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October 14, 2008

Mr. Charles Burke, P.E. Risk Management Department National Fuel Gas Distribution Corp. Building 8 365 Mineral Springs Road Buffalo, NY 14210

### Subject: Annual Operations and Maintenance Report 2008 Mineral Springs Road Site

Dear Charlie,

ENSR Corporation (ENSR) is pleased to provide this annual report documenting the results of the sitewide operations and maintenance program being implemented at National Fuel Gas Distribution Corporation's (NFG) Mineral Springs Road former manufactured gas plant (MGP) site under Voluntary Cleanup Agreement B9-0538-98-08. The program is described in RETEC's Final Engineering Report – Volume II, Operations and Maintenance Plan, dated May 2002, and subsequent NYSDEC correspondence.

# 1. Evaluation of Groundwater and Surface Water Monitoring Results

The Mineral Springs groundwater and surface water monitoring program includes sample collection and analysis from 13 monitoring wells and 2 surface water locations. The analytical results (from August 1995 to date) are tabulated in Appendix A. Sampling locations are shown in Figure 1-1.

## **Groundwater Elevations and Flow**

Groundwater flows onto the site from the east and southeast, then flows to the west and northwest towards Calais Street, Mineral Springs Road, and ultimately to the Buffalo River. On-site groundwater also appears to discharge to the Class D Stream, which in turn discharges to the Calais Street storm sewer and the municipal wastewater treatment system.

Groundwater elevations generally fluctuate approximately 3 feet over the year, with highest elevations measured in April and lowest in June through November. Groundwater slope varies seasonally between approximately 0.0017 to 0.0024 cm/cm across the site. Assuming an aquifer conductivity of approximately 1 x  $10^{-3}$  cm/sec, groundwater velocity across the site would be in the magnitude of 0.06 feet per day.

## Sampling and Analysis

The primary compounds of concern (COC) are the MGP indicators BTEX, PAHs, and cyanide. Groundwater and surface water samples are analyzed using some or all of the following methods:

BTEX	Method SW846 8260B
PAHs	Method SW846 8270C
Cyanide (free)	Method ASTM D4282-95
Cyanide (total)	Method APHA 4500-CN

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All sampling and analysis is conducted according to RETEC's Standard Operating Procedures as provided in the project Quality Assurance Plan of June 11, 1999. Cyanide sampling methods further include protecting the samples from sunlight and field verification of the sample pH following preservation.

# **Analytical Results and Conclusions**

Groundwater and surface water analytical results (1995 to date) are tabulated in Appendix A. The locations, sampling objectives, and a discussion of the analytical results for each of the specific areas of interest at the site are provided in the following sections.

## **Upgradient Site Perimeter**

Well MW-17 is located on NFG property in the southeast corner of the site and monitors upgradient groundwater quality.

Other than total cyanide, MGP COCs are not typically present in detectable concentrations in the upgradient groundwater. The total cyanide concentration at MW-17 has ranged from below the detection limit to 378  $\mu$ g/L. When viewed over time, there appears to be a slight upward trend in total cyanide at MW-17. Free cyanide is not typically detected at MW-17; however, it was detected during the April 2008 sampling event.

## **Downgradient Site Perimeter**

Wells MW-20 and MW-21 are located downgradient of the western boundary of the site on Calais Street. Wells MW-13, MW-14, MW-22, and MW-23 are located just inside the northern property boundary near Mineral Springs Road. These six "sentinel" wells monitor groundwater quality at the downgradient perimeter of the site. The sentinel wells are typically analyzed for total and free cyanide only. On an annual basis, MW-13 and MW-23 are also analyzed for BTEX and PAHs.

Low concentrations of benzene are occasionally detected at MW-13. BTEX and PAHs are not otherwise detected in MW-13 or MW-23. Off-site groundwater does not appear to be impacted by hydrocarbon COC from the Mineral Springs site.

All six of the sentinel wells contain, or have periodically contained, total cyanide in concentrations above the NYSDEC groundwater standard of 200  $\mu$ g/L. Free cyanide has also occasionally been detected in the sentinel wells.

The average downgradient perimeter concentration of total cyanide has ranged between 342  $\mu$ g/L and 650  $\mu$ g/L, and appears to be declining over time.

## **On-site Purifier Residuals Impacted Areas**

Wells MW-12 and MW-16 monitor groundwater quality at locations of known subsurface deposits of gas purifier residuals. These deposits were remediated by capping. Samples from these two wells are typically analyzed for total and free cyanide only.

Concentrations of total cyanide at both wells exceed the groundwater standard. Free cyanide has also been detected in samples from both of these wells.

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### **On-site Hydrocarbon Impacted Areas**

Wells MW-7, MW-10, MW-11A, and MW-19 monitor on-site groundwater at locations downgradient of hydrocarbon-impacted subsurface soil. Samples from these wells are analyzed for BTEX and PAHs.

BTEX and PAH compounds are not typically detected in MW-10. BTEX and PAH concentrations in MW-11A have generally been in decline since its installation in July 2003. BTEX and naphthalene concentrations in MW-7 and MW-19 are in excess of groundwater standards and have fluctuated with apparent declines and rebounds over time.

### Surface Water

Surface water samples are collected at the Calais Street storm sewer inlet (SW-01) and at the Eastern Drainage Ditch near the Class D Stream (SW-02). These surface sampling locations monitor the effectiveness of the Eastern Drainage Ditch Cap and also monitor the concentrations of COC in surface water at its most downgradient location at the Mineral Springs site.

BTEX and PAHs are not typically detected in the surface water samples. Total cyanide is usually detected, though at concentrations well below standards. Free cyanide is often detected, also typically at low concentrations, with infrequent exceedances of the surface water standard.

# **DNAPL Recovery Test System Evaluation**

The groundwater monitoring program includes periodically checking the DNAPL Recovery Test Well (RTW-01) and recovery of any accumulated DNAPL. In the past 12 months, no measurable quantity of DNAPL had accumulated.

# 2. Site Inspection and Maintenance

An annual site inspection was conducted on May 29, 2008 by Mr. Dan Shearer, P.E., of ENSR. The inspection checklist is included as Appendix B.

## **Clay Caps**

Clay caps are located behind Building 14 and in the Eastern Drainage Ditch north of the northern culvert and south of the southern culvert.

The clay cap behind Building 14 has been mowed periodically to prevent tree growth. Blue-stained soils (purifier residuals) were visible during the 2007 inspection. These soils, which were found outside the footprint of the cap and 1-foot wide clay barrier wall, were excavated on August 1, 2007 and stockpiled on and covered with 6-mil thick polyethylene. The stockpiled soils were disposed off site on January 28, 2008.

There appeared to be no significant damage to the Building 14 clay cap. However, woodchuck dens were observed along the northern and western edge of the clay cap.

In the clay-capped sections of the Eastern Drainage Ditch, no erosion, woodchuck dens, deep-rooted perennial plant species, or hydrocarbon sheen were observed. Debris was noted at the north end of the drainage ditch with significant debris below the Building 14 clay cap.

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# **Geomembrane Caps**

Geomembrane caps, constructed of 40-mil HDPE and soil or stone cover, are located in the Eastern Swale and in the Eastern Drainage Ditch between the culverts.

The Eastern Swale cap has been mowed periodically. No HDPE plastic or geofabric, woodchuck dens, or blue-stained surface soil were visible.

The Eastern Drainage Ditch cap includes an 18-inch diameter HDPE surface water drain pipe. The pipe flow was low at the time of observation. There was no erosion, woodchuck dens, deep-rooted perennial plant species, or hydrocarbon sheen observed. The "no dig" signage was in place.

# Asphalt Caps

The asphalt caps are located south and east of Building 3, and north and south of the Eastern Swale.

The asphalt caps south of Building 3 and north of the Eastern Swale had cracks and ruts that were addressed during the 2008 Interim Remedial Measure (IRM). The cap south of the Eastern Swale had ruts in the trafficked area but had no cracks of significance. These caps showed no erosion and no blue-stained soil was visible in the area.

The cap east of Building 3 also had cracks and ruts. In addition, blue-stained soil was visible in the gravel parking lot to the east of the cap. This area was capped with asphalt during the 2008 IRM. The edges of all the caps have been mowed periodically.

## **Other Areas**

Throughout the remainder of the site, no tar boils or blue-stained soils were observed.

No hydrocarbon sheens were observed in the Class D Stream or the Eastern Drainage Ditch. Heavy algal blooms were noted on the Class D Stream.

The compacted backfill placed in the various former Tar Boils and Separator Pit excavations has been maintained as necessary to assure run-off control. These areas showed minimal ponding of surface water.

The site perimeter security fence was observed to be intact. Woodchuck dens were observed near the southern fence.

# 3. Asphalt Cap Construction Interim Remedial Measure

NFG conducted an IRM at the Mineral Springs facility in June and July of 2008. Work included the placement of nearly 25,000 square feet of asphalt cap adjacent to previously installed asphalt cap east of Building 3 to address visual observations of blue-stained soils and filling of more than 3,000 linear feet of cracks on existing asphalt cap. The IRM Report will be provided under separate cover (Appendix D).

# 4. Conclusions

Groundwater concentrations of cyanide appear (by linear regression) to be in slight decline in the downgradient wells, though the decline may not be statistically significant.



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Groundwater concentrations of hydrocarbon COC in MW-19 may be slightly increasing over time, while they are slightly decreasing in MW-7. Except for periodic low detections of benzene at MW-13, hydrocarbon COCs do not appear to be migrating at or beyond the site property line.

# 5. Recommendations

ENSR recommends that the asphalt cap areas originally installed as part of the Site's 2000 Remedial Action be resealed by 2010. Crack repairs were performed as part of the 2008 IRM, however, sealing these repaired areas will extend the lifespan of the caps. ENSR also recommends continued monitoring of asphalt caps and cracks that were repaired during the 2008 IRM.

An Annual Certification of Institutional/Engineering Controls is attached in Appendix C.

Please call me with questions at 518-951-2288.

Sincerely yours,

Dam Mullie

Dan Shearer, P.E. Project Engineer

Attachments: Photographs Figure 1-1 – Site Plan Appendix A – Groundwater and Surface Water Analytical Results (Tables) Appendix B – Annual Site Inspection Form

Appendix C – Certification of Institutional/Engineering Controls

Appendix D – 2008 IRM Report (to be provided under separate cover)

cc: T. Alexander - NFG

D. Szymanski – NYSDEC M. Doster – NYSDEC G. Bailey – NYSDEC G. Litwin – NYSDOH C. O'Connor – NYSDOH R. Kennedy – Hogdson Russ LLP File: 04870-026-400

ENSR

Photographs

# ENSR AECOM **PHOTOGRAPHIC LOG** Site Location: Project No. Client Name: 04870-026-400 365 Mineral Springs Road, Buffalo, New York National Fuel Gas Distribution Corp. Photo No. Date: 5/29/08 1 **Direction Photo** Taken: From South **Description:** Building 14 Clay Cap (Stressed Vegetation Area caused by soil stockpile that was staged in that area on 6-mil poly from August 2007 until January 2008)



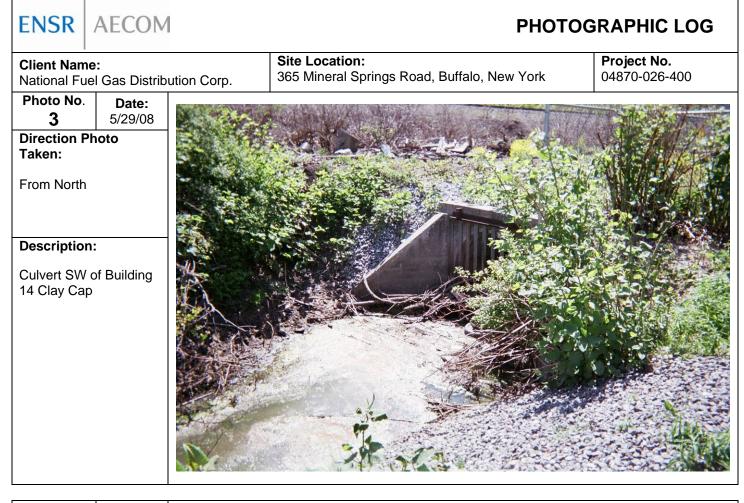
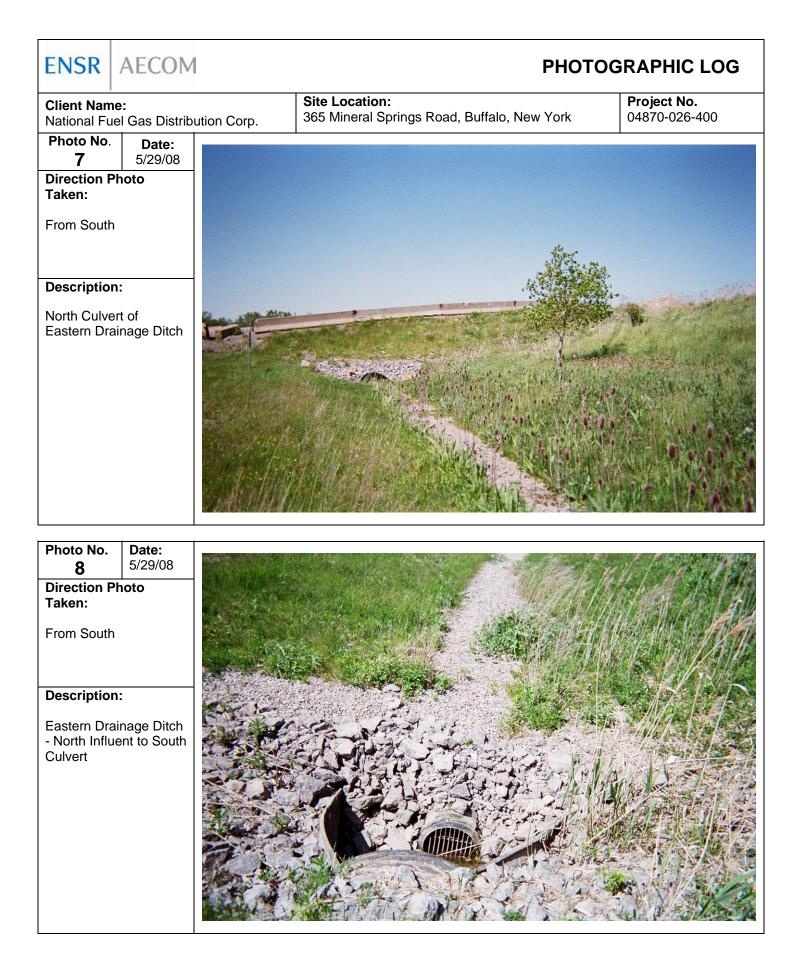
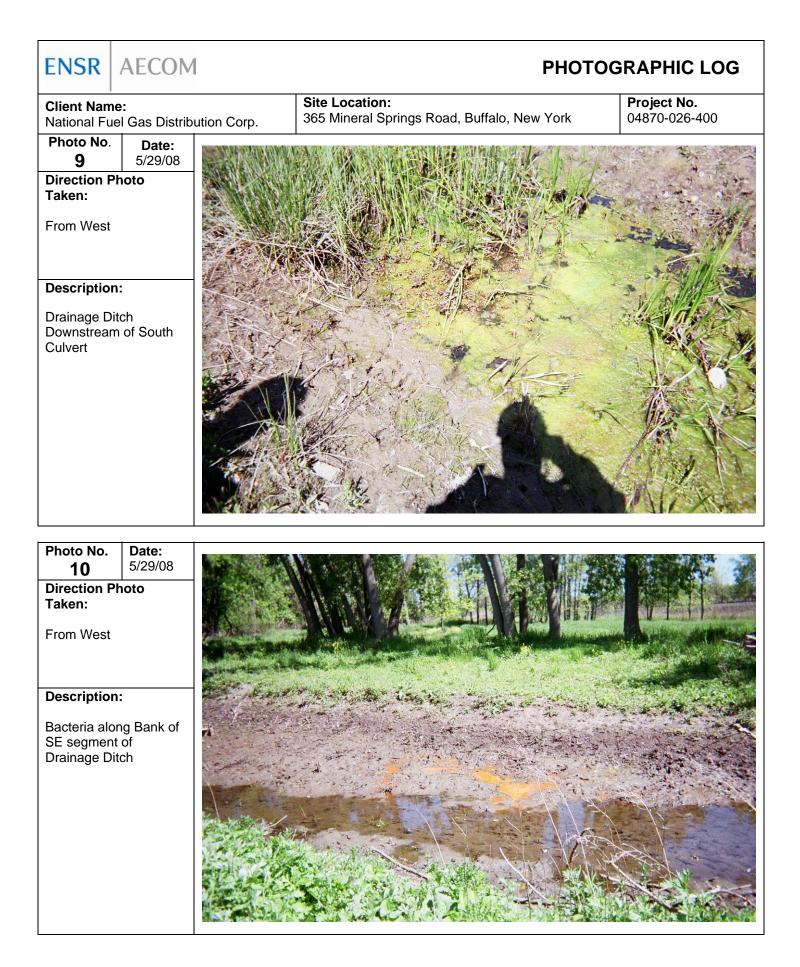


Photo No.	Date:	
4	5/29/08	
Direction Ph	oto	
Taken:		
From North		
Description:		
Culvert SW c 14 Clay Cap	of Building	



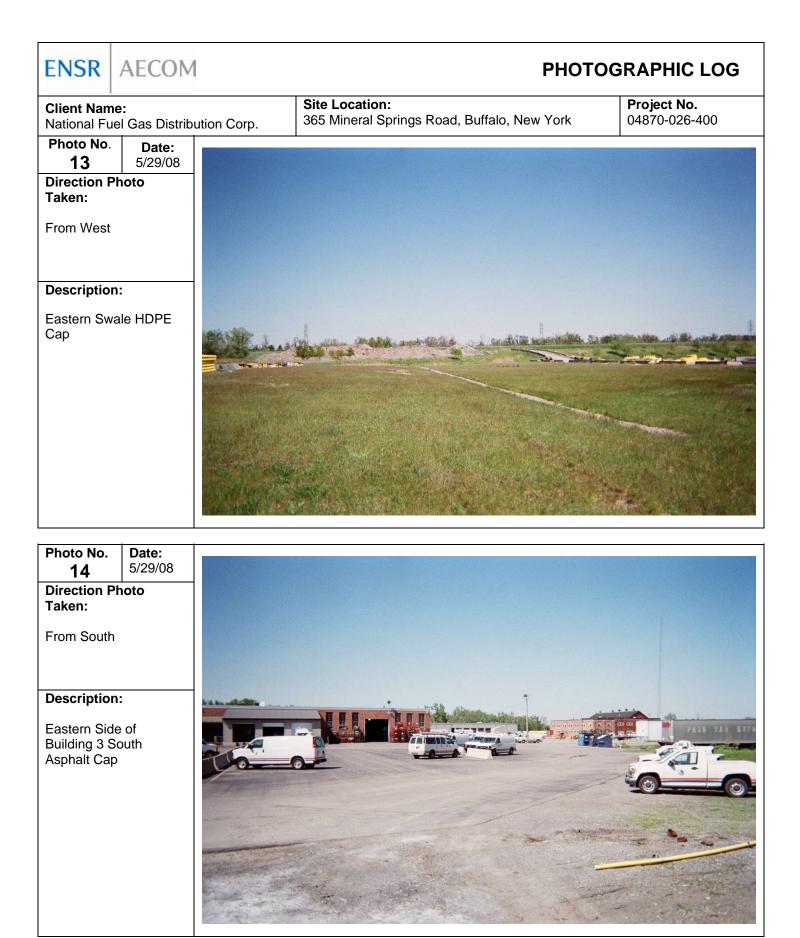














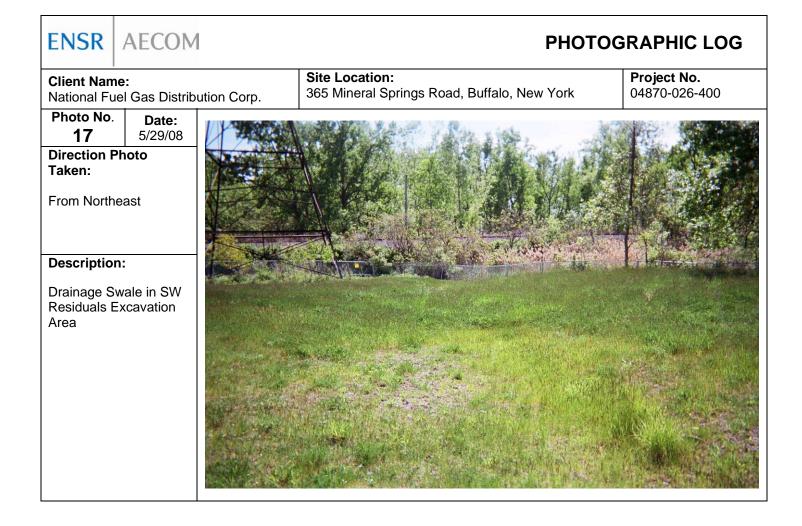
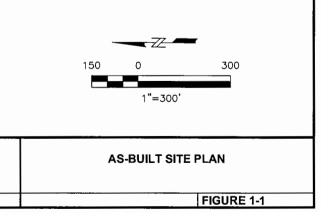


Photo No. 18	<b>Date:</b> 5/29/08	
Direction Ph Taken:	oto	
From East		
Description:		
Fence along Boundary of S	Southern Site	

Figure 1-1 – Site Plan

PROPERTY LINE -CHAIN LINK FENCE-APR **B**3EA SNN-18 B3SA B10A SOUTH CULVERT CC NORTH CULVERT-EDD CTBE DPE == = MW-12 EDD Ŗ ESHC ESSAC ESNA ESNA ESHC ESSA ETBE NTBE BLDG 10 RTW1 BLDC 9 - B10AC SETL BLDG 8 SPE ( WTBE) BLDG 2 SWP WTBE B3EAC Þ -DPE SPRINGS BLDG 3 ENTRANCE 23 -OVERHEAD TRANSMISSION TOWER EBLDG 5 **B3SAC** -BURIED ELECTRIC LINE ר = = ד MINERAL SWPRE MM. MN-20 ×. MW CALAIS STREET MINERAL SPRINGS ROAD MGP SITE RETEC NFGD3-14852 DATE: 06/14/06 DRWN: MAW/BIL

	LEGEND
	EXISTING STRUCTURE
	REMEDIAL CONSTRUCTION
<b></b>	MONITORING WELLS
e	SURFACE WATER SAMPLE LOCATION
APRE	ADDITIONAL PURIFIER RESIDUALS
	EXCAVATION
B3EAC	BUILDING 3 EAST ASPHALT CAP
B3SAC	BUILDING 3 SOUTH ASPHALT CAP
B10AC	BUILDING 10 ASPHALT CAP
CC	CLAY CAP
CTBE	CENTRAL TAR BOILS
	EXCAVATION
DPE	DIESEL PAD EXCAVATION
EDD	EASTERN DRAINAGE DITCH
ESHC	EASTERN SWALE HDPE CAP
ESNAC	EASTERN SWALE NORTH
	ASPHALT CAP
ESSAC	EASTERN SWALE SOUTH
	ASPHALT CAP
etbe	EASTERN TAR BOILS
	EXCAVATION
NTBE	NORTHERN TAR BOILS
	EXCAVATION
RTW1	RECOVERY TEST WELL
	AND DNAPL SHED
SETLE	SOUTHEASTERN TAR LENSES
	EXCAVATION
SPE	SEPARATOR PITS EXCAVATION
SWPRE	SOUTHWEST RESIDUALS
	EXCAVATION
WTBE	WESTERN TAR BOILS
	EXCAVATION



# ENSR

# Appendix A

# Groundwater and Surface Water Analytical Results (Tables)

MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07	MW-07
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene	3320	1210	4900		5100	5200	4800	3900	3300	2700	2200	3000	2100	1900	3200	2800	2000	1700	2800	2000	2900	2600	2000	1900	490
Toluene	389	20	750		2000	2700	2500	3400	1700	1500	1200	1400	1200	930	1700	1800	1300	930	1100	840	1100	570	620	100	270
Ethylbenzene	2400	410	2900		3700	3600	3300	2000	2100	2300	1900	2200	1900	1900	2700	2500	2500	1800	2700	2200	3100	2500	2500	2000	410
Xylene (sum of isomers)	1038	63	1200		1800	1900	1800	1600	1100	1200	1100	1100	1100	1000	1400	1200	1400	1000	1600	1300	1800	1500	1400	1100	270
Total BTEX	7147	1703	9750		12600	13400	12400	10900	8200	7700	6400	7700	6300	5730	9000	8300	7200	5430	8200	6340	8900	7170	6520	5100	1440
Naphthalene	3270	3000	2400		4100	5900	3400	3400	3600	2200	2600	5000	3100	3800	3200	3700	2700	4600	3500	3600	3000	3600	3700	3100	430
Acenaphthylene	nd	nd	nd		nd	nd	nd	2.2	nd	3	nd	2.5													
Acenaphthene	240	150	180		180	180	150	140	160	80	120	150	nd	160	120	160	180	160	130	220	120	130	nd	130	19
Fluorene	nd	28	45		nd	nd	nd	28	nd	nd	nd	33	nd	nd	27	nd	42	nd	24	46	32	24	nd	25	7.6
Phenanthrene	nd	nd	37		nd	nd	nd	32	nd	nd	nd	30	nd	nd	nd	nd	38	nd	nd	nd	33	28	nd	25	2.5
Anthracene	nd	nd	nd		nd	nd	nd	3.6	nd	5.4	3.9	nd	3	2.5											
Fluoranthene	nd	nd	nd		nd																				
Pyrene	nd	nd	nd		nd																				
Benzo(a)Anthracene	nd	nd	nd		nd																				
Chrysene	nd	nd	nd		nd																				
Benzo(b)Fluoranthene	nd	nd	nd		nd																				
Benzo(k)Fluoranthene	nd	nd	nd		nd																				
Benzo(a)Pyrene	nd	nd	nd		nd																				
Indeno(1,2,3-cd)Pyrene	nd	nd	nd		nd																				
Dibenzo(a,h)Anthracene	nd	nd	nd		nd	0.47	nd	nd	nd	nd															
Benzo(g,h,i)Perylene	nd	nd	nd		nd																				
2-Methylnaphthalene							180	190	200	100	180	230	nd	280	170	270	320	300	230	400	350	250	270	230	24
Total PAHs	3510	3178	2662		4280	6080	3730	3796	3960	2380	2900	5443	3100	4240	3517	4130	3283	5060	3884	4266	3541	4036	3970	3513	488
Cyanide, total (Exygen)			189																						
Cyanide, total (Clarkson Univ.)																									
Cyanide, free (Exygen)																									
Cyanide, free (Clarkson Univ.)																									
Water Elevation (feet)			580.13	581.68	579.84	581.70	581.50	579.98	580.58	582.01	580.96	580.26	581.66	580.31	580.32	582.45	581.24	581.36	582.28	579.76	581.90	579.24	582.58	578.21	581.99

MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene	nd	nd	nd		nd	1.2	nd	nd	nd	nd	nd	0.83	nd	nd	nd	nd	nd	nd							
Toluene	nd	nd	nd		nd	nd	nd	nd	nd	0.89	nd	nd	0.81	nd											
Ethylbenzene	nd	nd	nd		nd	0.9	nd	1.3	nd																
Xylene (sum of isomers)	nd	nd	nd		nd	0.66	nd																		
Total BTEX	0	0	0		0	0	0	0	0	0.89	0	0	2.91	0	0	0	0	0	0.83	0	0	0	0	1.96	0
Naphthalene	nd	nd	nd		nd	2.1	nd	nd	nd	nd	nd	nd	0.78	nd	43	nd	nd	2.3	nd						
Acenaphthylene	nd	nd	nd		nd																				
Acenaphthene	nd	nd	nd		nd																				
Fluorene	nd	nd	nd		nd																				
Phenanthrene	nd	nd	nd		nd																				
Anthracene	nd	nd	nd		nd																				
Fluoranthene	nd	nd	nd		nd																				
Pyrene	nd	nd	nd		nd																				
Benzo(a)Anthracene	nd	nd	nd		nd																				
Chrysene	nd	nd	nd		nd																				
Benzo(b)Fluoranthene	nd	nd	nd		nd																				
Benzo(k)Fluoranthene	nd	nd	nd		nd																				
Benzo(a)Pyrene	nd	nd	nd		nd																				
Indeno(1,2,3-cd)Pyrene	nd	nd	nd		nd																				
Dibenzo(a,h)Anthracene	nd	nd	nd		nd																				
Benzo(g,h,i)Perylene	nd	nd	nd		nd																				
2-Methylnaphthalene							nd	3.8	nd	nd	nd	nd													
Total PAHs	0	0	0		0	0	0	0	0	0	0	2.1	0	0	0	0	0	0	0.78	0	46.8	0	0	2.3	0
Cyanide, total (Exygen)			334																						
Cyanide, total (Clarkson Univ.)																									
Cyanide, free (Exygen)																									
Cyanide, free (Clarkson Univ.)																									
Water Elevation (feet)			579.87	581.44	579.33	581.19	581.07	579.64	580.10	581.61	580.51	579.51	581.23	579.93	579.16	581.92	580.80	580.90	581.78	579.53	581.15	580.04	582.06	578.19	581.51

### Mineral Springs

MW-11 / MW-11A	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11A	MW-11A	MW-11A	MW-11A	MW-11A	MW-11A	MW-11A	MW-11A	MW-11A	MW-11A	MW-11A	MW-11A
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene			35		nd	nd	nd	nd		nd	nd	nd	nd	350	80	50	270	150	140	250	67	140	100	180	230
Toluene			17		nd	nd	nd	68		nd	3.8	nd	nd	230	1.2	0.7	35	nd	1.2	7	0.56	1.2	0.99	nd	5.5
Ethylbenzene			94		nd	nd	nd	nd		nd	nd	nd	nd	650	3.5	6.9	30	5.4	9.6	38	2.5	8.7	2.8	5.5	69
Xylene (sum of isomers)			83		7	nd	nd	nd		nd	nd	nd	nd	410	9.1	9.2	38	16	16	30	8.1	14	5.5	29	41
Total BTEX			229		7	0	0	68		0	4	0	0	1640	94	67	373	171	167	325	78	164	109	215	346
Naphthalene			140		12	nd	nd	nd		nd	nd	nd	nd	150	130	nd	39	31	nd	20	2.9	nd	nd	0.79	7.1
Acenaphthylene			9		2	nd	nd	nd		nd	nd	nd	nd	12	8.4	nd	7.9	9.4	2.8	8.9	5.1	nd	5.8	0.93	6.9
Acenaphthene			7		nd	nd	nd	nd		nd	nd	nd	nd	4.4	3.1	1.2	4.5	5.9	4.5	5.6	nd	nd	nd	2.7	5.6
Fluorene			nd		nd	nd	nd	nd		nd	nd	nd	nd	2.2	nd	nd	1.9	2.3	1.3	1.7	1.5	nd	nd	nd	5.1
Phenanthrene			nd		nd	nd	nd	nd		nd nd	nd	nd	nd	2.7	2.2	nd	3.7 0.5	6.4 1.6	nd	2	nd	nd	nd nd	nd	1.5 2.2
Fluoranthene			nd		nd nd	nd	nd nd	nd		nd	nd	nd	nd	nd nd	nd	nd	nd	nd	nd 0.3	nd	nd	nd	nd	nd 0.57	2.2 nd
Pyrene			nd		nd	nd	nd	nd		nd	nd	nd	nd	nd	nd	nd	0.3	0.73	0.46	0.33	nd	nd	nd	1.2	nd
Benzo(a)Anthracene			nd		nd	nd	nd	nd		nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chrysene			nd		nd	nd	nd	nd		nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(b)Fluoranthene			nd		nd	nd	nd	nd		nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(k)Fluoranthene			nd		nd	nd	nd	nd		nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(a)Pyrene			nd		nd	nd	nd	nd		nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Indeno(1,2,3-cd)Pyrene			nd		nd	nd	nd	nd		nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Dibenzo(a,h)Anthracene			nd		nd	nd	nd	nd		nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzo(g,h,i)Perylene			nd		nd	nd	nd	nd		nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2-Methylnaphthalene							nd	nd		nd	nd	nd	nd	31	4.4	nd	0.26	nd	nd	0.15	nd	nd	nd	nd	nd
Total PAHs			156		14	0	0	0		0	0	0	0	202	148	1	58	57	9	39	10	0	6	6	28
Cyanide, total (Exygen)			1040						1340																
Cyanide, total (Clarkson Univ.)																									
Cyanide, free (Exygen)									nd																
Cyanide, free (Clarkson Univ.)																									
Water Elevation (feet)			580.28	582.26	579.82	583.55	583.85	579.28	581.30	583.85	581.32	581.03	582.97	580.70	581.11	583.03	581.54	581.87	582.74	580.09	582.38	580.78	583.07	578.46	582.43

All units ug/L

MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene			17																						
Toluene			nd																						
Ethylbenzene			nd																						
Xylene (sum of isomers)			nd																						
Total BTEX			17																						
Naphthalene			nd																						
Acenaphthylene			nd																						
Acenaphthene			nd																						
Fluorene			nd																						
Phenanthrene			nd																						
Anthracene			nd																						
Fluoranthene			nd																						
Pyrene			nd																						
Benzo(a)Anthracene			nd																						
Chrysene			nd																						
Benzo(b)Fluoranthene			nd																						
Benzo(k)Fluoranthene			nd																						
Benzo(a)Pyrene			nd																						
Indeno(1,2,3-cd)Pyrene			nd																						
Dibenzo(a,h)Anthracene			nd																						
Benzo(g,h,i)Perylene			nd																						
2-Methylnaphthalene																									
Total PAHs			0																						
Cyanide, total (Exygen)			375		294	380	434	1840	393	522	2020	438	440	384	437	134	458	514	2110						
Cyanide, total (Clarkson Univ.)																	461	491	425	413	440	415	459	454	473
Cyanide, free (Exygen)						nd	nd	nd	nd	nd	58	7	nd	88	57	19	6	5	817						
Cyanide, free (Clarkson Univ.)																6.7	nd	nd	3.3	2.9	2.6	nd	nd	6.8	25
Water Elevation (feet)			579.45	581.07	578.98	580.90	580.72	579.30	579.54	581.40	580.30	579.29	580.82	579.59	579.75	581.55	580.39	580.51	581.48	579.27	580.96	579.78	581.88	578.7	581.25

MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene			4	nd								1.8			3.7			1.2				1.9		2.1	nd
Toluene			nd	nd								nd			nd			nd				nd		nd	nd
Ethylbenzene			nd	nd								nd			nd			nd				nd		0.38	nd
Xylene (sum of isomers)			nd	nd								nd			nd			nd				nd		nd	nd
Total BTEX			4	0								1.8			3.7			1.2				1.9		2.48	0
Naphthalene			nd									nd			nd			nd				2.8		0.88	nd
Acenaphthylene			nd									nd			nd			nd				nd		nd	nd
Acenaphthene			nd									nd			nd			nd				nd		nd	nd
Fluorene			nd									nd			nd			nd				nd		nd	nd
Phenanthrene			nd									nd			nd			nd				nd		nd	nd
Anthracene			nd									nd			nd			nd				nd		nd	nd
Fluoranthene			nd									nd			nd			nd				nd		nd	nd
Pyrene			nd									nd			nd			nd				nd		nd	nd
Benzo(a)Anthracene			nd									nd			nd			nd				nd		nd	nd
Chrysene			nd									nd			nd			nd				nd		nd	nd
Benzo(b)Fluoranthene			nd									nd			nd			nd				nd		nd	nd
Benzo(k)Fluoranthene			nd									nd			nd			nd				nd		nd	nd
Benzo(a)Pyrene			nd									nd			nd			nd				nd		nd	nd
Indeno(1,2,3-cd)Pyrene			nd									nd			nd			nd				nd		nd	nd
Dibenzo(a,h)Anthracene			nd									nd			nd			nd				nd		nd	nd
Benzo(g,h,i)Perylene			nd									nd			nd			nd				nd		nd	nd
2-Methylnaphthalene												nd			nd			nd				nd		nd	nd
Total PAHs			0									0			0			0				2.8		0.88	0
Cyanide, total (Exygen)			323		356	280	129	465	716	nd	157	399	142	423	528	175	108	280	103						
Cyanide, total (Clarkson Univ.)																	145	234	55	363	61	300	3	664	54
Cyanide, free (Exygen)						nd	33	119	nd	nd	96	13	nd	51	22	22	nd	nd	45						
Cyanide, free (Clarkson Univ.)																5.3	nd	nd	nd	3	nd	nd	nd	5.3	2.3
Water Elevation (feet)			578.17	579.72	577.70	579.47	579.28	577.91	578.23	579.90	578.80	577.83	579.23	578.13	578.18	579.78	587.69	578.80	579.87	577.95	579.42	578.30	580.29	577.3	579.65

MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene			nd																						
Toluene			nd																						
Ethylbenzene			nd																						
Xylene (sum of isomers)			nd																						
Total BTEX			0																						
Naphthalene			nd																						
Acenaphthylene			nd																						
Acenaphthene			nd																						
Fluorene			nd																						
Phenanthrene			nd																						
Anthracene			nd																						
Fluoranthene			nd																						
Pyrene			nd																						
Benzo(a)Anthracene			nd																						
Chrysene			nd																						
Benzo(b)Fluoranthene			nd																						
Benzo(k)Fluoranthene			nd																						
Benzo(a)Pyrene			nd																						
Indeno(1,2,3-cd)Pyrene			nd																						
Dibenzo(a,h)Anthracene			nd																						
Benzo(g,h,i)Perylene			nd																						
2-Methylnaphthalene																			broken						
Total PAHs			0															1	no sample						
Cyanide, total (Exygen)			644		427	800	914	378	449	886	416	487	664	962	583	nd	503	537							
Cyanide, total (Clarkson Univ.)																	514	571		423	305	281	404	422	374
Cyanide, free (Exygen)						nd	nd	nd	nd	nd	17	12	nd	9	7	nd	14	13							
Cyanide, free (Clarkson Univ.)																nd	nd	nd		nd	nd	nd	nd	nd	4
Water Elevation (feet)			577.36	579.19	577.03	578.44	578.21	577.21	577.31	578.56	577.61	576.76	577.92	577.23	577.11	578.15	577.55	577.46		577.07	577.99	577.29	577.89	577.43	577.87

MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene			nd																						
Toluene			nd																						
Ethylbenzene			nd																						
Xylene (sum of isomers)			nd																						
Total BTEX			0																						
Naphthalene			nd																						
Acenaphthylene			nd																						
Acenaphthene			nd																						
Fluorene			nd																						
Phenanthrene			nd																						
Anthracene			nd																						
Fluoranthene			nd																						
Pyrene			nd																						
Benzo(a)Anthracene			nd																						
Chrysene			nd																						
Benzo(b)Fluoranthene Benzo(k)Fluoranthene			nd																						
Benzo(a)Pyrene			nd																						
Indeno(1,2,3-cd)Pyrene			nd																						
Dibenzo(a,h)Anthracene			nd																						
Benzo(g,h,i)Perylene			nd																						
2-Methylnaphthalene																									
Total PAHs			0																						
Cyanide, total (Exygen)			78.8																						
Cyanide, total (Clarkson Univ.)																									
Cyanide, free (Exygen)																									
Cyanide, free (Clarkson Univ.)																									
Water Elevation (feet)			579.11	579.81	578.70	580.15	580.55	578.98	579.49	580.98	579.48	578.88	580.40	579.11	579.30	581.04	579.99		580.54	579.45	580.54	579.36		577.89	580.60

MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene			nd																						
Toluene			nd																						
Ethylbenzene			nd																						
Xylene (sum of isomers)			nd																						
Total BTEX			0																						
Naphthalene			nd																						
Acenaphthylene			nd																						
Acenaphthene			nd																						
Fluorene			nd																						
Phenanthrene			nd																						
Anthracene			nd																						
Fluoranthene			nd																						
Pyrene			nd																						
Benzo(a)Anthracene			nd																						
Chrysene			nd																						
Benzo(b)Fluoranthene			nd																						
Benzo(k)Fluoranthene			nd																						
Benzo(a)Pyrene			nd																						
Indeno(1,2,3-cd)Pyrene			nd																						
Dibenzo(a,h)Anthracene			nd																						
Benzo(g,h,i)Perylene			nd																						
2-Methylnaphthalene																									
Total PAHs			0																						
Cyanide, total (Exygen)			346		459	360	214	214	138	174	23	187	203	130	220	254	297	293	307						
Cyanide, total (Clarkson Univ.)																	332	297	305	299	266	368	317	429	467
Cyanide, free (Exygen)						nd	nd	147	nd	nd	17	13	nd	89	20	95	12	104	nd						
Cyanide, free (Clarkson Univ.)																3.4	2.8	nd	nd	nd	nd	nd	nd	4	6.9
Water Elevation (feet)			580.17	581.49	579.66	581.81	581.59	580.06	580.77	582.08	580.23	580.34	581.92	580.42	580.95	582.83	581.35	581.72	581.08	579.91	582.14	580.56	582.87	578.25	581.82
vvaler Elevation (reet)			580.17	581.49	579.66	581.81	581.59	580.06	580.77	582.08	580.23	580.34	581.92	580.42	580.95	582.83	581.35	581.72	581.08	579.91	582.14	580.56	582.87	578.25	381.8Z

All units ug/	L
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MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17	MW-17
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene				nd	0.32	nd																			
Toluene				nd																					
Ethylbenzene				nd	1.1	nd																			
Xylene (sum of isomers)				nd	0.63	nd																			
Total BTEX				0	0	0	0	0	0	0	0	0	0	0	0	0.32	0	0	0	0	0	0	0	1.73	0
Naphthalene				nd	nd	nd	nd	3	nd																
Acenaphthylene				nd																					
Acenaphthene				nd																					
Fluorene				nd																					
Phenanthrene				nd																					
Anthracene				nd																					
Fluoranthene				nd																					
Pyrene				nd																					
Benzo(a)Anthracene				nd																					
Chrysene				nd																					
Benzo(b)Fluoranthene				nd																					
Benzo(k)Fluoranthene				nd																					
Benzo(a)Pyrene				nd																					
Indeno(1,2,3-cd)Pyrene				nd																					
Dibenzo(a,h)Anthracene				nd																					
Benzo(g,h,i)Perylene				nd																					
2-Methylnaphthalene							nd																		
Total PAHs				0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyanide, total (Exygen)				34	nd	27	65	38	74	185	127	108	185	50	66	378	106	160	217						
Cyanide, total (Clarkson Univ.)																	142	162	260	161	263	183	369	148	285
Cyanide, free (Exygen)						nd	13	nd	nd	nd	nd	nd	nd	16	nd	nd	nd	nd	61						
Cyanide, free (Clarkson Univ.)																nd	nd	nd	nd	nd	5.2	nd	nd	nd	5.9
Water Elevation (feet)				582.36	579.73	581.90	581.96	580.12	580.88	582.38	579.86	580.48	582.01	580.46	580.96	582.40	581.27	581.72	582.71	579.96	582.14	580.62	582.87	578.36	583.02

MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	MW-18	
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	
Benzene				nd							
Toluene				nd	nd	nd	nd	1.1	nd	nd	
Ethylbenzene				nd							
Xylene (sum of isomers)				nd							
Total BTEX				0	0	0	0	1.1	0	0	
Naphthalene				nd							
Acenaphthylene				nd							
Acenaphthene				nd							
Fluorene				nd							
Phenanthrene				nd							
Anthracene				nd							
Fluoranthene				nd							
Pyrene				nd							
Benzo(a)Anthracene				nd							
Chrysene				nd							
Benzo(b)Fluoranthene				nd							
Benzo(k)Fluoranthene				nd							
Benzo(a)Pyrene				nd							
Indeno(1,2,3-cd)Pyrene				nd							
Dibenzo(a,h)Anthracene				nd							
Benzo(g,h,i)Perylene				nd							
2-Methylnaphthalene							nd	nd	nd	nd	
Total PAHs				0	0	0	0	0	0	0	
Cyanide, total (Exygen)				nd	nd	nd	13	nd	nd	nd	
Cyanide, total (Clarkson Univ.)											
Cyanide, free (Exygen)						nd	nd	24	nd	nd	
Cyanide, free (Clarkson Univ.)											
Water Elevation (feet)				585.46	582.65	585.06	585.40	583.84	583.84	582.74	

All un	its	ua/	L
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MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19	MW-19
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene					4700	5700	6000	4600	4700	4800	3800	4200	4600		5300	4900	6000	5800	7500	5800	5800	5600	6700	4500	5200
Toluene					nd	nd	nd	160	nd	nd	nd	nd	nd		nd										
Ethylbenzene					nd	280	260	nd	nd	160	150	140	170		130	170	330	180	350	270	260	200	220	100	210
Xylene (sum of isomers)					1500	2200	1500	930	660	580	470	540	560		400	440	1000	660	950	770	730	810	710	470	780
Total BTEX					6200	8180	7760	5690	5360	5540	4420	4880	5330		5830	5510	7330	6640	8800	6840	6790	6610	7630	5070	6190
Naphthalene					1900	2200	2200	2000	2100	2300	2000	2100	2400	2100	2000	2700	2900	2800	3000	2600	2800	3600	3100	4600	4100
Acenaphthylene					nd																				
Acenaphthene					nd	1.5																			
Fluorene					nd																				
Phenanthrene					nd																				
Anthracene					nd																				
Fluoranthene					nd																				
Pyrene					nd																				
Benzo(a)Anthracene					nd																				
Chrysene					nd																				
Benzo(b)Fluoranthene					nd																				
Benzo(k)Fluoranthene					nd																				
Benzo(a)Pyrene					nd																				
Indeno(1,2,3-cd)Pyrene					nd																				
Dibenzo(a,h)Anthracene					nd																				
Benzo(g,h,i)Perylene					nd																				
2-Methylnaphthalene							nd	0.82	nd	5.5	4.8	nd	5.5	4.7											
Total PAHs					1900	2200	2200	2001	2100	2300	2000	2100	2400	2100	2000	2700	2900	2800	3000	2600	2806	3605	3100	4606	4106
Cyanide, total (Exygen)					1100																				
Cyanide, total (Clarkson Univ.)					1100																				
Cyanide, free (Exygen)																									
Cyanide, free (Clarkson Univ.)																									
2,2.30, 100 (Olarioon Only.)																									
Water Elevation (feet)					577.43	581.36	581.13	579.63	580.12	581.73	579.73	579.83	581.24	580.01	580.19	582.00	580.79	580.98	581.90	579.57	581.42	580.15	582.26	578.2	581.6
																				/					

MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20	MW-20
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene					nd																				
Toluene					nd																				
Ethylbenzene					nd																				
Xylene (sum of isomers)					nd																				
Total BTEX					0																				
Naphthalene					nd																				
Acenaphthylene					nd																				
Acenaphthene					nd																				
Fluorene					nd																				
Phenanthrene					nd																				
Anthracene					nd																				
Fluoranthene					nd																				
Pyrene					nd																				
Benzo(a)Anthracene					nd																				
Chrysene					nd																				
Benzo(b)Fluoranthene					nd																				
Benzo(k)Fluoranthene					nd																				
Benzo(a)Pyrene					nd																				
Indeno(1,2,3-cd)Pyrene					nd																				
Dibenzo(a,h)Anthracene					nd																				
Benzo(g,h,i)Perylene					nd																				
2-Methylnaphthalene																									
Total PAHs					0																				
Cyanide, total (Exygen)					344	450	295	439	46	455	361	8	506	399	21	501	242	387	644						
Cyanide, total (Clarkson Univ.)																	242	444	402	160	429	172	469	337	494
Cyanide, free (Exygen)						nd	13	nd	nd	nd	10	9	nd	44	14	nd	nd	53	13						
Cyanide, free (Clarkson Univ.)																nd	2.6	3.2							
Water Elevation (feet)					576 67	570.24	578 8F	576 76	577 15	579.20	577 40	576 60	578 3/	576.90	577.16	578 QF	577 /2	577 82	578.82	576.60	576.60	577.07	570.02	575.78	578.43
vvaler Elevation (reet)					576.67	579.24	578.86	576.76	577.15	579.20	577.49	576.60	578.34	576.90	5//.16	578.96	577.42	577.82	578.82	576.60	576.60	5//.0/	579.03	5/5./8	578.43

MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21	MW-21
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene					nd																				
Toluene					nd																				
Ethylbenzene					nd																				
Xylene (sum of isomers)					nd																				
Total BTEX					0																				
Naphthalene					nd																				
Acenaphthylene					nd																				
Acenaphthene					nd																				
Fluorene					nd																				
Phenanthrene					nd																				
Anthracene					nd																				
Fluoranthene					nd																				
Pyrene					nd																				
Benzo(a)Anthracene					nd																				
Chrysene					nd																				
Benzo(b)Fluoranthene					nd																				
Benzo(k)Fluoranthene					nd																				
Benzo(a)Pyrene					nd																				
Indeno(1,2,3-cd)Pyrene					nd																				
Dibenzo(a,h)Anthracene					nd																				
Benzo(g,h,i)Perylene					nd																				
2-Methylnaphthalene																									
Total PAHs					0																				
Cyanide, total (Exygen)					511	560	898	558	535	756	674	670	637	708	569	714	741	740	664						
Cyanide, total (Clarkson Univ.)																	749	709	688	545	404	448	574	560	543
Cyanide, free (Exygen)						nd	14	nd	nd	24	12	13	nd	11	nd	nd	nd	7	20				,		10 -
Cyanide, free (Clarkson Univ.)																nd	nd	nd	nd	2.6	nd	nd	nd	nd	18.5
Water Elevation (feet)					576.51	578.08	577.68	576.55	576.58	578.03	576.97	576.28	575.32	576.55	576.42	577.70	576.86	576.85	577.71	576.38	577.28	576.75	578.38	576.79	577.42

MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22	MW-22
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene					6																				
Toluene					nd																				
Ethylbenzene					nd																				
Xylene (sum of isomers)					nd																				
Total BTEX					6																				
Naphthalene					nd																				
Acenaphthylene					nd																				
Acenaphthene					nd																				
Fluorene					nd																				
Phenanthrene					nd																				
Anthracene					nd																				
Fluoranthene					nd																				
Pyrene					nd																				
Benzo(a)Anthracene					nd																				
Chrysene Benzo(b)Fluoranthene					nd																				
Benzo(k)Fluoranthene					nd																				
Benzo(a)Pyrene					nd																				
Indeno(1,2,3-cd)Pyrene					nd																				
Dibenzo(a,h)Anthracene					nd																				
Benzo(g,h,i)Perylene					nd																				
2-Methylnaphthalene																									
Total PAHs					0																				
Cyanide, total (Exygen)					487	600	1010	734	460	703	1570	467	604	560	1080	741	504	803	941						
Cyanide, total (Clarkson Univ.)																	676	759	628	534	587	540	642	641	666
Cyanide, free (Exygen)						nd	nd	201	nd	nd	49	231	267	88	49	132	nd	207	99						
Cyanide, free (Clarkson Univ.)																			2.4	2.4					
Cyanide, nee (Clarkson Univ.)																nd	8	nd	3.1	2.4	nd	nd	nd	4.3	5.9
Gyanide, nee (Clarkson Univ.)																na	8	na	3.1	2.4	na	na	nd	4.3	5.9

MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23	MW-23
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene						nd						nd			nd			nd				nd			
Toluene						nd						nd			nd			nd				nd			
Ethylbenzene						nd						nd			nd			nd				nd			
Xylene (sum of isomers)						nd						nd			nd			nd				nd			
Total BTEX						0						0			0			0				0			
Naphthalene						nd						nd			nd			nd				3.6			
Acenaphthylene						nd						nd			nd			nd				nd			
Acenaphthene						nd						nd			nd			nd				nd			
Fluorene						nd						nd			nd			nd				nd			
Phenanthrene						nd						nd			nd			nd				nd			
Anthracene						nd						nd			nd			nd				nd			
Fluoranthene						nd						nd			nd			nd				nd			
Pyrene Benzo(a)Anthracene						nd						nd			nd nd			nd				nd nd			
						nd						nd			nd			nd				nd			
Chrysene Benzo(b)Fluoranthene						nd						nd			nd			nd				nd			
Benzo(k)Fluoranthene						nd						nd			nd			nd				nd			
Benzo(a)Pyrene						nd						nd			nd			nd				nd			
Indeno(1,2,3-cd)Pyrene						nd						nd			nd			nd				nd			
Dibenzo(a,h)Anthracene						nd						nd			nd			nd				nd			
Benzo(g,h,i)Perylene						nd						nd			nd			nd				nd			
2-Methylnaphthalene												nd			nd			nd				nd			
Total PAHs						0						0			0			0				3.6			
Cyanide, total (Exygen)						480	658	469	654	480	425	728	356	620	729	587	446	437	274						
Cyanide, total (Clarkson Univ.)																	493	560	359	325	267	321	326	374	252
Cyanide, free (Exygen)						nd	nd	nd	nd	nd	12	10	nd	15	6	5	9	5	57						
Cyanide, free (Clarkson Univ.)																nd	nd	nd	3.2						
Water Elevation (feet)						578.66	578.30	577.40	577.58	578.69	577.83	577.18	578.11	577.40	577.29	578.54	577.83	577.91	578.61	577.44	578.19	577.63	578.95	577.19	578.37

SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01	SW-01
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene			nd				nd	0.44	nd	Dry	nd														
Toluene			nd				nd	nd	nd	nd	2	nd	nd	nd	nd	0.38	nd	nd	nd	0.47	nd	nd	nd		nd
Ethylbenzene			nd				nd	0.23	nd		nd														
Xylene (sum of isomers)			nd				nd		nd																
Total BTEX			0				0	0	0	0	2	0	0	0	0	0.82	0	0	0	0.47	0	0.23	0		0
Naphthalene			nd				nd	2.9	nd	nd	nd	1.6	nd	32	nd	nd		2.3							
Acenaphthylene			nd				nd		nd																
Acenaphthene			nd				nd	1.1	nd		nd														
Fluorene			nd				nd		nd																
Phenanthrene			nd				nd		nd																
Anthracene			nd				nd		nd																
Fluoranthene			nd				nd	0.5	nd	nd	nd		nd												
Pyrene			nd				nd	0.4	nd	nd	nd		nd												
Benzo(a)Anthracene			nd				nd		nd																
Chrysene			nd				nd		nd																
Benzo(b)Fluoranthene			nd				nd		nd																
Benzo(k)Fluoranthene			nd				nd		nd																
Benzo(a)Pyrene			nd				nd		nd																
Indeno(1,2,3-cd)Pyrene			nd				nd		nd																
Dibenzo(a,h)Anthracene			nd				nd		nd																
Benzo(g,h,i)Perylene			nd				nd		nd																
2-Methylnaphthalene							nd		nd																
Total PAHs			0				0	4	0	0	0	1.6	0	0	0	0	0	0	0	0.9	32	0	0		2.3
Cyanide, total (Exygen)			12.2				21	55	35	8	405	21	13	88	36	989	40	38	9						
Cyanide, total (Clarkson Univ.)																	46	53	10	5	4	24	nd		14
Cyanide, free (Exygen)							nd	16	nd	nd	29	6	nd	10	nd	86	6	19	nd						
Cyanide, free (Clarkson Univ.)																98.1	nd	nd	3.2	2.4	2.3	2.4	5		nd
Water Elevation (feet)					579.80	580.40	580.10	580.00	580.10	581.00	579.60	579.80	580.70	581.40	582.00	582.30	580.60	581.30	581.30	579.90	581.60	580.20	582.80		581.57

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SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02	SW-02
DATE	Aug-95	May-96	Jul-97	Feb-98	Jun-99	Apr-00	Apr-01	Jul-01	Nov-01	Apr-02	Jun-02	Nov-02	Apr-03	Jul-03	Nov-03	Mar-04	Jun-04	Nov-04	Apr-05	Jul-05	Apr-06	Aug-06	Apr-07	Aug-07	Apr-08
Benzene			nd		nd	6	2	nd	nd	1.2	nd	Dry	nd												
Toluene			nd		nd	8	2	nd	nd	0.25	nd		nd												
Ethylbenzene			nd		nd	15	nd		nd																
Xylene (sum of isomers)			nd		nd	24	nd		nd																
Total BTEX			0		0	53	4	0	0	1.45	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Naphthalene			nd		nd		0.94																		
Acenaphthylene			nd		nd		nd																		
Acenaphthene			nd		nd		nd																		
Fluorene			nd		nd		nd																		
Phenanthrene			nd		nd		nd																		
Anthracene			nd		nd		nd																		
Fluoranthene			nd		nd		nd																		
Pyrene			nd		nd	nd	nd	0.77	nd		nd														
Benzo(a)Anthracene			nd		nd		nd																		
Chrysene			nd		nd		nd																		
Benzo(b)Fluoranthene			nd		nd		nd																		
Benzo(k)Fluoranthene			nd		nd		nd																		
Benzo(a)Pyrene			nd		nd		nd																		
Indeno(1,2,3-cd)Pyrene			nd		nd		nd																		
Dibenzo(a,h)Anthracene			nd		nd		nd																		
Benzo(g,h,i)Perylene			nd		nd		nd																		
2-Methylnaphthalene							nd		nd																
Total PAHs			0		0	0	0	0.77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0.94
Cyanide, total (Exygen)			77.5		nd	380	121	nd	7	130	nd	1440	17	30	62	48	nd	24	nd						
Cyanide, total (Clarkson Univ.)																	nd	50	nd	nd	3	nd	nd		86
Cyanide, free (Exygen)						111	nd	nd	nd	16	nd	42	nd	nd	nd	20	nd	12	nd						
Cyanide, free (Clarkson Univ.)																19.2	nd	6.2	nd	nd	2.3	nd	8.6		50.7
Water Elevation (feet, approximate)					580.3	580.9	580.6	580.5	580.6	581.5	580.1	580.3	581.1	581.8	582.4	582.7	581.0	581.7	581.7	580.3	582.0	580.6	583.2		

ENSR

Appendix B

Annual Site Inspection Form

### **Annual Site Inspection Form**

Mineral Springs Road Former MGP

EPSK DUSterie Inspection by: Affiliation: Signature: Date: ASPHALT CAP SOUTH OF BUILDING #3 **CLAY CAP BEHIND BUILDING #14** Cracks or ruts ? Yes No Animal dens ? No Erosion at edges ? Erosion ? Blue-stained soil ? Yes Trees ? Comments Cracks to be addressed Blue-stained soil ? during 2008 TRM. Comments: Soils to be addressed During Caps Work in 2008. ASPHALT CAP EAST OF BUILDING #3 EASTERN DRAINAGE DITCH Cracks or ruts ? 'es No Erosion at edges ? Animal dens ? Yes No Blue-stained soil ? Erosion ? Yes To Eastwhere Cap to be placed in 2008. Comments: Trees ? Yes Blue-stained soil ? Yes Hydrocarbon sheen ? Yes Inadequate Signage ? Yes ASPHALT CAP NORTH OF EASTERN SWALE Trash / Debris ? (Yes) No Comments: Debris at northead of ditch. Cracks or ruts ? Signicent Debris below B-14 Cap. Erosion at edges ? Blue-stained soil ? Yes comments: C railes to be addressed **BACKFILLED EXCAVATIONS** During 2008 Asphalt Cap Excessive settlement? WORK. DMS Ponding of surface water ? ASPHALT CAP SOUTH OF EASTERN SWALE Tar boils ? Blue-stained soil ? Yes Cracks or ruts ? Comments: Minimal Erosion at edges ? Blue-stained soil ? Yes comments: Rutz in trafficked area. No cracksofsignificano **CLASS D STREAM** Hydrocarbon sheen ? HDPE/SOIL CAP IN EASTERN SWALE Comments: Heavy Algal blooms Cracks or ruts ? Yes Erosion at edges ? Yes Blue-stained soil ? Yes SITE FENCE Comments: Damage / Holes ? the Alarsouth Fare Comments:

# ENSR

Appendix C

**Certification of Institutional/Engineering Controls** 

# Annual Certification of Institutional/Engineering Controls at Voluntary Clean-Up Program Site

Site Number:V00195-9Site Name:National Fuel Gas - Mineral Springs Road Maintenance FacilitySite Address:365 Mineral Springs Road, West Seneca (T), Erie County, New York

County:Erie CountyTown:Town of West SenecaProperty ID:123.16 - 2 - 8

I <u>JAMES D. RAMSDELL</u>, residing at <u>4647 WINDING WOUDS LANE</u>, <u>HAMBURG</u>, <u>NY</u>, as a duly authorized representative of the property listed above, which is located wholly or partially within the boundaries of the Voluntary Cleanup Site named above; do certify that the engineering and/or institutional controls, as specified in the Restrictive Covenant for the Voluntary Cleanup Site are inplace and functioning as designed within the property listed above.

Signature: Title: 10 7/00 Date:

(This area for notary public)

Notary: ileen D. 10/7/08

EILEEN D. GUERRA Notary Public. State of New York Qualified in Erie County My Commission Expires Aug. 23, 20 0

# ENSR

# Appendix D

Asphalt Cap Construction – Building 8 Interim Remedial Measure *To be provided under Separate Cover*