Table 4.6-1
Analytical Results for Soil
Ely 2 Wellsite

Dimock, Township
Susquehana County, PA

Sample Identification / Sample Date / Parameter	Units	ELY-2-B1 5/25/2010	ELY-2-B2 5/25/2010	SOIL Residential Used Aquifer MSCs[1]
General Chemistry Analyses				
Percent Moisture (ASTM D2974-87)	%	10.1	8.8	NS[1]
Nitrogen, Ammonia (EPA 350.1)	mg/kg	11.3	5.5	1,900
Chloride (SM 4500-Cl-E)	mg/L	ND (3.0)[2]	ND (3.0)	NS
Surfactants (MBAS, SM 5540C)	mg/L	ND (0.10)	ND (0.10)	NS
Ethylene Glycol (EPA 8015)	mg/kg	ND (10.0)	ND (10.0)	1,400
Metals Analyses (6010B/7471)				
Aluminum	mg/kg	15,500	13,200	190,000
Antimony	mg/kg	ND (0.44)	ND (0.44)	27
Arsenic	mg/kg	19.6	15.4	12
Barium	mg/kg	75.9	71.7	8,200
Beryllium	mg/kg	0.79	0.72	320
Boron	mg/kg	9.1	7.9	1900
Cadmium	mg/kg	0.63	0.43	38
Calcium	mg/kg	1,860	1,490	NS
Chromium	mg/kg	17.6	15.1	190,000[3]
Cobalt	mg/kg	14.2	12	50
Copper	mg/kg	13.8	11.1	8,100
Iron	mg/kg	32,700	26,200	150,000
Lead	mg/kg	28.2	20.9	450
Magnesium	mg/kg	5,720	4,750	NS
Manganese	mg/kg	1,490	1,670	2,000
Molybdenum	mg/kg	ND (1.8)	ND (1.7)	650
Nickel	mg/kg	26.4	23.5	650
Potassium	mg/kg	1,920	1,900	NS
Selenium	mg/kg	0.58	ND (0.44)	26
Silver	mg/kg	0.33	0.26	84
Sodium	mg/kg	ND (442)	ND (435)	NS
Thallium	mg/kg	ND (1.8)	ND (1.7)	14
Vanadium	mg/kg	17.1	14.3	1,500
Zinc	mg/kg	95.1	72	12,000
Mercury	mg/kg	ND (0.11)	ND (0.11)	10
VOC Analyses (8260)				
1,1,1-Trichloroethane	mg/kg	ND (0.0042)	ND (0.0080)	20
1,1,2,2-Tetrachloroethane	mg/kg	ND (0.0042)	ND (0.0080)	0.08
1,1,2-Trichloroethane	mg/kg	ND (0.0042)	ND (0.0080)	0.5
1,1-Dichloroethane	mg/kg	ND (0.0042)	ND (0.0080)	3.1
1,1-Dichloroethene	mg/kg	ND (0.0042)	ND (0.0080)	0.7
1,2,4-Trimethylbenzene	mg/kg	ND (0.0042)	ND (0.0080)	8.4
1,2-Dichlorobenzene	mg/kg	ND (0.0042)	ND (0.0080)	60
1,2-Dichloroethane	mg/kg	ND (0.0042)	ND (0.0080)	0.5
1,2-Dichloroethene (Total)	mg/kg	ND (0.0084)	ND (0.0160)	7
1,2-Dichloropropane	mg/kg	ND (0.0042)	ND (0.0080)	0.5
1,3,5-Trimethylbenzene	mg/kg	ND (0.0042)	ND (0.0080)	2.3
1,3-Dichlorobenzene	mg/kg	ND (0.0042)	ND (0.0080)	61
1,4-Dichlorobenzene	mg/kg	ND (0.0042)	ND (0.0080)	10
2-Butanone (MEK)	mg/kg	ND (0.0084)	0.0293	400
2-Hexanone	mg/kg	ND (0.0084)	ND (0.0160)	1.1
4-Methyl-2-pentanone (MIBK)	mg/kg	ND (0.0084)	ND (0.0160)	290
Acetone	mg/kg	0.0365	ND (0.770)	3,300
Benzene	mg/kg	ND (0.0042)	ND (0.0080)	0.5
Bromodichloromethane	mg/kg	ND (0.0042)	ND (0.0080)	8
Bromoform	mg/kg	ND (0.0042)	ND (0.0080)	8
Bromomethane	mg/kg	ND (0.0042)	ND (0.0080)	1
Carbon disulfide	mg/kg	ND (0.0042)	ND (0.0080)	150
Carbon tetrachloride	mg/kg	ND (0.0042)	ND (0.0080)	0.5
Chlorobenzene	mg/kg	ND (0.0042)	ND (0.0080)	10
Chloroethane	mg/kg	ND (0.0042)	ND (0.0080)	23
Chloroform	mg/kg	ND (0.0042)	ND (0.0080)	8
Chloromethane	mg/kg	ND (0.0042)	ND (0.0080)	3
cis-1,2-Dichloroethene	mg/kg	ND (0.0042)	ND (0.0080)	7
cis-1,3-Dichloropropene	mg/kg	ND (0.0042)	ND (0.0080)	0.66
Dibromochloromethane	mg/kg	ND (0.0042)	ND (0.0080)	8

Table 4.5-1
Analytical Results for Soil
(Borehole Locations)
Ely 1H/5H/7H SE Wellsite

Dimock, Township
Susquehana County, PA

Sample Identification / Sample Date / Parameter	Units	ELY-5-B1 5/25/2010	ELY-5-B2 5/25/2010	ELY-5-B3 5/25/2010	ELY-5-B4 5/25/2010	SOIL Residential Used Aquifer MSCs[1]
General Chemistry Analyses						
Percent Moisture (ASTM D2974-87)	%	8.7	18.9	10.9	7.2	NS[1]
Nitrogen, Ammonia (EPA 350.1)	mg/kg	13.6	92.4	45.8	13.1	1,900
Chloride (SM 4500-Cl-E)	mg/L	ND (3.0)[2]	ND (3.0)	4.4	ND (3.0)	NS
Surfactants (MBAS, SM 5540C)	mg/L	ND (0.10)	ND (0.10)	0.11	ND (0.10)	NS
Ethylene Glycol (EPA 8015)	mg/kg	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	1,400
Metals Analyses (6010B/7471)						
Aluminum	mg/kg	11,500	15,400	12,900	13,100	190,000
Antimony	mg/kg	0.33	ND (5.3)	ND (0.42)	ND (0.39)	27
Arsenic	mg/kg	2.8	2.7	1.7	2.2	12
Barium	mg/kg	62.4	109	76.9	126	8,200
Beryllium	mg/kg	0.53	0.71	0.85	0.81	320
Boron	mg/kg	9.6	11.3	10.8	11.2	1,900
Cadmium	mg/kg	0.56	0.7	0.34	0.41	38
Calcium	mg/kg	441	459	731	1,160	NS
Chromium	mg/kg	18.1	19	19.8	20.4	190,000[2]
Cobalt	mg/kg	12	9.7	12.2	13.3	50
Copper	mg/kg	2.6	4.4	2.7	8.1	8,100
Iron	mg/kg	32,800	35,100	36,000	36,300	150,000
Lead	mg/kg	2.9	6.8	2.8	3.3	400
Magnesium	mg/kg	4,550	3,120	4,900	5,320	NS
Manganese	mg/kg	322	707	232	372	2,000
Molybdenum	mg/kg	ND (1.2)	ND (1.4)	ND (1.6)	ND (1.5)	650
Nickel	mg/kg	30.1	20.6	34.2	34.6	650
Potassium	mg/kg	1,790	1,810	2,100	2,090	NS
Selenium	mg/kg	0.42	0.43	ND (0.44)	ND (0.39)	26
Silver	mg/kg	1.2	1.5	0.44	0.45	84
Sodium	mg/kg	ND (0.56)	ND (0.64)	ND (0.39)	ND (0.37)	NS
Thallium	mg/kg	ND (1.2)	ND (1.4)	ND (1.6)	ND (1.5)	14
Vanadium	mg/kg	17.1	23.5	18.6	19.4	1,500
Zinc	mg/kg	51.9	63.8	58.9	59.5	12,000
Mercury	mg/kg	ND (0.16)	ND (0.21)	ND (0.13)	ND (0.11)	10
VOC Analyses						
1,1,1-Trichloroethane	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	20
1,1,2,2-Tetrachloroethane	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.08
1,1,2-Trichloroethane	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.5
1,1-Dichloroethane	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	3.1
1,1-Dichloroethene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.7
1,2,4-Trimethylbenzene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	6.4
1,2-Dichlorobenzene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	60
1,2-Dichloroethane	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.5
1,2-Dichloroethene (Total)	mg/kg	ND (0.0111)	ND (0.0125)	ND (0.0128)	ND (0.0121)	7[3]
1,2-Dichloropropane	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.5
1,3,5-Trimethylbenzene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	2.3
1,3-Dichlorobenzene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	61
1,4-Dichlorobenzene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	10
2-Butanone (MEK)	mg/kg	ND (0.0111)	0.152	ND (0.0128)	ND (0.0121)	400
2-Hexanone	mg/kg	ND (0.0111)	ND (0.0125)	ND (0.0128)	ND (0.0121)	1.1
4-Methyl-2-pentanone (MIBK)	mg/kg	ND (0.0111)	ND (0.0125)	ND (0.0128)	ND (0.0121)	290
Acetone	mg/kg	0.0458	1.470	0.0431	0.159	3,300
Benzene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.5
Bromodichloromethane	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	8
Bromoform	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	8
Bromomethane	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	1
Carbon disulfide	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	150
Carbon tetrachloride	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.5
Chlorobenzene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	10
Chloroethane	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	23
Chloroform	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	6
Chloromethane	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	3
cis-1,2-Dichloroethene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	7
cis-1,3-Dichloropropene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.66
Dibromochloromethane	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	8
Ethylbenzene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	70
Isopropylbenzene (Cumene)	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	600
m&p-Xylene	mg/kg	ND (0.0111)	ND (0.0125)	ND (0.0128)	ND (0.0121)	1,000[3]
Methylene Chloride	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.5
Methyl-tert-butyl ether	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	2
Naphthalene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	25
n-Butylbenzene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	950
n-Propylbenzene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	290
o-Xylene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	1,000[3]
p-Isopropyltoluene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	NS
sec-Butylbenzene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	350
Styrene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	24
Tetrachloroethene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.5
Toluene	mg/kg	ND (0.0055)	0.297	ND (0.0064)	ND (0.0060)	100
TOTAL BTEX	mg/kg	ND (0.0333)	0.297	ND (0.0255)	ND (0.0493)	NS
trans-1,2-Dichloroethene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	10
trans-1,3-Dichloropropene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.66
Trichloroethene	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.5
Vinyl chloride	mg/kg	ND (0.0055)	ND (0.0063)	ND (0.0064)	ND (0.0060)	0.2
Xylene (Total)	mg/kg	ND (0.0166)	ND (0.0188)	ND (0.0191)	ND (0.0241)	1,000

Table 4.4-1
Analytical Results for Soil
Costello 1 Wellsite

Dimock, Township
Susquehana County, PA

Sample Identification / Sample Date / Parameter	Units	COSTELLO-1-B1 5/25/2010	COSTELLO-1-B2 5/25/2010	SOIL Residential Used Aquifer MSCs[a]
General Chemistry Analyses				
Percent Moisture (ASTM D2974-87)	%	9.1	8.2	NS[b]
Nitrogen, Ammonia (EPA 350.1)	mg/kg	12.4	7.2	1,900
Chloride (SM 4500-Cl-E)	mg/L	ND (0.01)[c]	ND (0.01)	NS
Surfactants (MBAS, SM 5540C)	mg/L	ND (0.10)	ND (0.10)	NS
Ethylene Glycol (EPA 8015)	mg/kg	ND (10.0)	ND (10.0)	1400
Metals Analyses (6010B/7471)				
Aluminum	mg/kg	12,800	11,700	190,000
Antimony	mg/kg	ND (0.39)	ND (0.39)	27
Arsenic	mg/kg	12.5	10.1	12
Barium	mg/kg	72.3	64.2	8,200
Beryllium	mg/kg	0.6	0.52	320
Boron	mg/kg	7.4	6.5	1900
Cadmium	mg/kg	0.32	0.36	38
Calcium	mg/kg	899	721	NS
Chromium	mg/kg	14.4	12.6	190,000[d]
Cobalt	mg/kg	8.6	9.6	50
Copper	mg/kg	13.4	13.7	8,100
Iron	mg/kg	23,500	22,400	150,000
Lead	mg/kg	13.1	15.5	450
Magnesium	mg/kg	3,820	3,710	NS
Manganese	mg/kg	520	701	2,000
Molybdenum	mg/kg	ND (1.5)	ND (1.5)	550
Nickel	mg/kg	19.3	19.5	650
Potassium	mg/kg	1,450	1,440	NS
Selenium	mg/kg	0.5	ND (0.39)	26
Silver	mg/kg	0.22	0.21	84
Sodium	mg/kg	ND (387)	ND (388)	NS
Thallium	mg/kg	ND (1.5)	ND (1.5)	14
Vanadium	mg/kg	18.1	13.2	1,500
Zinc	mg/kg	58.4	58.6	12,000
Mercury	mg/kg	ND (0.10)	ND (0.10)	10
VOC Analyses (8260)				
1,1,1-Trichloroethane	mg/kg	ND (0.0049)	ND (0.0054)	20
1,1,2,2-Tetrachloroethane	mg/kg	ND (0.0049)	ND (0.0054)	0.08
1,1,2-Trichloroethane	mg/kg	ND (0.0049)	ND (0.0054)	0.5
1,1-Dichloroethane	mg/kg	ND (0.0049)	ND (0.0054)	3.1
1,1-Dichloroethene	mg/kg	ND (0.0049)	ND (0.0054)	0.7
1,2,4-Trimethylbenzene	mg/kg	ND (0.0049)	ND (0.0054)	8.4
1,2-Dichlorobenzene	mg/kg	ND (0.0049)	ND (0.0054)	60
1,2-Dichloroethane	mg/kg	ND (0.0049)	ND (0.0054)	0.5
1,2-Dichloroethene (Total)	mg/kg	ND (0.0098)	ND (0.0108)	7[e]
1,2-Dichloropropane	mg/kg	ND (0.0049)	ND (0.0054)	0.5
1,3,5-Trimethylbenzene	mg/kg	ND (0.0049)	ND (0.0054)	2.3
1,3-Dichlorobenzene	mg/kg	ND (0.0049)	ND (0.0054)	61
1,4-Dichlorobenzene	mg/kg	ND (0.0049)	ND (0.0054)	10
2-Butanone (MEK)	mg/kg	ND (0.0098)	ND (0.0108)	400
2-Hexanone	mg/kg	ND (0.0098)	ND (0.0108)	1.1
4-Methyl-2-pentanone (MIBK)	mg/kg	ND (0.0098)	ND (0.0108)	290
Acetone	mg/kg	0.0311	0.0703	3,300
Benzene	mg/kg	ND (0.0049)	ND (0.0054)	0.5
Bromodichloromethane	mg/kg	ND (0.0049)	ND (0.0054)	8
Bromoform	mg/kg	ND (0.0049)	ND (0.0054)	8
Bromomethane	mg/kg	ND (0.0049)	ND (0.0054)	1
Carbon disulfide	mg/kg	ND (0.0049)	ND (0.0054)	150
Carbon tetrachloride	mg/kg	ND (0.0049)	ND (0.0054)	0.5
Chlorobenzene	mg/kg	ND (0.0049)	ND (0.0054)	10
Chloroethane	mg/kg	ND (0.0049)	ND (0.0054)	23
Chloroform	mg/kg	ND (0.0049)	ND (0.0054)	8
Chloromethane	mg/kg	ND (0.0049)	ND (0.0054)	3
cis-1,2-Dichloroethene	mg/kg	ND (0.0049)	ND (0.0054)	7
cis-1,3-Dichloropropene	mg/kg	ND (0.0049)	ND (0.0054)	0.66
Dibromochloromethane	mg/kg	ND (0.0049)	ND (0.0054)	8
Ethylbenzene	mg/kg	ND (0.0049)	ND (0.0054)	70

Table 4.3-2
Analytical Results for Surface Water
W. Chudleigh 1 Wellsite

Dimock Township
Susquehanna County, PA

Sample Identification / Sample Location / Sample Date / Parameter	UNITS	Chud-DN *Downgradient* 5/26/2010	Chud-UP *Upgradient* 5/26/2010	Surface Water Quality Criteria[1] Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria
General Chemistry						
pH	pH units	7.6	7.6	6.0-9.0		NS[4]
Diesel Components (DRO EPA 8015B Mod)	mg/L	ND (0.11)[2]	ND (0.11)	NS[3]	NS	NS
TPH (C06-C10) (GRO EPA 8015B Mod)	mg/L	ND (0.200)	ND (0.200)	NS	NS	NS
Oil and Grease (EPA 1664A)	mg/L	ND (4.9)	ND (5.0)	NS	NS	NS
TPH (EPA 1664A)	mg/L	ND (4.8)	ND (4.8)	NS	NS	NS
Acidity (SM 2310B)	mg/L	ND (10.0)	ND (10.0)	NS	NS	NS
Alkalinity (SM 2320B)	mg/L	36.0	42.0	NS	NS	NS
Ammonia (EPA 350.1)	mg/L	ND (0.10)	ND (0.10)	NS	NS	NS
Ethylene Glycol (EPA 8015)	mg/L	ND (10.0)	ND (10.0)	NS	NS	NS
TDS (SM 2540C)	mg/L	106	89.0	NS	NS	750
Surfactants (MBAS SM 5540C)	mg/L	ND (0.10)	ND (0.10)	NS	NS	NS
Chloride (SM 4500-Cl-E)	mg/L	4.6	4.5	NS	NS	250
Total Metals Analyses (6010/7470)						
Aluminum, Total	ug/L	1480	291	NS	750	NS
Antimony, Total	ug/L	ND (5.0)[2]	ND (5.0)	220	1,100	5.6
Arsenic, Total	ug/L	ND (5.0)	ND (5.0)	150	340	10
Barium, Total	ug/L	50.6	34.8	4,100	21,000	2,400
Beryllium, Total	ug/L	ND (1.0)	ND (1.0)	NS	NS	NS
Boron, Total	ug/L	ND (50.0)	ND (50.0)	1,600	8,100	3,100
Cadmium, Total	ug/L	ND (1.0)	ND (1.0)	NS	NS	NS
Calcium, Total	ug/L	16,900	16,900	NS	NS	NS
Chromium, Total	ug/L	ND (5.0)	ND (5.0)	NS	NS	NS
Cobalt, Total	ug/L	ND (5.0)	ND (5.0)	19	95	NS
Copper, Total	ug/L	ND (5.0)	ND (5.0)	NS	NS	NS
Iron, Total	ug/L	2,080	481	1,500[4]	1,500[4]	NS[4]
Lead, Total	ug/L	ND (2.0)	ND (2.0)	NS	NS	NS
Magnesium, Total	ug/L	2,420	2,160	NS	NS	NS
Manganese, Total	ug/L	184	49.8	NS	NS	1,000
Molybdenum, Total	ug/L	ND (20.0)	ND (20.0)	NS	NS	NS
Nickel, Total	ug/L	ND (10.0)	ND (10.0)	NS	NS	NS
Potassium, Total	ug/L	973	623	NS	NS	NS
Selenium, Total	ug/L	ND (5.0)	ND (5.0)	NS	NS	NS
Silver, Total	ug/L	1.2	ND (1.0)	NS	NS	NS
Sodium, Total	ug/L	2,390	2,530	NS	NS	NS
Thallium, Total	ug/L	ND (10.0)	ND (10.0)	13	65	0.24
Vanadium, Total	ug/L	ND (5.0)	ND (5.0)	100	510	NS
Zinc, Total	ug/L	ND (10.0)	ND (10.0)	NS	NS	NS
Mercury, Total	ug/L	ND (0.20)	ND (0.20)	NS	NS	NS
Dissolved Metals Analyses (6010/7470)						
Aluminum, Dissolved	ug/L	ND (50.0)	ND (50.0)	NS	NS	NS
Antimony, Dissolved	ug/L	ND (5.0)	ND (5.0)	NS	NS	NS
Arsenic, Dissolved	ug/L	ND (5.0)	ND (5.0)	NS	NS	NS
Barium, Dissolved	ug/L	30.2	29.7	NS	NS	NS
Beryllium, Dissolved	ug/L	ND (1.0)	ND (1.0)	NS	NS	NS
Boron, Dissolved	ug/L	ND (50.0)	ND (50.0)	NS	NS	NS
Cadmium, Dissolved	ug/L	ND (1.0)	ND (1.0)	0.25	2.01	NS
Calcium, Dissolved	ug/L	16,100	16,500	NS	NS	NS
Chromium, Dissolved	ug/L	ND (5.0)	ND (5.0)	74.1	589.8	NS
Cobalt, Dissolved	ug/L	ND (5.0)	ND (5.0)	NS	NS	NS
Copper, Dissolved	ug/L	ND (5.0)	ND (5.0)	9.0	13	NS
Iron, Dissolved	ug/L	54.6	60.4	NS	NS	300
Lead, Dissolved	ug/L	ND (2.0)	ND (2.0)	2.5	64.6	NS
Magnesium, Dissolved	ug/L	1,940	1,980	NS	NS	NS
Manganese, Dissolved	ug/L	7.7	6.2	NS	NS	NS
Molybdenum, Dissolved	ug/L	ND (20.0)	ND (20.0)	NS	NS	NS
Nickel, Dissolved	ug/L	ND (10.0)	ND (10.0)	52	470	610
Potassium, Dissolved	ug/L	626	563	NS	NS	NS
Selenium, Dissolved	ug/L	ND (5.0)	ND (5.0)	4.6	NS	NS
Silver, Dissolved	ug/L	ND (1.0)	ND (1.0)	NS	3.2	NS
Sodium, Dissolved	ug/L	2,890	2,760	NS	NS	NS
Thallium, Dissolved	ug/L	ND (10.0)	ND (10.0)	NS	NS	NS
Vanadium, Dissolved	ug/L	ND (5.0)	ND (5.0)	NS	NS	NS
Zinc, Dissolved	ug/L	ND (10.0)	ND (10.0)	120	120	NS
Mercury, Dissolved	ug/L	ND (0.20)	ND (0.20)	0.77	1.4	0.05

Table 4.3-1
Analytical Results for Soil
W. Chudleigh 1 Wellsite

Dimock, Township
Susquehana County, PA

Sample Identification / Sample Date / Parameter	Units	CHUDLEIGH-1-B1 5/25/2010	CHUDLEIGH-1-B2 5/25/2010	SOIL Residential Used Aquifer MSCs[1]
General Chemistry Analyses				
Percent Moisture (ASTM D2974-87)	%	9.9	9.0	NS[3]
Nitrogen, Ammonia (EPA 350.1)	mg/kg	ND (5.3)[4]	ND (5.3)	1,900
Chloride (SM 4500-Cl-E)	mg/L	ND (3.0)	ND (3.0)	NS
Surfactants (MBAS SM 5540C)	mg/L	ND (0.10)	ND (0.10)	NS
Ethylene Glycol (EPA 8015)	mg/kg	ND (10.0)	ND (10.0)	1400
Metals Analyses (6010B/7471)				
Aluminum	mg/kg	11,000	13,100	190,000
Antimony	mg/kg	ND (0.52)	ND (0.49)	27
Arsenic	mg/kg	10.2	3.5	12
Barium	mg/kg	136	84.1	8,200
Beryllium	mg/kg	0.65	0.81	320
Boron	mg/kg	5.7	8.8	1,900
Cadmium	mg/kg	ND (0.21)	0.23	38
Calcium	mg/kg	1,350	1,010	NS
Chromium	mg/kg	11.8	16.9	190,000*
Cobalt	mg/kg	9.6	11.4	50
Copper	mg/kg	13.2	6.4	8,100
Iron	mg/kg	22,800	31,700	150,000
Lead	mg/kg	9.2	4.9	450
Magnesium	mg/kg	3,420	4,610	NS
Manganese	mg/kg	519	410	2,000
Molybdenum	mg/kg	ND (2.1)	ND (2.0)	650
Nickel	mg/kg	17.8	26.7	650
Potassium	mg/kg	1,790	2,050	NS
Selenium	mg/kg	ND (0.52)	ND (0.49)	26
Silver	mg/kg	0.52	0.93	84
Sodium	mg/kg	ND (524)	ND (491)	NS
Thallium	mg/kg	ND (2.1)	ND (2.0)	14
Vanadium	mg/kg	12.2	16.8	1,500
Zinc	mg/kg	50.2	52.5	12,000
Mercury	mg/kg	ND (0.10)	ND (0.10)	10
VOC Analyses (8260)				
1,1,1-Trichloroethane	mg/kg	ND (0.0052)	ND (0.0057)	20
1,1,2,2-Tetrachloroethane	mg/kg	ND (0.0052)	ND (0.0057)	0.08
1,1,2-Trichloroethane	mg/kg	ND (0.0052)	ND (0.0057)	0.5
1,1-Dichloroethane	mg/kg	ND (0.0052)	ND (0.0057)	3.1
1,1-Dichloroethene	mg/kg	ND (0.0052)	ND (0.0057)	0.7
1,2,4-Trimethylbenzene	mg/kg	ND (0.0052)	ND (0.0057)	8.4
1,2-Dichlorobenzene	mg/kg	ND (0.0052)	ND (0.0057)	60
1,2-Dichloroethane	mg/kg	ND (0.0052)	ND (0.0057)	0.5
1,2-Dichloroethene (Total)	mg/kg	ND (0.0105)	ND (0.0114)	7[2]
1,2-Dichloropropane	mg/kg	ND (0.0052)	ND (0.0057)	0.5
1,3,5-Trimethylbenzene	mg/kg	ND (0.0052)	ND (0.0057)	2.3
1,3-Dichlorobenzene	mg/kg	ND (0.0052)	ND (0.0057)	61
1,4-Dichlorobenzene	mg/kg	ND (0.0052)	ND (0.0057)	10
2-Butanone (MEK)	mg/kg	ND (0.0105)	ND (0.0114)	400
2-Hexanone	mg/kg	ND (0.0105)	ND (0.0114)	1.1
4-Methyl-2-pentanone (MIBK)	mg/kg	ND (0.0105)	ND (0.0114)	290

Location Sample Identification Sample Date Parameter	Units	Brooks 1H BRK-1H-P[illegible] 5/25/201[illegible]	Brooks 1H BRK-1H-P8B 5/25/2010	Brooks 1H BRK-1H-P9A 5/25/2010	Brooks 1H BRK-1H-P9B 5/25/2010	SCIL Residential Used Aquifer MSCs[1]
General Chemistry Analysis						
Percent Moisture (ASTM D2974-87)	%	12.4	8.4	9.1	9.6	NS[3]
Nitrogen, Ammonia (EPA 350.1)	mg/kg	179	6.8	ND(5.1)	ND(5.2)	1,500
pH (EPA 9045)	Std. Units	6.1	6.5	6.6	6	NS
Chloride (SM 4500-Cl-E)	mg/L	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	NS
Surfactants (MBAS SM 5540C)	mg/L	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	NS
Diesel Components (DRO EPA 8015B Mod)	mg/kg	13.3	ND(7.1)	ND(7.3)	ND(7.4)	NS
TPH (C06-C10) (GRO EPA 8015B Mod)	mg/kg	ND(9.2)	ND(7.3)	ND(9.1)	ND(9.5)	NS
Ethylene Glycol (8015)	mg/kg	ND(7.4)	ND(10.0)	ND(10.2)	ND(10.0)	1,400
Metals (6010B/7471)						
Aluminum	mg/kg	12,200	11,000	9,160	12,200	190,000
Antimony	mg/kg	ND(0.46)	ND(0.361)	ND(0.331)	ND(0.43)	27
Arsenic	mg/kg	10.5	8.6	7.4	8.5	12
Barium	mg/kg	144	149	83.8	132	8,208
Beryllium	mg/kg	0.62	0.5	0.59	0.73	329
Boron	mg/kg	7.7	7.6	7.1	8.8	1,500
Cadmium	mg/kg	0.41	0.41	0.31	0.4	38
Calcium	mg/kg	932	1460	1380	1220	NS
Chromium	mg/kg	14.5	13.8	12.6	15.2	190,000[2]
Cobalt	mg/kg	11.8	11.5	9.7	12.3	50
Copper	mg/kg	13.1	17	13.8	19.8	8,100
Iron	mg/kg	26,700	25,000	22,400	27,500	150,000
Lead	mg/kg	15.8	12.2	8.3	12.3	400
Magnesium	mg/kg	3,320	3,860	3,310	4,100	NS
Manganese	mg/kg	579	568	509	706	2,000
Molybdenum	mg/kg	ND(1.5)	ND(1.4)	ND(1.3)	ND(1.7)	550
Nickel	mg/kg	17.8	22.6	20.9	24.1	550
Potassium	mg/kg	1,260	1,670	1,520	2,000	NS
Selenium	mg/kg	ND(0.[illegible])	ND(0.361)	ND(0.371)	ND(0.43)	20
Silver	mg/kg	0.53	0.24	0.22	0.28	84
Sodium	mg/kg	ND(146)	ND(155)	ND(115)	ND(1[illegible])	NS
Thallium	mg/kg	ND(1.5)	ND(1.4)	ND(1.3)	ND(1.7)	14
Vanadium	mg/kg	18.7	14.2	13.1	15.1	1,500
Zinc	mg/kg	51.8	59.5	48.3	59.4	12,000
Mercury	mg/kg	ND(0.1)	ND(0.11)	ND(0.10)	ND(0.10)	10
VOCs (8260)						
1,1,1-Trichloroethane	mg/kg	ND(0.20)	ND(0.0160)	ND(0.0159)	ND(0.0163)	20
1,1,2,2-Tetrachloroethane	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.08
1,1,2-Trichloroethane	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.5
1,1-Dichloroethane	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	3.1
1,1-Dichloroethene	mg/kg	ND(0.20)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.7
1,2,4-Trimethylbenzene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	8.4
1,2-Dichlorobenzene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	60
1,2-Dichloroethane	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.5
1,2-Dichloroethene (Total)	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	1[4]
1,2-Dichloropropane	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.5
1,3,5-Trimethylbenzene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	2.3
1,3-Dichlorobenzene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	61
1,4-Dichlorobenzene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	15
2-Butanone (MEK)	mg/kg	ND(0.020)	ND(0.0294)	ND(0.0237)	ND(0.0299)	400
2-Hexanone	mg/kg	ND(0.020)	ND(0.0294)	ND(0.0237)	ND(0.0299)	1.1
4-Methyl-2-pentanone (MIBK)	mg/kg	ND(0.020)	ND(0.0294)	ND(0.0237)	ND(0.0299)	298
Acetone	mg/kg	0.0523	0.0201	0.0119	0.0239	3,300
Benzene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.5
Bromodichloromethane	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	8
Bromoform	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	8
Bromomethane	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	1
Carbon disulfide	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	150
Carbon tetrachloride	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.5
Chlorobenzene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	10
Chloroethane	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	23
Chloroform	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	8
Chloromethane	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	2
cis-1,2-Dichloroethene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	7
cis-1,3-Dichloropropene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.66
Dibromochloromethane	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	8
Ethylbenzene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	79
Isopropylbenzene (Cumene)	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	800
m&p-Xylene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	1,000[2]
Methylene Chloride	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.5
Methyl-tert-butyl ether	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	7
Naphthalene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	25
n-Butylbenzene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	950
n-Propylbenzene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	390
o-Xylene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	1,000[2]
p-Isopropyltoluene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	NS
sec-Butylbenzene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	350
Styrene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	24
Tetrachloroethene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.5
Toluene	mg/kg	0.0196	ND(0.0060)	ND(0.0048)	ND(0.0061)	100
TOTAL BTEX	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	NS
trans-1,2-Dichloroethene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	10
trans-1,3-Dichloropropene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.66
Trichloroethene	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.5
Vinyl chloride	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	0.2
Xylene (Total)	mg/kg	ND(0.004)	ND(0.0060)	ND(0.0048)	ND(0.0061)	1,000

Table 4.1-1
Analytical Results for Soil
Black 1H Wellsite

Dimock Township
Susquehana County, PA

Sample Identification / Sample Date / Parameter	Units	BLACK-1-B1 5/25/2010	BLACK-1-B2 5/25/2010	SOIL Residential Used Aquifer MSCs[1]
General Chemistry Analyses				
Percent Moisture (ASTM D2974-87)	%	4.8	6.2	NS[3]
Nitrogen, Ammonia (EPA 350.1)	mg/kg	15	ND (5.2)	NS
Chloride (SM 4500-Cl-E)	mg/L	ND (3.0)[2]	5	NS
Surfactants (MBAS SM 5540C)	mg/L	0.13	ND (0.10)	NS
Ethylene Glycol (EPA 8015)	mg/kg	ND (10.0)	ND (10.0)	1,400
Metals Analyses (6010B/7470)				
Aluminum	mg/kg	13,100	12,100	190,000
Antimony	mg/kg	ND (0.35)	ND (0.39)	27
Arsenic	mg/kg	9.5	3.9	12
Barium	mg/kg	185	142	8,200
Beryllium	mg/kg	0.69	0.8	320
Boron	mg/kg	6.5	7.1	1,900
Cadmium	mg/kg	0.29	0.27	38
Calcium	mg/kg	3,320	1,560	NS
Chromium	mg/kg	16.3	16.6	190000[4]
Cobalt	mg/kg	11.8	11.1	50
Copper	mg/kg	16.4	8.1	8,100
Iron	mg/kg	25,900	26,300	150,000
Lead	mg/kg	6.8	2.8	450
Magnesium	mg/kg	5,500	4,970	NS
Manganese	mg/kg	532	402	2,000
Molybdenum	mg/kg	ND (1.4)	ND (1.6)	650
Nickel	mg/kg	24.7	23.1	650
Potassium	mg/kg	1,600	1,660	NS
Selenium	mg/kg	ND (0.35)	0.48	26
Silver	mg/kg	0.67	0.88	84
Sodium	mg/kg	ND (346)	ND (392)	NS
Thallium	mg/kg	ND (1.4)	ND (1.6)	14
Vanadium	mg/kg	14	15.1	1,500
Zinc	mg/kg	65.6	55	12,000
Mercury	mg/kg	ND (0.10)	ND (0.11)	10
VOC Analyses (8260)				
1,1,1-Trichloroethane	mg/kg	ND (0.0067)	ND (0.0083)	20
1,1,2,2-Tetrachloroethane	mg/kg	ND (0.0067)	ND (0.0083)	0.08
1,1,2-Trichloroethane	mg/kg	ND (0.0067)	ND (0.0083)	0.5
1,1-Dichloroethane	mg/kg	ND (0.0067)	ND (0.0083)	3.1
1,1-Dichloroethene	mg/kg	ND (0.0067)	ND (0.0083)	0.7
1,2,4-Trimethylbenzene	mg/kg	ND (0.0067)	ND (0.0083)	8.4
1,2-Dichlorobenzene	mg/kg	ND (0.0067)	ND (0.0083)	60
1,2-Dichloroethane	mg/kg	ND (0.0067)	ND (0.0083)	0.5
1,2-Dichloroethene (Total)	mg/kg	ND (0.0134)	ND (0.0166)	7[5]
1,2-Dichloropropane	mg/kg	ND (0.0067)	ND (0.0083)	0.5
1,3,5-Trimethylbenzene	mg/kg	ND (0.0067)	ND (0.0083)	2.3
1,3-Dichlorobenzene	mg/kg	ND (0.0067)	ND (0.0083)	61
1,4-Dichlorobenzene	mg/kg	ND (0.0067)	ND (0.0083)	10
2-Butanone (MEK)	mg/kg	ND (0.0134)	ND (0.0166)	400

Table 4.7-1
Analytical Results for Soil
Ely 4PH Wellsite

Dimock, Township
Susquehana County, PA

Sample Identification / Sample Date / Parameter	Units	ELY-4-P1A 5/25/2010	ELY-4-P1B 5/25/2010	ELY-4-P2A 5/25/2010	ELY-4-P2B 5/25/2010	ELY-4-P3A 5/25/2010	ELY-4-P3B 5/25/2010	ELY-4-P3C 5/25/2010	ELY-4-P4A 5/25/2010	ELY-4-P4B 5/25/2010	ELY-4-P5A 5/25/2010	ELY-4-P5B 5/25/2010	ELY-4-P6A 5/25/2010	ELY-4-P6B 5/25/2010	ELY-4-P7A 5/25/2010	ELY-4-P7B 5/25/2010	SQAL Residential Used Aquifer MSCs[1]
General Chemistry Analyses																	
Percent Moisture (ASTM D2974-87)	%	18.6	17.6	8.6	10.2	10.8	9.3	8.8	17.6	15.1	14.8	13	11.2	22.4	29.4	21.4	NS[1]
Nitrogen, Ammonia (EPA 350.1)	mg/kg	45.2	76.8	13.3	17.4	30.8	7.8	212	337	39.3	68.5	18.9	160	10.6	183	20.9	1,000
pH (EPA 9045)	Std. Units	6.7	4.9	5	5.7	5.2	5.3	6.4	6.3	5.1	6.3	5.7	6	5.5	5.3	6.3	NS
Chloride (SM 4500-Cl-B)	mg/L	5.5	35.8	5.5	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	3.8	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	NS
Surfactants (MBAS, SM 5540C)	mg/L	ND(0.18)	ND(0.15)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	NS
Diesel Components (DRO, EPA 8015B Mod)	mg/kg	212	41.1	ND(7.1)	58.8	12.8	ND(7.2)	ND(7.2)	23.7	ND(7.4)	ND(7.0)	ND(7.4)	ND(7.3)	ND(8.5)	ND(9.3)	ND(5.8)	NS
TPH (C06-C10) (GRO, EPA 8015B Mod)	mg/kg	ND(11.1)	ND(12.9)	ND(9.7)	ND(10.0)	ND(11.4)	ND(9.6)	ND(8.5)	ND(11.8)	ND(8.6)	ND(12.3)	ND(12.7)	ND(10.1)	ND(14.1)	ND(16.4)	ND(12.8)	NS
Ethylene Glycol (EPA 8015)	mg/kg	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	1,000
Metals Analyses (6010/6020/7471)																	
Aluminum	mg/kg	14,100	16,900	12,700	14,000	16,900	14,500	15,400	14,100	13,300	14,700	14,900	12,900	13,900	18,200	18,100	100,000
Antimony	mg/kg	ND(0.30)	ND(0.43)	ND(0.34)	ND(0.44)	ND(0.40)	0.86	ND(0.43)	ND(0.51)	ND(0.35)	ND(0.44)	ND(0.29)	ND(0.35)	ND(0.44)	ND(0.62)	ND(0.45)	27
Arsenic	mg/kg	29	19.3	20.7	28.3	6	3.4	3.3	17.9	12.1	2.7	3.4	36.9	8.2	27.8	32.6	12
Barium	mg/kg	3,900	1,240	111	315	93.4	84.4	90.3	100	81.1	113	65.9	127	111	380	347	8,200
Beryllium	mg/kg	0.71	0.6	0.83	0.84	0.81	1.1	1.3	0.93	0.82	0.54	0.66	0.85	0.41	1.2	1.8	370
Boron	mg/kg	7.5	8.9	9	9.8	10.3	12.7	12.5	8	7.3	8.4	8.8	9.9	8.2	10.6	10.6	1,900
Cadmium	mg/kg	0.75	0.46	0.85	0.9	0.62	0.49	0.53	0.71	0.45	0.4	0.38	1.2	0.46	1.1	1	38
Calcium	mg/kg	945	833	946	1,490	184	636	861	623	260	1,070	415	1,170	844	1,870	1,620	NS
Chromium	mg/kg	14.7	16.8	14.4	15.1	17.7	18.9	29.3	13.7	14	18	18.5	14.5	13.6	20.3	21.8	190,000
Cobalt	mg/kg	15.3	12.9	13.8	14	11.7	11.8	12.1	11.8	10.5	9.3	11.4	14.5	6.3	11.8	12.5	90
Copper	mg/kg	29.4	11.3	18.4	21.4	9.8	6.1	9.2	14.4	12.4	3.4	5.9	28.8	7.2	24.7	38.7	8,190
Iron	mg/kg	25,000	26,200	38,600	27,700	33,600	37,100	38,200	24,000	23,900	29,700	29,600	30,100	23,900	28,600	30,500	130,000
Lead	mg/kg	58.9	18	43.1	71	7.5	6.2	6.4	33.8	18.8	8.5	6.1	60.1	20.1	38.1	32.5	450
Magnesium	mg/kg	6,450	2,860	4,360	4,320	4,780	5,580	6,010	3,350	4,040	3,440	5,240	4,640	2,220	3,140	3,830	NS
Manganese	mg/kg	894	829	1,380	1,110	852	863	829	1,020	473	1,850	296	1,490	704	2,960	4,310	3,000
Molybdenum	mg/kg	ND(1.2)	ND(1.2)	ND(1.4)	ND(1.9)	ND(1.6)	ND(1.6)	ND(1.9)	ND(2.1)	ND(1.6)	ND(1.6)	ND(1.7)	ND(1.8)	ND(2.0)	ND(2.5)	ND(1.8)	450
Nickel	mg/kg	21.9	20.1	22.7	22.9	27.4	29.3	38.8	18.5	20.8	17.8	28.2	24	16.5	18.5	21.3	850
Potassium	mg/kg	1,410	1,240	1,540	1,630	1,490	1,660	1,970	1,150	1,130	937	1,120	1,670	955	1,740	1,840	NS
Selenium	mg/kg	ND(0.30)	ND(0.43)	ND(0.34)	ND(0.44)	ND(0.40)	0.58	ND(0.43)	ND(0.51)	0.35	0.42	0.52	ND(0.35)	0.73	ND(0.62)	ND(0.45)	28
Silver	mg/kg	0.31	0.34	0.29	0.29	0.41	1.6	0.43	0.36	0.38	0.35	0.37	0.31	0.42	0.32	0.25	84
Sodium	mg/kg	323	606	ND(342)	ND(442)	ND(395)	ND(438)	ND(425)	ND(514)	ND(355)	ND(449)	ND(417)	ND(410)	ND(438)	ND(621)	ND(443)	NS
Thallium	mg/kg	ND(1.2)	ND(1.2)	ND(1.4)	ND(1.9)	ND(1.6)	ND(1.6)	ND(1.9)	ND(2.1)	ND(1.4)	ND(1.6)	ND(1.7)	ND(1.4)	ND(2.0)	ND(2.5)	3.1	14
Vanadium	mg/kg	17	22.9	18.3	17.2	21.3	20.2	29.8	18.2	16.7	20.9	19.4	16.2	22.1	29.1	29.8	1,580
Zinc	mg/kg	96.9	78.2	81.4	107	98.3	98.7	92.5	85	67.7	92.8	58.5	122	98.2	96.7	83.6	12,000
Mercury	mg/kg	ND(0.11)	ND(0.13)	ND(0.11)	ND(0.13)	ND(0.11)	ND(0.11)	ND(0.10)	ND(0.12)	ND(0.11)	ND(0.12)	ND(0.13)	ND(0.11)	ND(0.12)	ND(0.15)	ND(0.12)	10

DIM0190874

DIM0190881

DIM0190874

Table 4.7-1
Analytical Results for Soil
Ely 4HH Wellsite

Dimock, Township
Susquehanna County, PA

Sample Identification / Sample Date / Parameter	Units	ELY-4-P1A 5/25/2010	ELY-4-P1B 5/25/2010	ELY-4-P2A 5/25/2010	ELY-4-P2B 5/25/2010	ELY-4-P3A 5/25/2010	ELY-4-P3B 5/25/2010	ELY-4-P3C 5/25/2010	ELY-4-P4A 5/25/2010	ELY-4-P4B 5/25/2010	ELY-4-P5A 5/25/2010	ELY-4-P5B 5/25/2010	ELY-4-P6A 5/25/2010	ELY-4-P6B 5/25/2010	ELY-4-P7A 5/25/2010	ELY-4-P7B 5/25/2010	SOIL Residential Used Aquifer MSCs[1]
SVOCs Analyses (8270)																	
1,2,4-Trichlorobenzene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	27
1,2-Dichlorobenzene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	60
1,3-Dichlorobenzene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	91
1,4-Dichlorobenzene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	10
2,4,5-Trichlorophenol	mg/kg	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (1.071)	ND (1.071)	ND (1.071)	2,300
2,4,6-Trichlorophenol	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	11
2,4-Dichlorophenol	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	2
2,4-Dimethylphenol	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	73
2,4-Dinitrophenol	mg/kg	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (1.071)	ND (1.071)	ND (1.071)	7.2
2,4-Dinitrotoluene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	0.21
2,6-Dinitrotoluene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	3.7
2-Chloronaphthalene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	6,200
2-Chlorophenol	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	4.4
2-Methylnaphthalene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	600
2-Methylphenol(o-Cresol)	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	100
2-Nitroaniline	mg/kg	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (1.071)	ND (1.071)	ND (1.071)	11
2-Nitrophenol	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	29
3&4-Methylphenol(m&p Cresol)	mg/kg	ND (0.7141)	ND (0.7141)	ND (0.7141)	ND (0.7141)	ND (0.7141)	ND (0.7141)	ND (0.7141)	ND (0.7141)	ND (0.7141)	ND (0.7141)	ND (0.7141)	ND (0.7141)	ND (0.8341)	ND (0.8341)	ND (0.8341)	10
3,3'-Dichlorobenzidine	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	8.3
3-Nitroaniline	mg/kg	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (1.071)	ND (1.071)	ND (1.071)	1.1
4,6-Dinitro-2-methylphenol	mg/kg	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (1.071)	ND (1.071)	ND (1.071)	0.37
4-Bromophenylphenyl ether	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	NS
4-Chloro-3-methylphenol	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	37
4-Chloroaniline	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	0.42
4-Chlorophenylphenyl ether	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	NS
4-Nitroaniline	mg/kg	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (0.9171)	ND (1.071)	ND (1.071)	ND (1.071)	3.3
4-Nitrophenol	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	8
Acenaphthene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	2,700
Acenaphthylene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	2,500
Anthracene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	350
Benzo(a)anthracene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	5.7
Benzo(a)pyrene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	0.57
Benzo(b)fluoranthene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	5.7
Benzo(k)fluoranthene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	168
Benzyl alcohol	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	57
bis(2-Chloroethoxy)methane	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	1,800
bis(2-Chloroethyl) ether	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	11
bis(2-Chloroisopropyl) ether	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	6,015
bis(2-Ethylhexyl)phthalate	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	36
Butylbenzylphthalate	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	138
Chrysene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	3,900
Dibenz(a,h)anthracene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	339
Dibenzofuran	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	0.57
Diethylphthalate	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	95
Dimethylphthalate	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	2,500
Di-n-butylphthalate	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	NS
Di-n-octylphthalate	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	1500
Fluoranthene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	8,800
Fluorene	mg/kg	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.3571)	ND (0.4171)	ND (0.4171)	ND (0.4171)	3,700

DIM0190882

Table 4.7-2
Analytical Results for Surface Water
Ely 4/6H Wellsite

Dimock Township
Susquehanna County, PA

Sample Identification / Sample Date / Parameter	Units	Ely Pond 5/26/2010	Ely-OW Seep 5/26/2010	Ely-OW Seep D (Field Duplicate) 5/26/2010	Surface Water Quality Criteria[1] Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria
General Chemistry							
Acidity, Total (SM 2310B)	mg/L	ND (10.0)[2]	ND (10.0)	ND (10.0)	NS[3]	NS	NS
Alkalinity, Total as CaCO3 (SM 2320B)	mg/L	14.0	10.0	20.0	NS	NS	NS
Nitrogen, Ammonia (EPA 350.1)	mg/L	0.11	ND (0.10)	ND (0.10)	NS	NS	NS
Chloride (SM 4500-Cl-E)	mg/L	12.1	4.0	3.8	NS	NS	250
Ethylene Glycol (EPA 8015)	mg/L	ND (10.0)	ND (10.0)	ND (10.0)	NS	NS	NS
Surfactants (MBAS, SM 5540C)	mg/L	ND (0.10)	ND (0.10)	ND (0.10)	NS	NS	NS
Oil & Grease (1664A)	mg/L	ND (5.2)	ND (4.5)	ND (5.4)	NS	NS	NS
pH	pH units	5.8	5.6	6.9	6.0-9.0		NS
Total Dissolved Solids (SM 2540C)	mg/L	126	83.0	76.0	NS	NS	750
Total Petroleum Hydrocarbons (EPA 1664A)	mg/L	ND (4.8)	ND (4.8)	ND (4.8)	NS	NS	NS
Diesel Components (DRO, EPA 8015B Mod)	mg/L	ND (0.11)	ND (0.11)	ND (0.11)	NS	NS	NS
TPH (C06-C10) (GRO, EPA 8015B Mod)	mg/L	ND (0.230)	ND (0.200)	ND (0.200)	NS	NS	NS
Metals (6010/7470)							
Aluminum, Total	ug/L	191	ND (50.0)	ND (50.0)	NS	750	NS
Antimony, Total	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	220	1,100	5.6
Arsenic, Total	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	150	340	10
Barium, Total	ug/L	53.4	62.8	62.2	4,100	21,000	2,400
Beryllium, Total	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	NS	NS	NS
Boron, Total	ug/L	ND (50.0)	ND (50.0)	ND (50.0)	1,600	8,100	3,100
Cadmium, Total	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	NS	NS	NS
Calcium, Total	ug/L	10,000	8,900	8,930	NS	NS	NS
Chromium, Total	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	NS	NS	NS
Cobalt, Total	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	19	95	NS
Copper, Total	ug/L	5.8	ND (5.0)	ND (5.0)	NS	NS	NS
Iron, Total	ug/L	264	ND (50.0)	ND (50.0)	1,500[4]	1,500[4]	NS[4]
Lead, Total	ug/L	ND (2.0)	ND (2.0)	ND (2.0)	NS	NS	NS
Magnesium, Total	ug/L	1,980	1,810	1,800	NS	NS	NS
Manganese, Total	ug/L	92.9	8.9	10.1	NS	NS	1,000
Molybdenum, Total	ug/L	ND (20.0)	ND (20.0)	ND (20.0)	NS	NS	NS
Nickel, Total	ug/L	ND (10.0)	ND (10.0)	ND (10.0)	NS	NS	NS
Potassium, Total	ug/L	753	618	625	NS	NS	NS
Selenium, Total	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	NS	NS	NS
Silver, Total	ug/L	1.4	ND (1.0)	ND (1.0)	NS	NS	NS
Sodium, Total	ug/L	4,020	2,020	2,140	NS	NS	NS
Thallium, Total	ug/L	ND (10.0)	ND (10.0)	ND (10.0)	13	65	0.24
Vanadium, Total	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	100	510	NS
Zinc, Total	ug/L	ND (10.0)	ND (10.0)	ND (10.0)	NS	NS	NS
Mercury, Total	ug/L	ND (0.20)	ND (0.20)	ND (0.20)	NS	NS	NS
Metals (6010/7470)							
Aluminum, Dissolved	ug/L	ND (50.0)	ND (50.0)	ND (50.0)	NS	NS	NS
Antimony, Dissolved	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	NS	NS	NS
Arsenic, Dissolved	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	NS	NS	NS
Barium, Dissolved	ug/L	44.7	57.4	54.1	NS	NS	NS
Beryllium, Dissolved	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	NS	NS	NS
Boron, Dissolved	ug/L	ND (50.0)	ND (50.0)	ND (50.0)	NS	NS	NS
Cadmium, Dissolved	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	0.25	2.01	NS
Calcium, Dissolved	ug/L	9,580	8,620	8,460	NS	NS	NS
Chromium, Dissolved	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	74.1	569.8	NS
Cobalt, Dissolved	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	NS	NS	NS
Copper, Dissolved	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	9.8	13	NS
Iron, Dissolved	ug/L	ND (50.0)	ND (50.0)	ND (50.0)	NS	NS	300
Lead, Dissolved	ug/L	ND (2.0)	ND (2.0)	ND (2.0)	2.5	64.6	NS
Magnesium, Dissolved	ug/L	1,830	1,690	1,620	NS	NS	NS
Manganese, Dissolved	ug/L	24.9	10.7	ND (5.0)	NS	NS	NS
Molybdenum, Dissolved	ug/L	ND (20.0)	ND (20.0)	ND (20.0)	NS	NS	NS
Nickel, Dissolved	ug/L	ND (10.0)	ND (10.0)	ND (10.0)	52	470	610
Potassium, Dissolved	ug/L	620	ND (500)	643	NS	NS	NS
Selenium, Dissolved	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	4.6	NS	NS
Silver, Dissolved	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	NS	3.2	NS
Sodium, Dissolved	ug/L	4,200	2,050	2,290	NS	NS	NS
Thallium, Dissolved	ug/L	ND (10.0)	ND (10.0)	ND (10.0)	NS	NS	NS
Vanadium, Dissolved	ug/L	ND (5.0)	ND (5.0)	ND (5.0)	NS	NS	NS
Zinc, Dissolved	ug/L	ND (10.0)	ND (10.0)	ND (10.0)	120	120	NS
Mercury, Dissolved	ug/L	ND (0.20)	ND (0.20)	ND (0.20)	0.77	1.4	0.05

Table 4.9-1
Borehole Analytical Results for Soil
Gesford 3/9 Wellsite

Dimock Township, Susquehanna County, PA

Sample Location / Sample Identification / Sample Date / Parameter	Units	Gesford 3/9 Gesford-3-B1 5/26/2010	Gesford 3/9 Gesford-3-B2 5/26/2010	Gesford 3/9 Gesford-3-B3 5/26/2010	Gesford 3/9 Gesford-3-B4 5/26/2010	Gesford 3/9 Gesford-3-B22 5/26/2010	Gesford 3/9 Gesford-3-B5 5/26/2010	SOIL Residential Used Aquifer MSCs[1]
General Chemistry Analyses								
Percent Moisture (ASTM D2974-87)	%	13.4	11.6	12.0	3.9	13.4	9.5	NS[2]
Nitrogen, Ammonia (EPA 350.1)	mg/kg	11.9	14.8	8.8	7.4	3.8	ND (0.51)	1,900
MBAS (SM 5540C)	mg/L	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	ND (0.100)	NS
Chloride (SM 4500-Cl-E)	mg/L	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	NS
Ethylene Glycol (8015)	mg/kg	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	1,400
Metals Analyses (6010/7471)								
Aluminum	mg/kg	15,000	13,500	13,200	13,500	14,300	13,600	199,000
Antimony	mg/kg	ND (0.41)	ND (0.50)	ND (0.47)	ND (0.46)	ND (0.55)	ND (0.51)	27
Arsenic	mg/kg	15.9	18.9	15.2	35.6	18.5	27.2	12
Barium	mg/kg	130	172	134	171	148	214	8,200
Beryllium	mg/kg	0.77	0.7	0.69	0.6	0.79	0.81	320
Boron	mg/kg	8.5	8.8	7.9	6.2	9.1	10.2	1,900
Cadmium	mg/kg	0.43	0.53	0.55	0.46	0.45	0.60	38
Calcium	mg/kg	807	2,970	1,450	1,030	1,610	2,030	NS
Chromium	mg/kg	15.2	16.8	14.0	15.1	15.3	15.4	190,000[4]
Cobalt	mg/kg	12.0	15.0	11.3	19.4	12.1	15.9	50
Copper	mg/kg	18.2	16.2	17.6	11.6	18.1	20.5	8,190
Iron	mg/kg	28,700	27,700	24,900	27,700	27,900	30,700	150,000
Lead	mg/kg	15.4	16.2	20.2	12.0	17.9	14.3	450
Magnesium	mg/kg	4,210	4,750	3,930	4,230	4,440	4,560	NS
Manganese	mg/kg	808	999	702	1,390	778	3,160	2,000
Molybdenum	mg/kg	ND (1.2)	ND (1.4)	ND (1.2)	ND (1.8)	ND (1.5)	ND (2.0)	650
Nickel	mg/kg	21.9	23.8	20.9	25.6	23.1	25.9	650
Potassium	mg/kg	1,950	2,060	2,050	1,610	2,270	2,240	NS
Selenium	mg/kg	ND (0.61)	ND (0.55)	ND (0.50)	ND (0.46)	ND (0.45)	ND (0.51)	26
Silver	mg/kg	0.25	0.27	0.28	0.37	0.29	0.30	84
Sodium	mg/kg	ND (413)	ND (384)	ND (329)	ND (455)	ND (431)	ND (512)	NS
Thallium	mg/kg	ND (1.7)	ND (1.4)	ND (1.2)	ND (1.8)	ND (1.5)	ND (2.0)	14
Vanadium	mg/kg	16.4	16.0	14.9	14.2	16.6	15.8	1,500
Zinc	mg/kg	55.4	72.4	70.4	63.3	72.1	70.1	12,000
Mercury	mg/kg	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.09)	ND (0.12)	ND (0.11)	10
VOCs (8260)								
1,1,1-Trichloroethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	20
1,1,2,2-Tetrachloroethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.05
1,1,2-Trichloroethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.5
1,1-Dichloroethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	3.1
1,1-Dichloroethene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.7
1,2,4-Trimethylbenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	5.4
1,2-Dichlorobenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	59
1,2-Dichloroethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.5
1,2-Dichloroethene (Total)	mg/kg	ND (0.0061)	ND (0.0108)	ND (0.0087)	ND (0.0103)	ND (0.0134)	ND (0.0114)	7[4]
1,2-Dichloropropane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.5
1,3,5-Trimethylbenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	2.3
1,3-Dichlorobenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	61
1,4-Dichlorobenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	10
2-Butanone (MEK)	mg/kg	0.0097	ND (0.0108)	ND (0.0087)	0.0232	ND (0.0134)	ND (0.0114)	400
2-Hexanone	mg/kg	ND (0.0091)	ND (0.0108)	ND (0.0087)	ND (0.0103)	ND (0.0134)	ND (0.0114)	1.1
4-Methyl-2-pentanone (MIBK)	mg/kg	ND (0.0091)	ND (0.0108)	ND (0.0087)	ND (0.0103)	ND (0.0134)	ND (0.0114)	290
Acetone	mg/kg	0.119	0.0625	0.0574	0.217	0.0620	ND (0.0114)	3,300
Benzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.5
Bromodichloromethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	9
Bromoform	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	8
Bromomethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	1
Carbon disulfide	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	0.0128	ND (0.0067)	ND (0.0057)	150
Carbon tetrachloride	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.5
Chlorobenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	10
Chloroethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	23
Chloroform	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	8
Chloromethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	3
cis-1,2-Dichloroethene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	7
cis-1,3-Dichloropropene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.66
Dibromochloromethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	8
Ethylbenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	70
Isopropylbenzene (Cumene)	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	600
m&p-Xylene	mg/kg	ND (0.0091)	ND (0.0108)	ND (0.0087)	ND (0.0103)	ND (0.0134)	ND (0.0114)	1,000[4]
Methylene Chloride	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.5
Methyl-tert-butyl ether	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	2
Naphthalene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	23
n-Butylbenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	950
n-Propylbenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	290
o-Xylene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	1,000[4]
p-Isopropyltoluene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	NS
sec-Butylbenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	360
Styrene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	24
Tetrachloroethene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.5
Toluene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	100
TOTAL BTEX	mg/kg	ND (0.0279)	ND (0.0270)	ND (0.0215)	ND (0.0315)	ND (0.0335)	ND (0.0343)	NS
trans-1,2-Dichloroethene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	10
trans-1,3-Dichloropropene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.66
Trichloroethene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.5
Vinyl Chloride	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0067)	ND (0.0057)	0.2
Xylene (Total)	mg/kg	ND (0.0136)	ND (0.0162)	ND (0.0130)	ND (0.0155)	ND (0.0201)	ND (0.0172)	1,000

DIM0190874

Table 4.8-1
Test Pit Sample Results for Soil
Gesford 2/7H NW Wellsite

Dimock Township
Susquehanna County, PA

Sample Location / Sample Identification / Sample Date / Parameter	Units	Gesford 2/7 G-7-P1A 5/26/2010	Gesford 2/7 G-7-P1B 5/26/2010	Gesford 2/7 G-7-P2A 5/26/2010	Gesford 2/7 G-7-P2B 5/26/2010	Gesford 2/7 G-7-P3A 5/26/2010	Gesford 2/7 G-7-P3B 5/26/2010	Gesford 2/7 G-7-P4A 5/26/2010	Gesford 2/7 G-7-P4B 5/26/2010	Gesford 2/7 G-7-P5A 5/26/2010	Gesford 2/7 G-7-P5B 5/26/2010	Gesford 2/7 G-7-P6A 5/26/2010	Gesford 2/7 G-7-P6B 5/26/2010	Gesford 2/7 G-7-P7A 5/26/2010	Gesford 2/7 G-7-P7B 5/26/2010	Gesford 2/7 G-7-P8A 5/26/2010	Gesford 2/7 G-7-P8B 5/26/2010	Gesford 2/7 G-7-P9A 5/26/2010	SOIL Residential Used Aquifer MSCs[1]
General Chemistry Analyses																			
Percent Moisture (ASTM D2974-87)	%	17.6	14.0	10.6	9.2	6.7	12.3	9.0	6.6	8.1	11.6	9.4	8.5	8.7	9.9	7.7	12.6	11.9	NS[2]
Nitrogen, Ammonia (EPA 350.1)	mg/kg	14.5	15.9	7.3	ND(15.2)	ND(15.5)	ND(15.3)	8.8	ND(15.3)	8.1	ND(15.7)	ND(12.2)	8.8	5.3	8.9	5.7	9.5	14.8	1,000
MBAS (SM 5540C)	mg/L	ND(0.10)[7]	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	0.18	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	NS
Chloride (SM 4500-Cl-E)	mg/L	3.3	3.7	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	4.5	ND(3.0)	3.1	5.8	ND(3.0)	ND(3.0)	ND(3.0)	ND(3.0)	3.3	NS
Metals Analyses (6010B/7471)																			
Aluminum	mg/kg	12,200	13,700	14,400	12,500	14,100	15,000	13,200	12,900	16,200	14,600	12,900	12,900	14,100	14,700	13,100	16,500	13,400	100,000
Antimony	mg/kg	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.48)	0.43	0.78	ND(0.33)	0.61	ND(0.43)	ND(0.33)	ND(0.33)	ND(0.33)	0.63	0.47	0.69	ND(0.43)	27
Arsenic	mg/kg	23.2	30.9	14	15.4	22.8	12.2	19.7	18.4	14.3	13.7	14.8	11.1	18.8	12.6	24.3	9.1	47.6	12
Barium	mg/kg	1,840	1,430	137	112	148	123	226	135	187	147	120	208	173	144	139	180	184	8,200
Beryllium	mg/kg	0.67	0.76	0.78	0.7	0.82	0.81	0.82	0.74	0.77	0.82	0.7	0.62	0.76	0.81	0.9	0.81	0.83	370
Boron	mg/kg	8.7	8.5	6	7.3	8.3	7.8	8	8.6	6	8.1	7.3	6.6	7.9	8.2	8.3	7.7	8.4	1,000
Cadmium	mg/kg	0.48	0.51	0.37	0.35	0.42	0.44	0.54	0.48	0.57	0.39	0.44	0.48	0.52	0.43	0.61	0.45	0.49	38
Calcium	mg/kg	4,510	5,520	1,760	1,770	1,600	832	1,620	1,710	1,200	1,360	1,900	3070	1,490	1,420	1,800	1,110	3,860	NS
Chromium	mg/kg	14.8	15.8	16.3	13.9	15.3	15.6	14.2	13.8	15.3	15.9	14	14.4	15.4	16	15.2	17.1	15.7	100,000[1]
Cobalt	mg/kg	14.3	15.3	13.6	10.5	13.1	12.3	19.1	12.2	12.9	12.5	12.1	10.4	13.2	12.5	19.3	13	17	50
Copper	mg/kg	19.2	18.1	17.6	16.7	18.1	18.3	19.2	16.2	18.6	17.7	17.1	15.7	17.5	16.7	23.1	18.2	21.4	8,180
Iron	mg/kg	24,600	26,900	27,500	25,200	27,600	28,600	30,400	25,600	24,500	27,000	25,500	27500	27,200	28,200	31,500	28,900	27,200	130,000
Lead	mg/kg	38.5	35.8	14.4	16.1	18.1	17.8	29.7	18.1	17.5	16.7	17	22.2	15.4	13	216	12.3	55	450
Magnesium	mg/kg	4,720	4,750	4,490	4,250	4,410	4,380	4,100	4,040	4,270	4,500	4,200	3750	4,420	4,440	3,750	4,470	5,200	NS
Manganese	mg/kg	1,000	1,400	804	548	1,090	948	2,650	1,000	1,030	1,800	843	589	1,120	916	723	1,360	1,080	2,000
Molybdenum	mg/kg	ND(2.0)	ND(1.3)	ND(1.3)	ND(1.3)	ND(1.9)	ND(1.3)	ND(1.3)	ND(1.3)	ND(1.3)	ND(1.7)	ND(1.3)	ND(1.3)	ND(1.7)	ND(1.7)	ND(1.7)	ND(1.8)	ND(1.3)	550
Nickel	mg/kg	22.3	24.2	23.2	21.7	24.2	22.3	28.1	23	22.8	24.4	22	18.1	24.7	23.8	18.3	24.7	26.8	550
Potassium	mg/kg	1,880	1,920	1,820	2,030	1,920	1,900	1,730	1,980	1,780	1,890	1,810	1870	1,830	1,850	1,700	1,830	1,840	NS
Selenium	mg/kg	0.65	ND(0.33)	ND(0.33)	ND(0.33)	ND(0.48)	ND(0.33)	ND(0.33)	ND(0.43)	ND(0.33)	ND(0.43)	ND(0.33)	ND(0.33)	ND(0.38)	ND(0.43)	ND(0.38)	ND(0.40)	ND(0.46)	24
Silver	mg/kg	0.34	0.3	0.27	0.28	0.28	0.88	1.1	1.3	0.95	0.1	0.83	0.52	1	1.1	1.2	1	1.1	84
Sodium	mg/kg	ND(194)	ND(195)	ND(195)	ND(195)	ND(185)	ND(191)	ND(195)	ND(197)	ND(195)	ND(185)	ND(195)	ND(196)	ND(185)	ND(194)	ND(194)	ND(195)	ND(191)	NS
Thallium	mg/kg	ND(1.0)	ND(1.3)	ND(1.3)	ND(1.3)	ND(1.9)	ND(1.3)	ND(1.3)	ND(1.3)	ND(1.3)	ND(1.7)	ND(1.3)	ND(1.3)	ND(1.9)	ND(1.7)	ND(1.9)	ND(1.9)	ND(1.9)	14
Vanadium	mg/kg	13.9	15.4	18.2	14.3	18.2	18.6	17.9	15.1	18.2	18.6	14.6	15.5	18.1	17.2	20.9	17.5	15.6	1,000
Zinc	mg/kg	62	71.3	73.6	69.7	73	68.1	71.9	71	68.5	72.9	70.5	60.7	72.2	70.8	68.4	72.6	74.2	12,000
Mercury	mg/kg	ND(0.11)	ND(0.11)	ND(0.11)	ND(0.11)	ND(0.11)	ND(0.11)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.11)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.11)	ND(0.10)	ND(0.11)	ND(0.11)	10

DIM0190885

Table 4.9-1
Borehole Analytical Results for Soil
Gesford 3/9 Wellsite

Dimock Township, Susquehanna County, PA

Sample Location / Sample Identification / Sample Date / Parameter	Units	Gesford 3/9 Gesford-3-B1 5/26/2010	Gesford 3/9 Gesford-3-B2 5/26/2010	Gesford 3/9 Gesford-3-B3 5/26/2010	Gesford 3/9 Gesford-3-B4 5/26/2010	Gesford 3/9 Gesford-3-B22 5/26/2010	Gesford 3/9 Gesford-3-B5 5/26/2010	SOIL Residential Used Aquifer MSCs[1]
General Chemistry Analyses								
Percent Moisture (ASTM D2974-87)	%	13.4	11.6	12.0	3.9	13.4	9.5	NS[2]
Nitrogen, Ammonia (EPA 350.1)	mg/kg	11.9	14.8	8.8	7.4	5.9	ND (1.5)	1,900
MBAS (SM 5540C)	mg/L	ND (0.12)[3]	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	NS
Chloride (SM 4500-Cl-E)	mg/L	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	NS
Ethylene Glycol (8015)	mg/kg	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	1,400
Metals Analyses (6010B/7471)								
Aluminum	mg/kg	15,000	13,500	13,200	13,500	14,300	13,600	110,000
Antimony	mg/kg	ND (0.41)	ND (0.39)	ND (0.39)	ND (0.40)	ND (0.40)	ND (0.51)	27
Arsenic	mg/kg	15.9	18.9	15.2	35.6	16.5	27.2	12
Barium	mg/kg	130	172	134	171	148	214	8,200
Beryllium	mg/kg	0.77	0.7	0.69	0.6	0.79	0.81	320
Boron	mg/kg	8.5	8.8	7.9	8.2	9.1	10.2	1,900
Cadmium	mg/kg	0.43	0.53	0.55	0.48	0.48	0.60	38
Calcium	mg/kg	907	2,970	1,450	1,030	1,610	2,030	NS
Chromium	mg/kg	15.2	18.8	14.0	15.1	15.3	15.4	190,000[4]
Cobalt	mg/kg	12.0	15.0	11.3	13.4	12.1	13.9	90
Copper	mg/kg	18.2	16.2	17.6	11.6	16.1	20.5	8,100
Iron	mg/kg	26,700	27,700	24,800	27,700	27,500	30,700	150,000
Lead	mg/kg	15.4	16.2	20.2	12.0	17.9	14.3	450
Magnesium	mg/kg	4,210	4,750	3,930	4,230	4,440	4,560	NS
Manganese	mg/kg	806	909	702	1,350	778	3,180	2,000
Molybdenum	mg/kg	ND (1.7)	ND (1.6)	ND (1.2)	ND (1.8)	ND (1.6)	ND (2.0)	650
Nickel	mg/kg	21.9	23.8	20.9	25.8	23.1	25.9	650
Potassium	mg/kg	1,950	2,060	2,050	1,610	2,270	2,240	NS
Selenium	mg/kg	ND (0.41)	ND (0.39)	ND (0.39)	ND (0.40)	ND (0.40)	ND (0.51)	26
Silver	mg/kg	0.25	0.27	0.28	0.37	0.29	0.30	84
Sodium	mg/kg	ND (41.3)	ND (39.4)	ND (39.0)	ND (40.5)	ND (40.4)	ND (51.2)	NS
Thallium	mg/kg	ND (1.7)	ND (1.6)	ND (1.2)	ND (1.8)	ND (1.6)	ND (2.0)	14
Vanadium	mg/kg	16.4	16.0	14.8	14.2	16.6	15.8	1,900
Zinc	mg/kg	66.4	72.4	70.4	63.3	72.1	70.1	12,000
Mercury	mg/kg	ND (0.113)	ND (0.111)	ND (0.111)	ND (0.099)	ND (0.121)	ND (0.111)	10
VOCs (8260)								
1,1,1-Trichloroethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	20
1,1,2,2-Tetrachloroethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.68
1,1,2-Trichloroethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.5
1,1-Dichloroethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	3.1
1,1-Dichloroethene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.7
1,2,4-Trimethylbenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	8.4
1,2-Dichlorobenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	80
1,2-Dichloroethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.5
1,2-Dichloroethane (Total)	mg/kg	ND (0.0611)	ND (0.0539)	ND (0.0431)	ND (0.0521)	ND (0.0571)	ND (0.0571)	7[5]
1,2-Dichloropropane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.5
1,3,5-Trimethylbenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	2.3
1,3-Dichlorobenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	61
1,4-Dichlorobenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	10
2-Butanone (MEK)	mg/kg	0.0097	ND (0.0108)	ND (0.0087)	0.0232	ND (0.0104)	ND (0.0114)	400
2-Hexanone	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	1.1
4-Methyl-2-pentanone (MIBK)	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	290
Acetone	mg/kg	0.119	0.0625	0.0574	0.217	0.0520	ND (0.0114)	3,300
Benzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.5
Bromodichloromethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	8
Bromoform	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	8
Bromomethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	1
Carbon disulfide	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	0.0128	ND (0.0057)	ND (0.0057)	150
Carbon tetrachloride	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.5
Chlorobenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	10
Chloroethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	23
Chloroform	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	6
Chloromethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	3
cis-1,2-Dichloroethene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	7
cis-1,3-Dichloropropene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.68
Dibromochloromethane	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	8
Ethylbenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	70
Isopropylbenzene (Cumene)	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	600
m&p-Xylene	mg/kg	ND (0.0211)	ND (0.0193)	ND (0.0157)	ND (0.0193)	ND (0.0194)	ND (0.0214)	1,000[6]
Methylene Chloride	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.9
Methyl-tert-butyl ether	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	2
Naphthalene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	23
n-Butylbenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	950
n-Propylbenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	290
o-Xylene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	1,000[6]
p-Isopropyltoluene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	NS
sec-Butylbenzene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	350
Styrene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	24
Tetrachloroethene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.5
Toluene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	100
TOTAL BTEX	mg/kg	ND (0.0271)	ND (0.0239)	ND (0.0191)	ND (0.0231)	ND (0.0253)	ND (0.0253)	NS
trans-1,2-Dichloroethene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	10
trans-1,3-Dichloropropene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.68
Trichloroethene	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.5
Vinyl Chloride	mg/kg	ND (0.0061)	ND (0.0054)	ND (0.0043)	ND (0.0052)	ND (0.0057)	ND (0.0057)	0.2
Xylene (Total)	mg/kg	ND (0.0161)	ND (0.0147)	ND (0.0117)	ND (0.0145)	ND (0.0151)	ND (0.0171)	1,000

Table 4.10-1
Borehole Analytical Results for Soil
Lewis 2 Wellsite

Dimock, Township
Susquehana County, PA

Sample Location Sample Identification Sample Date Parameter	Units	*Lewis 2* LEWIS-2-B1 5/25/2010	*Lewis 2* LEWIS-2-B2 5/25/2010	SOIL Residential Used Aquifer MSCs[1]
General Chemistry Analyses				
Percent Moisture (ASTM D2974-87)	%	16.2	3.1	NS[3]
Nitrogen, Ammonia (EPA 350.1)	mg/kg	39.7	ND (4.7)	1,900
Chloride (SM 4500-Cl-E)	mg/L	ND (3.0)[2]	ND (3.0)	NS
MBAS (SM 5540C)	mg/L	ND (0.10)	ND (0.10)	NS
Ethylene Glycol (8015)	mg/kg	ND (10.0)	ND (10.0)	1,400
Metals Analyses (6010B/7471)				
Aluminum	mg/kg	20,500	14,600	190,000
Antimony	mg/kg	ND (0.51)	ND (0.33)	27
Arsenic	mg/kg	9.2	8.5	12
Barium	mg/kg	101	102	8,200
Beryllium	mg/kg	0.88	0.94	320
Boron	mg/kg	11.7	11	1,900
Cadmium	mg/kg	0.47	0.55	38
Calcium	mg/kg	409	4,160	NS
Chromium	mg/kg	24.3	20.7	190000[4]
Cobalt	mg/kg	12.1	14.2	50
Copper	mg/kg	14.5	10.2	8,100
Iron	mg/kg	35,800	35,600	150,000
Lead	mg/kg	23.2	17.3	450
Magnesium	mg/kg	5,320	6,480	NS
Manganese	mg/kg	400	524	2,000
Molybdenum	mg/kg	ND (2.0)	ND (1.3)	650
Nickel	mg/kg	26.7	29.7	650
Potassium	mg/kg	1,690	2,340	NS
Selenium	mg/kg	ND (0.51)	ND (0.33)	26
Silver	mg/kg	0.44	0.4	84
Sodium	mg/kg	ND (505)	ND (331)	NS
Thallium	mg/kg	ND (2.0)	ND (1.3)	14
Vanadium	mg/kg	32.2	18.9	1,500
Zinc	mg/kg	62.7	64.8	12,000
Mercury	mg/kg	ND (0.12)	ND (0.10)	10
VOC Analyses (8260)				
1,1,1-Trichloroethane	mg/kg	ND (0.0049)	ND (0.0081)	20
1,1,2,2-Tetrachloroethane	mg/kg	ND (0.0049)	ND (0.0081)	0.08
1,1,2-Trichloroethane	mg/kg	ND (0.0049)	ND (0.0081)	0.5
1,1-Dichloroethane	mg/kg	ND (0.0049)	ND (0.0081)	3.1
1,1-Dichloroethene	mg/kg	ND (0.0049)	ND (0.0081)	0.7
1,2,4-Trimethylbenzene	mg/kg	ND (0.0049)	ND (0.0081)	8.4
1,2-Dichlorobenzene	mg/kg	ND (0.0049)	ND (0.0081)	60
1,2-Dichloroethane	mg/kg	ND (0.0049)	ND (0.0081)	0.5
1,2-Dichloroethene (Total)	mg/kg	ND (0.0098)	ND (0.0162)	7[5]
1,2-Dichloropropane	mg/kg	ND (0.0049)	ND (0.0081)	0.5
1,3,5-Trimethylbenzene	mg/kg	ND (0.0049)	ND (0.0081)	2.3
1,3-Dichlorobenzene	mg/kg	ND (0.0049)	ND (0.0081)	61
1,4-Dichlorobenzene	mg/kg	ND (0.0049)	ND (0.0081)	10
2-Butanone (MEK)	mg/kg	ND (0.0098)	ND (0.0162)	400
2-Hexanone	mg/kg	ND (0.0098)	ND (0.0162)	1.1
4-Methyl-2-pentanone (MIBK)	mg/kg	ND (0.0098)	ND (0.0162)	290

Table 4.12-1
Test Pit Analytical Results for Soil
Teel 6 Wellsite

Dimock Township, Susquehanna County, PA

Sample Location / Sample Identification / Sample Date / Parameter	Units	Teel 6 TEEL-6-P1A 5/27/2010	Teel 6 TEEL-6-P1B 5/27/2010	Teel 6 TEEL-6-P1C 5/27/2010	Teel 6 TEEL-6-P1D 5/27/2010	Teel 6 TEEL-6-P2A 5/27/2010	Teel 6 TEEL-6-P2B 5/27/2010	Teel 6 TEEL-6-P2C 5/27/2010	Teel 6 TEEL-6-P3A 5/27/2010	Teel 6 TEEL-6-P3B 5/27/2010	Teel 6 TEEL-6-P3C 5/27/2010	Teel 6 TEEL-6-P4A 5/27/2010	Teel 6 TEEL-6-P4B 5/27/2010	Teel 6 TEEL-6-P4C 5/27/2010	SOIL Residential Used Aquifer MSCs[1]
General Chemistry Analyses															
Percent Moisture (ASTM D2974-87)	%	8.0	20.3	11.9	8.6	8.3	7.3	7.6	6.5	6.0	7.4	9.4	9.7	6.2	NS[3]
Ethylene Glycol (8015)	mg/kg	ND (10.0)[2]	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	1,400
Metals Analyses (6010B)															
Lead	mg/kg	119	98.9	95.6	106	35.9	39.5	99.8	122	127	125	442	190	211	450
VOCs (8260)															
Benzene	mg/kg	ND (0.0063)	ND (0.0080)	ND (0.0080)	ND (0.0059)	ND (0.0063)	ND (0.0024)	ND (0.0063)	ND (0.0050)	ND (0.0076)	ND (0.0069)	ND (0.0071)	ND (0.0076)	ND (0.0069)	0.3
1,2-Dibromoethane (EDB)	mg/kg	ND (0.0063)	ND (0.0080)	ND (0.0080)	ND (0.0059)	ND (0.0063)	ND (0.0024)	ND (0.0063)	ND (0.0050)	ND (0.0076)	ND (0.0069)	ND (0.0071)	ND (0.0076)	ND (0.0069)	0.005
1,2-Dichloroethane	mg/kg	ND (0.0063)	ND (0.0080)	ND (0.0080)	ND (0.0059)	ND (0.0063)	ND (0.0024)	ND (0.0063)	ND (0.0050)	ND (0.0076)	ND (0.0069)	ND (0.0071)	ND (0.0076)	ND (0.0069)	0.5
Ethylbenzene	mg/kg	ND (0.0063)	ND (0.0080)	ND (0.0080)	ND (0.0059)	ND (0.0063)	ND (0.0024)	ND (0.0063)	ND (0.0050)	ND (0.0076)	ND (0.0069)	ND (0.0071)	ND (0.0076)	ND (0.0069)	70
Isopropylbenzene (Cumene)	mg/kg	ND (0.0063)	ND (0.0080)	ND (0.0080)	ND (0.0059)	ND (0.0063)	ND (0.0024)	ND (0.0063)	ND (0.0050)	ND (0.0076)	ND (0.0069)	ND (0.0071)	ND (0.0076)	ND (0.0069)	600
Methyl-tert-butyl ether	mg/kg	ND (0.0063)	ND (0.0080)	ND (0.0080)	ND (0.0059)	ND (0.0063)	ND (0.0024)	ND (0.0063)	ND (0.0050)	ND (0.0076)	ND (0.0069)	ND (0.0071)	ND (0.0076)	ND (0.0069)	2
Naphthalene	mg/kg	ND (0.0063)	ND (0.0080)	ND (0.0080)	ND (0.0059)	ND (0.0063)	ND (0.0024)	ND (0.0063)	ND (0.0050)	ND (0.0076)	ND (0.0069)	ND (0.0071)	ND (0.0076)	ND (0.0069)	25
Toluene	mg/kg	ND (0.0063)	ND (0.0080)	ND (0.0080)	ND (0.0059)	ND (0.0063)	ND (0.0024)	ND (0.0063)	ND (0.0050)	ND (0.0076)	ND (0.0069)	ND (0.0071)	ND (0.0076)	ND (0.0069)	100
1,2,4-Trimethylbenzene	mg/kg	ND (0.0063)	ND (0.0080)	ND (0.0080)	ND (0.0059)	ND (0.0063)	ND (0.0024)	ND (0.0063)	ND (0.0050)	ND (0.0076)	ND (0.0069)	ND (0.0071)	ND (0.0076)	ND (0.0069)	8.4
1,3,5-Trimethylbenzene	mg/kg	ND (0.0063)	ND (0.0080)	ND (0.0080)	ND (0.0059)	ND (0.0063)	ND (0.0024)	ND (0.0063)	ND (0.0050)	ND (0.0076)	ND (0.0069)	ND (0.0071)	ND (0.0076)	ND (0.0069)	2.3
Xylene (Total)	mg/kg	ND (0.0189)	ND (0.0241)	ND (0.0239)	ND (0.0178)	ND (0.0257)	ND (0.0073)	ND (0.0189)	ND (0.0151)	ND (0.0228)	ND (0.0206)	ND (0.0212)	ND (0.0227)	ND (0.0207)	1,000
SVOCs (8270-SIM)															
Anthracene	mg/kg	ND (0.0071)	ND (0.0083)	ND (0.0075)	ND (0.0073)	ND (0.0071)	ND (0.0071)	ND (0.0071)	ND (0.0070)	ND (0.0071)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0069)	350
Benzo(a)anthracene	mg/kg	ND (0.0071)	ND (0.0083)	ND (0.0075)	ND (0.0073)	ND (0.0071)	ND (0.0071)	ND (0.0071)	ND (0.0070)	ND (0.0071)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0069)	6
Benzo(a)pyrene	mg/kg	ND (0.0071)	ND (0.0083)	ND (0.0075)	ND (0.0073)	ND (0.0071)	ND (0.0071)	ND (0.0071)	ND (0.0070)	ND (0.0071)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0069)	0.6
Benzo(b)fluoranthene	mg/kg	ND (0.0071)	ND (0.0083)	ND (0.0075)	ND (0.0073)	ND (0.0071)	ND (0.0071)	ND (0.0071)	ND (0.0070)	ND (0.0071)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0069)	6
Benzo(g,h,i)perylene	mg/kg	ND (0.0071)	ND (0.0083)	ND (0.0075)	ND (0.0073)	ND (0.0071)	ND (0.0071)	ND (0.0071)	ND (0.0070)	ND (0.0071)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0069)	180
Chrysene	mg/kg	ND (0.0071)	ND (0.0083)	ND (0.0075)	ND (0.0073)	ND (0.0071)	ND (0.0071)	ND (0.0071)	ND (0.0070)	ND (0.0071)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0069)	230
Fluorene	mg/kg	ND (0.0071)	ND (0.0083)	ND (0.0075)	ND (0.0073)	ND (0.0071)	ND (0.0071)	ND (0.0071)	ND (0.0070)	ND (0.0071)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0069)	3,800
Indeno(1,2,3-cd)pyrene	mg/kg	ND (0.0071)	ND (0.0083)	ND (0.0075)	ND (0.0073)	ND (0.0071)	ND (0.0071)	ND (0.0071)	ND (0.0070)	ND (0.0071)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0069)	6
Phenanthrene	mg/kg	ND (0.0071)	ND (0.0083)	ND (0.0075)	ND (0.0073)	ND (0.0071)	ND (0.0071)	ND (0.0071)	ND (0.0070)	ND (0.0071)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0069)	10,000
Pyrene	mg/kg	ND (0.0071)	ND (0.0083)	ND (0.0075)	ND (0.0073)	ND (0.0071)	ND (0.0071)	ND (0.0071)	ND (0.0070)	ND (0.0071)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0069)	2200

Notes:
All results in milligram per kilogram (mg/kg) unless otherwise stated.
[1] = 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.
[2] = ND (0.0063) = Parameter not detected at the detection limit specified in parentheses.
[3] = No Standard
15.9 = Result exceeds SHS Residential, Used Aquifer MSC

CABOT-EPA 003916
DIM0190888
DIM0190874