Cell Phone #: 304-830-1442	
Contractor: TechLaw, Inc.		Phone#: 304-230-1230 Cell Phone #: 304-830-1444	
#Samples 45		EPA CO/PO: Denise T. Page/Karen Esposito	
#Samples 48		Parameter: ICP-MS TAL metals+Hg+U	
#Samples 7		Parameter: TCL Trace VOA	
#Samples 7		Parameter: ICP-AES TAL metals+Hg+U	
#Samples		Parameter: TCL VOA	
#Samples		Parameter:	
#Samples		Parameter:	
#Samples		Parameter:	
#Samples		Parameter:	
#Samples		Parameter:	
Ship Date From: August 30, 2011		Ship Date To: September 1, 2011	
Unvalidated Data Requested: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		If Yes, TAT Needed: <input type="checkbox"/> 14days <input type="checkbox"/> 7days <input type="checkbox"/> 48hrs <input type="checkbox"/> 24hrs <input type="checkbox"/> Other (Specify) 21 days	
Validated Data Package Due: <input checked="" type="checkbox"/> 42 days <input type="checkbox"/> 30 days <input type="checkbox"/> 21days <input type="checkbox"/> 14 days <input type="checkbox"/> Other (Specify) 24/21			
Electronic Data Deliverables Required: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (EDDs will be provided in Region 3 EDD Format)			
Special Instructions: See attached CLP TCL and TAL for analytes and CRQLs. Request CLP Modified Analysis (M.A.) for Uranium with 1 ug/l QL in water and ?? for sediment samples.			

Request for Quote (RFQ) for Modified Analysis

Date: August 22, 2011

Subject: Modification Reference Number: 2183.0

Title: ICP-MS plus Uranium

Sample Matrix: Water and Soil

Fraction Affected: ICP-MS

Statement of Work: ISM01.2

Purpose:

The Contractor Laboratory is requested to perform the following modified analyses under the Inorganic Statement of Work (SOW) ISM01.2, based on the additional specifications listed below. Unless specifically modified by this modification, all analyses, Quality Control (QC), and reporting requirements specified in SOW ISM01.2 remain unchanged and in full force and effect. The number of samples requested in this modification is not guaranteed.

Please note that accepting a modified analysis request is voluntary, and that the Laboratory is not required to accept the modified analysis. There will be no adverse effect to the Laboratory for not accepting the modified analysis request. However, once the Laboratory accepts the request for modified analysis, it shall perform the analysis in accordance with this modification and as specified in SOW ISM01.2.

The Laboratory is requested to review the modification described herein, determine whether or not it shall accept the requested modified analyses, and complete the attached response form. The Laboratory shall provide comments in response to the required changes in the designated area, in order to ensure that the modified analysis can be completed in accordance with the specifications described herein.

Modification to the SOW Specifications:

The contract Laboratory shall analyze water/aqueous samples and soil/sediment samples for the Target Analyte List and the additional analyte Uranium (U, CASRN 7440-61-1) by ICP-MS as indicated on the Traffic Report/Chain of Custody Record.

The Contract Required Quantitation Limits (CRQLs) for the following analytes and matrices have been modified. All other CRQLs remain at the level specified in the SOW.

Analyte	Aqueous CRQL (µg/L)	Aqueous Spike level (µg/L)	Soil CRQL (mg/kg)	Soil Spike level (mg/kg)
Uranium	1.0	100	1.0	20

If Method Detection Limits (MDLs) have not already been determined, the Laboratory shall determine MDLs for this analyte using the appropriate preparation methods. The MDLs must be lower than the CRQLs, but are not required to be less than one-half the CRQL.

The Laboratory shall:

- Perform the Initial Calibration with at least one non-blank standard at or below the modified aqueous CRQL.
- Add U to the ICV and CCV at appropriate mid-range concentrations.
- Evaluate the ICB and CCB against the modified aqueous CRQL.
- Perform the Matrix Spike at the levels specified above. Post-digestion spike requirements are per the SOW.
- Add U to the LCS at 2 times the appropriate modified CRQL.
- Add U to Forms 1, 2A, 3, 4B, 5A (5B), 6, 7, 8, 9, 11, 13, and 16.

The Laboratory is not required to add U to the ICSA/ICSAB solutions. The Laboratory shall use a true value of zero (0) and acceptance windows of $\pm 2x$ the modified aqueous CRQL unless a non-zero value has been determined for the solutions.

The Laboratory is not required to bracket U with an internal standard having a mass greater than 238. The analysis of the Bismuth internal standard at mass 209 is sufficient.

Reporting Requirements:

Hardcopy and electronic data reporting are required as specified per SOW ISM01.2. All hardcopy and electronic data shall be adjusted to incorporate modified specifications. This includes attaching a copy of the requirements for modified analysis to the SDG Narrative. If specific problems occur with incorporation of the modified analysis into the hardcopy and/or electronic deliverable, the Laboratory shall contact the DASS Manager within the Sample Management Office (SMO) at (703) 818-4233 or via email at CCSSUPPORT@fedcsc.com for resolution.

All samples analyzed for the same fraction within an SDG must be analyzed under the same fractional requirements. The Laboratory shall not include data for the same fraction with different requirements in the same SDG.

The Laboratory shall include the Modification Reference Number 2183.0 on each hardcopy data form under the "Mod. Ref. No:" header appearing on each form as well as the SamplePlusMethod/ClientMethodModificationID element of the electronic deliverable. The Laboratory shall also document the Modification Reference Number and Solicitation Number on the SDG Coversheet and SDG Narrative.

Clarifications/Revisions to the RFQ for Modified Analysis:

Laboratory Name:

Laboratory Comments:

Appendix D

Laboratory Case Narrative

USEPA - CLP
COVER PAGE

Lab Name: A4 SCIENTIFIC, INC.

Contract: EPW09035

Lab Code: A4 Case No.: 41667 Mod. Ref. No.: _____ SDG No.: MC0047

SOW No.: ISM01.2

EPA Sample No.	Lab Sample ID
<u>MC0047</u>	<u>0014659-14</u>
<u>MC0048</u>	<u>0014659-15</u>
<u>MC0050</u>	<u>0014659-16</u>
<u>MC0050D</u>	<u>1090051-DUP1</u>
<u>MC0050D</u>	<u>1090168-DUP1</u>
<u>MC0050S</u>	<u>1090051-MS1</u>
<u>MC0050S</u>	<u>1090168-MS1</u>
<u>MC0051</u>	<u>0014659-17</u>
<u>MC0052</u>	<u>0014659-01</u>
<u>MC0053</u>	<u>0014659-02</u>
<u>MC0054</u>	<u>0014659-03</u>
<u>MC0055</u>	<u>0014659-04</u>
<u>MC0056</u>	<u>0014659-05</u>
<u>MC0057</u>	<u>0014659-06</u>
<u>MC0058</u>	<u>0014659-07</u>
<u>MC0059</u>	<u>0014659-08</u>
<u>MC0060</u>	<u>0014659-09</u>
<u>MC0061</u>	<u>0014659-10</u>
<u>MC0062</u>	<u>0014659-11</u>
<u>MC0063</u>	<u>0014659-12</u>
<u>MC0064</u>	<u>0014659-13</u>
<u>MC0074</u>	<u>0014659-18</u>
<u>MC0076</u>	<u>0014659-19</u>
<u>MC0077</u>	<u>0014659-20</u>

Were ICP-AES and ICP interelement corrections applied? (Yes/No) Yes ICP-AES ICP-MS

Were ICP-AES and ICP background corrections applied? (Yes/No) Yes ICP-AES ICP-MS

If yes, were raw data generated before application of background corrections? (Yes/No) No ICP-AES ICP-MS

The laboratory did not receive any instructions with this SDG to modify the SOW standard laboratory sample preparation procedures (e.g., subsampling). To aid in the determination of data usability with respect to project decisions, any modifications performed are described below.

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the electronic data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date 09/21/2011 Title : Data Reviewer

USEPA - CLP
COVER PAGE

Lab Name: A4 SCIENTIFIC, INC.

Contract: EPW09035

Lab Code: A4 Case No.: 41667 Mod. Ref. No.: 2183.0 SDG No.: MC0047

SOW No.: ISM01.2

EPA Sample No.	Lab Sample ID
<u>MC0047</u>	<u>0014659-14</u>
<u>MC0048</u>	<u>0014659-15</u>
<u>MC0050</u>	<u>0014659-16</u>
<u>MC0050D</u>	<u>1090164-DUP1</u>
<u>MC0050S</u>	<u>1090164-MS1</u>
<u>MC0050S</u>	<u>1090164-MS2</u>
<u>MC0051</u>	<u>0014659-17</u>
<u>MC0052</u>	<u>0014659-01</u>
<u>MC0053</u>	<u>0014659-02</u>
<u>MC0054</u>	<u>0014659-03</u>
<u>MC0055</u>	<u>0014659-04</u>
<u>MC0056</u>	<u>0014659-05</u>
<u>MC0057</u>	<u>0014659-06</u>
<u>MC0058</u>	<u>0014659-07</u>
<u>MC0059</u>	<u>0014659-08</u>
<u>MC0060</u>	<u>0014659-09</u>
<u>MC0061</u>	<u>0014659-10</u>
<u>MC0062</u>	<u>0014659-11</u>
<u>MC0063</u>	<u>0014659-12</u>
<u>MC0064</u>	<u>0014659-13</u>
<u>MC0074</u>	<u>0014659-18</u>
<u>MC0076</u>	<u>0014659-19</u>
<u>MC0077</u>	<u>0014659-20</u>

Were ICP-AES and ICP interelement
corrections applied?

(Yes/No)

ICP-AES

ICP-MS

Yes

Were ICP-AES and ICP background corrections
applied?

(Yes/No)

Yes

If yes, were raw data generated before
application of background corrections?

(Yes/No)

No

The laboratory did not receive any instructions with this SDG to modify the SOW standard laboratory sample preparation procedures (e.g., subsampling). To aid in the determination of data usability with respect to project decisions, any modifications performed are described below.

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the electronic data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [REDACTED]

Name: [REDACTED]

Date 09/21/2011

Title: Data Reviewer

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW09035**Case #: 41667****SDG #: MC0047****SDG NARRATIVE****SAMPLE RECIEPT & LOGIN**

The following samples were received on the dates listed against them. The samples were logged in for analysis as listed.

<u>Client Sample</u>	<u>Lab Sample</u>	<u>Matrix</u>	<u>#Cont.</u>	<u>Received</u>	<u>Analysis</u>	<u>Comments</u>
MC0052	0014659-01	Water	1	09/02/11 10:00	ISM01.2 HG	1st Sx
					ISM01.2 ICPAES	
					ISM01.2 ICPMS+2183.0	
MC0053	0014659-02	Water	1	09/02/11 10:00	ISM01.2 HG	
					ISM01.2 ICPAES	
					ISM01.2 ICPMS+2183.0	
MC0054	0014659-03	Water	1	09/02/11 10:00	ISM01.2 HG	
					ISM01.2 ICPMS+2183.0	
					ISM01.2 ICPAES	
MC0055	0014659-04	Water	1	09/02/11 10:00	ISM01.2 HG	
					ISM01.2 ICPAES	
					ISM01.2 ICPMS+2183.0	
MC0056	0014659-05	Water	1	09/02/11 10:00	ISM01.2 HG	
					ISM01.2 ICPAES	
MC0056	0014659-05	Water	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	
MC0057	0014659-06	Water	1	09/02/11 10:00	ISM01.2 HG	
					ISM01.2 ICPAES	
					ISM01.2 ICPMS+2183.0	
MC0058	0014659-07	Water	1	09/02/11 10:00	ISM01.2 HG	
					ISM01.2 ICPAES	
					ISM01.2 ICPMS+2183.0	

000003

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW09035**Case #: 41667****SDG #: MC0047****SDG NARRATIVE**

<u>Client Sample</u>	<u>Lab Sample</u>	<u>Matrix</u>	<u>#Cont.</u>	<u>Received</u>	<u>Analysis</u>	<u>Comments</u>
MC0059	0014659-08	Water	1	09/02/11 10:00	ISM01.2 HG ISM01.2 ICPAES ISM01.2 ICPMS+2183.0	
MC0060	0014659-09	Water	1	09/02/11 10:00	ISM01.2 ICPAES ISM01.2 ICPMS+2183.0 ISM01.2 HG	
MC0061	0014659-10	Water	1	09/02/11 10:00	ISM01.2 HG ISM01.2 ICPAES ISM01.2 ICPMS+2183.0	
MC0062	0014659-11	Water	1	09/02/11 10:00	ISM01.2 HG ISM01.2 ICPAES ISM01.2 ICPMS+2183.0	
MC0063	0014659-12	Water	1	09/02/11 10:00	ISM01.2 HG ISM01.2 ICPAES ISM01.2 ICPMS+2183.0	FIELD BLANK
MC0064	0014659-13	Water	1	09/02/11 10:00	ISM01.2 HG ISM01.2 ICPAES ISM01.2 ICPMS+2183.0	FIELD BLANK
MC0047	0014659-14	Water	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0 ISM01.2 HG ISM01.2 ICPAES	

000004

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW09035**Case #: 41667****SDG #: MC0047****SDG NARRATIVE**

<u>Client Sample</u>	<u>Lab Sample</u>	<u>Matrix</u>	<u>#Cont.</u>	<u>Received</u>	<u>Analysis</u>	<u>Comments</u>
MC0048	0014659-15	Water	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	
					ISM01.2 HG	
					ISM01.2 ICPAES	
MC0050	0014659-16	Water	3	09/02/11 10:00	ISM01.2 HG	MS/Dup
					ISM01.2 ICPAES	
					ISM01.2 ICPMS+2183.0	
MC0051	0014659-17	Water	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	
					ISM01.2 HG	
					ISM01.2 ICPAES	
MC0074	0014659-18	Water	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	
					ISM01.2 HG	
					ISM01.2 ICPAES	
MC0076	0014659-19	Water	1	09/02/11 10:00	ISM01.2 HG	
					ISM01.2 ICPAES	
					ISM01.2 ICPMS+2183.0	
MC0077	0014659-20	Water	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	Last Sx
					ISM01.2 HG	
					ISM01.2 ICPAES	

The following issues were noted:

Issue: The lab received and analyzed samples by ICP-MS (MA 2183.0) and found there are extremely high concentrations of Ca, Fe, K, Na, Mg and Al in almost all samples. Due to the high concentrations, the laboratory would like to run these analytes by ICP-AES and the remainder of the analytes by ICP-MS for all samples.

Resolution: Per Region 3, the laboratory may run all samples by ICP-AEs for Al, Ca, Fe, K, Mg, and Na and all remaining analytes by ICP-MS (MA 2183.0)

000005

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW09035

Case #: 41667

SDG #: MC0047

SDG NARRATIVE

Directive is enclosed. No other discrepancies of issues were noted during receipt and login.

pH of the water samples was verified upon sample receipt and the reading is listed below. pH determination log is included in the data package.

EPA SAMPLE #	LAB SAMPLE #	pH-ICP-AES, ICP-MS, Hg
MC0052	0014659-01	<2
MC0053	0014659-02	<2
MC0054	0014659-3	<2
MC0055	0014659-04	<2
MC0056	0014659-05	<2
MC0057	0014659-06	<2
MC0058	0014659-07	<2
MC0059	0014659-08	<2
MC0060	0014659-09	<2
MC0061	0014659-10	<2
MC0062	0014659-11	<2
MC0063	0014659-12	<2
MC0064	0014659-13	<2
MC0047	0014659-14	<2
MC0048	0014659-15	<2
MC0050	0014659-16	<2
MC0051	0014659-17	<2
MC0074	0014659-18	<2
MC0076	0014659-19	<2
MC0077	0014659-20	<2

MERCURY

Water samples were digested by Hot-Block technique (7470A) and analyzed using a Perkin Elmer FIMS-100 Mercury Analyzer.

MS and DUP were performed on sample "MC0050" and they were within the QC limits.

No problems were encountered during sample preparation or analysis.

ICP-AES

Water Samples were digested by Hot-Block technique (200.7) and analyzed using a Thermo Electron ICAP6500.

MS was performed on sample "MC0050". Recoveries were within the QC limits.

Dup was performed on sample "MC0050". RPDs were within the QC limits

Serial Dilution is performed on sample "MC0050". Percent Differences (%D) were within QC limits

No other problems were encountered during sample preparation or analysis.

000006

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW09035

Case #: 41667

SDG #: MC0047

SDG NARRATIVE

ICP-MS

Samples were analyzed as per ISM01.2. MA 2183.0.

Water samples were digested by Hot-Block technique (200.8) and analyzed using a Thermo Electron Corporation ICP MS model X-II.

MS was performed on sample "MC0050". Recoveries were within the QC limits

Dup was performed on sample "MC0050". RPDs were within the QC limits

Serial Dilution is performed on sample "MC0050". Percent Differences (%D) were outside QC limits for MANGANESE.

No other problems were encountered during sample preparation or analysis.

The following equations are used for calculation of sample results from raw instrument output data:

MERCURY

WATER Samples:

A standard curve is prepared by plotting the instrumental response of processed standards against true concentration values. Using a linear regression equation, the concentration of field and Quality Control (QC) samples is determined.

ICP-AES

WATER Samples:

$$\text{Concentration } (\mu\text{g/L}) = C * \frac{V_f}{V_i} * DF$$

Where,

C = Instrument value in $\mu\text{g/L}$

V_f = Final digestion volume (mL) (50ml)

V_i = Initial digestion volume (mL) (50ml)

DF = Dilution Factor

ICP-MS

WATER Samples:

$$\text{Concentration } (\mu\text{g/L}) = C * \frac{V_f}{V_i} * DF$$

Where,

C = Instrument value in $\mu\text{g/L}$ (The average of all replicate integrations).

V_f = Final digestion volume (mL) (50ml)

V_i = Initial digestion volume (mL) (50ml)

DF = Dilution Factor

000007

SAMPLE LOG-IN SHEET

14659-A

Lab Name A4SCIENTIFIC		Page 1 of 1
Received By (Print Name) [REDACTED]		Log-in Date 9-2-11
Received By (Signature) [REDACTED]		
Case Number 41667	Sample Delivery Group No. MC0047	Mod. Ref. No. 21830

Remarks:	
1. Custody Seal(s)	<u>Present/Absent*</u> <u>Intact/Broken</u>
2. Custody Seal Nos.	<u>NA</u>
3. Traffic Reports/Chain of Custody Records or Packing Lists	<u>Present/Absent*</u>
4. Airbill	<u>Airbill Sticker Present/Absent*</u>
5. Airbill No.	<u>8768833973</u> <u>37</u>
6. Sample Tags	<u>Present/Absent*</u>
Sample Tag Numbers	<u>Listed/Not Listed on Traffic Report/Chain of Custody Record</u>
7. Sample Condition	<u>Intact/Broken*/Leaking</u>
8. Cooler Temperature Indicator Bottle	<u>Present/Absent*</u>
9. Cooler Temperature	<u>4°C</u>
10. Does information on Traffic Reports/Chain of Custody Records and sample tags agree?	<u>Yes/No*</u>
11. Date Received at Lab	<u>9-2-11</u>
12. Time Received	<u>10:00</u>

Sample Transfer	
Fraction <u>Metals</u>	Fraction <u>NA</u>
Area# <u>COOLER A</u>	Area# <u>NA</u>
By <u>[Signature]</u>	By <u>[Signature]</u>
On <u>9-2-11</u>	On <u>9-2-11</u>

	EPA Sample #	Aqueous/Water Sample pH	Corresponding		Remarks: Condition of Sample Shipment, etc.
			Sample Tag #	Assigned Lab #	
1	MC00452	22	231	0014659-01	1-14 plastic
2	53	1	232	-02	
3	54		233	-03	
4	55		234	-04	
5	56		235	-05	
6	57		236	-06	
7	58		237	-07	
8	59		238	-08	
9	60		239	-09	
10	61		240	-10	
11	62		241	-11	
12	63		242	-12	
13	64		243	-13	
14					
15					
16					
17					
18					
19					
20					
21					
22					

* Contact SMO and attach record of resolution

Reviewed By [REDACTED]	Logbook No. <u>NA</u>
Date <u>9/2/11</u>	Logbook Page No. <u>NA</u>

SAMPLE LOG-IN SHEET

14659-B

Lab Name A4SCIENTIFIC		Page 1 of 1
Received By (Print Name) [REDACTED]		Log-in Date 9-2-11
Received By (Signature) [REDACTED]		
Case Number 41667	Sample Delivery Group No. MC0047	Mod. Ref. No. 21830

Remarks:	
1. Custody Seal(s)	Present /Absent* Intact/ Broken
2. Custody Seal NOs.	NA
3. Traffic Reports/Chain of Custody Records or Packing Lists	Present /Absent*
4. Airbill	Airbill /Sticker Present/ Absent *
5. Airbill No.	87688339 7326
6. Sample Tags	Present /Absent*
Sample Tag Numbers	Listed/Not Listed on Traffic Report/Chain of Custody Record
7. Sample Condition	Intact /Broken*/Leaking
8. Cooler Temperature Indicator Bottle	Present /Absent*
9. Cooler Temperature	4°C
10. Does information on Traffic Reports/Chain of Custody Records and sample tags agree?	Yes /No*
11. Date Received at Lab	9-2-11
12. Time Received	10:00

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding		Remarks: Condition of Sample Shipment, etc.
			Sample Tag #	Assigned Lab #	
1	MC0047	2.2	224	0014659-14	1-1L Plastic
2	48		225	-15	↓
3	50		227 + 29	-16	g-1L Plastic
4	51		230	-17	1-1L Plastic
5	74		254	-18	
6	76		256	-19	
7	77		257	-20	
8	7				
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Sample Transfer	
Fraction Metals	Fraction
Area# COOLY A	Area#
By [Signature]	By [Signature]
On 9-2-11	On 9-2-11

* Contact SMO and attach record of resolution

Reviewed By [Signature]	Logbook No. NA
Date 9/2/11	Logbook Page No. NA



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE : October 28, 2011

SUBJECT: Region III Data QA Review

FROM: Colleen Walling *Colleen Walling*
Region III ESAT RPO (3EA20)

TO: Lisa Johnson
Remedial Project Manager (3HS12)

Attached is the inorganic data validation report for the Kiskimere Groundwater Well (Case#41667; SDG#: MC0075 and MC0065) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachment

cc: [REDACTED] (TechLaw, Inc.)

TO #0037 TDF: #10030

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

Lockheed Martin IS&GS – Civil
Energy & Environment
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

LOCKHEED MARTIN
We never forget who we're working for™



Date: October 27, 2011

Subject: Inorganic Data Validation (IM2 Level)
Case: 41667
SDGs: MC0065, MC0075
Site: Kiskimere Groundwater Well

From: [REDACTED]
Inorganic Data Reviewer
[REDACTED]
Senior Oversight Chemist

To: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 41667, Sample Delivery Groups (SDGs) MC0065 and MC0075, consisted of nine (9) sediment samples including one (1) field duplicate pair and four (4) aqueous samples analyzed for mercury (Hg) by cold vapor technique, for aluminum (Al), calcium (Ca), iron (Fe), magnesium (Mg), potassium (K) and sodium (Na) by ICP-AES and for the remaining analytes by ICP-MS. All samples were analyzed by A4 Scientific, Inc. (A4) according to Contract Laboratory Program (CLP) Statement of Work (SOW) ISM01.2 (modified) through the Routine Analytical Services (RAS) program. Modification reference number 2183.0 details the specifications and reporting requirements for the addition of uranium (U) to the target analyte list.

SUMMARY

Data were validated according to Region 3 Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2, and is assigned the Superfund Data Validation Label S4VM (Stage_4_Validation_Manual). Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by outliers present in a laboratory blank as well as matrix spike, laboratory duplicate and ICP serial dilution analyses. Details of these outliers are discussed under "Minor Problems," specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on Data Summary Forms (DSFs).

Field blanks MC0063 and MC0064 were used in evaluating blank contamination for the associated samples in this case based on sampling date. These blanks were analyzed in SDG MC0047 and results may be found in Appendix C. No positive results were reported in these blanks.

MINOR PROBLEMS

In SDG MC0075, a Continuing Calibration Blank (CCB) had a reported result greater than the Method Detection Limit (MDL) for Fe. The positive result for this analyte in affected sample MC0075 which is equal to five times (5X) the blank concentration may be biased high and has been qualified "B" on the DSF.

In SDG MC0065, percent Difference (%D) in the ICP serial dilution analysis was outside the control limit (>10%) for copper (Cu). Positive results for this analyte are estimated due to possible matrix interferences and have been qualified "J" on the DSFs.

In SDG MC0065, Relative Percent Differences (RPDs) in the laboratory duplicate analysis were outside control limits [35% RPD, $\pm 2X$ Contract Required Quantitation Limits (CRQLs)] for arsenic (As), chromium (Cr), lead (Pb) and vanadium (V). Positive results for these analytes are estimated and have been qualified "J" on the DSFs.

In SDGs MC0065 and MC0075, matrix spike recoveries were low (<75% but >30%) for beryllium (Be) and U, respectively. Low recoveries may be attributed to matrix interferences or analyte lost during the digestion process. Positive results for Be in SDG MC0065 may be biased low and are qualified "L" on the DSFs. Quantitation limits for U in SDG MC0075 may be biased low and have been qualified "UL" on the DSF.

In SDG MC0065, matrix spike recovery was high (>125%) for U. Positive results for this analyte may be biased high; however, the "K" qualifier for this outlier has been superseded by "J" on the DSFs.

NOTES

In SDG MC0065, the laboratory reported that all samples were initially analyzed at five-fold (5X) dilution to avoid high interferences. The laboratory adjusted the calibration standard concentrations in order to achieve the required CRQLs. The adjusted CRQL and dilution factor of five (5) are reported on the DSFs by the reviewer.

The concentration of manganese (Mn) exceeded the calibration range in the initial analysis for the samples listed below. These samples were re-analyzed to bring the concentration of the analyte within the calibration range. Results for this analyte were reported from the diluted analyses and annotated with a (+) symbol on the DSFs by the reviewer.

<u>SDG</u>	<u>Sample</u>	<u>Dilution</u>
MC0065	MC0065	27.5X
	MC0066	58.5X
	MC0067	35X
	MC0068	20X
	MC0069	6.5X
	MC0070	36X
	MC0071	19X
	MC0072	8.5X
MC0075	MC0079	2.3X

Reported results between MDLs and CRQLs were qualified "J" on the DSFs.

In SDG MC0065, Cu was flagged on Form Is and Form 8 by the reviewer for having a serial dilution %D greater than ten percent (>10%).

In SDG MC0065, The RPD in the laboratory duplicate analysis was outside contractual control limits (20% RPD, \pm CRQL) for Cu. However, the RPD for this analyte was within Region 3 established control limits (35% RPD, \pm 2XCRQL) for soil analysis. No data were qualified for this analyte based on laboratory duplicate imprecision.

In SDG MC0065, the laboratory flagged selenium (Se) on Form 5 indicating matrix spike outside control limit for this analyte. However, raw data confirm recovery for this analyte as one hundred percent (100%). The reviewer crossed off laboratory flag on this Form.

In SDG MC0075, matrix spike recovery was high (>125%) for Se. No positive results were reported for this analyte; therefore, no data were impacted due to this outlier.

In SDG MC0075, Se and U were flagged on Form Is and Form 5 by the reviewer for having recoveries outside control limit (75%-125%).

Reported results for field duplicate pair MC0067/MC0068 were within 35% RPD, \pm 2XCRQL for all analytes except As and Mn.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

Table 1A	Summary of qualifiers on data summary forms after data validation
Table 1B	Codes used in comments column of Table 1A
Appendix A	Glossary of Data Qualifier Codes
Appendix B	Data Summary Form(s)
Appendix C	Chain of Custody Records
Appendix D	Laboratory Case Narrative

DCN: 41667_ MC0065_75

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY
FORM AFTER DATA VALIDATION

Case 41667, SDG MC0065

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON- DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
As	All samples	J			DUP (72%)
Be	All samples	L		Low	MSL (73%)
Cr	All samples	J			DUP (42%)
Cu	All samples	J			ISD (29%)
Pb	All samples	J			DUP (101%)
U	MC0065, MC0068, MC0069, MC0070	J			>MDL<CRQL MSH (154%)
V	All samples	J			DUP (35.4%)

Case 41667, SDG MC0075

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON- DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Fe	MC0075	B		High	CCB (41.0 J ug/L)
U	All samples		UL	Low	MSL (74.6%)

* See explanation of comments in Table 1B

TABLE 1B
CODES USED IN COMMENTS COLUMN

DUP	=	Relative Percent Differences (RPDs) for the laboratory duplicate analysis were outside the control limit (35% RPD, $\pm 2X$ CRQL) [RPDs are in parenthesis]. Positive results are to be considered estimates.
MSL	=	Matrix spike recoveries were low (<75% but >30%) [percent recoveries are in parenthesis]. Positive results and quantitation limits may be biased low.
ISD	=	Percent difference (%D) in the ICP serial dilution analysis was outside the control limit (>10%) [%D is in parenthesis]. Positive results are estimated.
>MDL<CRQL	=	Reported results are greater than MDLs but less than CRQLs and are considered estimated.
MSH	=	Matrix spike recovery was high (>125%) [percent recovery is in parenthesis]. Positive results may be biased high.
CCB	=	Continuing calibration blank had a result >MDL [result is in parenthesis]. Positive results which are $\leq 5X$ the blank concentration may be biased high.

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Appendix B

Data Summary Forms

DATA SUMMARY FORM: INORGANIC

Page 1 of 5

Case #: 41667

SDG : MC0065

Number of Sediment Samples : 9

Site :

KISKIMERE GROUNDWATER WELL

Number of Water Samples : 0

Lab. :

A4

Sample Number :		MC0065		MC0066		MC0067		MC0068		MC0069	
Sampling Location :		SD01		SD02		SD03		SD04		SD05	
Field QC :						Dup. of MC0068		Dup. of MC0067			
Matrix :		Sediment		Sediment		Sediment		Sediment		Sediment	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		08/31/2011		08/31/2011		08/31/2011		08/31/2011		08/31/2011	
Time Sampled :		15:55		11:00		15:45		15:55		16:50	
% Solids :		65.8		23.0		74.1		65.2		50.9	
Dilution Factor :		5.0 / 27.5		5.0 / 58.5		5.0 / 35.0		5.0 / 20.0		5.0 / 6.5	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	0.2										
ARSENIC	0.1	5.1	J	7.3	J	3.0	J	4.6	J	7.7	J
BARIUM	1	131		224		92.5		111		265	
BERYLLIUM	0.1	1.3	L	3.6	L	1.1	L	1.2	L	1.3	L
CADMIUM	0.1	0.68	J	1.9	J	0.45	J	0.54	J	0.57	J
CHROMIUM	0.2	20.9	J	18.7	J	18.9	J	16.4	J	15.0	J
COBALT	0.1	27.2		105		29.3		22.1		13.5	
COPPER	0.2	32.0	J	41.9	J	22.0	J	28.3	J	20.7	J
LEAD	0.1	75.9	J	48.7	J	29.0	J	39.7	J	23.1	J
MANGANESE	0.1	1620 +		10200 +		1840+		1190 +		497 +	
NICKEL	0.1	38.6		160		41.7		32.3		33.9	
SELENIUM	0.5										
SILVER	0.1										
THALLIUM	0.1	0.27	J								
URANIUM	0.2	1.1	J					1.1	J	1.1	J
VANADIUM	0.5	16.5	J	17.3	J	12.5	J	14.7	J	19.5	J
ZINC	0.2	164		433		155		152		102	

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100)

Revised 09/99

"+" = Result reported from the diluted analysis.

DATA SUMMARY FORM: INORGANIC

Page 2 of 5

Case #: 41667 SDG : MC0065
 Site : KISKIMERE GROUNDWATER WELL
 Lab. : A4

Sample Number :		MC0070		MC0071		MC0072		MC0073			
Sampling Location :		SD06		SD07		SD08		SD09			
Matrix :		Sediment		Sediment		Sediment		Sediment			
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg			
Date Sampled :		08/31/2011		08/31/2011		08/30/2011		08/30/2011			
Time Sampled :		16:35		13:10		11:04		11:40			
% Solids :		74.3		79.1		68.8		64.4			
Dilution Factor :		5.0 / 36.0		5.0 / 19.0		5.0 / 8.5		5.0			
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	0.2										
ARSENIC	0.1	5.5	J	1.8	J	2.0	J	2.4	J		
BARIUM	1	134		97.4		97.8		102			
BERYLLIUM	0.1	1.3	L	0.88	L	0.97	L	1.3	L		
CADMIUM	0.1	0.50	J			0.31	J				
CHROMIUM	0.2	20.5	J	15.6	J	16.6	J	15.0	J		
COBALT	0.1	38.3		14.3		13.6		13.4			
COPPER	0.2	23.4	J	12.5	J	20.0	J	20.3	J		
LEAD	0.1	72.8	J	18.8	J	40.0	J	22.7	J		
MANGANESE	0.1	1910 +		955 +		468 +		344			
NICKEL	0.1	54.5		24.3		25.8		28.7			
SELENIUM	0.5										
SILVER	0.1	0.27	J								
THALLIUM	0.1										
URANIUM	0.2	0.71	J								
VANADIUM	0.5	19.3	J	15.7	J	24.1	J	16.5	J		
ZINC	0.2	192		75.7		108		101			

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100)

Revised 09/99

"+" = Result reported from the diluted analysis.

DATA SUMMARY FORM: INORGANIC

Page 3 of 5

Case #: 41667 SDG : MC0065
 Site : KISKIMERE GROUNDWATER WELL
 Lab. : A4

Sample Number :		MC0065		MC0066		MC0067		MC0068		MC0069	
Sampling Location :		SD01		SD02		SD03		SD04		SD05	
Field QC :						Dup. of MC0068		Dup. of MC0067			
Matrix :		Sediment		Sediment		Sediment		Sediment		Sediment	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		08/31/2011		08/31/2011		08/31/2011		08/31/2011		08/31/2011	
Time Sampled :		15:55		11:00		15:45		15:55		16:50	
% Solids :		65.8		23.0		74.1		65.2		50.9	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
MERCURY	0.1	0.084	J	0.19	J	0.062	J	0.085	J	0.098	J

Sample Number :		MC0070		MC0071		MC0072		MC0073			
Sampling Location :		SD06		SD07		SD08		SD09			
Matrix :		Sediment		Sediment		Sediment		Sediment			
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg			
Date Sampled :		08/31/2011		08/31/2011		08/30/2011		08/30/2011			
Time Sampled :		16:35		13:10		11:04		11:40			
% Solids :		74.3		79.1		68.8		64.4			
Dilution Factor :		1.0		1.0		1.0		1.0			
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
MERCURY	0.1	0.054	J	0.046	J	0.038	J	0.060	J		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Page 4 of 5

Case #: 41667

SDG : MC0075

Number of Water Samples : 4

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

A4

Sample Number :		MC0075		MC0078		MC0079		MC0080			
Sampling Location :		SW02		SW05		SW06		SW07			
Matrix :		Water		Water		Water		Water			
Units :		ug/L		ug/L		ug/L		ug/L			
Date Sampled :		08/31/2011		08/30/2011		08/30/2011		08/31/2011			
Time Sampled :		11:00		16:50		11:30		13:10			
Dilution Factor :		1.0		1.0		1.0		1.0			
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	75.6	J	99.3	J	8930					
CALCIUM	5000	60800		57200		43900		25700			
IRON	100	205	B	533		4910		112			
MAGNESIUM	5000	18400		17200		19200		7050			
MERCURY	0.2										
POTASSIUM	5000	3070	J	2940	J	2830	J	1970	J		
SODIUM	5000	41200		38800		62500		34900			

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Page 5 of 5

Case #: 41667 SDG : MC0075
 Site : KISKIMERE GROUNDWATER WELL
 Lab. : A4

Sample Number :		MC0075		MC0078		MC0079		MC0080			
Sampling Location :		SW02		SW05		SW06		SW07			
Matrix :		Water		Water		Water		Water			
Units :		ug/L		ug/L		ug/L		ug/L			
Date Sampled :		08/31/2011		08/30/2011		08/30/2011		08/31/2011			
Time Sampled :		11:00		16:50		11:30		13:10			
Dilution Factor :		1.0		1.0		1.0 / 2.3		1.0			
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	2										
ARSENIC	1			0.48	J	0.73	J				
BARIUM	10	53.9		51.6		13.9		41.2			
BERYLLIUM	1					3.9					
CADMIUM	1										
CHROMIUM	2	0.78	J	0.81	J	1.5	J	1.2	J		
COBALT	1	0.41	J	0.56	J	56.4					
COPPER	2			0.92	J	5.0					
LEAD	1										
MANGANESE	1	55.8		81.3		947 +		22.9			
NICKEL	1	3.2		3.5		145		0.58	J		
SELENIUM	5										
SILVER	1										
THALLIUM	1					0.40	J				
URANIUM	1		UL		UL		UL		UL		
VANADIUM	5										
ZINC	2	2.0		3.2		214					

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

"+" = Result reported from the diluted analysis.

Appendix C

Chain of Custody Records



USEPA Contract Laboratory Program Inorganic Traffic Report & Chain of Custody Record

Case No: 41667
DAS No: R

Region: 3		Date Shipped: 9/1/2011		Chain of Custody Record	
Project Code: CT5653		Carrier Name: FedEx		Sample Signature: [Redacted]	
Account Code: 2011TQ3N302DD2C03ZZQB00		Airbill: 8768 8339 7315		Relinquished By: [Redacted] (Date / Time) 9/1/11/1900	
CERCLIS ID: PAN000306740		Shipped to: A4 Scientific, 1544 Sawdust Road, Suite 505, The Woodlands TX 77380, (281) 292-5277		Received By: [Redacted] (Date / Time)	
Spill ID: ARL					
Site Name/State: Kiskimere GW Well Investigation/WV					
Project Leader: [Redacted]					
Action: Site Evaluation					
Sampling Co: TechLaw, Inc.					

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNOVER	PRESERVATIVE/ Bottles	TAG No./	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC0065	Sediment/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	244 (Ice Only) (1)		SD01	S: 8/31/2011 15:55		
MC0066	Sediment/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	245 (Ice Only) (1)		SD02	S: 8/31/2011 11:00		
MC0067	Sediment/ John Elson	L/G	TAL + U (21)	246 (Ice Only) (1)		SD03	S: 8/31/2011 15:45		Field Duplicate of SD04
MC0068	Sediment/ John Elson	L/G	TAL + U (21)	247 (Ice Only) (1)		SD04	S: 8/31/2011 15:55		Field Duplicate of SD03
MC0069	Sediment/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	248 (Ice Only) (1)		SD05	S: 8/30/2011 16:50		
MC0070	Sediment/ Dan Buckley	L/G	TAL + U (21)	249 (Ice Only), 250 (Ice Only) (2)		SD06	S: 8/31/2011 16:35		Lab QC
MC0071	Sediment/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	251 (Ice Only) (1)		SD07	S: 8/31/2011 13:10		
MC0072	Sediment/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	252 (Ice Only) (1)		SD08	S: 8/30/2011 11:04		

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: MC0070	Additional Sampler Signature(s): [Redacted]	Chain of Custody Seal Number:
Analysis Key: TAL + U = CLP TAL Metals + U	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

TR Number: 3-043013577-090111-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY

EPA USEPA Contract Laboratory Program Inorganic Traffic Report & Chain of Custody Record

Case No: 41667
DAS No: R

Region: 3		Date Shipped: 9/1/2011		Chain of Custody Record	
Project Code: CT5653		Carrier Name: FedEx		Sampler Signature: [Redacted]	
Account Code: 2011T03N302DD2C03ZZQB00		Airbill: 8768 8339 7315		Received By: [Redacted] (Date / Time)	
CERCLIS ID: PAN000306740		Shipped to: A4 Scientific		Relinquished By: [Redacted] (Date / Time)	
Spill ID: ARL		1544 Sawdust Road		2	
Site Name/State: Kiskimere GW Well Investigation/WV		Suite 505		3	
Project Leader: [Redacted]		The Woodlands TX 77380		4	
Action: Site Evaluation		(281) 292-5277			
Sampling Co: TechLaw, Inc.					

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC0073	Sediment/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	253 (Ice Only) (1)	SD09	S: 8/30/2011 11:40		

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: MC0070	Additional Sampler Signatures: [Redacted]	Chain of Custody Seal Number:
Analysis Key: TAL + U = CLP TAL Metals + U	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? [Redacted]

TR Number: 3-043013577-090111-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

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Case No: 41667
 DAS No:

R

Region: 3		Date Shipped: 9/1/2011		Chain of Custody Record	
Project Code: CT5653	Carrier Name: FedEx	Relinquished By: [Signature]		Sampler Signature: [Signature]	
Account Code: 2011T03N302DD2C03ZZQB00	Airbill: 8768 8339 7326	(Date / Time) 9/1/11/1900		(Date / Time)	
CERCLIS ID: PAN000306740	Shipped to: A4 Scientific	1		Received By	
Spill ID: ARL	1544 Sawdust Road	2			
Site Name/State: Kiskimere GW Well Investigation/MV	Suite 505	3			
Project Leader: [Signature]	The Woodlands TX 77380	4			
Action: Site Evaluation	(281) 292-5277				
Sampling Co: TechLaw, Inc.					

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC0047	Ground Water/ John Elson	L/G	TAL + U (21)	224 (HNO3) (1)	GW01	S: 8/30/2011 9:45		
MC0048	Ground Water/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	225 (HNO3) (1)	GW02	S: 8/30/2011 10:14		
MC0050	Ground Water/ Dan Buckley	L/G	TAL + U (21)	227 (HNO3), 228 (HNO3), 229 (HNO3) (3)	GW03	S: 8/30/2011 10:35		Lab QC
MC0051	Ground Water/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	230 (HNO3) (1)	GW04	S: 8/30/2011 15:36		
MC0074	Surface Water/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	254 (HNO3) (1)	SW01	S: 8/31/2011 15:25		
MC0075	Surface Water/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	255 (HNO3) (1)	SW02	S: 8/31/2011 11:00		Lab QC
MC0076	Surface Water/ John Elson	L/G	TAL + U (21)	256 (HNO3) (1)	SW03	S: 8/31/2011 15:10		Field Duplicate of SW04
MC0077	Surface Water/ John Elson	L/G	TAL + U (21)	257 (HNO3) (1)	SW04	S: 8/31/2011 15:20		Field Duplicate of SW03

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: MC0050, MC0075	Additional Sampler Signature(s): [Signature]	Chain of Custody Seal Number:
Analysis Key: TAL + U = CLP-TAL Metals + U	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-043013577-090111-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

703/818-4602

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EPA USEPA Contract Laboratory Program Inorganic Traffic Report & Chain of Custody Record

Case No: 41667
DAS No: R

Region: 3	Date Shipped: 9/1/2011	Carrier Name: FedEx	Airbill: 8768-8339 7326
Project Code: CT5653	Shipped to: A4 Scientific	1544 Sawdust Road	
Account Code: 2011T03N302DD2C03ZZQB00		Suite 505	
CERCLIS ID: PAN000306740		The Woodlands TX 77380	
Spill ID: ARL		(281) 292-5277	
Site Name/State: Kiskimere GW Well Investigation/WV			
Project Leader: [Redacted]			
Action: Site Evaluation			
Sampling Co: TechLaw, Inc.			

Chain of Custody Record	
Relinquished By: [Redacted]	Received By: [Redacted]
(Date / Time)	(Date / Time)
2	
3	
4	

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNOVER	PRESERVATIVE/ Bottles	TAG No/	STATION LOCATION	SAMPLE COLLECT DATE/TIME	ORGANIC SAMPLE No.	QC Type
MC0078	Surface Water/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	258 (HNO3) (1)		SW05	S: 8/30/2011 16:50		
MC0079	Surface Water/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	259 (HNO3) (1)		SW06	S: 8/30/2011 11:30		
MC0080	Surface Water/ MICHELLE DALLESSAND RO	L/G	TAL + U (21)	260 (HNO3) (1)		SW07	S: 8/31/2011 13:10		

Shipment for Case Complete?	Sample(s) to be used for laboratory QC:	Additional Sample Signatures:	Chain of Custody Seal Number:
	MC0050, MC0075	[Redacted]	
Analysis Key: TAL + U = CLP TAL Metals + U	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?

TR Number: 3-043013577-090111-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

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U.S EPA Region III Analytical Request Form

Revision 11.09

Control #		CT5653		OASQA USE ONLY	
DAS#				RAS #	41667
PES #				NSF #	
				Analytical TAT	21 days

41667

Date: 08/10/11		Site Activity: Site Assessment	
Site Name: Kiskimere Groundwater Well Investigation			
City: Parks Township, Armstrong Co.		State: PA	
Program: Superfund		Latitude: 40 degrees 37'11.24"	
Site ID: 0306740		Longitude: -079 degrees 35'01.16"	
Act. #: 2011T03N302DD2CA3RLQB00		CERCLIS #: PAN000306740	
Spill ID: A3RL		Operable Unit:	
Site Specific QA Plan Submitted: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		Title: Sampling QA/QC Work Plan	
EPA Project Leader: Lisa Johnson		Date Approved: Aug 10, 2011	
Request Preparer: [REDACTED]		E-mail: johnson.lisa@epa.gov	
Site Leader: [REDACTED]		E-mail: [REDACTED]	
Contractor: TechLaw, Inc.			
#Samples 45	Matrix: Water	Parameter: ICP-MS TAL metals+Hg+U	Method: CLP ISM01.2 ICP-MS/ M.A. for U 34388
#Samples 48	Matrix: Water	Parameter: TCL Trace VOA	Method: CLP SOM01.2 34389
#Samples 7	Matrix: sediment	Parameter: ICP-AES TAL metals+Hg+U	Method: CLP ISM01.2 ICP-AES/ M.A. for U 34391
#Samples 7	Matrix: sediment	Parameter: TCL VOA	Method: CLP SOM01.2 34390
#Samples	Matrix:	Parameter:	Method:
#Samples	Matrix:	Parameter:	Method:
#Samples	Matrix:	Parameter:	Method:
#Samples	Matrix:	Parameter:	Method:
Ship Date From: August 30, 2011		Ship Date To: September 1, 2011	Inorg. Validation Level IM2
Unvalidated Data Requested: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		Org. Validation Level M3	
Validated Data Package Due: <input checked="" type="checkbox"/> 42 days <input type="checkbox"/> 30 days <input type="checkbox"/> 21days <input type="checkbox"/> 14 days <input type="checkbox"/> Other (Specify) 24/21		(Specify) 21 days	
Electronic Data Deliverables Required: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (EDDs will be provided in Region 3 EDD Format)			
Special Instructions: See attached CLP TCL and TAL for analytes and CRQLs. Request CLP Modified Analysis (M.A.) for Uranium with 1 ug/l QL in water and ?? for sediment samples.			

Request for Quote (RFQ) for Modified Analysis

Date: August 22, 2011

Subject: Modification Reference Number: 2183.0
Title: ICP-MS plus Uranium
Sample Matrix: Water and Soil
Fraction Affected: ICP-MS
Statement of Work: ISM01.2

Purpose:

The Contractor Laboratory is requested to perform the following modified analyses under the Inorganic Statement of Work (SOW) ISM01.2, based on the additional specifications listed below. Unless specifically modified by this modification, all analyses, Quality Control (QC), and reporting requirements specified in SOW ISM01.2 remain unchanged and in full force and effect. The number of samples requested in this modification is not guaranteed.

Please note that accepting a modified analysis request is voluntary, and that the Laboratory is not required to accept the modified analysis. There will be no adverse effect to the Laboratory for not accepting the modified analysis request. However, once the Laboratory accepts the request for modified analysis, it shall perform the analysis in accordance with this modification and as specified in SOW ISM01.2.

The Laboratory is requested to review the modification described herein, determine whether or not it shall accept the requested modified analyses, and complete the attached response form. The Laboratory shall provide comments in response to the required changes in the designated area, in order to ensure that the modified analysis can be completed in accordance with the specifications described herein.

000006

Modification to the SOW Specifications:

The contract Laboratory shall analyze water/aqueous samples and soil/sediment samples for the Target Analyte List and the additional analyte Uranium (U, CASRN 7440-61-1) by ICP-MS as indicated on the Traffic Report/Chain of Custody Record.

The Contract Required Quantitation Limits (CRQLs) for the following analytes and matrices have been modified. All other CRQLs remain at the level specified in the SOW.

Analyte	Aqueous CRQL (µg/L)	Aqueous Spike level (µg/L)	Soil CRQL (mg/kg)	Soil Spike level (mg/kg)
Uranium	1.0	100	1.0	20

If Method Detection Limits (MDLs) have not already been determined, the Laboratory shall determine MDLs for this analyte using the appropriate preparation methods. The MDLs must be lower than the CRQLs, but are not required to be less than one-half the CRQL.

The Laboratory shall:

- Perform the Initial Calibration with at least one non-blank standard at or below the modified aqueous CRQL.
- Add U to the ICB and CCV at appropriate mid-range concentrations.
- Evaluate the ICB and CCB against the modified aqueous CRQL.
- Perform the Matrix Spike at the levels specified above. Post-digestion spike requirements are per the SOW.
- Add U to the LCS at 2 times the appropriate modified CRQL.
- Add U to Forms 1, 2A, 3, 4B, 5A (5B), 6, 7, 8, 9, 11, 13, and 16.

The Laboratory is not required to add U to the ICSA/ICSAB solutions. The Laboratory shall use a true value of zero (0) and acceptance windows of $\pm 2x$ the modified aqueous CRQL unless a non-zero value has been determined for the solutions.

The Laboratory is not required to bracket U with an internal standard having a mass greater than 238. The analysis of the Bismuth internal standard at mass 209 is sufficient.

Reporting Requirements:

Hardcopy and electronic data reporting are required as specified per SOW ISM01.2. All hardcopy and electronic data shall be adjusted to incorporate modified specifications. This includes attaching a copy of the requirements for modified analysis to the SDG Narrative. If specific problems occur with incorporation of the modified analysis into the hardcopy and/or electronic deliverable, the Laboratory shall contact the DASS Manager within the Sample Management Office (SMO) at (703) 818-4233 or via email at CCSSUPPORT@fedcsc.com for resolution.

000007

All samples analyzed for the same fraction within an SDG must be analyzed under the same fractional requirements. The Laboratory shall not include data for the same fraction with different requirements in the same SDG.

The Laboratory shall include the Modification Reference Number 2183.0 on each hardcopy data form under the "Mod. Ref. No:" header appearing on each form as well as the SamplePlusMethod/ClientMethodModificationID element of the electronic deliverable. The Laboratory shall also document the Modification Reference Number and Solicitation Number on the SDG Coversheet and SDG Narrative.

Clarifications/Revisions to the RFQ for Modified Analysis:

Laboratory Name:

Laboratory Comments:

000008

DATA SUMMARY FORM: INORGANIC

Case #: 41667

SDG : MC0047

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

A4

Sample Number :		MC0063		MC0064							
Sampling Location :		FB01		FB02							
Field QC :		Field Blank		Field Blank							
Matrix :		Water		Water							
Units :		ug/L		ug/L							
Date Sampled :		08/30/2011		08/31/2011							
Time Sampled :		18:20		17:30							
Dilution Factor :		1.0		1.0							
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200										
CALCIUM	5000										
IRON	100										
MAGNESIUM	5000										
MERCURY	0.2										
POTASSIUM	5000										
SODIUM	5000										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Case #: 41667

SDG : MC0047

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

A4

Sample Number :		MC0063		MC0064							
Sampling Location :		FB01		FB02							
Field QC :		Field Blank		Field Blank							
Matrix :		Water		Water							
Units :		ug/L		ug/L							
Date Sampled :		08/30/2011		08/31/2011							
Time Sampled :		18:20		17:30							
Dilution Factor :		1.0		1.0							
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	2										
ARSENIC	1										
BARJUM	10										
BERYLLIUM	1										
CADMIUM	1										
CHROMIUM	2										
COBALT	1										
COPPER	2										
LEAD	1										
MANGANESE	1										
NICKEL	1										
SELENIUM	5										
SILVER	1										
THALLIUM	1										
URANIUM	1										
VANADIUM	5										
ZINC	2										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

Appendix D

Laboratory Case Narrative

SDG MC0065

USEPA - CLP
COVER PAGE

Lab Name: A4 SCIENTIFIC, INC. Contract: EPW09035
Lab Code: A4 Case No.: 41667 Mod. Ref. No.: 2183.0 SDG No.: MC0065
SOW No.: ISM01.2

EPA Sample No.	Lab Sample ID
<u>MC0065</u>	<u>0014661-01</u>
<u>MC0066</u>	<u>0014661-02</u>
<u>MC0067</u>	<u>0014661-03</u>
<u>MC0068</u>	<u>0014661-04</u>
<u>MC0069</u>	<u>0014661-05</u>
<u>MC0070</u>	<u>0014661-06</u>
<u>MC0070D</u>	<u>1090082-DUP2</u>
<u>MC0070D</u>	<u>1090082-DUP1</u>
<u>MC0070S</u>	<u>1090082-MS2</u>
<u>MC0070S</u>	<u>1090082-MS1</u>
<u>MC0071</u>	<u>0014661-07</u>
<u>MC0072</u>	<u>0014661-08</u>
<u>MC0073</u>	<u>0014661-09</u>

Were ICP-AES and ICP interelement corrections applied? (Yes/No) ICP-AES ICP-MS
Yes

Were ICP-AES and ICP background corrections applied? (Yes/No) Yes

If yes, were raw data generated before application of background corrections? (Yes/No) No

The laboratory did not receive any instructions with *True Sample* modify the SOW standard laboratory sample preparation procedures (e.g., subsampling). To aid in the determination of data usability with respect to project decisions, any modifications performed are described below.

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the electronic data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [Redacted]
Date: 10/05/2011

Name: [Redacted]
Title: QA Specialist

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW09035	Case #: 41667	SDG #: MC0065
-----------------------------	----------------------	----------------------

SDG NARRATIVE

SAMPLE RECIEPT & LOGIN

The following samples were received on the dates listed against them. The samples were logged in for analysis as listed.

<u>Client Sample</u>	<u>Lab Sample</u>	<u>Matrix</u>	<u>#Cont.</u>	<u>Received</u>	<u>Analysis</u>	<u>Comments</u>
MC0065	0014661-01	Soil	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	1st Sx
					ISM01.2 HG	
MC0066	0014661-02	Soil	1	09/02/11 10:00	ISM01.2 HG	
					ISM01.2 ICPMS+2183.0	
MC0067	0014661-03	Soil	1	09/02/11 10:00	ISM01.2 HG	
					ISM01.2 ICPMS+2183.0	
MC0068	0014661-04	Soil	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	
					ISM01.2 HG	
MC0069	0014661-05	Soil	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	
					ISM01.2 HG	
MC0070	0014661-06	Soil	2	09/02/11 10:00	ISM01.2 HG	MS/Dup
					ISM01.2 ICPMS+2183.0	
MC0071	0014661-07	Soil	1	09/02/11 10:00	ISM01.2 HG	
					ISM01.2 ICPMS+2183.0	
MC0072	0014661-08	Soil	1	09/02/11 10:00	ISM01.2 HG	
					ISM01.2 ICPMS+2183.0	
MC0073	0014661-09	Soil	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	Last Sx
					ISM01.2 HG	

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW09035

Case #: 41667

SDG #: MC0065

SDG NARRATIVE

No issues were noted

MERCURY

Soil samples were digested by Hot-Block technique (7471B) and analyzed using a Perkin Elmer FIMs-100 Mercury Analyzer.

MS and DUP were performed on sample "MC0070" and they were within the QC limits.

No problems were encountered during sample preparation or analysis.

ICP-MS

Soil Samples were digested by Hot-Block technique (3050B) and analyzed using a Thermo Electron Corporation ICP MS model X-II.

All samples are digested as per SOW requirements and prior to the analysis samples were 5X diluted and analyzed to avoid high interferences.

Below are the calibration levels:

Analytes	TRUE	TRUE	TRUE	TRUE	TRUE
Antimony	2	20	200	500	1000
Arsenic	1	10	100	250	500
Barium	10	100	1000	2500	5000
Beryllium	1	10	100	250	500
Cadmium	1	10	100	250	500
Chromium	2	20	200	500	1000
Cobalt	1	10	100	250	500
Copper	2	20	200	500	1000
Lead	1	10	100	250	500
Manganese	1	10	100	250	500
Nickel	1	10	100	250	500
Selenium	5	50	500	1250	2500
Silver	1	10	100	250	500
Thallium	1	10	100	250	500
Vanadium	5	50	500	1250	2500
Zinc	2	20	200	500	1000
Uranium	1	10	100	250	500

MS and DUP were performed on sample "MC0070" and they were within the QC limits. The RPD is outside the control limit for As, Cr, Cu, Pb & V.

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW09035

Case #: 41667

SDG #: MC0065

SDG NARRATIVE

Serial Dilution is performed on sample "MC0070" and they were within the QC limits.

No problems were encountered during sample preparation or analysis.

The following Samples were analyzed at a dilution for the analytes listed against them to bring the concentration below the Upper range of calibration. The dilutions were made as below:

Sample ID	Analyte	Dilution
MC0065	Mn	27.5 ✓
MC0066	Mn	58.5 ✓
MC0067	Mn	35.0 ✓
MC0068	Mn	20.0 ✓
MC0069	Mn	6.5 ✓
MC0070	Mn	36.0 ✓
MC0071	Mn	19 ✓
MC0072	Mn	8.5 ✓
MC0073	Mn	5.0 ✓

DV 102nd 11

The following equations are used for calculation of sample results from raw instrument output data:

MERCURY

SOIL Samples:

$$\text{Hg Concentration (mg/kg)} = \text{Hg } \mu\text{g/g} = \frac{C}{W * S} * (0.1)$$

Where,

C = Concentration from curve ($\mu\text{g/L}$)

W = Wet sample weight (g) (0.2gm)

S = % solids/100

ICP-MS

SOIL Samples:

$$\text{Concentration (dry Wt.) (mg/kg)} = \frac{C * V}{W * S} * DF$$

Where,

C = Concentration (mg/L)

V = Final sample volume in Liters (L) (0.1L)

W = Wet sample weight (kg) (0.001kg)

S = % solids/100

DF = Dilution Factor

INSTRUMENT RUN-LOG

Instrument: A-ICPMSX	Sequence: 1121006
	Logbook RCN #: 858-0708
	Logbook Page No(s): 163
Start Date: 09/18/2011 18:41	Analyst/Date: <i>SM</i> 09/21/2011
End Date: 09/19/2011 00:33	Reviewer/Date: <i>AW 9/21/11</i>

File	Analyzed	Instrument	Lab Sample	Client Sample	Dil	STD ID / Comments
plasmalab-0	09/18/2011 22:50	A-ICPMSX	1121006-IBL	ZZZZZZ	5.0	
plasmalab-0	09/18/2011 22:54	A-ICPMSX	1121006-IBLF	ZZZZZZ	1	
plasmalab-0	09/18/2011 22:57	A-ICPMSX	1121006-IBLG	ZZZZZZ	1	
plasmalab-0	09/18/2011 23:01	A-ICPMSX	1121006-CCV3	CCV	1	
plasmalab-0	09/18/2011 23:05	A-ICPMSX	1121006-CCB3	CCB	1	
plasmalab-0	09/18/2011 23:09	A-ICPMSX	0014661-01	MC0065	5.0	> Mn
plasmalab-0	09/18/2011 23:12	A-ICPMSX	0014661-02	MC0066	5.0	> Mn
plasmalab-0	09/18/2011 23:16	A-ICPMSX	0014661-03	MC0067	5.0	> Mn
plasmalab-0	09/18/2011 23:19	A-ICPMSX	0014661-04	MC0068	5.0	> Mn
plasmalab-0	09/18/2011 23:23	A-ICPMSX	0014661-05	MC0069	5.0	> Mn
plasmalab-0	09/18/2011 23:27	A-ICPMSX	0014661-07	MC0071	5.0	> Mn
plasmalab-0	09/18/2011 23:30	A-ICPMSX	0014661-08	MC0072	5.0	> Mn
plasmalab-0	09/18/2011 23:34	A-ICPMSX	0014661-09	MC0073	5.0	
plasmalab-0	09/18/2011 23:38	A-ICPMSX	1121006-IBLH	ZZZZZZ	1	
plasmalab-0	09/18/2011 23:41	A-ICPMSX	0014660-03RE1	MC0079	2.3	Mn
plasmalab-0	09/18/2011 23:45	A-ICPMSX	0014661-06RE1	MC0070	36	Mn
plasmalab-0	09/18/2011 23:49	A-ICPMSX	1090082-DUP2	MC0070D	39	Mn
plasmalab-0	09/18/2011 23:53	A-ICPMSX	1090082-MS2	MC0070S	36.5	Mn
plasmalab-0	09/18/2011 23:56	A-ICPMSX	1121006-SRD4	MC0070L	180	Mn
plasmalab-0	09/19/2011 00:00	A-ICPMSX	0014661-01RE1	MC0065	27.5	Mn
plasmalab-0	09/19/2011 00:03	A-ICPMSX	0014661-02RE1	MC0066	58.5	Mn
plasmalab-0	09/19/2011 00:07	A-ICPMSX	0014661-03RE1	MC0067	35.0	Mn
plasmalab-0	09/19/2011 00:11	A-ICPMSX	0014661-04RE1	MC0068	20.0	Mn
plasmalab-0	09/19/2011 00:15	A-ICPMSX	0014661-05RE1	MC0069	6.5	Mn
plasmalab-0	09/19/2011 00:18	A-ICPMSX	0014661-07RE1	MC0071	19	Mn
plasmalab-0	09/19/2011 00:22	A-ICPMSX	0014661-08RE1	MC0072	8.5	Mn
plasmalab-0	09/19/2011 00:26	A-ICPMSX	1090065-MS2	MC0075S	1.4	Mn
plasmalab-0	09/19/2011 00:29	A-ICPMSX	1121006-CCV4	CCV	1	
plasmalab-0	09/19/2011 00:33	A-ICPMSX	1121006-CCB4	CCB	1	

SAMPLE LOG-IN SHEET

14661-A

Lab Name A4SCIENTIFIC		Page 1 of 1
Received By (Print Name) [REDACTED]		Log-in Date 9-2-11
Received By (Signature) [REDACTED]		
Case Number 41667	Sample Delivery Group No. MC0065	Mod. Ref. No. 21830

Remarks:	
1. Custody Seal(s)	<u>Present/Absent*</u> <u>Intact/Broken</u>
2. Custody Seal NOs.	<u>NA</u>
3. Traffic Reports/Chain of Custody Records or Packing Lists	<u>Present/Absent*</u>
4. Airbill	<u>Airbill/Sticker Present/Absent*</u>
5. Airbill No.	<u>87688339</u> <u>7315</u>
6. Sample Tags	<u>Present/Absent*</u>
Sample Tag Numbers	<u>Listed/Not Listed on Traffic Report/Chain of Custody Record</u>
7. Sample Condition	<u>Intact/Broken*/Leaking</u>
8. Cooler Temperature Indicator Bottle	<u>Present/Absent*</u>
9. Cooler Temperature	<u>4°C</u>
10. Does information on Traffic Reports/Chain of Custody Records and sample tags agree?	<u>Yes/No*</u>
11. Date Received at Lab	<u>9-2-11</u>
12. Time Received	<u>10:00</u>

Sample Transfer	
Fraction <u>metals</u>	Fraction <u> </u>
Area# <u>COOLEY A</u>	Area# <u> </u>
By <u>[Signature]</u>	By <u>[Signature]</u>
On <u>9-2-11</u>	On <u>9-2-11</u>

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding		Remarks: Condition of Sample Shipment, etc.
			Sample Tag #	Assigned Lab #	
1	MC0065	NA	244	0014661-01	1-802 Intact
2	66		245	-02	
3	67		246	-03	
4	68		247	-04	
5	69		248	-05	↓
6	70		249*50	-06	2-802
7	71		251	-07	1-802
8	72		252	-08	↓
9	73		253	-09	↓
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

* Contact SMO and attach record of resolution

Reviewed By [REDACTED]	Logbook No. <u>NA</u>
Date <u>9/2/11</u>	Logbook Page No. <u>NA</u>



Percent Solids [5SOP03-B] - ASTM D2216-92 / SM2540G (ISM01.2) SOM01.2 / OTHER

OVEN ID: ATHERMOMETER ID: Spec-1DATE IN: 9-6-11TIME IN: 15:00TEMP IN: 104°CANALYST: 7/13DATE OUT (1): 9-7-11TIME OUT (1): 9:50TEMP OUT (1): 104°CANALYST: 7/13DATE OUT (2): -TIME OUT (2): -TEMP OUT (2): -ANALYST: -DATE OUT (3): -TIME OUT (3): -TEMP OUT (3): -ANALYST: -

Lab Sample ID	Client Sample ID	Pan #	Pan Weight (g)	Pan + Wet Sample (g)	(1) Pan+Dry Sample (g)	(2) Pan+Dry Sample (g)	(3) Pan+Dry Sample (g)	Comments
0014661-01	MC0065	39	1.904	10.217	7.376	NA	NA	7/13 9/7/11
0014661-02	MC0066	38	1.776	8.407	3.300			
0014661-03	MC0067	121	1.801	9.265	7.329			
0014661-04	MC0068	107	1.811	8.344	6.072			
0014661-05	MC0069	13	1.822	8.493	5.217			
0014661-06	MC0070	140	1.837	9.015	7.167			
0014661-07	MC0071	101	1.881	9.774	8.128			
0014661-08	MC0072	31	1.843	9.730	7.270			
0014661-09	MC0073	102	1.826	9.460	6.746			
1090047-BLK1	PMBLK92	81	1.880	1.881	1.881			
1090047-DUP1	MC0070D	34	1.839	9.423	7.473	↓	↓	0014661-06

Notes:

9/07/2011 10:00

Reviewed by / Date&Time

See LIMS report for the Percent Solids results.

000394

RESULTS - PERCENT SOLIDS

BATCH - 1090047

BATCH_1090047

<i>Lab Sample ID</i>	<i>Client Sample ID</i>	<i>Percent Solids</i>	<i>Percent Moisture</i>	<i>RPD</i>	<i>Analyzed</i>	<i>Comments</i>
0014661-03	MC0067	74.06	25.94		09/06/2011	
0014661-07	MC0071	79.15	20.85		09/06/2011	
0014661-02	MC0066	22.98	77.02		09/06/2011	
0014661-06	MC0070	74.25	25.75		09/06/2011	
0014661-04	MC0068	65.22	34.78		09/06/2011	
0014661-08	MC0072	68.81	31.19		09/06/2011	
0014661-01	MC0065	65.82	34.18		09/06/2011	
0014661-05	MC0069	50.89	49.11		09/06/2011	
0014661-09	MC0073	64.45	35.55		09/06/2011	
1090047-BLK1	Blank	100.00	0.00		09/06/2011	
1090047-DUP1	Duplicate	74.29	25.71	0.04	09/06/2011	0014661-06

000395

laxmi@a4scientific.com

From: [REDACTED]@fedcsc.com>
To: <[REDACTED]@a4scientific.com>; <[REDACTED]@a4scientific.com>; <[REDACTED]@a4scientific.com>
Cc: <[REDACTED]@a4scientific.com>; "Mondon-Konan, Emilie" <[REDACTED]@fedcsc.com>; <mecanic.mahboobeh@epa.gov>; <Slizys.Dan@epamail.epa.gov>
Sent: Tuesday, October 18, 2011 9:01 AM
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL
 Reddy,

In regards to SDG MC0065/Case 41667, no additional corrections are required at this time. However, the laboratory is to submit a revised SDG narrative that includes detailed information about the calibration, analysis, and reporting procedures for the ICP-MS analysis in this SDG.

Please send this information to Region 3 and SMO as soon as possible.

Thank you,

[REDACTED]
 Data Assessment Environmental Coordinator
 CSC
 (703) 818-[REDACTED]

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | [REDACTED]@fedcsc.com |
www.CSC.com

Please send all DASS/CCS inquiries to: CCSSupport@fedcsc.com

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From: [REDACTED]
Sent: Tuesday, October 18, 2011 8:55 AM
To: [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'
Cc: [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'; 'mecanic.mahboobeh@epa.gov'; 'Slizys.Dan@epamail.epa.gov'
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

It is specified in MA# 2183.0 that "the Contract Required Quantitation Limits (CRQLs) for the following analytes (Uranium, in this instance) and matrices have been modified. **All other CRQLs remain at the level specified in the SOW.**"

For example, the soil MS CRQL for Antimony in SOW ISM01.2 is 1 mg/kg. Therefore, the Antimony result in Sample MC0065 should be 7.6 U not 1.5 U.

Please make the appropriate corrections and submit the revised EDD to SMO as NFG Resubmittal and the hardcopy Forms 1, 5A, 6, and 8 to Region 3 and SMO as soon as possible. Please note that the

10/18/2011

Region has an immediate need for this data.

Thank you,

██████████
Data Assessment Environmental Coordinator
CSC
(703) 818-██████████

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | ██████████@fedcsc.com | www.CSC.com

Please send all DASS/CCS inquiries to: CCSSupport@fedcsc.com

This is a PRIVATE message. If you are not the intended recipient, please delete without copying and kindly advise us by e-mail of the mistake in delivery. NOTE: Regardless of content, this e-mail shall not operate to bind CSC to any order or other contract unless pursuant to explicit written agreement or government initiative expressly permitting the use of e-mail for such purpose.

From: ██████████@a4scientific.com [mailto:██████████@a4scientific.com]
Sent: Monday, October 17, 2011 7:26 PM
To: ██████████@a4scientific.com; ██████████@a4scientific.com
Cc: a4slizys@a4scientific.com; ██████████@a4scientific.com; mecanic.mahboobeh@epa.gov; Slizys.Dan@epamail.epa.gov
Subject: Re: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

██████████
The Non-detected values reported on Forms and EDDS are correct. Below is an example calculation for Antimony in sample MC0065.

Instrument results= 0.2883 ug/L
Final digestion volume =100ml
Initial Aliquot Amount = 1.0gm
DF = 5
S= %solids/100 = 0.658

MDL = 0.078mg/Kg
Quantitation limit = 0.2 mg/Kg (based on the concentration of the lowest non-zero standard =2ug/L)

Sample Results (EQ. 2 of SOW) = $0.2883 \text{ ug/L} * 100 \text{ ml} * 5 / 1000 / 1.0 / 0.658 = 0.2191 \text{ mg/Kg}$
Adjusted MDL = $0.078 * 5 / 0.658 = 0.593 \text{ mg/Kg}$.
Adjusted CRQL = $0.2 * 5 / 0.658 = 1.52 \text{ mg/Kg}$.

We have therefore reported the results of Antimony as 1.5 U on Form 1.

Please let me know if you have any questions.

Regards,

██████████
A4 Scientific Inc.
281-292-██████████
██████████@a4scientific.com

----- Original Message -----
From: ██████████

To: [REDACTED]@a4scientific.com ; [REDACTED]@a4scientific.com ; [REDACTED]@a4scientific.com
Cc: [REDACTED]@a4scientific.com ; [REDACTED]@a4scientific.com ; mecanic.mahboobeh@epa.gov ; Slizys.Dan@epamail.epa.gov
Sent: Monday, October 17, 2011 12:59 PM
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

A4,

SMO received the EDD and revised Forms 9 for SDG MC0065/Case 41667 on 10/17/11. However, the following issues still remain:

- 1) The non-detected values in all samples were not adjusted for the 5X sample dilution factor indicated on Form 13. These values are to be corrected in the EDD and on hardcopy Forms 1, 5A, 6, and 8.
- 2) Also note that, for Sample MC0070L, the non-detected values in the EDD and in the "Serial Dilution Result" field on hardcopy Form 8 are to be adjusted by a factor of 25 not 5.

Please make the appropriate corrections and submit the revised EDD to SMO as NFG Resubmittal and the hardcopy Forms 1, 5A, 6, and 8 to Region 3 and SMO as soon as possible.

Thank you,

[REDACTED]
 Data Assessment Environmental Coordinator
 CSC
 (703) 818- [REDACTED]

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | chammelman@fedcsc.com | www.CSC.com

Please send all DASS/CCS inquiries to: CCSSupport@fedcsc.com

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From: [REDACTED]@a4scientific.com [mailto:[REDACTED]@a4scientific.com]
Sent: Monday, October 17, 2011 12:13 PM
To: [REDACTED]@a4scientific.com ; [REDACTED]@a4scientific.com
Cc: [REDACTED]@a4scientific.com ; [REDACTED]@a4scientific.com ; mecanic.mahboobeh@epa.gov ; Slizys.Dan@epamail.epa.gov
Subject: Re: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

Caitlin,

Its already uploaded.

----- Original Message -----

From: [REDACTED]
To: [REDACTED]@a4scientific.com ; [REDACTED]@a4scientific.com ; [REDACTED]@a4scientific.com
Cc: [REDACTED]@a4scientific.com ; [REDACTED]@a4scientific.com ; mecanic.mahboobeh@epa.gov ; Slizys.Dan@epamail.epa.gov

10/18/2011

Sent: Monday, October 17, 2011 11:09 AM

Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

Hello [REDACTED]

As follow up to our phone conversation regarding SDG MC0065/Case 41667, please resubmit the corrected EDD to SMO as soon as possible, complete with ALL fractions for the SDG. Please note that the appropriate submission type is "NFG Resubmittal".

Thank you,

[REDACTED]
Data Assessment Environmental Coordinator

CSC

(703) 818 [REDACTED]

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From: [REDACTED]

Sent: Thursday, October 13, 2011 8:56 AM

To: [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'

Cc: [REDACTED]@a4scientific.com'; [REDACTED]; 'mecanic.mahboobeh@epa.gov'; 'Slizys.Dan@epamail.epa.gov'

Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

Good morning [REDACTED]

SMO has not yet received the corrected EDD and hardcopy Forms 1 that were requested for SDG MC0065/Case 41667 (see attached email below). Please provide information on the status and expected delivery of these corrected data to SMO and Region 3. Your immediate response is requested.

Thank you,

[REDACTED]
Data Assessment Environmental Coordinator

CSC

(703) 818 [REDACTED]

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | chammelman@fedcsc.com | www.CSC.com

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10/18/2011

agreement or government initiative expressly permitting the use of e-mail for such purpose.

From: [REDACTED]
Sent: Tuesday, October 11, 2011 11:33 AM
To: [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'
Cc: 'mecanic.mahboobeh@epa.gov'; [REDACTED]; [REDACTED]@a4scientific.com';
 'Slizys.Dan@epamail.epa.gov'
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

A4,

SMO received the revised Forms 1 for SDG MC0065/Case 41667 on 10/10/11. However, the following issues have been noted:

- 1) The non-detect values in all samples were not corrected for the 5X dilution factor indicated on Form 13.
- 2) It seems that the Cadmium results reported as detects are actually non-detects, considering the MDL value of 0.19 mg/kg reported on hardcopy Form 9.

For example, the raw data value for Cadmium in Sample MC0065 (page 181) is 0.892 ug/L. This value converts to 0.0892 mg/kg (prior to the 5X dilution adjustment), which is less than the 0.19 mg/kg MDL. Therefore, the result on Form 1 should be 3.8 U not 0.68 J.

Please make the appropriate corrections and submit the corrected EDD to SMO as NFG Resubmittal and the hardcopy Forms 1 to Region 3 and SMO as soon as possible.

Thank you,

[REDACTED]
 Data Assessment Environmental Coordinator
 CSC
 (703) 818-[REDACTED]

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From: [REDACTED]
Sent: Thursday, October 06, 2011 8:53 AM
To: [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'
Cc: [REDACTED]@a4scientific.com'; [REDACTED]; 'Slizys.Dan@epamail.epa.gov'
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

A4,

In regards to SDG MC0065/Case 41667, the lab indicated that the corrected EDD for this SDG would be submitted today (see attached ROC) to address the following issues:

- The EDD and hardcopy Form 1 values do not match for Cadmium in all samples. For example, in Sample MC0066, the EDD result is 1.9 J and the hardcopy Form 1 result is 2.2 U.

Please submit the corrected EDD to SMO as submission type "NFG Resubmittal" as soon as possible.

Thank you,

██████████
Data Assessment Environmental Coordinator
CSC
(703) 818-██████

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | chammelman@fedcsc.com | www.CSC.com

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From: ██████████
Sent: Wednesday, October 05, 2011 11:24 AM
To: 'ROCv2.0TEST-DASS@fedcsc.com'
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

ROC

10/5/2011 11:00 A.M. Phone conversation between Laxmi Teerupalli, A4, and Caitlin Hammelman, DASS. SMO contacted the lab to follow up regarding SDG MC0065/Case 41667. As indicated in the emails below, SMO had previously made the lab aware of discrepancies between the Hardcopy Form 1s and EDD and requested the lab submit a corrected EDD as NFG Resubmittal. SMO inquired about the status of the corrected EDD and was informed that the lab had experienced a power outage until mid-day yesterday (10/4). The lab indicated that the corrected EDD would be submitted to SMO tomorrow (10/6).

From: ██████████
Sent: Tuesday, October 04, 2011 8:52 AM
To: '██████████@a4scientific.com'; '██████████@a4scientific.com'; '██████████@a4scientific.com'
Cc: '██████████@a4scientific.com'; 'Slizys.Dan@epamail.epa.gov'; '██████████@a4scientific.com'
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT

Hello ██████████

In regards to the resubmission request for SDG MC0065/Case 41667, SMO has still not received a corrected EDD addressing the outstanding issues with this SDG (see email below). Please provide information on the status and expected resubmission of the corrected EDD. Your immediate response is appreciated.

10/18/2011

Thank you,

[REDACTED]
Data Assessment Environmental Coordinator
CSC
(703) 818 [REDACTED]

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | [REDACTED]@fedcsc.com |
www.CSC.com

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From: [REDACTED]
Sent: Friday, September 30, 2011 9:26 AM
To: [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'
[REDACTED]@a4scientific.com'; 'Slizys.Dan@epamail.epa.gov'; [REDACTED]@a4scientific.com'
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

A4,

In regards to SDG MC0065/Case 41667, SMO has noted the following issue:

The EDD and hardcopy Form 1 values do not match for Cadmium in all samples. For example, in Sample MC0066, the EDD result is 1.9 J and the hardcopy Form 1 result is 2.2 U.

Please make the appropriate corrections and submit the corrected EDD to SMO as submission type "NFG Resubmittal" as soon as possible.

Thank you,

[REDACTED]
Data Assessment Environmental Coordinator
CSC
(703) 818 [REDACTED]

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | [REDACTED]@fedcsc.com |
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██████████@a4scientific.com

From: ██████████@fedcsc.com>
To: <██████████@a4scientific.com>; <██████████@a4scientific.com>; <parveen@a4scientific.com>
Cc: <██████████@a4scientific.com>; "██████████" @fedcsc.com>;
 <mecanic.mahboobeh@epa.gov>; <Slizys.Dan@epamail.epa.gov>
Sent: Thursday, October 13, 2011 7:55 AM
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL
 Good morning Laxmi,

SMO has not yet received the corrected EDD and hardcopy Forms 1 that were requested for SDG MC0065/Case 41667 (see attached email below). Please provide information on the status and expected delivery of these corrected data to SMO and Region 3. Your immediate response is requested.

Thank you,

██████████
 Data Assessment Environmental Coordinator
 CSC
 (703) 818 4059

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | ██████████@fedcsc.com |
www.CSC.com

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From: ██████████
Sent: Tuesday, October 11, 2011 11:33 AM
To: '██████████@a4scientific.com'; '██████████@a4scientific.com'; '██████████@a4scientific.com'
Cc: 'mecanic.mahboobeh@epa.gov'; '██████████@a4scientific.com'; 'Slizys.Dan@epamail.epa.gov'
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

A4,

SMO received the revised Forms 1 for SDG MC0065/Case 41667 on 10/10/11. However, the following issues have been noted:

- 1) The non-detect values in all samples were not corrected for the 5X dilution factor indicated on Form 13.
- 2) It seems that the Cadmium results reported as detects are actually non-detects, considering the MDL value of 0.19 mg/kg reported on hardcopy Form 9.

For example, the raw data value for Cadmium in Sample MC0065 (page 181) is 0.892 ug/L. This value converts to 0.0892 mg/kg (prior to the 5X dilution adjustment), which is less than the 0.19 mg/kg MDL. Therefore, the result on Form 1 should be 3.8 U not 0.68 J.

10/14/2011

Please make the appropriate corrections and submit the corrected EDD to SMO as NFG Resubmittal and the hardcopy Forms 1 to Region 3 and SMO as soon as possible.

Thank you,

[REDACTED]
Data Assessment Environmental Coordinator
CSC
(703) 818 [REDACTED]

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | [REDACTED]@fedcsc.com | www.CSC.com

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From: [REDACTED]
Sent: Thursday, October 06, 2011 8:53 AM
To: [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'
Cc: [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'; 'Slizys.Dan@epamail.epa.gov'
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

A4,

In regards to SDG MC0065/Case 41667, the lab indicated that the corrected EDD for this SDG would be submitted today (see attached ROC) to address the following issues:

- The EDD and hardcopy Form 1 values do not match for Cadmium in all samples. For example, in Sample MC0066, the EDD result is 1.9 J and the hardcopy Form 1 result is 2.2 U.

Please submit the corrected EDD to SMO as submission type "NFG Resubmittal" as soon as possible.

Thank you,

[REDACTED]
Data Assessment Environmental Coordinator
CSC
(703) 818 4059

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | [REDACTED]@fedcsc.com | www.CSC.com

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From: [REDACTED]

10/14/2011

Sent: Wednesday, October 05, 2011 11:24 AM
To: 'ROCv2.OTEST-DASS@fedcsc.com'
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

ROC

10/5/2011 11:00 A.M. Phone conversation between [REDACTED] A4, and [REDACTED] DASS. SMO contacted the lab to follow up regarding SDG MC0065/Case 41667. As indicated in the emails below, SMO had previously made the lab aware of discrepancies between the Hardcopy Form 1s and EDD and requested the lab submit a corrected EDD as NFG Resubmittal. SMO inquired about the status of the corrected EDD and was informed that the lab had experienced a power outage until mid-day yesterday (10/4). The lab indicated that the corrected EDD would be submitted to SMO tomorrow (10/6).

From: [REDACTED]
Sent: Tuesday, October 04, 2011 8:52 AM
To: [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'
Cc: [REDACTED]; 'Slizys.Dan@epamail.epa.gov'; [REDACTED]@a4scientific.com'
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT

Hello [REDACTED]

In regards to the resubmission request for SDG MC0065/Case 41667, SMO has still not received a corrected EDD addressing the outstanding issues with this SDG (see email below). Please provide information on the status and expected resubmission of the corrected EDD. Your immediate response is appreciated.

Thank you,

[REDACTED]
 Data Assessment Environmental Coordinator
 CSC
 (703) 818-[REDACTED]

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | [REDACTED]@fedcsc.com | www.CSC.com

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From: [REDACTED]
Sent: Friday, September 30, 2011 9:26 AM
To: [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'; [REDACTED]@a4scientific.com'
Cc: [REDACTED]; 'Slizys.Dan@epamail.epa.gov'; [REDACTED]@a4scientific.com'
Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

A4,

In regards to SDG MC0065/Case 41667, SMO has noted the following issue:

The EDD and hardcopy Form 1 values do not match for Cadmium in all samples. For example, in Sample

10/14/2011

MC0066, the EDD result is 1.9 J and the hardcopy Form 1 result is 2.2 U.

Please make the appropriate corrections and submit the corrected EDD to SMO as submission type "NFG Resubmittal" as soon as possible.

Thank you,

[REDACTED]
Data Assessment Environmental Coordinator

CSC

(703) 818 [REDACTED]

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 [REDACTED] [\[REDACTED\]@fedcsc.com](mailto:[REDACTED]@fedcsc.com) | www.CSC.com

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10/14/2011

*add'l Information
from SMO*

██████████@a4scientific.com

From: ██████████@fedcsc.com>
To: ██████████@a4scientific.com>; ██████████@a4scientific.com>; ██████████@a4scientific.com>
Cc: ██████████@fedcsc.com>; <Slizys.Dan@epamail.epa.gov>; ██████████@a4scientific.com>

Sent: Tuesday, October 04, 2011 7:52 AM

Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT

Hello ██████████

In regards to the resubmission request for SDG MC0065/Case 41667, SMO has still not received a corrected EDD addressing the outstanding issues with this SDG (see email below). Please provide information on the status and expected resubmission of the corrected EDD. Your immediate response is appreciated.

Thank you,

██████████
 Data Assessment Environmental Coordinator

CSC

(703) 818-██████████

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | ██████████@fedcsc.com |
www.CSC.com

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From: Hammelman, Caitlin

Sent: Friday, September 30, 2011 9:26 AM

To: 'laxmi@a4scientific.com'; 'pakanati@a4scientific.com'; 'parveen@a4scientific.com'

Cc: Mondon-Konan, Emilie; 'Slizys.Dan@epamail.epa.gov'; 'a4clpROC@a4scientific.com'

Subject: REGION 3 | CASE 41667 | LAB A4 | SDG MC0065 | ISSUE NFG SUPPORT | FINAL

A4,

In regards to SDG MC0065/Case 41667, SMO has noted the following issue:

The EDD and hardcopy Form 1 values do not match for Cadmium in all samples. For example, in Sample MC0066, the EDD result is 1.9 J and the hardcopy Form 1 result is 2.2 U.

Please make the appropriate corrections and submit the corrected EDD to SMO as submission type "NFG Resubmittal" as soon as possible.

Thank you,

██████████
 Data Assessment Environmental Coordinator
 CSC

10/7/2011

(703) 818 [REDACTED]

15000 Conference Center Drive, Chantilly, VA 20151-3819 | Fax: 703-818-4604 | [REDACTED]@fedcsc.com | www.CSC.com

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10/7/2011

SDG MC0075

USEPA - CLP
COVER PAGE

Lab Name: A4 SCIENTIFIC, INC.

Contract: EPW09035

Lab Code: A4 Case No.: 41667 Mod. Ref. No.: _____ SDG No.: MC0075

SOW No.: ISM01.2

EPA Sample No.
<u>MC0075</u>
<u>MC0075D</u>
<u>MC0075S</u>
<u>MC0078</u>
<u>MC0079</u>
<u>MC0080</u>

Lab Sample ID
<u>0014660-01</u>
<u>1090169-DUP1</u>
<u>1090169-MS1</u>
<u>0014660-02</u>
<u>0014660-03</u>
<u>0014660-04</u>

Were ICP-AES and ICP interelement
corrections applied?

(Yes/No)

ICP-AES
Yes

ICP-MS

Were ICP-AES and ICP background corrections
applied?

(Yes/No)

Yes

If yes, were raw data generated before
application of background corrections?

(Yes/No)

No

The laboratory did not receive any instructions with this SDG to modify the SOW standard laboratory sample preparation procedures (e.g., subsampling). To aid in the determination of data usability with respect to project decisions, any modifications performed are described below.

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the electronic data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following:

Signature: _____

Name: _____

Date 09/21/2011

Title : Data Reviewer

USEPA - CLP
COVER PAGE

Lab Name: A4 SCIENTIFIC, INC.

Contract: EPW09035

Lab Code: A4 Case No.: 41667 Mod. Ref. No.: 2183.0 SDG No.: MC0075

SOW No.: ISM01.2

EPA Sample No.

MC0075

MC0075D

MC0075S

MC0075S

MC0078

MC0079

MC0080

Lab Sample ID

0014660-01

1090165-DUP1

1090165-MS2

1090165-MS1

0014660-02

0014660-03

0014660-04

Were ICP-AES and ICP interelement
corrections applied?

(Yes/No)

ICP-AES

ICP-MS

Yes

Were ICP-AES and ICP background corrections
applied?

(Yes/No)

Yes

If yes, were raw data generated before
application of background corrections?

(Yes/No)

No

The laboratory did not receive any instructions with this SDG to modify the SOW standard laboratory sample preparation procedures (e.g., subsampling). To aid in the determination of data usability with respect to project decisions, any modifications performed are described below.

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the electronic data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____

Name: _____

Date 09/21/2011

Title : Data Reviewer

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW09035**Case #: 41667****SDG #: MC0075****SDG NARRATIVE****SAMPLE RECIEPT & LOGIN**

The following samples were received on the dates listed against them. The samples were logged in for analysis as listed.

<u>Client Sample</u>	<u>Lab Sample</u>	<u>Matrix</u>	<u>#Cont.</u>	<u>Received</u>	<u>Analysis</u>	<u>Comments</u>
MC0075	0014660-01	Water	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	1st Sx, Ms/Dup
					ISM01.2 ICPAES	
					ISM01.2 HG	
MC0078	0014660-02	Water	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	
					ISM01.2 ICPAES	
					ISM01.2 HG	
MC0079	0014660-03	Water	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	
					ISM01.2 ICPAES	
					ISM01.2 HG	
MC0080	0014660-04	Water	1	09/02/11 10:00	ISM01.2 ICPMS+2183.0	Last Sx
					ISM01.2 ICPAES	
					ISM01.2 HG	

The following issues were noted:

Following issues were encountered during sample receive and log in.

Issue: The lab received and analyzed samples by ICP-MS (MA 2183.0) and found there are extremely high concentrations of Ca, Fe, K, Na, Mg and Al in almost all samples. Due to the high concentrations, the laboratory would like to run these analytes by ICP-AES and the remainder of the analytes by ICP-MS for all samples.

Resolution: Per Region 3, the laboratory may run all samples by ICP-AEs for Al, Ca, Fe, K, Mg, and Na and all remaining analytes by ICP-MS (MA 2183.0)

Directive is enclosed. No other discrepancies of issues were noted during receipt and login.

A4 SCIENTIFIC, INC.
1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW09035

Case #: 41667

SDG #: MC0075

SDG NARRATIVE

pH of the water samples was verified upon sample receipt and the reading is listed below. pH determination log is included in the data package.

EPA SAMPLE #	LAB SAMPLE #	pH-ICP-AES, ICP-MS, Hg
MC0075	0014660-01	<2
MC0078	0014660-02	<2
MC0079	0014660-03	<2
MC0080	0014660-04	<2

MERCURY

Water samples were digested by Hot-Block technique (7470A) and analyzed using a Perkin Elmer FIMS-100 Mercury Analyzer.

MS and DUP were performed on sample "MC0075" and they were within the QC limits.

No problems were encountered during sample preparation or analysis.

ICP-AES

Water Samples were digested by Hot-Block technique (200.7) and analyzed using a Thermo Electron ICP6500.

MS was performed on sample "MC0075". Recoveries were within the QC limits.

Dup was performed on sample "MC0075". RPDs were within the QC limits.

Serial Dilution is performed on sample "MC0075". Percent Differences (%D) were within QC limits

No other problems were encountered during sample preparation or analysis.

ICP-MS

Samples were analyzed as per ISM01.2. / MA 2183.0.

Water samples were digested by Hot-Block technique (200.8) and analyzed using a Thermo Electron Corporation ICP MS model X-II.

MS was performed on sample "MC0075". Recoveries were within the QC limits

Dup was performed on sample "MC0075". RPDs were within the QC limits.

Serial Dilution is performed on sample "MC0075". Percent Differences (%D) were within QC limits

No other problems were encountered during sample preparation or analysis.

A4 SCIENTIFIC, INC.

1544 Sawdust Road, Suite 505 • The Woodlands, TX 77380 • Phone (281) 292-5277

Contract #: EPW09035

Case #: 41667

SDG #: MC0075

SDG NARRATIVE

The following Samples were analyzed at a dilution for the analytes listed against them to bring the concentration below the upper calibration range. The dilutions were made as below:

Sample ID	Analyte	Dilution
MC0079	Mn	2.3

The following equations are used for calculation of sample results from raw instrument output data:

MERCURY

WATER Samples:

A standard curve is prepared by plotting the instrumental response of processed standards against true concentration values. Using a linear regression equation, the concentration of field and Quality Control (QC) samples is determined.

ICP-AES

WATER Samples:

$$\text{Concentration } (\mu\text{g/L}) = C * \frac{V_f}{V_i} * DF$$

Where,

C = Instrument value in $\mu\text{g/L}$

V_f = Final digestion volume (mL) (50ml)

V_i = Initial digestion volume (mL) (50ml)

DF = Dilution Factor

ICP-MS

WATER Samples:

$$\text{Concentration } (\mu\text{g/L}) = C * \frac{V_f}{V_i} * DF$$

Where,

C = Instrument value in $\mu\text{g/L}$ (The average of all replicate integrations).

V_f = Final digestion volume (mL) (50ml)

V_i = Initial digestion volume (mL) (50ml)

DF = Dilution Factor

SAMPLE LOG-IN SHEET

14660-A

Lab Name A4SCIENTIFIC		Page 1 of 1
Received By (Print Name) [REDACTED]		Log-in Date 9-2-11
Received By (Signature) [REDACTED]		
Case Number 41667	Sample Delivery Group No. MC0075	Mod. Ref. No. 21830

Remarks:	
1. Custody Seal(s)	<u>Present/Absent*</u> <u>Intact/Broken</u>
2. Custody Seal NOS.	<u>MA</u>
3. Traffic Reports/Chain of Custody Records or Packing Lists	<u>Present/Absent*</u>
4. Airbill	<u>Airbill/Sticker Present/Absent*</u>
5. Airbill No.	<u>8768833973</u> <u>26</u>
6. Sample Tags	<u>Present/Absent*</u> <u>Listed/Not Listed on Traffic Report/Chain of Custody Record</u>
7. Sample Condition	<u>Intact/Broken*/Leaking</u>
8. Cooler Temperature Indicator Bottle	<u>Present/Absent*</u>
9. Cooler Temperature	<u>4°C</u>
10. Does information on Traffic Reports/Chain of Custody Records and sample tags agree?	<u>Yes/No*</u>
11. Date Received at Lab	<u>9-2-11</u>
12. Time Received	<u>10:00</u>

Sample Transfer	
Fraction <u>metals</u>	Fraction <u> </u>
Area# <u>COOLER A</u>	Area# <u> </u>
By <u>MA</u>	By <u>MA</u>
On <u>9-2-11</u>	On <u>9-2-11</u>

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding		Remarks: Condition of Sample Shipment, etc.
			Sample Tag #	Assigned Lab #	
1	MC0075	L2	255	0014660-01	1-1 Plastic
2	78	↓	258	↓ 02	↓
3	79	↓	259	↓ 03	↓
4	80	↓	260	↓ 04	↓
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

* Contact SMO and attach record of resolution

Reviewed By [REDACTED]	Logbook No. <u>MA</u>
Date <u>9/2/11</u>	Logbook Page No. <u>MP</u>

APPENDIX F:
ORGANIC VALIDATION REPORTS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE : October 27, 2011

SUBJECT: Region III Data QA Review

FROM: Colleen Walling *Colleen K. Walling*
Region III ESAT RPO (3EA20)

TO: Lisa Johnson
Remedial Project Manager (3HS12)

Attached is the organic data validation report for the Kiskimere Groundwater Well (Case#41667; SDG#: C0047) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachment

cc: [REDACTED] TechLaw, Inc.)

TO #0037 TDF: #10028

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

Lockheed Martin IS&GS – Civil
Energy & Environment
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597



Date: October 26, 2011

Subject: Organic Data Validation (M3 Level)
Case: 41667
SDG: C0047
Site: Kiskimere Groundwater Well

From: [REDACTED]
Organic Data Reviewer
[REDACTED]
Senior Oversight Chemist

To: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 41667, Sample Delivery Group (SDG) C0047, consisted of twenty (20) aqueous samples including two (2) field duplicate pairs, two (2) field blanks and one (1) trip blank analyzed for trace volatile compounds. Samples were analyzed by KAP Technologies, Inc. (KAP) according to Contract Laboratory Program (CLP) Statement of Work (SOW) SOM01.2 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to Region 3 Modifications to the National Functional Guidelines for Organic Data Review, Level M3 and is assigned the Superfund Data Validation Label S4VM (Stage_4_Validation_Manual). Areas of concern with respect to data usability are listed below.

MINOR PROBLEMS

- Several compounds failed precision criteria [Percent Relative Standard Deviation (%RSD) and/or Percent Difference (%D)] in the initial and/or continuing calibrations. The positive result reported for methylene chloride was impacted in sample C0048; however, the "J" qualifier for this outlier has been superseded by "B" on the DSF. Quantitation limits were not impacted since the %RSD or %D did not exceed the 50% criteria.

- Recoveries for several Deuterated Monitoring Compounds (DMCs) were outside lower control limits for the samples listed below. The positive result reported for acetone in sample C0053 was impacted and qualified "L" on the DSF. Quantitation limits for compounds associated with these DMCs in these samples were qualified "UL" on the DSFs.

<u>DMC</u>	<u>Sample(s)</u>
2-butanone-d ₅	C0053
trans-1,3-dichloropropene-d ₄	C0058
1,1,2,2-tetrachloroethane-d ₂	C0056, C0058, C0061
1,2-dichlorobenzene-d ₄	C0058

NOTES

- Concentrations of target compounds found in the analysis of the associated blanks are listed below. Only the compounds used to qualify data are listed. Samples with concentrations of common laboratory contaminants (*) less than ten times (<10X) the blank concentration or with concentrations of other contaminants less than five times (<5X) blank concentration have been qualified "B" on the DSFs.

<u>Blanks</u>	<u>Compound</u>	<u>Concentration</u>	<u>Affected Samples</u>
Field (C0063)	methylene chloride*	1.5 ug/L	C0048
	toluene	0.65 ug/L	C0050

- No positive results were reported in field duplicate pairs C0057/C0060 and C0059/C0061.
- Tentatively Identified Compounds (TICs) were reviewed during data validation. TIC Form Is for samples in which TICs were identified are included in Appendix E. Compounds identified as blank and/or common laboratory contaminants were crossed off TIC Form Is by the reviewer.
- The "J" qualifier for methylene chloride which was detected below Contract Required Quantitation Limit (CRQL) was superseded by "B" on the DSF.

ATTACHMENTS

Appendix A – Glossary of Data Qualifier Codes
 Appendix B – Data Summary Form(s)
 Appendix C – Chain of Custody Records
 Appendix D – Laboratory Case Narrative
 Appendix E – Tentatively Identified Compounds

DCN: 41667_C0047

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

NO CODE = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

Q = No analytical result.

Appendix B

Data Summary Forms

Page 1 of 8

Number of Soil Samples : 0

Number of Water Samples : 20

KAP

[illegible]

DATA SUMMARY FORM: Trace Volatiles

Page 2 of 8

Case #: 41667

SDG : C0047

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

KAP

Sample Number :		C0047		C0048		C0050		C0051		C0052	
Sampling Location :		GW01		GW02		GW03		GW04		GW07	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		08/30/2011		08/30/2011		08/30/2011		08/30/2011		08/30/2011	
Time Sampled :		09:45		10:14		10:35		15:36		13:00	
pH :		< 2		< 2		< 2		< 2		< 2	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
*Tetrachloroethene	0.50										
2-Hexanone	5.0										
Dibromochloromethane	0.50										
1,2-Dibromoethane	0.50										
*Chlorobenzene	0.50										
*Ethylbenzene	0.50										
o-Xylene	0.50										
m,p-Xylene	0.50										
*Styrene	0.50										
Bromoform	0.50										
Isopropylbenzene	0.50										
1,1,2,2-Tetrachloroethane	0.50										
*1,3-Dichlorobenzene	0.50										
*1,4-Dichlorobenzene	0.50										
1,2-Dichlorobenzene	0.50										
1,2-Dibromo-3-chloropropane	0.50										
1,2,4-Trichlorobenzene	0.50										
1,2,3-Trichlorobenzene	0.50										

CRQL = Contract Required Quantitation Limit

* Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

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Page 3 of 8

SDG : C0047

KISKIMERE GROUNDWATER WELL

KAP

[illegible]

DATA SUMMARY FORM: Trace Volatiles

Page 4 of 8

Case #: 41667

SDG : C0047

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

KAP

Sample Number :		C0053	C0054		C0055		C0056		C0057		
Sampling Location :		GW08D	GW09		GW10		GW14		GW15		
Field QC :									Dup. of C0060		
Matrix :		Water	Water		Water		Water		Water		
Units :		ug/L	ug/L		ug/L		ug/L		ug/L		
Date Sampled :		08/30/2011	08/30/2011		08/30/2011		08/30/2011		08/30/2011		
Time Sampled :		16:50	16:45		15:00		10:41		11:25		
pH :		< 2	< 2		< 2		< 2		< 2		
Dilution Factor :		1.0	1.0		1.0		1.0		1.0		
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
*Tetrachloroethene	0.50	0.55									
2-Hexanone	5.0										
Dibromochloromethane	0.50										
1,2-Dibromoethane	0.50										
*Chlorobenzene	0.50										
*Ethylbenzene	0.50										
o-Xylene	0.50										
m,p-Xylene	0.50										
*Styrene	0.50										
Bromoform	0.50										
Isopropylbenzene	0.50										
1,1,2,2-Tetrachloroethane	0.50								UL		
*1,3-Dichlorobenzene	0.50										
*1,4-Dichlorobenzene	0.50										
1,2-Dichlorobenzene	0.50										
1,2-Dibromo-3-chloropropane	0.50								UL		
1,2,4-Trichlorobenzene	0.50										
1,2,3-Trichlorobenzene	0.50										

CRQL = Contract Required Quantitation Limit

* Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

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DATA SUMMARY FORM: Trace Volatiles

Page 5 of 8

Case #: 41667

SDG : C0047

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

KAP

Sample Number :		C0058		C0059		C0060		C0061		C0062	
Sampling Location :		GW24		GW26		GW27		GW28		GW8S	
Field QC :				Dup. of C0061		Dup. of C0057		Dup. of C0059			
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		08/31/2011		08/31/2011		08/30/2011		08/31/2011		08/30/2011	
Time Sampled :		13:05		10:40		11:35		10:50		17:10	
pH :		< 2		< 2		< 2		< 2		< 2	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	0.50										
Chloromethane	0.50										
*Vinyl chloride	0.50										
Bromomethane	0.50										
Chloroethane	0.50										
Trichlorofluoromethane	0.50										
*1,1-Dichloroethene	0.50										
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50										
Acetone	5.0										
Carbon Disulfide	0.50										
Methyl acetate	0.50										
*Methylene chloride	0.50										
trans-1,2-Dichloroethene	0.50										
Methyl tert-butyl ether	0.50										
1,1-Dichloroethane	0.50										
cis-1,2-Dichloroethene	0.50										
*2-Butanone	5.0										
Bromochloromethane	0.50										
Chloroform	0.50										
*1,1,1-Trichloroethane	0.50										
Cyclohexane	0.50										
*Carbon tetrachloride	0.50										
*Benzene	0.50										
*1,2-Dichloroethane	0.50										
Trichloroethene	0.50										
Methylcyclohexane	0.50										
*1,2-Dichloropropane	0.50										
Bromodichloromethane	0.50										
cis-1,3-Dichloropropene	0.50		UL								
4-Methyl-2-pentanone	5.0										
*Toluene	0.50										
trans-1,3-Dichloropropene	0.50		UL								
1,1,2-Trichloroethane	0.50		UL								

DATA SUMMARY FORM: Trace Volatiles

Page 6 of 8

Case #: 41667

SDG : C0047

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

KAP

Sample Number :		C0058		C0059		C0060		C0061		C0062	
Sampling Location :		GW24		GW26		GW27		GW28		GW8S	
Field QC :				Dup. of C0061		Dup. of C0057		Dup. of C0059			
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		08/31/2011		08/31/2011		08/30/2011		08/31/2011		08/30/2011	
Time Sampled :		13:05		10:40		11:35		10:50		17:10	
pH :		< 2		< 2		< 2		< 2		< 2	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
*Tetrachloroethene	0.50									2.7	
2-Hexanone	5.0										
Dibromochloromethane	0.50										
1,2-Dibromoethane	0.50										
*Chlorobenzene	0.50		UL								
*Ethylbenzene	0.50										
o-Xylene	0.50										
m,p-Xylene	0.50										
*Styrene	0.50										
Bromoform	0.50										
Isopropylbenzene	0.50										
1,1,2,2-Tetrachloroethane	0.50		UL						UL		
*1,3-Dichlorobenzene	0.50		UL								
*1,4-Dichlorobenzene	0.50		UL								
1,2-Dichlorobenzene	0.50		UL								
1,2-Dibromo-3-chloropropane	0.50		UL						UL		
1,2,4-Trichlorobenzene	0.50		UL								
1,2,3-Trichlorobenzene	0.50		UL								

CRQL = Contract Required Quantitation Limit

* Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

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Page 7 of 8

SDG : C0047

KISKIMERE GROUNDWATER WELL

KAP

[illegible]

DATA SUMMARY FORM: Trace Volatiles

Page 8 of 8

Case #: 41667

SDG : C0047

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

KAP

Sample Number :		C0063		C0064		C0074		C0075		C0082	
Sampling Location :		FB01		FB02		SW01		SW02		TB02	
Field QC :		Field Blank		Field Blank						Trip Blank	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		08/30/2011		08/31/2011		08/31/2011		08/31/2011		08/30/2011	
Time Sampled :		18:20		17:30		15:25		11:00		08:15	
pH :		< 2		< 2		< 2		< 2		< 2	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
*Tetrachloroethene	0.50										
2-Hexanone	5.0										
Dibromochloromethane	0.50										
1,2-Dibromoethane	0.50										
*Chlorobenzene	0.50										
*Ethylbenzene	0.50										
o-Xylene	0.50										
m,p-Xylene	0.50										
*Styrene	0.50										
Bromoform	0.50										
Isopropylbenzene	0.50										
1,1,2,2-Tetrachloroethane	0.50										
*1,3-Dichlorobenzene	0.50										
*1,4-Dichlorobenzene	0.50										
1,2-Dichlorobenzene	0.50										
1,2-Dibromo-3-chloropropane	0.50										
1,2,4-Trichlorobenzene	0.50										
1,2,3-Trichlorobenzene	0.50										

CRQL = Contract Required Quantitation Limit

* Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

Appendix C

Chain of Custody Records



USEPA Contract Laboratory Program Organic Traffic Report & Chain of Custody Record

Case No: 41667
DAS No:

R

Region: 3	Date Shipped: 9/1/2011	Carrier Name: FedEx	Airbill: 8768 8339 7359	Shipped to: KAP Technologies 9391 Grogans Mill Rd Suite A2 The Woodlands TX 77380 (281) 367-0065
Project Code: CT5653	Account Code: 2011T03N302DD2C03ZZQB00	CERCLUS ID: PAN000306740	Spill ID: ARL	Site Name/State: Kiskimere GW Well Investigation/WV
Project Leader: [Redacted]	Action: Site Evaluation	Sampling Co: TechLaw, Inc.		

Chain of Custody Record

Relinquished By	(Date / Time)	Sampler Signature	Received By	(Date / Time)
1 [Redacted]	9/1/11/1900			
2 [Redacted]				
3 [Redacted]				
4 [Redacted]				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C0047	Ground Water/ John Elson	L/G	TVOA (21)	303 (HCL), 304 (HCL), 305 (HCL) (3)	GW01	S: 8/30/2011 9:45	MC0047	-
C0048	Ground Water/ MICHELLE DALLESSAND RO	L/G	TVOA (21)	306 (HCL), 307 (HCL), 308 (HCL) (3)	GW02	S: 8/30/2011 10:14	MC0048	-
C0050	Ground Water/ Dan Buckley	L/G	TVOA (21)	309 (HCL), 310 (HCL), 311 (HCL) (3)	GW03	S: 8/30/2011 10:35	MC0050	Lab QC
C0051	Ground Water/ MICHELLE DALLESSAND RO	L/G	TVOA (21)	312 (HCL), 313 (HCL), 314 (HCL) (3)	GW04	S: 8/30/2011 15:36	MC0051	-
C0052	Ground Water/ MICHELLE DALLESSAND RO	L/G	TVOA (21)	315 (HCL), 316 (HCL), 317 (HCL) (3)	GW07	S: 8/30/2011 13:00	MC0052	-
C0053	Ground Water/ Dan Buckley	L/G	TVOA (21)	318 (HCL), 319 (HCL), 320 (HCL) (3)	GW08D	S: 8/30/2011 16:50	MC0053	-
C0054	Ground Water/ John Elson	L/G	TVOA (21)	321 (HCL), 322 (HCL), 323 (HCL) (3)	GW09	S: 8/30/2011 16:45	MC0054	-
C0055	Ground Water/ John Elson	L/G	TVOA (21)	324 (HCL), 325 (HCL), 326 (HCL) (3)	GW10	S: 8/30/2011 15:00	MC0055	-
C0056	Ground Water/ John Elson	L/G	TVOA (21)	327 (HCL), 328 (HCL), 329 (HCL) (3)	GW14	S: 8/30/2011 10:41	MC0056	-

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	
Analysis Key: TVOA = CLP Trace VOA			Shipment lead?

TR Number: 3-043013577-090111-0005

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY

Case No: 41667
DAS No: R

Region: 3	Date Shipped: 9/1/2011	Carrier Name: FedEx	Airbill: 8768 8339 7359	Shipped to: KAP Technologies 9391 Grogans Mill Rd Suite A2 The Woodlands TX 77380 (281) 367-0065
Project Code: CT5653	Carrier Name: FedEx	Airbill: 8768 8339 7359	Shipped to: KAP Technologies	
Account Code: 2011T03N302DD2C03ZZQB00				
CERCLIS ID: PAN000306740				
Split ID: ARL				
Site Name/State: Kiskimere GW Well Investigation/WV				
Project Leader: [Redacted]				
Action: Site Evaluation				
Sampling Co: TechLaw, Inc.				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	OC Type
C0057	Ground Water/ John Elson	L/G	TVOA (21)	330 (HCL), 331 (HCL), 332 (HCL) (3)	GW15	S: 8/30/2011 11:25	MC0057	Field Duplicate of GW27 00060
C0058	Ground Water/ John Elson	L/G	TVOA (21)	333 (HCL), 334 (HCL), 335 (HCL) (3)	GW24	S: 8/31/2011 13:05	MC0058	
C0059	Ground Water/ Dan Buckley	L/G	TVOA (21)	336 (HCL), 337 (HCL), 338 (HCL) (3)	GW26	S: 8/31/2011 10:40	MC0059	Field Duplicate of GW28 00061
C0060	Ground Water/ John Elson	L/G	TVOA (21)	339 (HCL), 340 (HCL), 341 (HCL) (3)	GW27	S: 8/30/2011 11:35	MC0060	Field Duplicate of GW15 00057
C0061	Ground Water/ Dan Buckley	L/G	TVOA (21)	342 (HCL), 343 (HCL), 344 (HCL) (3)	GW28	S: 8/31/2011 10:50	MC0061	Field Duplicate of GW26 00059
C0062	Ground Water/ Dan Buckley	L/G	TVOA (21)	345 (HCL), 346 (HCL), 347 (HCL) (3)	GW8S	S: 8/30/2011 17:10	MC0062	
C0063	Ground Water/ Dan Buckley	L/G	TVOA (21)	348 (HCL), 349 (HCL), 350 (HCL) (3)	FB01	S: 8/30/2011 18:20	MC0063	Field Blank
C0064	Ground Water/ Dan Buckley	L/G	TVOA (21)	351 (HCL), 352 (HCL), 353 (HCL) (3)	FB02	S: 8/31/2011 17:30	MC0064	Field Blank
C0074	Surface Water/ MICHELLE DALLESSAND RO	L/G	TVOA (21)	354 (HCL), 355 (HCL), 356 (HCL) (3)	SW01	S: 8/31/2011 15:25	MC0074	
C0075	Surface Water/ MICHELLE DALLESSAND RO	L/G	TVOA (21)	357 (HCL), 358 (HCL), 359 (HCL) (3)	SW02	S: 8/31/2011 11:00	MC0075	Lab QC

micl qts 00047 9-23-11

Shipment/Case Complete Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
		[Redacted]	
Analysis Key: TVOA = CLP Trace VOA	Concentration: L = Low, M = Low/Medium, H = High	Shipment lost?	

TR Number: 3-043013577-090111-0005

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY



USEPA Contract Laboratory Program Organic Traffic Report & Chain of Custody Record

Case No: 41667

DAS No:

R

Region: Project Code: Account Code: CERCLUS ID: Spill ID: Site Name/State: Project Leader: Action: Sampling Co:	3. CT5653 2011T03N302DD2C03ZZQB00 PAN000306740 ARL Kiskimere GW Well Investigation/WV Site Evaluation TechLaw, Inc.	Date Shipped: 9/1/2011 Carrier Name: FedEx Airbill: 8768 8339 7348 Shipped to: KAP Technologies 9391 Grogans Mill Rd Suite A2 The Woodlands TX 77380 (281) 367-0065	Chain of Custody Record Relinquished By: [Signature] (Date / Time) 9/1/11 / 1900 Received By: [Signature] (Date / Time)	Sampler Signature [Signature]
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ORGANIC SAMPLE NO.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE NO.	QC Type
C0073	Sediment/ MICHELLE DALLESSAND RO	L/G	VOA (21)	293 (Ice Only), 294 (Ice Only), 295 (Ice Only), 296 (Ice Only) (4)	SD09	S: 8/30/2011 11:40	MC0073	
C0082	Ground Water/ MICHELLE DALLESSAND RO	L/G	TVOA (21)	300 (HCL), 301 (HCL), 302 (HCL) (3)	TB02	S: 8/30/2011 8:15		Trip Blank

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: TVOA = CLP Trace VOA, VOA = CLP TCL Volatiles	Concentration: L = Low, M = Low/Medium, H = High	[Signature]	Shipment lost?

TR Number: 3-043013577-090111-0004

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY

U.S EPA Region III Analytical Request Form

Revision 11.09

Control #		CT5653		OASQA USE ONLY	
DAS #				RAS #	41667
PES #				NSF #	
				Analytical TAT	21 days

41667

Date: 08/10/11		Site Activity: Site Assessment	
Site Name: Kiskimere Groundwater Well Investigation			
City: Parks Township, Armstrong Co.		State: PA	
Program: Superfund		Latitude: 40 degrees 37'11.24"	
Site ID: 0306740		Longitude: -079 degrees 35'01.16"	
Acct. #: 2011T03N302DD2CA3RLQB00		CERCLIS #: PAN000306740	
Spill ID: A3RL		Operable Unit:	
Site Specific QA Plan Submitted: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		Title: Sampling QA/QC Work Plan	
EPA Project Leader: Lisa Johnson		Phone#: 215-814-3314	Cell Phone #: NA
Request Prepare: [REDACTED]		Phone#: 740-867-0968	Cell Phone #: 304-830-1442
Site Leader: [REDACTED]		Phone#: 304-230-1230	Cell Phone #: 304-830-1444
Contractor: TechLaw, Inc.		EPA CO/PO: Denise T. Page/Karen Esposito	
#Samples 45	Matrix: Water	Parameter: ICP-MS TAL metals+Hg+U	Method: CLP ISM01.2 ICP-MS/ M.A. for U AY
#Samples 48	Matrix: Water	Parameter: TCL Trace VOA	Method: CLP SOM01.2 KAP
#Samples 7	Matrix: sediment	Parameter: ICP-AES TAL metals+Hg+U	Method: CLP ISM01.2 ICP-AES/ M.A. for U AY
#Samples 7	Matrix: sediment	Parameter: TCL VOA	Method: CLP SOM01.2 KAP
#Samples	Matrix:	Parameter:	Method:
#Samples	Matrix:	Parameter:	Method:
#Samples	Matrix:	Parameter:	Method:
#Samples	Matrix:	Parameter:	Method:
#Samples	Matrix:	Parameter:	Method:
Ship Date From: August 30, 2011	Ship Date To: September 1, 2011	Org. Validation Level M3	Inorg. Validation Level IM2
Unvalidated Data Requested: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If Yes, TAT Needed: <input type="checkbox"/> 14days <input type="checkbox"/> 7days <input type="checkbox"/> 48hrs <input type="checkbox"/> 24hrs <input type="checkbox"/> Other (Specify) 21 days			
Validated Data Package Due: <input checked="" type="checkbox"/> 42 days <input type="checkbox"/> 30 days <input type="checkbox"/> 21days <input type="checkbox"/> 14 days <input type="checkbox"/> Other (Specify) 24/21			
Electronic Data Deliverables Required: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes (EDDs will be provided in Region 3 EDD Format)			
Special Instructions: See attached CLP TCL and TAL for analytes and CRQLs. Request CLP Modified Analysis (M.A.) for Uranium with 1 ug/l QL in water and ?? for sediment samples.			

Appendix D

Laboratory Case Narrative

KAP TECHNOLOGIES, INC.
9391 Grogans Mill Rd, Suite A2 • The Woodlands, TX 77380 • Phone (281) 367-0065

Contract No. EPW11031	Case No. 41667	SDG No. C0047
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SDG NARRATIVE

SAMPLE RECEIPT:

On 09/02/11 @ 10:30 A.M. - Received two coolers via FedEx with shipment numbers 876883397348 and 876883397359. The cooler temperature was 4.1⁰C and 3.3⁰C.

The package contained the following samples for TVOA analyses.
The custody seals and the samples were intact.

EPA SAMPLE ID	pH	EPA SAMPLE ID	pH
C0047	<2	C0058	<2
C0048	<2	C0059	<2
C0050	<2	C0060	<2
C0051	<2	C0061	<2
C0052	<2	C0062	<2
C0053	<2	C0063	<2
C0054	<2	C0064	<2
C0055	<2	C0074	<2
C0056	<2	C0075	<2
C0057	<2	C0082	<2

No problems were encountered during sample receiving and login.

TRACE VOLATILES:

All samples were analyzed on G-5973 GC/MS using a 30-meter long RTX-VMS column having a 0.25mm ID and 3µm film thickness. The trap used was OV-1/Tenax/Silica Gel (Tekmar #6 CAT #14-1755-003).

A 25 mL purge volume was used for all samples, blanks and standards. The concentrations of the standards and spikes were maintained at the levels required by the Statement of Work (SOW).

These samples were analyzed for Trace Volatiles as per SOM 1.2 statement of work.

No problems were encountered during the sample analyses.

KAP TECHNOLOGIES, INC.

9391 Grogans Mill Rd, Suite A2 • The Woodlands, TX 77380 • Phone (281) 367-0065

Contract No. EPW11031	Case No. 41667	SDG No. C0047
------------------------------	-----------------------	----------------------

SDG NARRATIVE

The formula used to calculate the Sample concentration:

$$\text{Concentration in ug/L} = \frac{(A_x) (I_s) (DF)}{(A_{is}) (RRF) (V_o)}$$

Where,

A_x = Area of the characteristic ion (EICP) for the compound to be measured.

A_{is} = Area of the characteristic ion (EICP) for the internal standard.

I_s = Amount of internal standard added in ng.

RRF = Mean relative Response Factor from the initial calibration standard.

V_o = Total Volume of water purged, in ml.

DF = Dilution Factor.

Manual Integrations:

The software did not pick-up the following compounds and these compounds were manually integrated and the EICP is enclosed in the data package.

C0047 – 1,1-Dichloroethene-d2	VSTD0.52G – 1,1-Dichloroethene
C0054 – Chloroethane-d5	VSTD0.52G – Acetone
C0056 – trans-1,3-Dichloropropene-d3	VSTD0.52G – Methyl acetate
C0058 – 1,2-Dichloropropane-d6	VSTD0.52G – 1,2-Dichloroethane
C0059 – 1,1-Dichloroethene-d2	VSTD0053G – Methyl acetate
C0061 – trans-1,3-Dichloropropene-d3	VSTD0053G – 1,2-Dichloroethane
C0062 – 1,1-Dichloroethene-d2	VSTD0053F – Chloromethane
C0063 – Toulene	VSTD0053H – Chloromethane
C0064 – Toulene	VSTD0053H – Methyl acetate
C0082 – Toulene	VSTD0053Q – Chloroethane
VSTD0102G – Chloromethane	VSTD0053Q – Acetone
VSTD0052G – Bromomethane	VSTD0053Q – Methyl acetate
VSTD0012G – Chloroethane	VSTD0053R – 1,2-Dibromom-3-chloropropane
VSTD0012G – Bromomethane	VBLK3C – 1,1,2,2-Tetrachloroethane-d2
VSTD0.52G – Chloromethane	VBLK3G – 1,1-Dichloroethene-d2

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy sample data package and in the electronic data deliverable has been authorized by the laboratory manager or the manager's designee, as verified by the following signature:


Signature/Title

9/20/11
Date of Signature

Lab Name		KAP TECHNOLOGIES, INC.		Page <u>1</u> of <u>1</u>
Received By (Print Name)				Log-in Date
Received By (Signature)				9/2/11
Case Number	41667	Sample Delivery Group No.	C0047	Mod. Ref. No.
Remarks:		Corresponding		
		EPA Sample #	Sample Tag #	Assigned Lab #
1. Custody Seal(s) <u>Present</u> /Absent* Intact/Broken		C0047	303 - 305	S-4306.01
2. Custody Seal Nos.		48	306 - 308	.02
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists <u>Present</u> /Absent*		50	309 - 311	.03
4. Airbill <u>Airbill</u> /Sticker <u>Present</u> /Absent*		51	312 - 314	.04
5. Airbill No. <u>876883397359</u>		52	315 - 317	.05
6. Sample Tags <u>Present</u> /Absent*		53	318 - 320	.06
Sample Tag Numbers <u>Listed</u> /Not Listed on Chain-of-Custody		54	321 - 323	.07
7. Sample Condition <u>Intact</u> /Broken*/ Leaking		55	324 - 326	.08
8. Cooler Temperature Indicator Bottle <u>Present</u> /Absent*		56	327 - 329	.09
9. Cooler Temperature <u>4.1°C</u>		57	330 - 332	.10
10. Does information on TR/COCs and sample tags agree? <u>Yes</u> /No*		58	33 - 335	.11
11. Date Received at Laboratory <u>9/2/11</u>		59	336 - 338	.12
12. Time Received <u>10:30</u>		60	339 - 341	.13
Sample Transfer		61	342 - 344	.14
Fraction <u>TVDA</u>	Fraction	62	345 - 347	.15
Area # <u>Cooler E</u>	Area #	63	348 - 350	.16
By <u>NH</u>	By	64	351 - 353	.17
On <u>9/2/11</u>	On	74	354 - 356	.18
		75	357 - 359	.19
		VHBLK01	-	.20

* Contact SMO and attach record of resolution

Reviewed By		Logbook No.
Date	9/2/11	Logbook Page No.

8558

SAMPLE LOG-IN SHEET
FORM DC-1

Lab Name		KAP TECHNOLOGIES, INC.		Page <u>1</u> of <u>1</u>
Received By (Print Name)				Log-in Date
Received By (Signature)				9/2/11
Case Number	41667	Sample Delivery Group No.	C0047	Mod. Ref. No.
Remarks:		Corresponding		
		EPA Sample #	Sample Tag #	Assigned Lab #
1. Custody Seal(s)	Present /Absent* Intact/Broken	10082	300-302	S-4306.20 Intact 3-40ml vial
2. Custody Seal Nos.	—			
3. Traffic Reports/Chain of Custody Records (TR/COCs) or Packing Lists	Present /Absent*			
4. Airbill	Airbill /Sticker Present /Absent*			
5. Airbill No.	876803397348			
6. Sample Tags	Present /Absent*			
Sample Tag Numbers	Listed/Not Listed on Chain-of-Custody			
7. Sample Condition	Intact /Broken*/Leaking			
8. Cooler Temperature Indicator Bottle	Present /Absent*			
9. Cooler Temperature	3.3°C			
10. Does information on TR/COCs and sample tags agree?	Yes /No*			
11. Date Received at Laboratory	9/2/11			
12. Time Received	10:30			
Sample Transfer				
Fraction	TVDA	Fraction		
Area #	Cooler E	Area #		
By	NH	By		
On	9/2/11	On		

* Contact SMO and attach record of resolution

Reviewed By		Logbook No.
Date	9/2/11	Logbook Page No.

8851

Appendix E

Tentatively Identified Compounds (TICs)

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0047

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0047

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4306.01

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15803

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/10/2011

GC Column: RTX-VMS ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	001825-61-2	Silane, methoxytrimethyl	4.19	0.51	NJ
02		Unknown 01	4.20	0.66	J
03		Unknown 02 <i>Silane</i>	6.40	0.70	J
04		Unknown 03	9.02	5.6	J
05	000527-84-4	Benzene, 1-methyl-2-(1-methyl	16.21	0.59	NJ
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
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17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

DV
10/24/11

SOM01.2 (6/2007)

0024

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0053

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0047

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4306.06

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15837

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/11/2011

GC Column: RTX-VMS ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000420-56-4	Trimethylsilyl fluoride	2.34	0.69	NJ
02		Unknown-01	6.75	1.8	J
03		Unknown-02	6.76	0.63	J
04		Unknown-03	9.82	5.4	J
05		Unknown-04	16.21	0.74	J
06					
07					
08					
09					
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12					
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21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

DV
10/24/11

SOM01.2 (6/2007)

0113

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0056

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0047

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4306.09

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15822

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/10/2011

GC Column: RTX-VMS ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	2.59	0.57	J
02		Unknown-02	2.60	0.51	J
03		Unknown-03	2.62	0.86	J
04		Unknown-04	4.20	0.96	J
05		Unknown-05	9.02	5.1	J
06					
07					
08					
09					
10					
11					
12					
13					
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21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

DV
10/24/11

SOM01.2 (6/2007)

0167

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0057

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0047

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4306.10

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15847

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/11/2011

GC Column: RTX-VMS

ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	2.60	0.80	J
02		Unknown-02	9.02	5.8	J
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

27
10/24/11

SOM01.2 (6/2007)

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C0058

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0047

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4306.11

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15824

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/10/2011

GC Column: RTX-VMS ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-02	2.63	0.55	J
02		Unknown-01	2.63	1.2	J
03		Unknown-03	9.82	4.7	J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
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16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

DV
10/24/11

SOM01.2 (6/2007)

0205

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C0059

Lab Name: KAP TECHNOLOGIES, INC. Contract: EPW11031
Lab Code: KAP Case No.: 41667 Mod. Ref No.: _____ SDG No.: C0047
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: S-4306.12
Sample wt/vol: 25.00 (g/mL) ML Lab File ID: G15825
Level: (TRACE or LOW/MED) TRACE Date Received: 09/02/2011
% Moisture: not dec. _____ Date Analyzed: 09/10/2011
GC Column: RTX-VMS ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000420-56-4	Trimethylsilyl fluoride	2.34	0.52	NJ
02		Unknown-01	2.63	1.6	J
03	001025-61-2	Silane, methoxytrimethyl	4.19	0.57	NJ
04		Unknown-02	6.48	0.57	J
05		Unknown-03	9.82	6.0	J
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

DV
10/24/11

SOM01.2 (6/2007)

0224

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0060

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0047

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4306.13

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15826

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/10/2011

GC Column: RTX-VMS ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000420-56-4	Trimethylsilyl fluoride	2.34	0.65	NJ
02		Unknown-01	4.19	0.65	J
03		Unknown-02 <i>Silane</i>	4.20	0.93	J
04		Unknown-03	6.48	0.64	J
05		Unknown-04	9.82	6.4	J
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

DV
10/24/11

SOM01.2 (6/2007)

0244

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C0062

Lab Name: KAP TECHNOLOGIES, INC. Contract: EPW11031
Lab Code: KAP Case No.: 41667 Mod. Ref No.: _____ SDG No.: C0047
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: S-4306.15
Sample wt/vol: 25.00 (g/mL) ML Lab File ID: G15841
Level: (TRACE or LOW/MED) TRACE Date Received: 09/02/2011
% Moisture: not dec. _____ Date Analyzed: 09/11/2011
GC Column: RTX-VMS ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	4.20	1.2	J
02		Unknown-02	6.46	0.65	J
03		Unknown-03	9.82	5.5	J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

DV
12/14

SOM01.2 (6/2007)

0283

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0074

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0047

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4306.18

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15844

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/11/2011

GC Column: RTX-VMS ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000420-56-4	Trimethylsilyl fluoride	2.34	0.82	NJ
02		Unknown-01	6.47	0.70	J
03		Unknown-02	9.82	5.6	J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

SOM01.2 (6/2007)

DV
10/24/11

0342

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0063

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0047

FB

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4306.16

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15842

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/11/2011

GC Column: RTX-VMS ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000060-29-7	Ethyl ether	3.08	0.72	NJ
02		Unknown-01	3.08	1.2	J
03		Unknown-02	9.02	5.1	J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
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18					
19					
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21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

SOM01.2 (6/2007)

0302

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0064

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

FB

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0047

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4306.17

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15843

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/11/2011

GC Column: RTX-VMS ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	3.07	0.73	J
02		Unknown-02	4.19	0.96	J
03		Unknown-03	9.02	5.7	J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
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19					
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24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

48

¹ EPA-designated Registry Number.

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0082

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0047

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4306.20

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15846

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/11/2011

GC Column: RTX-VMS

ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	3.08	1.1	J
02		Unknown-02	4.19	0.88	J
03		Unknown-03	9.82	4.6	J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
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24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

SOM01.2 (6/2007)

0377



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE : October 27, 2011

SUBJECT: Region III Data QA Review

FROM: Colleen Walling *Colleen K Walling*
Region III ESAT RPO (3EA20)

TO: Lisa Johnson
Remedial Project Manager (3HS12)

Attached is the organic data validation report for the Kiskimere Groundwater Well (Case#41667; SDG#: C0065 and C0076) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachment

cc: [REDACTED] (TechLaw, Inc.)

TO #0037 TDF: #10027

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

Lockheed Martin IS&GS – Civil
Energy & Environment
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597



Date: October 26, 2011

Subject: Organic Data Validation (M3 Level)
Case: 41667
SDGs: C0065, C0076
Site: Kiskimere Groundwater Well

From: [REDACTED]
Organic Data Reviewer
[REDACTED]
Senior Oversight Chemist

To: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 41667, Sample Delivery Groups (SDGs) C0065 and C0076, consisted of nine (9) soil samples analyzed for volatile organic compounds and six (6) aqueous samples analyzed for trace volatile compounds. All samples were analyzed by KAP Technologies Incorporated (KAP). The sample set included one (1) trip blank and one (1) aqueous field duplicate pair analyzed for trace volatile compounds and one (1) soil field duplicate pair analyzed for volatile organic compounds. The samples were analyzed according to Contract Laboratory Program (CLP) Statement of Work (SOW) SOM01.2 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to Region III Modifications to the National Functional Guidelines for Organic Data Review, Level M3 and is assigned the Superfund Data Validation Label S4VM (Stage_4_Validation_Manual). Areas of concern with respect to data usability are listed below.

It should be noted that in SOM01.2, 1,4-dioxane is no longer a target analyte by Trace VOA and Trace VOA SIM analyses. Using SOM01.2 for the detection and reporting of 1,4-dioxane at low and medium levels has not consistently generated data of sufficiently known quality. This is due to poor purge efficiency. Results for 1,4-dioxane using this method should be considered advisory.

MINOR PROBLEMS

- Several compounds failed precision criteria [Percent Relative Standard Deviation (%RSD) and/or Percent Difference (%D)] in the trace volatile and/or volatile initial and continuing calibrations. The "J" qualifier for methylene chloride in the soil samples has been superseded by "B" on the Data Summary Forms (DSFs). The precisions did not exceed the 50% criteria. Therefore, no quantitation limits were qualified based on these outliers.
- In the trace volatile analyses, recovery of Deuterated Monitoring Compound (DMC) 1,1,2,2-tetrachloroethane-d2 was outside the lower control limit in sample C0080. No positive results were reported for compounds associated with this DMC. Quantitation limits for compounds associated with this DMC in this sample were qualified "UL" on the DSF.
- In the volatile analyses, recovery of DMC 1,1-dichloroethene-d2 was outside the lower control limit in sample C0067. No positive results were reported for compounds associated with this DMC. Quantitation limits for compounds associated with this DMC in this sample were qualified "UL" on the DSF.

NOTES

- Compounds detected below Contract Required Quantitation Limits (CRQLs) are qualified "J" on the DSFs unless superseded by "B".
- In the volatile analyses, recovery of DMC benzene-d6 was outside the upper control limit in sample C0066. No positive results were reported for the compounds associated with this DMC in these samples. Therefore, no data were qualified based on this outlier.
- Concentrations of target compounds found in the analysis of samples' associated trip, storage and method blanks are listed below. Only compounds used to qualify data are listed. Samples with concentrations of this common laboratory contaminants less than ten times (<10X) the blank concentration have been qualified "B" on the DSFs.

SDG: C0065

<u>Blank</u>	<u>Compound</u>	<u>Concentration</u>	<u>Affected Samples</u>
Method (VBLK2W)	methylene chloride	3.1 J µg/Kg	C0065, C0066, C0067, C0068, C0069, C0071

SDG: C0076

<u>Blank</u>	<u>Compound</u>	<u>Concentration</u>	<u>Affected Samples</u>
Storage (VHBLK01)	methylene chloride	0.41 J µg/L	C0080, C0083

- Tentatively Identified Compounds (TICs) were reviewed during data validation. TICs identified as blank contaminants were crossed-off the TIC Form Is by the reviewer. TIC Form Is for samples in which TICs were identified are included in Appendix E.
- Sample weights other than five (5) grams in the volatile analyses were used for these samples. The dilution factors reported on the DSFs reflect actual sample weights analyzed.
- The volatile soil samples were collected utilizing Encore samplers. The samples were placed in a freezer upon sample receipt until sample analysis.
- No positive results were reported in the aqueous trace volatile field duplicate pair, samples C0076/C0077.
- Results reported for soil field duplicate pair, samples C0067/C0068, were comparable except for toluene.

ATTACHMENTS

Appendix A – Glossary of Data Qualifier Codes

Appendix B – Data Summary Form(s)

Appendix C – Chain of Custody Records

Appendix D – Laboratory Case Narrative

Appendix E – Tentatively Identified Compounds

DCN: 41667M3

Appendix A

Glossary of Data Qualifiers

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

NO CODE = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

Q = No analytical result.

Appendix B

Data Summary Forms

Page 1 of 8

Number of Soil Samples : 9

Number of Water Samples : 0

KAP

[illegible]

DATA SUMMARY FORM: Volatiles

Page 2 of 8

Case #: 41667

SDG : C0065

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

KAP

Sample Number :		C0065	C0066		C0067		C0068		C0069		
Sampling Location :		SD01	SD02		SD03		SD04		SD05		
Field QC:					Field Dup. of C0068		Field Dup. of C0067				
Matrix :		Soil	Soil		Soil		Soil		Soil		
Units :		ug/Kg	ug/Kg		ug/Kg		ug/Kg		ug/Kg		
Date Sampled :		8/31/2011	8/31/2011		8/31/2011		8/31/2011		8/30/2011		
Time Sampled :		15:55	11:00		15:45		15:55		16:50		
%Moisture :		76	31		34		43		46		
Dilution Factor :		1.0	0.93		0.96		0.94		0.91		
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0										
Tetrachloroethene	5.0										
2-Hexanone	10										
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
Chlorobenzene	5.0										
Ethylbenzene	5.0										
o-Xylene	5.0										
m,p-Xylene	5.0										
Styrene	5.0										
Bromoform	5.0										
Isopropylbenzene	5.0										
1,1,2,2-Tetrachloroethane	5.0										
1,3-Dichlorobenzene	5.0										
1,4-Dichlorobenzene	5.0										
1,2-Dichlorobenzene	5.0										
1,2-Dibromo-3-chloropropane	5.0										
1,2,4-Trichlorobenzene	5.0										
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: $(CRQL * Dilution Factor) / [(100 - \%Moisture) / 100]$

Revised 09/99

Page 3 of 8

SDG : C0065

KISKIMERE GROUNDWATER WELL

KAP

[illegible]

DATA SUMMARY FORM: Volatiles

Page 4 of 8

Case #: 41667

SDG : C0065

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

KAP

Sample Number :		C0070	C0071		C0072		C0073				
Sampling Location :		SD06	SD07		SD08		SD09				
Field QC:											
Matrix :		Soil	Soil		Soil		Soil				
Units :		ug/Kg	ug/Kg		ug/Kg		ug/Kg				
Date Sampled :		8/31/2011	8/31/2011		8/30/2011		8/30/2011				
Time Sampled :		16:35	13:10		11:04		11:40				
%Moisture :		39	21		38		34				
Dilution Factor :		0.93	1.0		1.02		1.0				
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0										
Tetrachloroethene	5.0										
2-Hexanone	10										
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0										
Chlorobenzene	5.0										
Ethylbenzene	5.0										
o-Xylene	5.0										
m,p-Xylene	5.0										
Styrene	5.0										
Bromoform	5.0										
Isopropylbenzene	5.0										
1,1,2,2-Tetrachloroethane	5.0										
1,3-Dichlorobenzene	5.0										
1,4-Dichlorobenzene	5.0										
1,2-Dichlorobenzene	5.0										
1,2-Dibromo-3-chloropropane	5.0										
1,2,4-Trichlorobenzene	5.0										
1,2,3-Trichlorobenzene	5.0										

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: $(CRQL * Dilution Factor) / [(100 - \%Moisture) / 100]$

Revised 09/99

DATA SUMMARY FORM: Trace Volatiles

Page 5 of 8

Case #: 41667

SDG : C0076

Number of Soil Samples : 0

Site :

KISKIMERE GROUNDWATER WELL

Number of Water Samples : 6

Lab. :

KAP

Sample Number :		C0076	C0077		C0078		C0079		C0080		
Sampling Location :		SW03	SW04		SW05		SW06		SW07		
Field QC :		Field Dup. of C0077	Field Dup. of C0076								
Matrix :		Water	Water		Water		Water		Water		
Units :		ug/L	ug/L		ug/L		ug/L		ug/L		
Date Sampled :		8/31/2011	8/31/2011		8/30/2011		8/30/2011		8/31/2011		
Time Sampled :		15:10	15:20		16:50		11:30		13:10		
pH :		< 2	< 2		< 2		< 2		< 2		
Dilution Factor :		1.0	1.0		1.0		1.0		1.0		
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	0.50										
Chloromethane	0.50										
*Vinyl chloride	0.50										
Bromomethane	0.50										
Chloroethane	0.50										
Trichlorofluoromethane	0.50										
*1,1-Dichloroethene	0.50										
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50										
Acetone	5.0										
Carbon disulfide	0.50										
Methyl acetate	0.50										
*Methylene chloride	0.50									1.7	B
trans-1,2-Dichloroethene	0.50										
Methyl tert-butyl ether	0.50										
1,1-Dichloroethane	0.50										
cis-1,2-Dichloroethene	0.50										
*2-Butanone	5.0										
Bromochloromethane	0.50										
Chloroform	0.50									0.74	
*1,1,1-Trichloroethane	0.50										
Cyclohexane	0.50										
*Carbon tetrachloride	0.50										
*Benzene	0.50										
*1,2-Dichloroethane	0.50										
Trichloroethene	0.50										
Methylcyclohexane	0.50										
*1,2-Dichloropropane	0.50										
Bromodichloromethane	0.50										
cis-1,3-Dichloropropene	0.50										
4-Methyl-2-pentanone	5.0										
*Toluene	0.50									0.63	
trans-1,3-Dichloropropene	0.50										
1,1,2-Trichloroethane	0.50										

+ = Result reported from the diluted analysis. See dilution table in the case narrative.

DATA SUMMARY FORM: Trace Volatiles

Page 6 of 8

Case #: 41667

SDG : C0076

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

KAP

Sample Number :		C0076		C0077		C0078		C0079		C0080	
Sampling Location :		SW03		SW04		SW05		SW06		SW07	
Field QC :		Field Dup. of C0077		Field Dup. of C0076							
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		8/31/2011		8/31/2011		8/30/2011		8/30/2011		8/31/2011	
Time Sampled :		15:10		15:20		16:50		11:30		13:10	
pH :		< 2		< 2		< 2		< 2		< 2	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
*Tetrachloroethene	0.50										
2-Hexanone	5.0										
Dibromochloromethane	0.50										
1,2-Dibromoethane	0.50										
*Chlorobenzene	0.50										
*Ethylbenzene	0.50										
o-Xylene	0.50										
m,p-Xylene	0.50										
*Styrene	0.50										
Bromoform	0.50										
Isopropylbenzene	0.50										
1,1,2,2-Tetrachloroethane	0.50										UL
*1,3-Dichlorobenzene	0.50										
*1,4-Dichlorobenzene	0.50										
1,2-Dichlorobenzene	0.50										
1,2-Dibromo-3-chloropropane	0.50										UL
1,2,4-Trichlorobenzene	0.50										
1,2,3-Trichlorobenzene	0.50										

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

+ = Result reported from the diluted analysis. See dilution table in the case narrative.

DATA SUMMARY FORM: Trace Volatiles

Page 7 of 8

Case #: 41667

SDG : C0076

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

KAP

Sample Number :		C0083									
Sampling Location :		TB01									
Field QC :		Trip Blank									
Matrix :		Water									
Units :		ug/L									
Date Sampled :		8/30/2011									
Time Sampled :		08:10									
pH :		< 2									
Dilution Factor :		1.0									
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	0.50										
Chloromethane	0.50										
*Vinyl chloride	0.50										
Bromomethane	0.50										
Chloroethane	0.50										
Trichlorofluoromethane	0.50										
*1,1-Dichloroethene	0.50										
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50										
Acetone	5.0										
Carbon disulfide	0.50										
Methyl acetate	0.50										
*Methylene chloride	0.50	0.39	B								
trans-1,2-Dichloroethene	0.50										
Methyl tert-butyl ether	0.50										
1,1-Dichloroethane	0.50										
cis-1,2-Dichloroethene	0.50										
*2-Butanone	5.0										
Bromochloromethane	0.50										
Chloroform	0.50										
*1,1,1-Trichloroethane	0.50										
Cyclohexane	0.50										
*Carbon tetrachloride	0.50										
*Benzene	0.50										
*1,2-Dichloroethane	0.50										
Trichloroethene	0.50										
Methylcyclohexane	0.50										
*1,2-Dichloropropane	0.50										
Bromodichloromethane	0.50										
cis-1,3-Dichloropropene	0.50										
4-Methyl-2-pentanone	5.0										
*Toluene	0.50										
trans-1,3-Dichloropropene	0.50										
1,1,2-Trichloroethane	0.50										

+ = Result reported from the diluted analysis.

DATA SUMMARY FORM: Trace Volatiles

Page __8__ of __8__

Case #: 41667

SDG : C0076

Site :

KISKIMERE GROUNDWATER WELL

Lab. :

KAP

Sample Number :		C0083									
Sampling Location :		TB01									
Field QC :		Trip Blank									
Matrix :		Water									
Units :		ug/L									
Date Sampled :		8/30/2011									
Time Sampled :		08:10									
pH :		< 2									
Dilution Factor :		1.0									
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
*Tetrachloroethene	0.50										
2-Hexanone	5.0										
Dibromochloromethane	0.50										
1,2-Dibromoethane	0.50										
*Chlorobenzene	0.50										
*Ethylbenzene	0.50										
o-Xylene	0.50										
m,p-Xylene	0.50										
*Styrene	0.50										
Bromoform	0.50										
Isopropylbenzene	0.50										
1,1,2,2-Tetrachloroethane	0.50										
*1,3-Dichlorobenzene	0.50										
*1,4-Dichlorobenzene	0.50										
1,2-Dichlorobenzene	0.50										
1,2-Dibromo-3-chloropropane	0.50										
1,2,4-Trichlorobenzene	0.50										
1,2,3-Trichlorobenzene	0.50										

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

Appendix C

Chain of Custody (COC) Records



USEPA Contract Laboratory Program Organic Traffic Report & Chain of Custody Record

Case No: 41667
DAS No:

R

Region: 3		Date Shipped: 9/1/2011		Chain of Custody Record	
Project Code: CT5653		Carrier Name: FedEx		Sampler Signature: [Redacted]	
Account Code: 2011703N302DD2C03ZZQB00		Airbill: 8768 8339 7348		Received By: [Redacted]	
CERCLIS ID: PAN000306740		Shipped to: KAP Technologies		(Date / Time)	
Spill ID: ARL		Suite A2		2	
Site Name/State: Kiskimere GW Well Investigation/WV		The Woodlands TX 77380		3	
Project Leader: [Redacted]		(281) 367-0065		4	
Action: Site Evaluation					
Sampling Co: TechLaw, Inc.					

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C0065	Sediment/ MICHELLE DALLESSAND RO	L/G	VOA (21)	261 (Ice Only), 262 (Ice Only), 263 (Ice Only), 264 (Ice Only) (4)	SD01	S: 8/31/2011 15:55	MC0065	-
C0066	Sediment/ MICHELLE DALLESSAND RO	L/G	VOA (21)	265 (Ice Only), 266 (Ice Only), 267 (Ice Only), 268 (Ice Only) (4)	SD02	S: 8/31/2011 11:00	MC0066	-
C0067	Sediment/ John Elson	L/G	VOA (21)	269 (Ice Only), 270 (Ice Only), 271 (Ice Only), 272 (Ice Only) (4)	SD03	S: 8/31/2011 15:45	MC0067	Field Duplicate of SD04
C0068	Sediment/ John Elson	L/G	VOA (21)	273 (Ice Only), 274 (Ice Only), 275 (Ice Only), 276 (Ice Only) (4)	SD04	S: 8/31/2011 15:55	MC0068	Field Duplicate of SD03
C0069	Sediment/ MICHELLE DALLESSAND RO	L/G	VOA (21)	277 (Ice Only), 278 (Ice Only), 279 (Ice Only), 280 (Ice Only) (4)	SD05	S: 8/30/2011 16:50	MC0069	-
C0070	Sediment/ Dan Buckley	L/G	VOA (21)	281 (Ice Only), 282 (Ice Only), 283 (Ice Only), 284 (Ice Only) (4)	SD06	S: 8/31/2011 16:35	MC0070	Lab QC
C0071	Sediment/ MICHELLE DALLESSAND RO	L/G	VOA (21)	285 (Ice Only), 286 (Ice Only), 287 (Ice Only), 288 (Ice Only) (4)	SD07	S: 8/31/2011 13:10	MC0071	-
C0072	Sediment/ MICHELLE DALLESSAND RO	L/G	VOA (21)	289 (Ice Only), 290 (Ice Only), 291 (Ice Only), 292 (Ice Only) (4)	SD08	S: 8/30/2011 11:04	MC0072	-

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Chain of Custody Seal Number:
Analysis Key: TVOA = CLP Trace VOA, VOA = CLP TCL Volatiles	Concentration: L = Low, M = Low/Medium, H = High Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-043013577-090111-0004

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY

Case No: 41667
DAS No: R

Region: 3		Date Shipped: 9/1/2011		Chain of Custody Record	
Project Code: CT5653		Carrier Name: FedEx		Sample Signature: [Redacted]	
Account Code: 2011T03N302DD2C03ZZQB00		Airbill: 8768 8339 7348		Received By: [Redacted]	
CERCLIS ID: PAN000306740		Shipped to: KAP Technologies, 9391 Grogans Mill Rd Suite A2, The Woodlands TX 77380 (281) 367-0065		(Date / Time) 8/11/11 1900	
Spill ID: ARL					
Site Name/State: Kiskimere GW Well Investigation/WV					
Project Leader: [Redacted]					
Action: Site Evaluation					
Sampling Co: TechLaw, Inc.					

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNOVER	PRESERVATIVE/ Bottles	TAG No./	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C0073	Sediment/ MICHELLE DALLESSAND RO	L/G	VOA (21)	293 (Ice Only), 294 (Ice Only), 295 (Ice Only), 296 (Ice Only) (4)		SD09	S: 8/30/2011 11:40	MC0073	
C0082	Ground Water/ MICHELLE DALLESSAND RO	L/G	TVOA (21)	300 (HCL), 301 (HCL), 302 (HCL) (3)		TB02	S: 8/30/2011 8:15		Trip Blank

Shipment for Case Complete Y/N	Sample(s) to be used for laboratory QC:	Additional Sampler Signatures:	Chain of Custody Seal Number:
		[Redacted]	
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced?
TVOA = CLP Trace VOA	VOA = CLP TCL Volatiles		

TR Number: 3-043013577-090111-0004

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY



USEPA Contract Laboratory Program Organic Traffic Report & Chain of Custody Record

Case No: 41667
DAS No: R

Region: 3	Date Shipped: 9/1/2011	Carrier Name: FedEx	Shipped to: KAP Technologies 9391 Grogans Mill Rd Suite A2 The Woodlands TX 77380 (281) 367-0065
Project Code: CT5653	Airbill: 8768 8339 7359		
Account Code: 2011T03N302DD2C03ZZQB00			
CERCLIS ID: PAN00306740			
Spill ID: ARL			
Site Name/State: Kiskimere GW Well Investigation/WV			
Project Leader: [REDACTED]			
Action: Site Evaluation			
Sampling Co: TechLaw, Inc.			

Chain of Custody Record

Relinquished By	(Date/Time)	Received By	(Date/Time)
[REDACTED]	9/1/11 1900	[REDACTED]	
2			
3			
4			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C0076	Surface Water/ John Elson	L/G	TVOA (21)	360 (HCL), 361 (HCL), 362 (HCL) (3)	SW03	S: 8/31/2011 15:10	MC0076	Field Duplicate of SW04
C0077	Surface Water/ John Elson	L/G	TVOA (21)	363 (HCL), 364 (HCL), 365 (HCL) (3)	SW04	S: 8/31/2011 15:20	MC0077	Field Duplicate of SW03
C0078	Surface Water/ MICHELLE DALLESSAND RO	L/G	TVOA (21)	366 (HCL), 367 (HCL), 368 (HCL) (3)	SW05	S: 8/30/2011 16:50	MC0078	-
C0079	Surface Water/ MICHELLE DALLESSAND RO	L/G	TVOA (21)	369 (HCL), 370 (HCL), 371 (HCL) (3)	SW06	S: 8/30/2011 11:30	MC0079	-
C0080	Surface Water/ MICHELLE DALLESSAND RO	L/G	TVOA (21)	372 (HCL), 373 (HCL), 374 (HCL) (3)	SW07	S: 8/31/2011 13:10	MC0080	-
C0083	Ground Water/ MICHELLE DALLESSAND RO	L/G	TVOA (21)	375 (HCL), 376 (HCL), 377 (HCL) (3)	TB01	S: 8/30/2011 8:10		Trip Blank

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Chain of Custody Seal Number:
Analysis Key: TVOA = CLP Trace VOA	Concentration: L = Low, M = Low/Medium, H = High	Shipment Iced? _____

TR Number: 3-043013577-090111-0005

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY

U.S EPA Region III Analytical Request Form

Revision 11.09

Control#		CT5653		OASQA USE ONLY	
DAS#				RAS# 41667	
PES#				NSE#	
				Analytical TAT 21 days	

41667

Date: 08/10/11		Site Activity: Site Assessment	
Site Name: Kiskimere Groundwater Well Investigation		Street Address: intersection of Eisenhower and Main Streets	
City: Parks Township, Armstrong Co.		State: PA	Latitude: 40 degrees 37'11.24"
Program: Superfund		Longitude: -079 degrees 35'01.16"	
Site ID: 0306740		CERCLIS #: PAN000306740	
Spill ID: A3RL		Operable Unit:	
Site Specific QA Plan Submitted: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		Title: Sampling QA/QC Work Plan	
EPA Project Leader: Lisa Johnson		Phone#: 215-814-3314	Cell Phone #: NA
Request Preparer: [Redacted]		Phone#: 740-867-[Redacted]	Cell Phone #: 304-830-1442
Site Leader: [Redacted]		Phone#: 304-230-[Redacted]	Cell Phone #: 304-830-1444
Contractor: TechLaw, Inc.		EPA CO/PO: Denise T. Page/Karen Esposito	
#Samples 45	Matrix: Water	Parameter: ICP-MS TAL metals+Hg+U	Method: CLP ISM01.2 ICP-MS/ M.A. for U 34388
#Samples 48	Matrix: Water	Parameter: TCL Trace VOA	Method: CLP SOM01.2 34389
#Samples 7	Matrix: sediment	Parameter: ICP-AES TAL metals+Hg+U	Method: CLP ISM01.2 ICP-AES/ M.A. for U 34391
#Samples 7	Matrix: sediment	Parameter: TCL VOA	Method: CLP SOM01.2 34390
#Samples	Matrix:	Parameter:	Method:
#Samples	Matrix:	Parameter:	Method:
#Samples	Matrix:	Parameter:	Method:
#Samples	Matrix:	Parameter:	Method:
Ship Date From: August 30, 2011		Ship Date To: September 1, 2011	Inorg. Validation Level IM2
Unvalidated Data Requested: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		If Yes, TAT Needed: <input type="checkbox"/> 14days <input type="checkbox"/> 7days <input type="checkbox"/> 48hrs <input type="checkbox"/> 24hrs <input type="checkbox"/> Other (Specify) 21 days	
Validated Data Package Due: <input checked="" type="checkbox"/> 42 days <input type="checkbox"/> 30 days <input type="checkbox"/> 21days <input type="checkbox"/> 14 days <input type="checkbox"/> Other (Specify) 24/21			
Electronic Data Deliverables Required: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		(EDDs will be provided in Region 3 EDD Format)	
Special Instructions: See attached CLP TCL and TAL for analytes and CRQLs. Request CLP Modified Analysis (M.A.) for Uranium with 1 ug/l QL in water and ?? for sediment samples.			

Appendix D

Laboratory Case Narrative

Contract No. EPW11031

Case No. 41667

SDG No. C0065

SDG NARRATIVE

SAMPLE RECEIPT:

On 09/02/11 @ 10:30 A.M. - Received one cooler via FedEx with shipment numbers 876883397348. The cooler temperature was 3.3°C.

The cooler contained the following samples for VOA analyses.
The custody seals and the samples were intact.

EPA SAMPLE ID	pH	EPA SAMPLE ID	pH
C0065	NA	C0070	NA
C0066	NA	C0071	NA
C0067	NA	C0072	NA
C0068	NA	C0073	NA
C0069	NA		

No problems were encountered during sample receiving and login.

VOA SOIL SAMPLE:

This sample was analyzed on G-5973 GC/MS using a 30 meters long RTX-VMS column having a 0.25mm ID and 3µm film thickness. The trap used was OV-1/Tenax/Silica Gel (Tekmar #6 CAT #14-1755-003).

A 10 mL purge volume was used for all samples, blanks and standards. The concentrations of the standards and spikes were maintained at the levels required by the Statement of Work (SOW).

The sample was analyzed for Volatiles as per SOM 1.2 statement of work.

No problems were encountered during the sample analysis.

The formula used to calculate the Sample concentration:

LOW-MED-VOA SOIL SAMPLE:

$$\text{Concentration in ug/L} = \frac{(A_x) (I_s) (DF)}{(A_{is}) (RRF) (W_s)(D)}$$

Where,

A_x = Area of the characteristic ion (EICP) for the compound to be measured.

A_{is} = Area of the characteristic ion (EICP) for the internal standard.

Contract No. EPW11031	Case No. 41667	SDG No. C0065
-----------------------	----------------	---------------

SDG NARRATIVE

Is = Amount of internal standard added in ng.

RRF = Mean relative Response Factor from the initial calibration standard.

100 - % Moisture

D = -----

100

W_s = Weight of sample added to the purge tube, in g.

Manual Integrations:

The software did not pick-up the following compounds and these compounds were manually integrated and the EICP is enclosed in the data package.

C0065 - 1,4-Dioxane-d8
C0066 - 1,4-Dioxane-d8
C0067 - Chloroethane-d5
C0067 - 1,2-Dichloroethane-d4
C0067 - 1,4-Dioxane-d8
C0068 - 1,4-Dioxane-d8
C0069 - 1,4-Dioxane-d8
C0070 - 1,4-Dioxane-d8
C0071 - 1,4-Dioxane-d8
C0073 - 1,4-Dioxane-d8
VSTD0502K - 1,4-Dioxane-d8
VSTD0502K - Methyl acetate
VSTD0502K - 1,4-Dioxane
VSTD0252K - 1,4-Dioxane-d8
VSTD0252K - Methyl acetate
VSTD0252K - 1,4-Dioxane
VSTD0052K - 1,4-Dioxane-d8
VSTD0052K - 1,4-Dioxane
VSTD2.52K - 1,4-Dioxane-d8
VSTD2.52K - Dichlorodifluoromethane
VSTD2.52K - 1,4-Dioxane
VSTD1004E - 1,1-Dichloroethene-d2
VSTD1004E - 1,4-Dioxane-d4
VSTD1004E - 1,1-Dichloroethene
VSTD1004E - 1,4-Dioxane
VSTD0504E - 1,1-Dichloroethene-d2
VSTD0504E - 1,2-Dichloroethane-d4
VSTD0504E - 1,4-Dioxane-d4
VSTD0504E - Bromomethane
VSTD0504E - 1,1-Dichloroethene
VSTD0504E - 1,4-Dioxane
VSTD0504E - Toluene
VSTD0054E - 1,2-Dichloroethane-d4

Contract No. EPW11031	Case No. 41667	SDG No. C0065
------------------------------	-----------------------	----------------------

SDG NARRATIVE

VSTD0054E – 1,4-Dioxane-d4
VSTD0054E – 1,4-Dioxane
VSTD2.54E – 1,2-Dichloroethane-d4
VSTD2.54E – 1,4-Dioxane-d4
VSTD2.54E – trans-1,3-Dichloropropene
VSTD2.54E – Methyl acetate
VSTD254E – 1,4-Dioxane
VSTD0254E – 1,1,2,2-Tetrachloroethane-d2
VSTD0254E – Methyl acetate
VSTD0252W - 1,4-Dioxane
VSTD0252W - 1,4-Dioxane-d8
VSTD0252W -Methyl acetate
VSTD0252X - 1,4-Dioxane
VSTD0252X - 1,4-Dioxane-d8
VSTD0254E – 1,1,2,2-Tetrachloroethane-d2
VSTD0254E – Methyl acetate
VSTD0254F - 1,4-Dioxane-d8
VBLK2W - 1,4-Dioxane-d8
VBLK4E - 1,4-Dioxane-d8

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy sample data package and in the electronic data deliverable has been authorized by the laboratory manager or the manager's designee, as verified by the following signature:


Signature/Title

9/22/11
Date of Signature



Contract Laboratory Program

Sample Delivery Group (SDG) Cover Sheet

SDG Number C0065 Case Number 41667 Contract Number EPW11031
Lab Code KAP SDG Turnaround 21 DAY Delivery CLIN(s)

First Sample Received in SDG C0065 Last Sample Received in SDG C0073
First Sample Receipt Date 09/02/2011 Last Sample Receipt Date 09/02/2011

USEPA Sample Numbers in SDG (Listed in Numerical Order)

CLP Sample ID	Sample Type	Requested Analytical CLIN(s)/SubCLIN(s)	Solicitation Number	MA Number(s)
1 C0065	SOIL	VOA		
2 C0066	SOIL	VOA		
3 C0067	SOIL	VOA		
4 C0068	SOIL	VOA		
5 C0069	SOIL	VOA		
6 C0070	SOIL	VOA		
7 C0071	SOIL	VOA		
8 C0072	SOIL	VOA		
9 C0073	SOIL	VOA		
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Note: There are a maximum of 20 **field** samples (excluding PE samples) in an SDG. Attach TR/COC Records to this form in alphanumeric order (the order listed above on this form).

Signature

Date

9/7/2011

9391 Grogans Mill Rd., Suite A2
The Woodlands, TX 77380

RUNLOG – PERCENT MOISTURE

TIME OUT: 13:30 TEMP OUT: 105°

Analyst:

319A
0047

Contract No. EPW11031

Case No. 41667

SDG No. C0076

SDG NARRATIVE

SAMPLE RECEIPT:

On 09/02/11 @ 10:30 A.M. - Received one cooler via FedEx with shipment number 876883397359. The cooler temperature was 4.1⁰C.

The package contained the following samples for TVOA analyses.
The custody seals and the samples were intact.

EPA SAMPLE ID	pH	EPA SAMPLE ID	pH
C0076	<2	C0079	<2
C0077	<2	C0080	<2
C0078	<2	C0083	<2

No problems were encountered during sample receiving and login.

TRACE VOLATILES:

All samples were analyzed on G-5973 GC/MS using a 30-meter long RTX-VMS column having a 0.25mm ID and 3µm film thickness. The trap used was OV-1/Tenax/Silica Gel (Tekmar #6 CAT #14-1755-003).

A 25 mL purge volume was used for all samples, blanks and standards. The concentrations of the standards and spikes were maintained at the levels required by the Statement of Work (SOW).

These samples were analyzed for Trace Volatiles as per SOM 1.2 statement of work.

No problems were encountered during the sample analyses.

The formula used to calculate the Sample concentration:

$$\text{Concentration in ug/L} = \frac{(A_x) (I_s) (DF)}{(A_{is}) (RRF) (V_o)}$$

Where,

A_x = Area of the characteristic ion (EICP) for the compound to be measured.

A_{is} = Area of the characteristic ion (EICP) for the internal standard.

I_s = Amount of internal standard added in ng.

RRF = Mean relative Response Factor from the initial calibration standard.

V_o = Total Volume of water purged, in ml.

DF = Dilution Factor.

Contract No. EPW11031

Case No. 41667

SDG No. C0076

SDG NARRATIVE

Manual Integrations:

The software did not pick-up the following compounds and these compounds were manually integrated and the EICP is enclosed in the data package.

C0077 – trans-1,3-Dichloropropene-d3
C0079 – Chloroethane-d5
C0080 – Toulene
C0083 – Chloroethane-d5
VSTD0102G – Chloromethane
VSTD0052G – Bromomethane
VSTD0012G – Chloroethane
VSTD0012G – Bromomethane
VSTD0.52G – Chloromethane
VSTD0.52G – 1,1-Dichloroethene
VSTD0.52G – Acetone
VSTD0.52G – Methyl acetate
VSTD0.52G – 1,2-Dichloroethane
VSTD0052R – Chloroethane
VSTD0052R – 1,2-Dibromoethane
VSTD0053H – Chloromethane
VSTD0053H – Methyl acetate
VSTD0053Q – Chloroethane
VSTD0053Q – Acetone
VSTD0053Q – Methyl acetate
VSTD0053R – 1,2-Dibromom-3-chloropropane
VBLK3G – 1,1-Dichloroethene-d2

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy sample data package and in the electronic data deliverable has been authorized by the laboratory manager or the manager's designee, as verified by the following signature:


Signature/Title

9/20/11
Date of Signature



Contract Laboratory Program

Sample Delivery Group (SDG) Cover Sheet

SDG Number C0076 Case Number 41667 Contract Number EPW11031
Lab Code KAP SDG Turnaround 21 DAY Delivery CLIN(s)

First Sample Received in SDG C0076 Last Sample Received in SDG C0083
First Sample Receipt Date 09/02/2011 Last Sample Receipt Date 09/02/2011

USEPA Sample Numbers in SDG (Listed in Numerical Order)

CLP Sample ID	Sample Type	Requested Analytical CLIN(s)/SubCLIN(s)	Solicitation Number	MA Number(s)
1 C0076	WATER	TVOA		
2 C0077	WATER	TVOA		
3 C0078	WATER	TVOA		
4 C0079	WATER	TVOA		
5 C0080	WATER	TVOA		
6 C0083	WATER	TVOA		
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Note: There are a maximum of 20 **field** samples (excluding PE samples) in an SDG. Attach TR/COC Records to this form in alphanumeric order (the order listed above on this form).

Signature _____

Date _____

9/7/2014

0003

February 2010

Appendix E

TIC Form Is

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C0067

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0065

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: S-4308.03

Sample wt/vol: 5.200 (g/mL) G

Lab File ID: G15750

Level: (TRACE or LOW/MED) LOW

Date Received: 09/02/2011

% Moisture: not dec. 34

Date Analyzed: 09/08/2011

GC Column: RTX-VMS

ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.78	43	J 50
02		Unknown-02	10.78	8.1	J
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

SOM01.2 (6/2007)

DJ
10/21/11

0045

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0071

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0065

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: S-4308.07

Sample wt/vol: 5.000 (g/mL) G

Lab File ID: G15754

Level: (TRACE or LOW/MED) LOW

Date Received: 09/02/2011

% Moisture: not dec. 21

Date Analyzed: 09/08/2011

GC Column: RTX-VMS

ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.79	44	J <i>SCB</i>
02	000079-92-5	Camphene	16.36	11	NJ
03		Unknown-02	17.72	3.4	J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

D/ 10/11 SOM01.2 (6/2007)

0100

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0072

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0065

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: S-4308.08

Sample wt/vol: 4.900 (g/mL) G

Lab File ID: G15756

Level: (TRACE or LOW/MED) LOW

Date Received: 09/02/2011

% Moisture: not dec. 38

Date Analyzed: 09/08/2011

GC Column: RTX-VMS

ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

Purge Volume: 10.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	10.79	57	I
02	007785-26-4	1S-.alpha.-Pinene	15.56	11	NJ
03	000079-92-5	Camphene	16.37	26	NJ
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

SOM01.2 (6/2007)

0115

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C0076

Lab Name: KAP TECHNOLOGIES, INC. Contract: EPW11031
Lab Code: KAP Case No.: 41667 Mod. Ref No.: _____ SDG No.: C0076
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: S-4307.01
Sample wt/vol: 25.00 (g/mL) ML Lab File ID: G15848
Level: (TRACE or LOW/MED) TRACE Date Received: 09/02/2011
% Moisture: not dec. _____ Date Analyzed: 09/11/2011
GC Column: RTX-VMS ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)
CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000420-56-4	Trimethylsilyl fluoride	2.34	1.5	NJ
02		Unknown-01	6.48	0.80	J
03		Unknown-02	9.82	5.7	J TS
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

SOM01.2 (6/2007)

0019

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0077

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0076

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4307.02

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15849

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/11/2011

GC Column: RTX-VMS ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000420-56-4	Trimethylsilyl fluoride	2.34	0.53	NJ
02		Unknown-01	9.81	5.5	J B
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

SOM01.2 (6/2007)

0036

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0078*

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____

SDG No.: C0076

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4307.03

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15850

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/11/2011

GC Column: RTX-VMS

ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	4.20	0.65	J
02		Unknown-02	9.81	3.8	J MB
03		Unknown-03	9.82	1.4	J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

SOM01.2 (6/2007)

DJ
10/21/11

0051

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0079

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0076

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4307.04

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15851

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/11/2011

GC Column: RTX-VMS ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	000420-56-4	Trimethylsilyl fluoride	2.34	0.63	NJ
02		Unknown-01	9.82	5.4	J 16
03		Unknown-02	12.21	0.57	J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

SOM01.2 (6/2007)

DJ
10/21/14

0069

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0080

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____ SDG No.: C0076

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4307.05

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15852

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/11/2011

GC Column: RTX-VMS ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	2.61	1.2	J
02		Unknown-02	3.07	1.1	J
03		Unknown-03	9.81	5.1	J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

SOM01.2 (6/2007)

0088

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

C0083

Lab Name: KAP TECHNOLOGIES, INC.

Contract: EPW11031

Lab Code: KAP

Case No.: 41667

Mod. Ref No.: _____

SDG No.: C0076

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: S-4307.06

Sample wt/vol: 25.00 (g/mL) ML

Lab File ID: G15702

Level: (TRACE or LOW/MED) TRACE

Date Received: 09/02/2011

% Moisture: not dec. _____

Date Analyzed: 09/07/2011

GC Column: RTX-VMS

ID: 0.25 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

Purge Volume: 25.0 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	2.62	0.58	J
02		Unknown-02	9.81	5.6	J SB
03		Unknown-03	12.21	0.98	J
04		Unknown-04	15.71	0.93	J
05	000535-77-3	Benzene, 1-methyl-3-(1-methyl	16.20	0.68	NJ
06	000488-23-3	Benzene, 1,2,3,4-tetramethyl-	17.06	0.78	NJ
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796 ¹	Total Alkanes	N/A		

¹ EPA-designated Registry Number.

SOM01.2 (6/2007)

0108

APPENDIX G:
GROUNDWATER SAMPLE RESULTS

Kiskimere Groundwater Well Investigation Site
Data Summary Key

[MCL = Maximum Contaminant Level - National Primary Drinking Water Regulations](#)

[PA ACT 2 = Pennsylvania Act 2 Residential Groundwater and Soil Standards](#)

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

µg/kg = micrograms per kilogram

100 Exceeds MCL

100 Exceeds PA ACT 2 Regulations

100 Exceeds MCL and PA ACT 2 Regulations

100 Concentration is elevated when compared to background sample

NA = No Action Level

N/A = Not Analyzed

ND = Not detected at or below the quantitation limit

B = Not detected substantially above the level reported in laboratory or field blank

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte Present. Reported value may be biased high. Actual value is expected to be lower

L = Analyte Present. Reported value may be biased low. Actual value is expected to be lower

UL = Not detected, quantitation limit is probably higher.

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

* National Secondary Drinking Water Regulations (Secondary MCL) or Secondary PA ACT 2 Residential Groundwater Standards

(+) Result reported from the diluted analysis

CRQL = Contract Required Quantitation Limit

SQL = Sampling Quantitation Limit

Notes:

Only analytes that were detected are included in media specific result tables.

SQLs are not adjusted for qualified sample results.

Radio Chemistry results report activity only; uncertainty is not reported.

Percent moisture or percent solid results used in SQL calculation were reported on data validation report data summary forms.

Kiskimere Groundwater Well Investigation Site
Groundwater Sample Results

Parameter/Method	4/2012 Tapwater RSL (MCL)	MCL	PA ACT 2	Background Sample GW04	GW01	Qualifier	GW02	Qualifier	GW03	Qualifier	GW07	Qualifier
CLP TAL Metals + Mercury (ISM01.2) (µg/L or µg/kg)												
Aluminum	16000	NA	200*	SQL = 200	ND		ND		ND		ND	
Calcium	x	NA	NA	17,400	10,600		9,770		33,100		13,300	
Iron	11000	NA	300*	298	ND		ND		812		59.5	B
Magnesium	x	NA	NA	6,040	3,010	J	7,260		7,470		6,810	
Mercury	0.63	2	2	SQL = 0.2	ND		ND		ND		ND	
Potassium	x	NA	NA	SQL = 5,000	ND		ND		ND		2,890	J
Sodium	x	NA	NA	31,100	4,080	J	1,890	J	4,960	J	2,790	J
Arsenic	0.045	10	10	SQL = 2	ND		ND		ND		ND	
Barium	2900	2,000	2,000	81.7	42.6		80.6		154		72.2	
Chromium	x	100	100	1.6 J	1.3	J	ND		2.6		ND	
Cobalt	x	NA	11	SQL = 1	ND		ND		1.1		ND	
Copper	620	1,300	1,000	.93J	34.1		1.4	J	17.2		60.2	
Lead	x	15	5	SQL = 1	2.2		ND		0.84	J	1.7	
Manganese	320	50*	300	8.9J	4.1	J	2.7	J	305	J	10.6	J
Nickel	300	NA	100	.83J	4.5		9.7		0.83		12.6	
Silver	71	100	100	SQL = 1	ND		ND		ND		ND	
Uranium	47	30	NA	SQL = 5	ND		ND		ND		ND	
Zinc	4700	5,000*	2,000	1.4 J	28.4		6.6		27.7		44.6	

Kiskimere Groundwater Well Investigation Site
Groundwater Sample Results

Parameter/Method	4/2012 Tapwater RSL (MCL)	MCL	PA ACT 2	Background Sample GW04	GW01	Qualifier	GW02	Qualifier	GW03	Qualifier	GW07	Qualifier
CLP TCL Organics (SOM01.2) (µg/L or µg/kg)												
Acetone	12000	NA	33,000	SQL = 5	ND		ND		ND		ND	
2-Butanone	x	NA	NA	SQL = 5	ND		ND		ND		ND	
Chlorobenzene	72	100	100	SQL = 0.5	ND		ND		ND		ND	
cis-1,3-Dichloropropene	0.41	NA	NA	SQL = 0.5	ND		ND		ND		ND	
trans-1,3-Dichloropropene	0.41	NA	NA	SQL = 0.5	ND		ND		ND		ND	
1,1,2-Trichloroethane	0.24	NA	5	SQL = 0.5	ND		ND		ND		ND	
Methylene Chloride	99	5	30	SQL = 0.5	ND		0.27	B	ND		ND	
Tetrachloroethene	x	5	5	SQL = 0.5	ND		ND		ND		ND	
1,1,2,2-Tetrachloroethane	0.066	NA	0.84	SQL = 0.5	ND		ND		ND		ND	
1,3-Dichlorobenzene	x	NA	600	SQL = 0.5	ND		ND		ND		ND	
1,4-Dichlorobenzene	0.42	NA	NA	SQL = 0.5	ND		ND		ND		ND	
1,2-Dichlorobenzene	280	NA	600	SQL = 0.5	ND		ND		ND		ND	
1,2-Dibromo-3-chloropropane	0.00032	0.2	0.2	SQL = 0.5	ND		ND		ND		ND	
1,2,4-Trichlorobenzene	0.99	70	70	SQL = 0.5	ND		ND		ND		ND	
1,2,3-Trichlorobenzene	52	NA	NA	SQL = 0.5	ND		ND		ND		ND	
Toluene	860	1,000	1,000	SQL = 0.5	ND		ND		0.56	B	ND	

Kiskimere Groundwater Well Investigation Site
Groundwater Sample Results

Parameter/Method	4/2012 Tapwater RSL (MCL)	MCL	PA ACT 2	GW8S	Qualifier	GW8D	Qualifier	GW09	Qualifier	GW10	Qualifier	GW14	Qualifier
CLP TAL Metals + Mercury (ISM01.2) (µg/L or µg/kg)													
Aluminum	16000	NA	200*	ND		ND		ND		ND		ND	
Calcium	x	NA	NA	16,400		17,400		47,300		13,500		38,100	
Iron	11000	NA	300*	<u>1,190</u>		76.3	B	ND		<u>2,350</u>		33.8	B
Magnesium	x	NA	NA	4,080	J	6,000		9,920		6,900		8,610	
Mercury	0.63	2	2	ND		ND		ND		ND		ND	
Potassium	x	NA	NA	2,960	J	ND		<u>9,760</u>		ND		ND	
Sodium	x	NA	NA	1,850	J	14,600		41,200		20,700		2,010	J
Arsenic	0.045	10	10	ND		ND		0.49	J	ND		ND	
Barium	2900	2,000	2,000	<u>57.2</u>		<u>284</u>		<u>49.8</u>		<u>68.1</u>		<u>66.5</u>	
Chromium	x	100	100	1.5	J	1.1	J	1.7	J	1.5	J	2.2	
Cobalt	x	NA	11	ND		ND		ND		ND		ND	
Copper	620	1,300	1,000	<u>24.1</u>		<u>55</u>		<u>23.0</u>		<u>240</u>		<u>11.6</u>	
Lead	x	15	5	<u>5.1</u>		<u>9.6</u>		<u>2.5</u>		<u>3.9</u>		0.49	J
Manganese	320	50*	300	<u>28.7</u>	J	30.9	J	2.3	J	58.4	<u>J</u>	0.95	J
Nickel	300	NA	100	<u>5.6</u>		0.72	J	<u>8.7</u>		<u>5.6</u>		1.1	
Silver	71	100	100	ND		ND		0.39	J	ND		ND	
Uranium	47	30	NA	ND		ND		ND		ND		ND	
Zinc	4700	5,000*	2,000	<u>16.1</u>		<u>95.9</u>		<u>59.7</u>		<u>173</u>		<u>16</u>	

Kiskimere Groundwater Well Investigation Site
Groundwater Sample Results

Parameter/Method	4/2012 Tapwater RSL (MCL)	MCL	PA ACT 2	GW8S	Qualifier	GW8D	Qualifier	GW09	Qualifier	GW10	Qualifier	GW14	Qualifier
CLP TCL Organics (SOM01.2) (µg/L or µg/kg)													
Acetone	12000	NA	33,000	ND		<u>13</u>	L	ND		ND		ND	
2-Butanone	x	NA	NA	ND		5	UL	ND		ND		ND	
Chlorobenzene	72	100	100	ND		ND		ND		ND		ND	
cis-1,3-Dichloropropene	0.41	NA	NA	ND		ND		ND		ND		ND	
trans-1,3-Dichloropropene	0.41	NA	NA	ND		ND		ND		ND		ND	
1,1,2-Trichloroethane	0.24	NA	5	ND		ND		ND		ND		ND	
Methylene Chloride	99	5	30	ND		<u>0.55</u>		ND		ND		ND	
Tetrachloroethene	x	5	5	<u>2.7</u>		ND		ND		ND		ND	
1,1,2,2-Tetrachloroethane	0.066	NA	0.84	ND		ND		ND		ND		0.50	UL
1,3-Dichlorobenzene	x	NA	600	ND		ND		ND		ND		ND	
1,4-Dichlorobenzene	0.42	NA	NA	ND		ND		ND		ND		ND	
1,2-Dichlorobenzene	280	NA	600	ND		ND		ND		ND		ND	
1,2-Dibromo-3-chloropropane	0.00032	0.2	0.2	ND		ND		ND		ND		0.50	UL
1,2,4-Trichlorobenzene	0.99	70	70	ND		ND		ND		ND		ND	
1,2,3-Trichlorobenzene	52	NA	NA	ND		ND		ND		ND		ND	
Toluene	860	1,000	1,000	ND		ND		ND		ND		ND	

Kiskimere Groundwater Well Investigation Site
Groundwater Sample Results

Parameter/Method	4/2012 Tapwater RSL (MCL)	MCL	PA ACT 2	GW15 Dup. of GW27	Qualifier	GW24	Qualifier	GW26- Dup. of DW28	Qualifier	GW27- Dup. of DW15	Qualifier	GW28- Dup. of DW26	Qualifier
CLP TAL Metals + Mercury (ISM01.2) (µg/L or µg/kg)													
Aluminum	16000	NA	200*	ND		ND		ND		ND		ND	
Calcium	x	NA	NA	43300		7,540		47,800		43,000		46,400	
Iron	11000	NA	300*	ND		ND		ND		ND		ND	
Magnesium	x	NA	NA	8250		5,630		10,900		8,150		10,600	
Mercury	0.63	2	2	ND		ND		ND		ND		ND	
Potassium	x	NA	NA	ND		ND		ND		ND		ND	
Sodium	x	NA	NA	4650	J	3,510	J	5,380		4,550	J	5,180	
Arsenic	0.045	10	10	ND		ND		ND		ND		ND	
Barium	2900	2,000	2,000	<u>251</u>		35.6		<u>65.9</u>		253		66.6	
Chromium	x	100	100	2.7		1.5	J	2.4		2.6		2.2	
Cobalt	x	NA	11	ND		ND		ND		ND		ND	
Copper	620	1,300	1,000	<u>4.9</u>		<u>86.7</u>		<u>8.0</u>		<u>5.4</u>		<u>14.4</u>	
Lead	x	15	5	ND		<u>3.5</u>		<u>1.1</u>		ND		<u>1.3</u>	
Manganese	320	50*	300	0.93	J	17.2	J	1.7	J	1.1	J	2.7	J
Nickel	300	NA	100	ND		<u>9.8</u>		ND		ND		ND	
Silver	71	100	100	ND		ND		ND		ND		ND	
Uranium	47	30	NA	ND		ND		0.85	J	ND		0.81	J
Zinc	4700	5,000*	2,000	<u>20.3</u>		<u>255</u>		<u>2.5</u>		<u>19.3</u>		2.0	J

Kiskimere Groundwater Well Investigation Site
Groundwater Sample Results

Parameter/Method	4/2012 Tapwater RSL (MCL)	MCL	PA ACT 2	GW15 Dup. of GW27	Qualifier	GW24	Qualifier	GW26- Dup. of DW28	Qualifier	GW27- Dup. of DW15	Qualifier	GW28- Dup. of DW26	Qualifier
CLP TCL Organics (SOM01.2) (µg/L or µg/kg)													
Acetone	12000	NA	33,000	ND		ND		ND		ND		ND	
2-Butanone	x	NA	NA	ND		ND		ND		ND		ND	
Chlorobenzene	72	100	100	ND		0.50	UL	ND		ND		ND	
cis-1,3-Dichloropropene	0.41	NA	NA	ND		0.50	UL	ND		ND		ND	
trans-1,3-Dichloropropene	0.41	NA	NA	ND		0.50	UL	ND		ND		ND	
1,1,2-Trichloroethane	0.24	NA	5	ND		0.50	UL	ND		ND		ND	
Methylene Chloride	99	5	30	ND		ND		ND		ND		ND	
Tetrachloroethene	x	5	5	ND		ND		ND		ND		ND	
1,1,2,2-Tetrachloroethane	0.066	NA	0.84	ND		0.50	UL	ND		ND		0.50	UL
1,3-Dichlorobenzene	x	NA	600	ND		0.50	UL	ND		ND		ND	
1,4-Dichlorobenzene	0.42	NA	NA	ND		0.50	UL	ND		ND		ND	
1,2-Dichlorobenzene	280	NA	600	ND		0.50	UL	ND		ND		ND	
1,2-Dibromo-3-chloropropane	0.00032	0.2	0.2	ND		0.50	UL	ND		ND		0.50	UL
1,2,4-Trichlorobenzene	0.99	70	70	ND		0.50	UL	ND		ND		ND	
1,2,3-Trichlorobenzene	52	NA	NA	ND		0.50	UL	ND		ND		ND	
Toluene	860	1,000	1,000	ND		ND		ND		ND		ND	

Kiskimere Groundwater Well Investigation Site
Groundwater Sample Results

Parameter/Method	MCL	PA ACT 2	Background Sample GW04	GW01	GW02	GW03	GW07	GW08D	GW8S
Radiochemistry									
Gross Alpha (pCi/L)	15 pCi/L	15 pCi/L	0.5	<u>1</u>	0.2	0.4	0	0.2	0.2
Gross Beta (pCi/L)	50 pCi/L	50 pCi/L	2.6	1.5	1.9	2	1.7	1.7	<u>4.2</u>
Radium 228 (pCi/L)	5 pCi/L	5 pCi/L	0.31	<u>0.86</u>	<u>0.81</u>	<u>0.79</u>	<u>0.56</u>	0.16	0.15
Radium 226 (pCi/L)	5 pCi/L	5 pCi/L	0.054	<u>0.103</u>	<u>0.082</u>	<u>0.09</u>	<u>0.15</u>	<u>0.2</u>	<u>0.14</u>
Tl208 (pCi/L)	.5 µg/L	2 µg/L						2.5	
Pb212 (pCi/L)	15 µg/L	5 µg/L					4	3.6	
Gamma Spectroscopy									
Ba140 (pCi/L)	2000 µg/L	2000 µg/L	ND	ND	ND	ND	ND	ND	ND
Co60 (pCi/L)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cs137 (pCi/L)	ND	ND	ND	ND	ND	ND	ND	ND	ND
I131 (pCi/L)	ND	ND	ND	ND	ND	ND	ND	ND	ND
K40 (pCi/L)			ND	ND	ND	ND	ND	ND	ND
Ra226 (pCi/L)	5 pCi/L	5 pCi/L	ND	ND	ND	ND	ND	ND	ND
Ra228 (pCi/L)	5 pCi/L	5 pCi/L	ND	ND	ND	ND	ND	ND	ND

Kiskimere Groundwater Well Investigation Site
Groundwater Sample Results

Parameter/Method	GW09	GW10	GW14	GW15-Dup. of GW27	GW24	GW26-Dup. of GW28	GW27-Dup. of GW15	GW28-Dup. of GW26
Radiochemistry								
Gross Alpha (pCi/L)	-0.5	-0.2	<u>1.1</u>	0.1	<u>0.7</u>	<u>2</u>	0	0.5
Gross Beta (pCi/L)	<u>11</u>	0.8	<u>2.9</u>	1.95	2.15	<u>4.1</u>	1.3	2.1
Radium 228 (pCi/L)	<u>0.58</u>	<u>0.32</u>	0.22	<u>0.63</u>	<u>0.68</u>	<u>0.49</u>	<u>0.49</u>	<u>0.37</u>
Radium 226 (pCi/L)	<u>0.18</u>	<u>0.088</u>	<u>0.103</u>	<u>0.3</u>	<u>0.1</u>	<u>0.16</u>	<u>0.22</u>	<u>0.15</u>
Tl208 (pCi/L)								
Pb212 (pCi/L)								
Gamma Spectroscopy								
Ba140 (pCi/L)	ND	ND	ND	ND	ND	ND	ND	ND
Co60 (pCi/L)	ND	ND	ND	ND	ND	ND	ND	ND
Cs137 (pCi/L)	ND	ND	ND	ND	ND	ND	ND	ND
I131 (pCi/L)	ND	ND	ND	ND	ND	ND	ND	ND
K40 (pCi/L)	37.00	ND	ND	ND	ND	ND	30	ND
Ra226 (pCi/L)	ND	ND	ND	ND	ND	ND	ND	ND
Ra228 (pCi/L)	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX H:
SURFACE WATER SAMPLE RESULTS

Kiskimere Groundwater Well Investigation Site
Data Summary Key

[MCL = Maximum Contaminant Level - National Primary Drinking Water Regulations](#)

[PA ACT 2 = Pennsylvania Act 2 Residential Groundwater and Soil Standards](#)

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

µg/kg = micrograms per kilogram

100 Exceeds MCL

100 Exceeds PA ACT 2 Regulations

100 Exceeds MCL and PA ACT 2 Regulations

100 Concentration is elevated when compared to background sample

NA = No Action Level

N/A = Not Analyzed

ND = Not detected at or below the quantitation limit

B = Not detected substantially above the level reported in laboratory or field blank

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte Present. Reported value may be biased high. Actual value is expected to be lower

L = Analyte Present. Reported value may be biased low. Actual value is expected to be lower

UL = Not detected, quantitation limit is probably higher.

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

* National Secondary Drinking Water Regulations (Secondary MCL) or Secondary PA ACT 2 Residential Groundwater Standards

(+) Result reported from the diluted analysis

CRQL = Contract Required Quantitation Limit

SQL = Sampling Quantitation Limit

Notes:

Only analytes that were detected are included in media specific result tables.

SQLs are not adjusted for qualified sample results.

Radio Chemistry results report activity only; uncertainty is not reported.

Percent moisture or percent solid results used in SQL calculation were reported on data validation report data summary forms.

**Kiskimere Groundwater Well Investigation Site
Surface Water Sample Results**

4/2012 Tapwater RSL (MCL)	4/2012 Tapwater RSL	MCL	PA ACT 2	Background Sample SW01	Qualifier	SW02	Qualifier	SW03- Dup. of SW04	Qualifier
CLP TAL Metals + Mercury (ISM01.2) (µg/L or µg/kg)									
Aluminum	16000	NA	200*	98.7 J	J	75.6	J	92.2	J
Calcium	x	NA	NA	60,100		60800		61,400	
Iron	11000	NA	300*	256		205	B	223	
Magnesium	x	NA	NA	18,100		18400		18,500	
Mercury	0.63	2	2	SQL = 0.2		0.2	U	ND	
Potassium	x	NA	NA	3,200 J	J	3070	J	3,160	J
Sodium	x	NA	NA	41,100		41200		41,600	
Arsenic	0.045	10	10	SQL = 1		1	U	ND	
Barium	2900	2,000	2,000	53		53.9		54.1	
Beryllium	16	4	4	SQL = 1		1	U	ND	
Chromium	x	100	100	SQL = 2		0.78	J	ND	
Cobalt	x	NA	11	0.56	J	0.41	J	0.45	J
Copper	620	1,300	1,000	SQL = 2		2	U	ND	
Manganese	320	50*	300	80.5	J	55.8		60.5	J
Nickel	300	NA	100	3.2		3.2		3.2	
Thallium	0.16	2	2	SQL = 1		1	U	ND	
Uranium	47	30	NA	SQL = 1		1	U	ND	
Zinc	4700	5,000*	2,000	2.2		2		2.1	
CLP TCL Organics (SOM01.2) (µg/L or µg/kg)									
Methylene Chloride	99	5	30	SQL = 5		ND		ND	
Chloroform	0.19	80	80	SQL = 5		ND		ND	
1,1,2,2-Tetrachloroethane	0.066	NA	70	SQL = 5		ND		ND	
1,2-Dibromo-3-chloropropane	0.00032	0.2	0.2	SQL = 5		ND		ND	
Toluene	8600	1,000	1,000	SQL = 5		ND		ND	

**Kiskimere Groundwater Well Investigation Site
Surface Water Sample Results**

4/2012 Tapwater RSL (MCL)	MCL	PA ACT 2	SW05	Qualifier	SW06	Qualifier	SW07	Qualifier
CLP TAL Metals + Mercury (ISM01.2) (µg/L or µg/kg)								
Aluminum	NA	200*	<u>99.3</u>	J	<u>8,930</u>		200	U
Calcium	NA	NA	57200		43,900		25700	
Iron	NA	300*	<u>533</u>		<u>4,910</u>		112	
Magnesium	NA	NA	17200		<u>19,200</u>		7050	
Mercury	2	2	0.2	U	0	U	0.2	U
Potassium	NA	NA	2940	J	2,830	J	1970	J
Sodium	NA	NA	38800		<u>62,500</u>		34900	
Arsenic	10	10	0.48	J	0.73	J	1	U
Barium	2,000	2,000	51.6		13.9		41.2	
Beryllium	4	4	1	U	<u>3.9</u>		1	U
Chromium	100	100	0.81	J	1.5	J	1.2	J
Cobalt	NA	11	0.56	J	<u>56.4</u>		1	U
Copper	1,300	1,000	0.92	J	<u>5.0</u>		2	U
Manganese	50*	300	<u>81.3</u>		<u>947</u>	D	22.9	
Nickel	NA	100	<u>3.5</u>		<u>145</u>		0.58	J
Thallium	2	2	1	U	0.40	J	1	U
Uranium	30	NA	1	U	1	U	1	U
Zinc	5,000*	2,000	<u>3.2</u>		<u>214</u>		2	U
CLP TCL Organics (SOM01.2) (µg/L or µg/kg)								
Methylene Chloride	5	30	ND		ND		1.7	B
Chloroform	80	80	ND		ND		0.74	
1,1,2,2-Tetrachloroethane	NA	70	ND		ND		0.5	UL
1,2-Dibromo-3-chloropropane	0.2	0.2	ND		ND		<u>0.5</u>	UL
Toluene	1,000	1,000	ND		ND		0.63	

Kiskimere Groundwater Well Investigation Results
Surface Water Results

Parameter/Method	MCL	PA ACT 2	Background Sample SW01	SW02	SW03-Dup. of SW04	SW04-Dup. of SW03	SW05	SW06	SW07
Radiochemistry									
Radium 226 (pCi/L)	5 pCi/L	5 pCi/L	0.075	-0.006	<u>0.088</u>	<u>0.13</u>	0.011	0.043	0.039
Radium 228 (pCi/L)	5 pCi/L	5 pCi/L	0.09	0.41	0.76	0.6	0.27	0.85	0.31
Gross Alpha (pCi/L)	15 pCi/L	15 pCi/L	4.3	-1.2	<u>5</u>	0.3	0.4	0.8	0.5
Gross Beta (pCi/L)	50 pCi/L	50 pCi/L	0.9	-0.5	<u>4.8</u>	<u>2.6</u>	<u>3.9</u>	<u>5.9</u>	<u>1.7</u>
Gamma Spectroscopy									
Ba140 (pCi/L)	2000 µg/L	2000 µg/L	ND	ND	ND	ND	ND	ND	ND
Co60 (pCi/L)	N/A	N/A	ND	ND	ND	ND	ND	ND	ND
Cs137 (pCi/L)	N/A	N/A	ND	ND	ND	ND	ND	ND	ND
I131 (pCi/L)	N/A	N/A	ND	ND	ND	ND	ND	ND	ND
K40 (pCi/L)	N/A	N/A	ND	ND	ND	ND	ND	ND	ND
Pb212 (pCi/L)	15 µg/L	5 µg/L						3.7	
Ra226 (pCi/L)	N/A	N/A	ND	ND	ND	ND	ND	ND	ND
Ra228 (pCi/L)	N/A	N/A	ND	ND	ND	ND	ND	ND	ND

APPENDIX I:
SEDIMENT SAMPLE RESULTS

Kiskimere Groundwater Well Investigation Site
Data Summary Key

[MCL = Maximum Contaminant Level - National Primary Drinking Water Regulations](#)

[PA ACT 2 = Pennsylvania Act 2 Residential Groundwater and Soil Standards](#)

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

µg/kg = micrograms per kilogram

100 Exceeds MCL

100 Exceeds PA ACT 2 Regulations

100 Exceeds MCL and PA ACT 2 Regulations

100 Concentration is elevated when compared to background sample

NA = No Action Level

N/A = Not Analyzed

ND = Not detected at or below the quantitation limit

B = Not detected substantially above the level reported in laboratory or field blank

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte Present. Reported value may be biased high. Actual value is expected to be lower

L = Analyte Present. Reported value may be biased low. Actual value is expected to be lower

UL = Not detected, quantitation limit is probably higher.

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

* National Secondary Drinking Water Regulations (Secondary MCL) or Secondary PA ACT 2 Residential Groundwater Standards

(+) Result reported from the diluted analysis

CRQL = Contract Required Quantitation Limit

SQL = Sampling Quantitation Limit

Notes:

Only analytes that were detected are included in media specific result tables.

SQLs are not adjusted for qualified sample results.

Radio Chemistry results report activity only; uncertainty is not reported.

Percent moisture or percent solid results used in SQL calculation were reported on data validation report data summary forms.

**Kiskimere Groundwater Well Investigation Site
Sediment Sample Results**

Parameter/Method	Background Sample SD01	SD02	Qualifier	SD03-Dup. of SD04	Qualifier	SD04-Dup. of SD03	Qualifier
Radiochemistry							
Alpha (pCi/gDry)	15.40	8.3		6.09 ± 4.7		6.3	
Beta (pCi/gDry)	29.70	20.1		20.0 ± 4.4		17.6	
Gamma Spectroscopy							
Ba140 (pCi/gDry)	ND	ND		ND		ND	
Be7 (pCi/gDry)	6.42	0.94		0.130 ± .12		0.16	
Bi212 (pCi/gDry)	1.34	1.21		1.05 ± .19		1.14	
Bi214 (pCi/gDry)	1.02	0.97	*	0.927 ± .11	*	0.91	*
Co60 (pCi/gDry)	ND	ND		ND		ND	
Cs137 (pCi/gDry)	0.06	0.047		0.0758 ± .014		0.069	
I131 (pCi/gDry)	ND	ND		ND		ND	
K40 (pCi/gDry)	12.60	14.2		9.02 ± 1.1		9.4	
Pa234m (pCi/gDry)	2.40	0.99	*			1.7	*
Pb210 (pCi/gDry)	2.02						
Pb212 (pCi/gDry)	1.22	1.15		0.978 ± .12		0.97	
Pb214 (pCi/gDry)	1.12	1.06	*	0.956 ± .11	*	0.95	*
Ra223 (pCi/gDry)	0.31	0.298	*	0.254 ± .061	*	0.299	*
Ra226 (pCi/gDry)	2.10	1.77	*	1.95 ± .32	*	2.07	*
Ra228 (pCi/gDry)	1.30	1.22		1.00 ± .12		0.98	
Th227 (pCi/gDry)							
Th234 (pCi/gDry)	1.09	0.78	*	0.628 ± .19	*	0.67	*
T1208 (pCi/gDry)	0.39	0.37		0.313 ± .039		0.313	
U235 (pCi/gDry)	0.13	0.111	*	0.119 ± .019	*	0.127	*

**Kiskimere Groundwater Well Investigation Site
Sediment Sample Results**

Parameter/Method	Background Sample SD01	SD02	Qualifier	SD03-Dup. of SD04	Qualifier	SD04-Dup. of SD03	Qualifier
CLP TAL Metals + Mercury (ISM01.2) (mg/kg sediment)							
Mercury	0.084 J	0.19	J	0.062	J	0.085	J
Arsenic	5.1 J	7.3	J	3.0	J	4.6	J
Barium	131.00	224		92.5		111	
Beryllium	1.3 L	3.6	L	1.1	L	1.2	L
Cadmium	0.68 J	1.9	J	0.45	J	0.54	J
Chromium	20.9 J	18.7	J	18.9	J	16.4	J
Cobalt	27.20	105		29.3		22.1	
Copper	32 J	41.9	J	22.0	J	28.3	J
Lead	75.9 J	48.7	J	29.0	J	39.7	J
Manganese	1,620 +	10,200+		1,840+		1,190+	
Nickel	38.60	160		41.7		32.3	
Silver	SQL = 0.76	ND		ND		ND	
Uranium	1.1 J	ND		ND		1.1	J
Vanadium	16.5 J	17.3	J	12.5	J	14.7	J
Zinc	164.00	433		155		152	
CLP TCL Organics (SOM01.2) (µg/L or µg/kg)							
1,1-Dichloroethene	SQL = 20.83	ND		5.0	UL	ND	
Methylene chloride	16 B	4.8	B	5.3	B	5.8	B
trans-1,2-Dichloroethene	SQL = 20.83	ND		5.0	UL	ND	
cis-1,2-Dichloroethene	SQL = 20.83	ND		5.0	UL	ND	
Toluene	51.00	22		ND		16	

**Kiskimere Groundwater Well Investigation Site
Sediment Sample Results**

Parameter/Method	SD05	Qualifier	SD06	Qualifier	SD07	Qualifier	SD08	Qualifier	SD09	Qualifier
Radiochemistry										
Alpha (pCi/gDry)	10.9		4.3		2.9		8.2		9.5	
Beta (pCi/gDry)	33.5		16.6		14.4		14.5		21.9	
Gamma Spectroscopy										
Ba140 (pCi/gDry)	ND		ND		ND		ND		ND	
Be7 (pCi/gDry)			0.69		0.68		0.233		0.25	
Bi212 (pCi/gDry)	1.63		1.02		1.22		0.78		1.41	
Bi214 (pCi/gDry)	1.58	*	0.842	*	0.79	*	0.64	*	1.05	*
Co60 (pCi/gDry)	ND		ND		ND		ND		ND	
Cs137 (pCi/gDry)	ND		0.317		0.0302		0.034		0.068	
I131 (pCi/gDry)	ND		ND		ND		ND		ND	
K40 (pCi/gDry)	16.1		9.6		10.8		9.9		14.4	
Pa234m (pCi/gDry)	3.2	*	0.75	*			0.8	*	1.7	*
Pb210 (pCi/gDry)										
Pb212 (pCi/gDry)	1.57		0.93		0.96		0.806		1.33	
Pb214 (pCi/gDry)	1.71	*	0.89	*	0.84	*	0.696	*	1.1	*
Ra223 (pCi/gDry)			0.262	*			0.184	*		
Ra226 (pCi/gDry)	2.76	*	1.57	*	1.47	*	1.3	*	1.86	*
Ra228 (pCi/gDry)	1.58		1.01		0.96		0.79		1.34	
Th227 (pCi/gDry)									0.087	
Th234 (pCi/gDry)	0.7	*					0.429	*		
T1208 (pCi/gDry)	0.488		0.289		0.323		0.244		0.433	
U235 (pCi/gDry)			0.099	*	0.92	*	0.079	*	0.117	*

**Kiskimere Groundwater Well Investigation Site
Sediment Sample Results**

Parameter/Method	SD05	Qualifier	SD06	Qualifier	SD07	Qualifier	SD08	Qualifier	SD09	Qualifier
CLP TAL Metals + Mercury (ISM01.2) (mg/kg sediment)										
Mercury	0.098	J	0.054	J	0.046	J	0.038	J	0.060	J
Arsenic	7.7	J	5.5	J	1.8	J	2.0	J	2.4	J
Barium	265		134		97.4		97.8		102	
Beryllium	1.3	L	1.3	L	0.88	L	0.97	L	1.3	L
Cadmium	0.57	J	0.50	J	ND		0.31	J	ND	
Chromium	15.0	J	20.5	J	15.6	J	16.6	J	15.0	J
Cobalt	13.5		38.3		14.3		13.6		13.4	
Copper	20.7	J	23.4	J	12.5	J	20.0	J	20.3	J
Lead	23.1	J	72.8	J	18.8	J	40.0	J	22.7	J
Manganese	497+		1,910+		955+		468+		344	
Nickel	33.9		54.5		24.3		25.8		28.7	
Silver	ND		0.27	J	ND		ND		ND	
Uranium	1.1	J	0.71	J	ND		ND		ND	
Vanadium	19.5	J	19.3	J	15.7	J	24.1	J	16.5	J
Zinc	102		192		75.7		108		101	
CLP TCL Organics (SOM01.2) (µg/L or µg/kg)										
1,1-Dichloroethene	ND		ND		4.4	B	ND		ND	
Methylene chloride	5.3	B	ND		ND		ND		ND	
trans-1,2-Dichloroethene	ND		ND		ND		ND		ND	
cis-1,2-Dichloroethene	ND		ND		ND		ND		ND	
Toluene	38		26		15		17		36	

APPENDIX J:
TRIP BLANK SAMPLE RESULTS

Kiskimere Groundwater Well Investigation Site
Data Summary Key

[MCL = Maximum Contaminant Level - National Primary Drinking Water Regulations](#)

[PA ACT 2 = Pennsylvania Act 2 Residential Groundwater and Soil Standards](#)

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

µg/kg = micrograms per kilogram

100 Exceeds MCL

100 Exceeds PA ACT 2 Regulations

100 Exceeds MCL and PA ACT 2 Regulations

100 Concentration is elevated when compared to background sample

NA = No Action Level

N/A = Not Analyzed

ND = Not detected at or below the quantitation limit

B = Not detected substantially above the level reported in laboratory or field blank

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte Present. Reported value may be biased high. Actual value is expected to be lower

L = Analyte Present. Reported value may be biased low. Actual value is expected to be lower

UL = Not detected, quantitation limit is probably higher.

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

* National Secondary Drinking Water Regulations (Secondary MCL) or Secondary PA ACT 2 Residential Groundwater Standards

(+) Result reported from the diluted analysis

CRQL = Contract Required Quantitation Limit

SQL = Sampling Quantitation Limit

Notes:

Only analytes that were detected are included in media specific result tables.

SQLs are not adjusted for qualified sample results.

Radio Chemistry results report activity only; uncertainty is not reported.

Percent moisture or percent solid results used in SQL calculation were reported on data validation report data summary forms.

Kiskimere Groundwater Well Investigation Results
Trip Blank Sample Results

Parameter/Method	MCL	PA ACT 2	TB01	Qualifier	TB02	Qualifier
CLP TCL Organics (SOM01.2) (µg/L or µg/kg)						
Methylene Chloride	5	30	0.39	B	1.7	
Chloroform	80	80	ND		0.78	
Toluene	1,000	1,000	ND		0.7	

APPENDIX K:
FIELD BLANK SAMPLE RESULTS

Kiskimere Groundwater Well Investigation Site
Data Summary Key

[MCL = Maximum Contaminant Level - National Primary Drinking Water Regulations](#)

[PA ACT 2 = Pennsylvania Act 2 Residential Groundwater and Soil Standards](#)

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

µg/kg = micrograms per kilogram

100 Exceeds MCL

100 Exceeds PA ACT 2 Regulations

100 Exceeds MCL and PA ACT 2 Regulations

100 Concentration is elevated when compared to background sample

NA = No Action Level

N/A = Not Analyzed

ND = Not detected at or below the quantitation limit

B = Not detected substantially above the level reported in laboratory or field blank

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte Present. Reported value may be biased high. Actual value is expected to be lower

L = Analyte Present. Reported value may be biased low. Actual value is expected to be lower

UL = Not detected, quantitation limit is probably higher.

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

* National Secondary Drinking Water Regulations (Secondary MCL) or Secondary PA ACT 2 Residential Groundwater Standards

(+) Result reported from the diluted analysis

CRQL = Contract Required Quantitation Limit

SQL = Sampling Quantitation Limit

Notes:

Only analytes that were detected are included in media specific result tables.

SQLs are not adjusted for qualified sample results.

Radio Chemistry results report activity only; uncertainty is not reported.

Percent moisture or percent solid results used in SQL calculation were reported on data validation report data summary forms.

**Kiskimere Groundwater Well Investigation Site
Field Blank Sample Results**

Parameter/Method	MCL	PA ACT 2	FB01	Qualifier	FB02	Qualifier
Radiochemistry						
Radium 226	5 pCi/L	5 pCi/L	0.055		0.031	
Radium 228	5 pCi/L	5 pCi/L	0.55		1.09	
Gross Alpha	15 pCi/L	15 pCi/L	0.25		-0.04	
Gross Beta	50 pCi/L	50 pCi/L	0.32		0.38	
CLP TAL Metals + Mercury (ISM01.2) (µg/L or µg/kg)						
Aluminum	NA	200*	ND		ND	
Calcium	NA	NA	ND		ND	
Iron	NA	300*	ND		ND	
Magnesium	NA	NA	ND		ND	
Mercury	2	2	ND		ND	
Potassium	NA	NA	ND		ND	
Sodium	NA	NA	ND		ND	
Metals, Single Analyte (per Metal) (6020A) (µg/L)						
Arsenic	10	10	ND		ND	
Barium	2,000	2,000	ND		ND	
Chromium	100	100	ND		ND	
Cobalt	NA	11	ND		ND	
Copper	1,300	1,000	ND		ND	
Lead	15	5	ND		ND	
Manganese	50*	300	ND		ND	
Nickel	NA	100	ND		ND	
Silver	100	100	ND		ND	
Uranium	30	NA	ND		ND	
Zinc	5,000*	2,000	ND		ND	
CLP TCL Organics (SOM01.2) (µg/L or µg/kg)						
Methylene Chloride	5	30	1.5		1.6	
Chloroform	80	80	0.73		ND	
Toluene	1,000	1,000	0.65		0.5	

APPENDIX L:
BACKGROUND SAMPLE RESULTS

Kiskimere Groundwater Well Investigation Site
Data Summary Key

[MCL = Maximum Contaminant Level - National Primary Drinking Water Regulations](#)

[PA ACT 2 = Pennsylvania Act 2 Residential Groundwater and Soil Standards](#)

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

µg/kg = micrograms per kilogram

100 Exceeds MCL

100 Exceeds PA ACT 2 Regulations

100 Exceeds MCL and PA ACT 2 Regulations

100 Concentration is elevated when compared to background sample

NA = No Action Level

N/A = Not Analyzed

ND = Not detected at or below the quantitation limit

B = Not detected substantially above the level reported in laboratory or field blank

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte Present. Reported value may be biased high. Actual value is expected to be lower

L = Analyte Present. Reported value may be biased low. Actual value is expected to be lower

UL = Not detected, quantitation limit is probably higher.

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

* National Secondary Drinking Water Regulations (Secondary MCL) or Secondary PA ACT 2 Residential Groundwater Standards

(+) Result reported from the diluted analysis

CRQL = Contract Required Quantitation Limit

SQL = Sampling Quantitation Limit

Notes:

Only analytes that were detected are included in media specific result tables.

SQLs are not adjusted for qualified sample results.

Radio Chemistry results report activity only; uncertainty is not reported.

Percent moisture or percent solid results used in SQL calculation were reported on data validation report data summary forms.

**Kiskimere Groundwater Well Investigation Site
Background Sample Results**

Parameter/Method	CRQL Water	CRQL Soil/Sediment	GW-04	SQL	Qualifier	SW-01	SQL	Qualifier	SD-01	SQL	Qualifier
Radiochemistry											
Radiochemistry results are listed in media specific result tables											
CLP TAL Metals + Mercury (ISM01.2) (µg/L water, mg/kg sediment)											
Aluminum	200	N/A	ND	200		98.7	200	J	N/A	N/A	
Calcium	5,000	N/A	17,400	5,000		60,100	5,000		N/A	N/A	
Iron	100	N/A	298	100		256	100		N/A	N/A	x
Magnesium	5,000	N/A	6,040	5,000		18,100	5,000		N/A	N/A	
Mercury	0.2	0.1	ND	0.2		ND	0.2		0.084	0.2	J
Potassium	5,000	N/A	ND	5000		3,200	5,000	J	N/A	N/A	
Sodium	5,000	N/A	31,100	5,000		41,100	5,000		N/A	N/A	
Antimony	2	200	ND	2		ND	2		ND	304.0	
Arsenic	1	100	ND	1		ND	1		5.1	152.0	J
Barium	10	1,000	81.7	10		53	10		131	1519.8	
Beryllium	1	100	ND	1		ND	1		1.3	152.0	L
Cadmium	1	100	ND	1		ND	1		0.68	152.0	J
Chromium	2	200	1.6	2	J	ND	2		20.9	304.0	J
Cobalt	1	100	ND	1		0.56	1	J	27.2	152.0	
Copper	2	200	0.93	2	J	ND	2		32	304.0	J
Lead	1	100	ND	1		ND	1		75.9	152.0	J
Manganese	1	100	8.9	1	J	80.5	1	J	1620+	4179.3	
Nickel	1	100	0.83	1	J	3.2	1		38.6	759.9	
Selenium	5	500	ND	5		ND	5		ND	3799.4	
Silver	1	100	ND	1		ND	1		ND	759.9	
Thallium	1	100	ND	1		ND	1		0.27	759.9	J
Uranium	1	200	ND	1		ND	1		1.1	1519.8	J
Vanadium	5	500	ND	5		ND	5		16.5	3799.4	J
Zinc	2	200	1.4	2	J	2.2	2		164	1519.8	

GW SQL = CRQL * Dilution Factor; SW SQL = CRQL * Dilution Factor
SD SQL = (CRQL * Dilution Factor) / [(100 - % Moisture) / 100] or
SD SQL = (CRQL * Dilution Factor) / (% Solids / 100)

TDD No. TL03-11-03-003

Kiskimere Groundwater Well Investigation Site
Background Sample Results

Parameter/Method	CRQL Water	CRQL Soil/Sediment	GW-04	SQL	Qualifier	SW-01	SQL	Qualifier	SD-01	SQL	Qualifier
CLP TCL Organics (SOM01.2) (µg/L or µg/kg)											
Dichlorodifluoromethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Chloromethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Vinyl Chloride	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Bromomethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Chloroethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Trichlorofluoromethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,1-Dichloroethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Acetone	5	5	ND	5		ND	5		72	20.8	
Carbon Disulfide	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Methyl acetate	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Methylene chloride	0.5	5	ND	0.5		ND	0.5		16	20.8	B
trans-1,2-Dichloroethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Methyl tert-butyl ether	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,1-Dichloroethene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
cis-1,2-Dichloroethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
2-Butanone	5	10	ND	5		ND	5		ND	41.7	
Bromochloromethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Chloroform	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,1,1-Trichloroethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Cyclohexane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Carbon tetrachloride	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Benzene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,2-Dichloroethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,4-Dioxane	N/A	100	N/A	N/A		N/A	N/A		ND	416.7	
Trichloroethane	0.5	5	ND	0.5		ND	0.5		18	20.8	J
Methylcyclohexane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,2-Dichloropropane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Bromodichloromethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
cis-1,3-Dichloropropane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
4-Methyl-2-pentanone	5	10	ND	5		ND	5		ND	41.7	
Toluene	0.5	5	ND	0.5		ND	0.5		51	20.8	
trans-1,3-Dichloropropane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,1,2-Trichloroethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Tetrachloroethene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
2-Hexanone	5	10	ND	5		ND	5		ND	41.7	

GW SQL = CRQL * Dilution Factor; SW SQL = CRQL * Dilution Factor
SD SQL = (CRQL * Dilution Factor) / [(100 - % Moisture) / 100] or
SD SQL = (CRQL * Dilution Factor) / (% Solids / 100)

TDD No. TL03-11-03-003

Kiskimere Groundwater Well Investigation Site
Background Sample Results

Parameter/Method	CRQL Water	CRQL Soil/Sediment	GW-04	SQL	Qualifier	SW-01	SQL	Qualifier	SD-01	SQL	Qualifier
Dibromochloromethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,2-Dibromoethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Chlorobenzene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Ethylbenzene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
o-Xylene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
m,p-Xylene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Styrene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Bromoform	0.5	5	ND	0.5		ND	0.5		ND	20.8	
Isopropylbenzene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,1,1,2-Tetrachloroethane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,3-Dichlorobenzene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,4-Dichlorobenzene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,2-Dichlorobenzene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,2-Dibromo-3-chloropropane	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,2,4-Trichlorobenzene	0.5	5	ND	0.5		ND	0.5		ND	20.8	
1,2,3-Trichlorobenzene	0.5	5	ND	0.5		ND	0.5		ND	20.8	