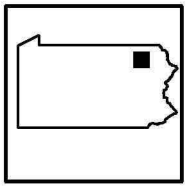
Hull 1H/2H

DIM0190096

0 2000 4000

APPROXIMATE SCALE IN FEET



BASE MAP SOURCE: USGS 7.5 minute series topographic quadrangle map Springville, Pennsylvania (1946, photorevised 1969).

Cabot Oil & Gas Corporation

FIGURE 1
SITE VICINITY MAP
HULL 1H/2H WELLSITE
SUSQUEHANNA COUNTY PENNSYLVANIA

URS

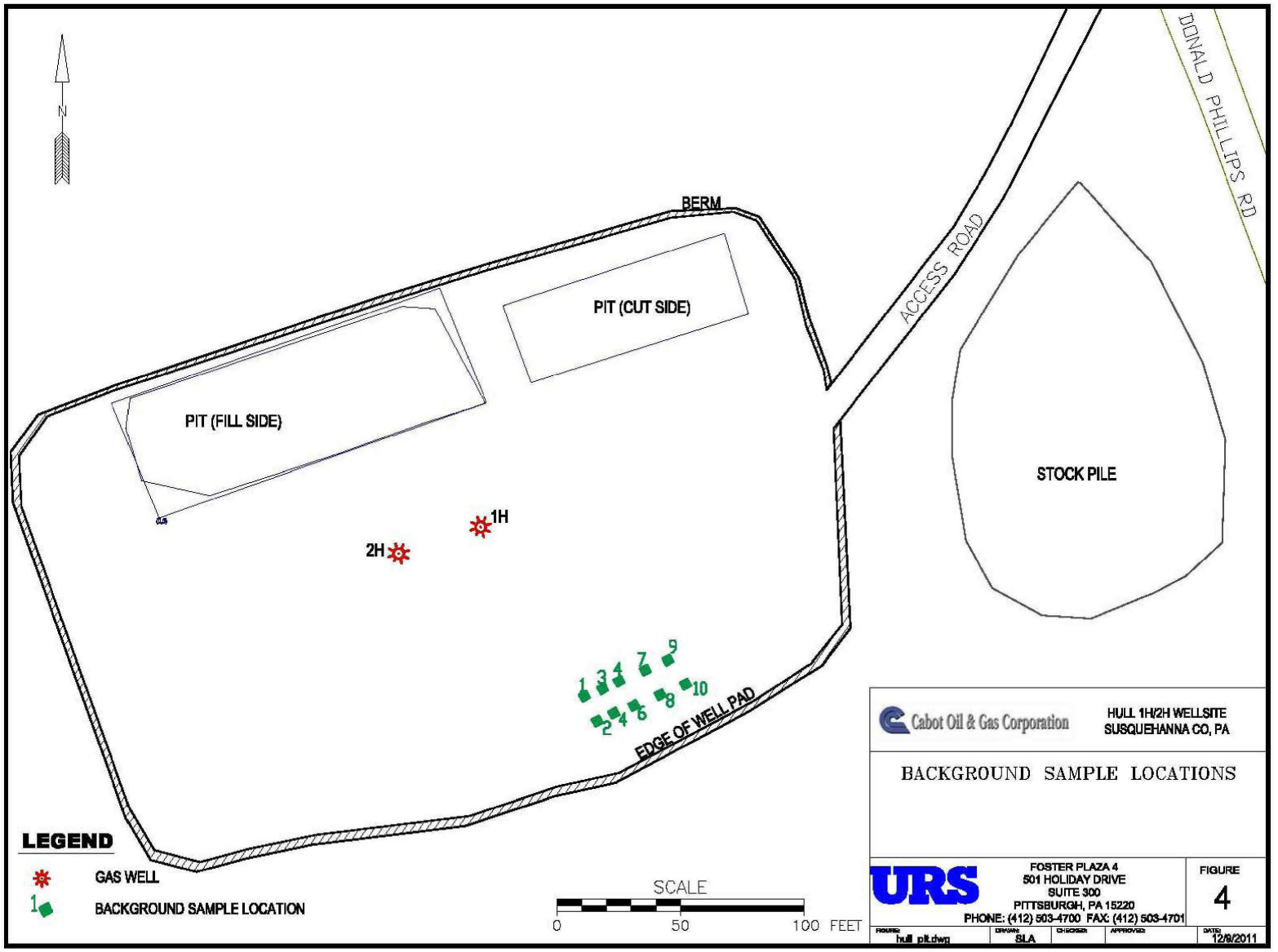


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Table 2
Analytical Results for Soil
Background Samples
Reserve Pit Remediation
Hull 1H/2H Wellsite

Springville Township
Susquehana County, PA

Sample ID		HULL-BKG-1	HULL-BKG-2	HULL-BKG-3	HULL-BKG-4	HULL-BKG-5	HULL-BKG-6	HULL-BKG-7	HULL-BKG-8	HULL-BKG-9	HULL-BKG-10	Soil Residential Used Aquifer MSCs[1]
Sample Date		10/28/2011	10/28/2011	10/28/2011	10/28/2011	10/28/2011	10/28/2011	10/28/2011	10/28/2011	10/28/2011	10/28/2011	
Sample Depth (ft)		0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	0-2	
Parameter	**Units**											
General Chemistry Parameters												
Percent Moisture (ASTM D2974-87)	%	9.2	8.5	10.1	10.8	7.5	9.1	7.4	7.3	8.9	9.4	NS[2]
Metals (EPA 6010B / EPA 7471)												
Aluminum	mg/kg	11,200	13,800	11,200	12,700	10,000	12,600	11,700	8,960	12,300	13,000	190,000
Antimony	mg/kg	ND (0.35)	ND (0.61)	ND (0.45)	ND (0.37)	ND (0.44)	ND (0.41)	ND (0.36)	ND (0.49)	ND (0.51)	ND (0.61)	27
Arsenic	mg/kg	57.6	16.2	69.4	13.9	14.9	14.8	19.9	13.3	18.0	14.8	12
Barium	mg/kg	99.5	160	106	139	191	140	344	205	148	157	8,200
Beryllium	mg/kg	0.75	0.71	0.66	0.61	0.54	0.6	0.6	0.46	0.6	0.65	320
Boron	mg/kg	ND (2.9)	ND (5.1)	ND (3.8)	ND (3.1)	ND (3.7)	ND (3.4)	ND (3.0)	ND (4.1)	ND (4.2)	ND (5.1)	1,900
Cadmium	mg/kg	0.26	ND (0.30)	0.98	ND (0.18)	ND (0.22)	ND (0.21)	ND (0.18)	ND (0.25)	ND (0.25)	ND (0.31)	38
Calcium	mg/kg	3,720	961	3,730	1,450	6,370	2,600	3,610	4,300	5,130	3,580	NS
Chromium	mg/kg	11.4	14	11.2	13.8	11	13.2	13	10.2	13.1	13.6	190,000[5]
Cobalt	mg/kg	23.1	13.9	34.2	13.6	12.5	13.7	13.9	10.7	14.9	13.8	50
Copper	mg/kg	29	16.6	42.3	14	23.4	15.0	16.7	12.2	19.9	14.6	8,100
Iron	mg/kg	24,800	26,300	25,700	23,300	20,100	23,500	23,100	18,100	23,800	24,500	150,000
Lead	mg/kg	521	27.8	824	18.6	29.4	16.4	13.3	12.3	15.1	17.6	450
Lithium	mg/kg	36.7	30.4	33.3	31.4	26.3	29.8	30.0	23.5	32.6	31.2	440
Magnesium	mg/kg	4,340	3,970	4,030	4,040	4,200	3,980	4,430	3,580	4,260	4,260	NS
Manganese	mg/kg	1390	727	2000	555	736	747	574	528	884	795	2,000
Molybdenum	mg/kg	ND (1.2)	ND (2.0)	1.6	ND (1.2)	ND (1.5)	ND (1.4)	ND (1.2)	ND (1.6)	ND (1.7)	ND (2.0)	650
Nickel	mg/kg	22.6	21.7	29.8	20.2	18	20.7	20.2	16	21.6	21.7	650
Potassium	mg/kg	1,090	1,640	1,170	1,330	1,300	1,500	1,400	1,250	1,570	1,740	NS
Selenium	mg/kg	ND (0.46)	ND (0.81)	ND (0.60)	ND (0.49)	ND (0.58)	ND (0.55)	ND (0.48)	ND (0.65)	ND (0.68)	ND (0.82)	26
Silver	mg/kg	ND (0.35)	ND (0.61)	ND (0.45)	ND (0.37)	ND (0.44)	ND (0.41)	ND (0.36)	ND (0.49)	ND (0.51)	ND (0.61)	84
Sodium	mg/kg	ND (290)	ND (506)	ND (376)	350	ND (365)	ND (344)	306	ND (409)	ND (422)	ND (511)	NS
Strontium	mg/kg	12.2	6.8	12.5	10.9	15.6	9.9	14.1	12.7	12.7	11.3	NS
Thallium	mg/kg	ND (1.2)	ND (2.0)	ND (1.5)	ND (1.2)	ND (1.5)	ND (1.4)	ND (1.2)	ND (1.6)	ND (1.7)	ND (2.0)	14
Vanadium	mg/kg	9.3	14.5	10	13.1	10.2	13.2	12.3	9.7	12.7	13.7	1,500
Zinc	mg/kg	144.0	69.7	112.0	63.1	47.8	61.4	54.0	44.6	56.8	63.9	12,000
Mercury	mg/kg	ND (0.11)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.11)	ND (0.10)	ND (0.10)	ND (0.11)	10

Notes:

[1] Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2,500 MSCs, Soil to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 25 PA Code Section 250, Administration of the Land Recycling Act (Act 2) regulations.

[2] No Standard

[3] NA = Not Analyzed.

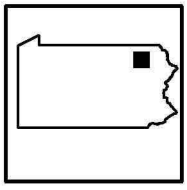
[4] ND (3.0) = Parameter not detected at the detection limit specified in parentheses.

[5] MSC presented as Chromium III.

29.0 = Result exceeds SHS Residential, Used Aquifer MSC

0 2000 4000

APPROXIMATE SCALE IN FEET

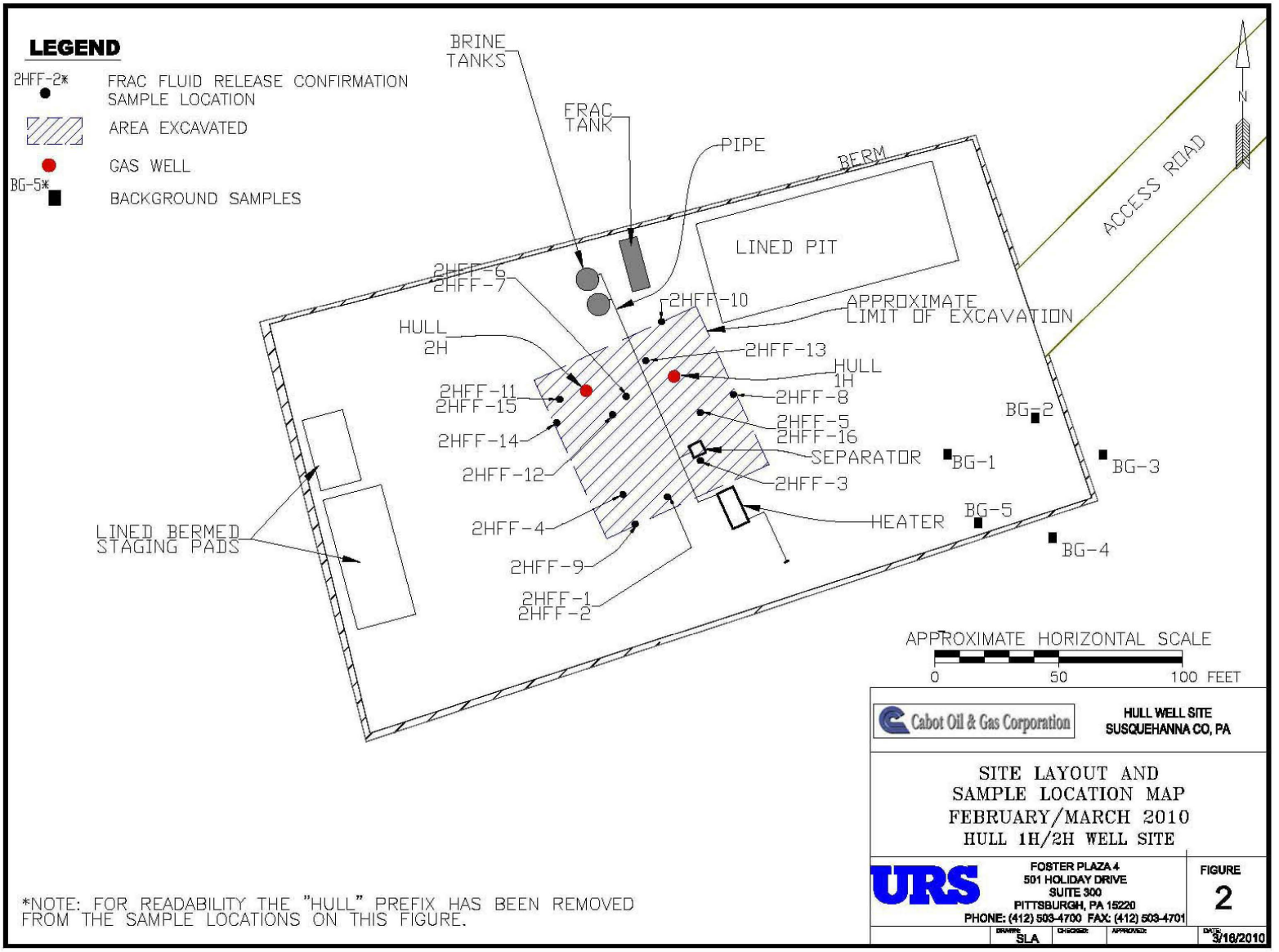


Cabot Oil & Gas Corporation

FIGURE 1
SITE VICINITY MAP
R. HULL 1H AND 2H SITE
SUSQUEHANNA COUNTY PENNSYLVANIA

BASE MAP SOURCE: USGS 7.5 minute series topographic quadrangle map Springville, Pennsylvania (1946, photorevised 1969).

URS



*NOTE: FOR READABILITY THE "HULL" PREFIX HAS BEEN REMOVED FROM THE SAMPLE LOCATIONS ON THIS FIGURE.

Table 4
Analytical Results
Background Soil Sample Results
Hull 2H Wellsite

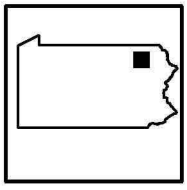
Springville Township
Susquehanna County, PA

	Sample Location					**SOIL**	**SOIL**
Sample I.D. (Field)	HULL BG-1	HULL BG-2	HULL BG-3	HULL BG-4	HULL BG-5	**Clean Fill Standards[1]**	**Residential Used Aquifer MSCs[2]**
Sample Date	3/10/2010	3/10/2010	3/10/2010	3/10/2010	3/10/2010		
6010 Metals Analyses							
Arsenic	**14.4**	10.7	12.0	**12.7**	5.5	**12**	**12**

Notes:
All results in milligram per kilogram (mg/kg) unless otherwise stated.
[1]=Clean Fill standards derived from "Management of Fill," memorandum dated April 24, 2004 , PA Department of Environmental Protection
[2] = Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2500 MSCs Soil to Groundwater Numeric Values Appendix A, Table 3 and Table 4 of 25 PA Code Section 250, Administration of the Land Recycling Act (Act 2) regulations.
14.4 =Result exceeds SHS Residential, Used Aquifer MSC.

0 2000 4000

APPROXIMATE SCALE IN FEET



Cabot Oil & Gas Corporation

FIGURE 1
SITE VICINITY MAP
R. HULL 1H AND 2H SITE
SUSQUEHANNA COUNTY PENNSYLVANIA

BASE MAP SOURCE: USGS 7.5 minute series topographic quadrangle map Springville, Pennsylvania (1946, photorevised 1969).

URS

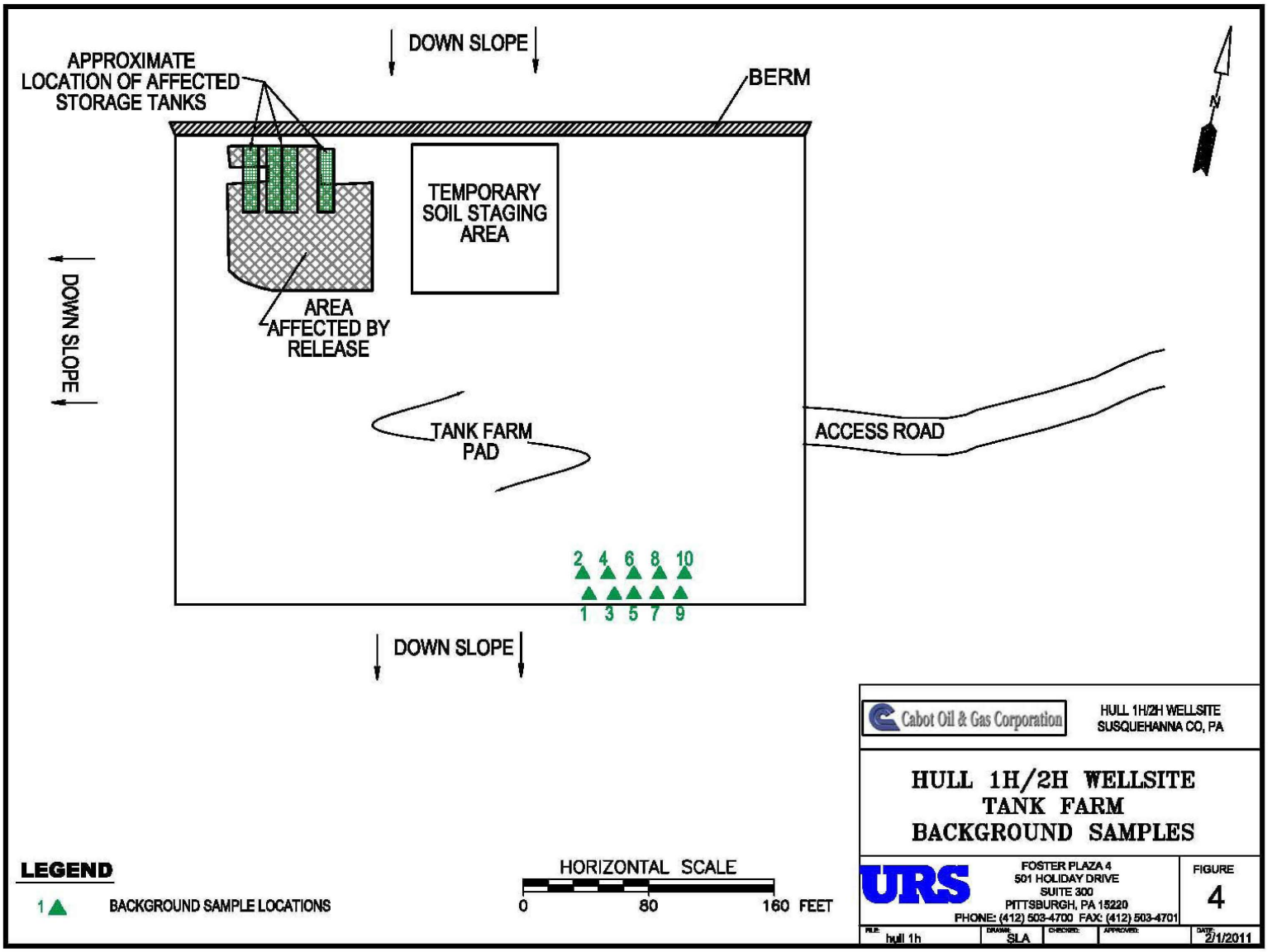


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Table 2
Analytical Results for Background Soil Samples
Hull 1H/2H Wellsite Tank Farm

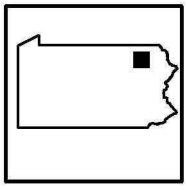
Springville Township
Susquehana County, PA

Sample I.D. (Field) **Sample Date** Parameter	Units	**HULL B-1** **1/11/2011**	**HULL B-2** **1/11/2011**	**HULL B-3** **1/11/2011**	**HULL B-4** **1/11/2011**	**HULL B-5** **1/11/2011**	**HULL B-6** **1/11/2011**	**HULL B-7** **1/11/2011**	**HULL B-8** **1/11/2011**	**HULL B-9** **1/11/2011**	**HULL B-10** **1/11/2011**	**SOIL Residential Used Aquifer MSCs[2]**
General Chemistry Analysis												
Percent Moisture (ASTM D2974-87)	%	13.2	9.7	10.9	11	11.3	11.8	13.3	12.9	9.5	12.7	**NS[3]**
Metal Analyses (6010B/7471)												
Aluminum	mg/kg	11,600	12,300	11,900	11,300	12,500	12,200	10,900	11,400	11,100	12,100	**190,000**
Antimony	mg/kg	ND (0.36)[1]	ND (0.47)	ND (0.46)	ND (0.39)	ND (0.52)	ND (0.59)	ND (0.38)	ND (0.42)	ND (0.38)	ND (0.46)	**27**
Arsenic	mg/kg	**17.3**	**15.1**	**18.3**	**13.7**	**14.6**	**19.8**	**14.3**	**14.6**	**14.3**	**13.7**	**12**
Barium	mg/kg	98	98.7	95.9	98.1	96.8	116	93.1	96.3	89.5	93.9	**8,200**
Beryllium	mg/kg	0.58	0.6	0.59	0.55	0.6	0.64	0.54	0.55	0.55	0.57	**320**
Boron	mg/kg	ND (3.0)	ND (3.9)	ND (3.8)	ND (3.2)	ND (4.3)	ND (4.9)	ND (3.2)	ND (3.5)	ND (3.2)	ND (3.8)	**1,900**
Cadmium	mg/kg	ND (0.18)	ND (0.23)	ND (0.23)	ND (0.19)	ND (0.26)	ND (0.29)	ND (0.19)	ND (0.21)	ND (0.19)	ND (0.23)	**38**
Calcium	mg/kg	938	939	896	971	946	1020	1030	997	869	885	**NS**
Chromium	mg/kg	12.5	13.1	12.5	12.2	13.4	13.1	11.7	12.4	11.8	13.3	**190,000[4]**
Cobalt	mg/kg	15.3	12.7	11.7	12.4	11.2	20.5	11.5	11.4	12.6	12.2	**50**
Copper	mg/kg	20.4	17.5	17.7	16.8	18.1	22.1	15.4	15.5	16.2	16.2	**8,100**
Iron	mg/kg	23,000	23,400	22,800	21,500	23,100	25,600	20,900	21,700	21,200	22,700	**150,000**
Lead	mg/kg	37.7	24.6	22.7	24.8	22.7	48.5	25.6	23.5	24.1	23	**450**
Magnesium	mg/kg	3,450	3,690	3,430	3,350	3,580	3,570	3,370	3,360	3,360	3,520	**NS**
Manganese	mg/kg	796	702	604	615	576	1180	629	562	730	642	**2,000**
Molybdenum	mg/kg	ND (1.2)	ND (1.6)	ND (1.5)	ND (1.3)	ND (1.7)	ND (2.0)	ND (1.3)	ND (1.4)	ND (1.3)	ND (1.5)	**650**
Nickel	mg/kg	19.5	20.3	19.5	19	20	22.3	18.6	19.1	19.6	19.8	**650**
Potassium	mg/kg	1,440	1,580	1,520	1,450	1,620	1,610	1,350	1,510	1,360	1,530	**NS**
Selenium	mg/kg	ND (0.49)	ND (0.62)	ND (0.61)	ND (0.52)	ND (0.69)	ND (0.78)	ND (0.51)	ND (0.56)	ND (0.51)	ND (0.61)	**26**
Silver	mg/kg	ND (0.36)	ND (0.47)	ND (0.46)	ND (0.39)	ND (0.52)	ND (0.59)	ND (0.38)	ND (0.42)	ND (0.38)	ND (0.46)	**84**
Sodium	mg/kg	ND (303)	ND (390)	ND (379)	ND (323)	ND (433)	ND (489)	ND (320)	ND (350)	ND (318)	ND (382)	**NS**
Thallium	mg/kg	ND (1.2)	ND (1.6)	ND (1.5)	ND (1.3)	ND (1.7)	ND (2.0)	ND (1.3)	ND (1.4)	ND (1.3)	ND (1.5)	**14**
Vanadium	mg/kg	14.7	14.9	14.7	14.1	15.8	17	13.4	14.3	13.7	15.9	**1,500**
Zinc	mg/kg	60.1	63.8	63.6	61.1	62.4	74.6	58.5	60.7	58.2	61.7	**12,000**
Mercury	mg/kg	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	**10**

Notes:
[1] ND (0.50) = Parameter not detected at the detection limit specified in parentheses.
[2] Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2500 MSCs, Soil to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 25 PA Code Section 250, Administration of the Land Recycling Act (Act 2) regulations.
[3] No Standard.
[4] MSC presented as Chromium III.
14.2 =Result exceeds SHS Residential, Used Aquifer MSC for soil.

0 2000 4000

APPROXIMATE SCALE IN FEET



BASE MAP SOURCE: USGS 7.5 minute series topographic quadrangle map Springville, Pennsylvania (1946, photorevised 1969).

Cabot Oil & Gas Corporation

FIGURE 1
SITE VICINITY MAP
R. HULL 1H AND 2H SITE
SUSQUEHANNA COUNTY PENNSYLVANIA

URS

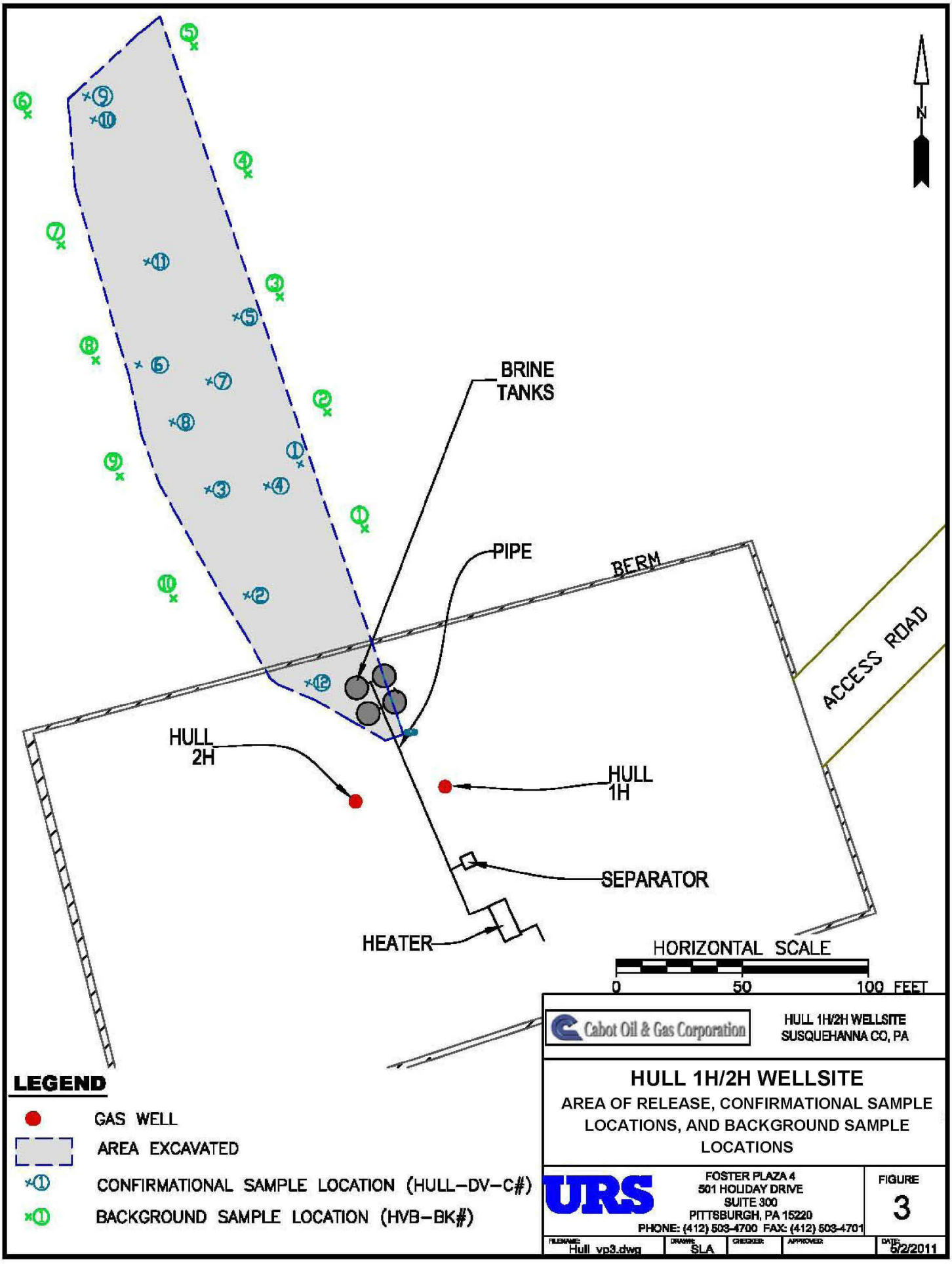

N
BRINE TANKS
PIPE
BERM
ACCESS ROAD
HULL 2H
HULL 1H
SEPARATOR
HEATER
HORIZONTAL SCALE
0
50
100 FEET
LEGEND
GAS WELL
AREA EXCAVATED
CONFIRMATIONAL SAMPLE LOCATION (HULL-DV-C#)
BACKGROUND SAMPLE LOCATION (HVB-BK#)
Cabot Oil & Gas Corporation
HULL 1H/2H WELLSITE
SUSQUEHANNA CO, PA
HULL 1H/2H WELLSITE
AREA OF RELEASE, CONFIRMATIONAL SAMPLE LOCATIONS, AND BACKGROUND SAMPLE LOCATIONS
URS
FOSTER PLAZA 4
501 HOLIDAY DRIVE
SUITE 300
PITTSBURGH, PA 15220
PHONE: (412) 503-4700 FAX: (412) 503-4701
FIGURE
3
FILENAME: Hull_vp3.dwg
DRAWN: SLA
CHECKED:
APPROVED:
DATE: 5/2/2011

Table 2
Analytical Results for Background Soil Samples
Hull 1H/2H Wellsite

Springville Township
Susquehana County, PA

Sample I.D. (Field)		**HVB BK1**	**HVB BK2**	**HVB BK3**	**HVB BK4**	**HVB BK5**	**HVB BK6**	**HVB BK7**	**HVB BK8**	**HVB BK9**	**HVB BK10**	**Soil Residential Used Aquifer MSCs[1]**
Date Collected		4/13/2011	4/13/2011	4/13/2011	4/13/2011	4/13/2011	4/13/2011	4/13/2011	4/13/2011	4/13/2011	4/13/2011	
Parameter	Units											
General Chemistry												
Percent Moisture (ASTM D2974-87)	%	9.0	16.7	16.8	11.8	10.1	9.1	10.5	10.5	10.3	9.9	**NS[2]**
Chloride (Total - SW 846 9056)	mg/kg	ND (50.0)[3]	ND (50.0)	ND (50.0)	ND (50.0)	ND (50.0)	ND (50.0)	ND (50.0)	ND (50.0)	ND (50.0)	55.0	**NS**
Metals (6010B/7471)												
Aluminum	mg/kg	12,500	12,000	12,300	12,600	12,600	11,800	12,900	12,600	12,900	12,900	**190,000**
Antimony	mg/kg	0.48	ND (0.40)	ND (0.52)	ND (0.44)	ND (0.45)	ND (0.35)	ND (0.59)	ND (0.42)	ND (0.60)	ND (0.49)	**27**
Arsenic	mg/kg	**13.7**	11.4	**12.3**	11.2	**12.5**	11.3	**13.7**	**13.1**	**14.8**	**12.0**	**12**
Barium	mg/kg	190	121	313	242	161	127	155	140	142	188	**8,200**
Beryllium	mg/kg	0.65	0.62	0.66	0.65	0.65	0.6	0.69	0.67	0.67	0.66	**320**
Boron	mg/kg	ND (3.4)	ND (3.3)	ND (4.3)	ND (3.6)	ND (3.8)	ND (2.9)	ND (4.9)	ND (3.5)	ND (5.0)	ND (4.1)	**1900**
Cadmium	mg/kg	ND (0.21)	ND (0.20)	ND (0.26)	ND (0.22)	ND (0.23)	ND (0.18)	ND (0.29)	ND (0.21)	ND (0.30)	ND (0.24)	**38**
Calcium	mg/kg	1,680	1,520	1,670	1,540	1,550	1,620	1,730	1,640	1,540	1,800	**NS**
Chromium	mg/kg	13.7	13.1	13.7	14.2	14.5	13.6	14.9	14.1	14.4	14.8	**190,000[4]**
Cobalt	mg/kg	13.1	12.2	13.8	14.0	15.0	14.0	13.6	14.9	15.5	15.6	**50**
Copper	mg/kg	16.5	15.0	18.6	21.7	18.5	16.7	17.9	17.4	18.5	20.7	**8,100**
Iron	mg/kg	24,900	24,600	24,900	25,500	25,500	23,400	26,700	25,400	26,000	26,300	**150,00**
Lead	mg/kg	18.1	15.9	17.2	17.6	22.5	19.0	17.5	21.9	19.3	19.6	**450**
Lithium	mg/kg	30.8	29.5	30.1	30.6	31.0	30.3	31.9	31.8	31.9	31.1	**440**
Magnesium	mg/kg	4,110	3,950	4,100	4,250	4,250	4,010	4,410	4,350	4,270	4,430	**NS**
Manganese	mg/kg	539	495	642	575	638	551	550	698	630	698	**2,000**
Molybdenum	mg/kg	ND (1.4)	ND (1.3)	ND (1.7)	ND (1.5)	ND (1.5)	ND (1.2)	ND (2.0)	ND (1.4)	ND (2.0)	ND (1.6)	**650**
Nickel	mg/kg	21.4	20.4	22.3	22.0	23.6	21.8	23.4	23.1	22.8	22.7	**650**
Potassium	mg/kg	1,570	1,490	1,610	1,630	1,540	1,310	1,720	1,510	1,580	1,680	**NS**
Selenium	mg/kg	ND (0.55)	ND (0.53)	ND (0.69)	ND (0.58)	ND (0.60)	ND (0.47)	ND (0.78)	ND (0.56)	ND (0.80)	ND (0.65)	**26**
Silver	mg/kg	ND (0.41)	ND (0.40)	ND (0.52)	ND (0.44)	ND (0.45)	ND (0.35)	ND (0.59)	ND (0.42)	ND (0.60)	ND (0.49)	**84**
Sodium	mg/kg	ND (343)	ND (330)	ND (429)	ND (363)	ND (376)	ND (293)	ND (490)	ND (349)	ND (497)	ND (408)	**NS**
Strontium	mg/kg	13.0	8.0	22.7	15.3	9.4	8.4	10.1	8.9	8.2	10.7	**NS**
Thallium	mg/kg	ND (1.4)	ND (1.3)	ND (1.7)	ND (1.5)	ND (1.5)	ND (1.2)	ND (2.0)	ND (1.4)	ND (2.0)	ND (1.6)	**14**
Vanadium	mg/kg	14.5	14.4	14.5	15.4	15.3	14.5	16.4	15.4	16.1	15.7	**1,500**
Zinc	mg/kg	62.6	59.3	61.7	62.0	62.8	60.7	65.1	63.1	65.2	68.2	**12,000**
Mercury	mg/kg	ND (0.10)	ND (0.12)	ND (0.12)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	**10**

Notes:

[1] Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2,500 MSCs, Soil to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 25 PA Code Section 250, Administration of the Land Recycling Act (Act 2) regulations.

[2] No Standard

[3] ND (3.0) = Parameter not detected at the detection limit specified in parentheses.

[4] MSC presented as Chromium III.

29.0 =Result exceeds SHS Residential, Used Aquifer MSC for soil.