ARCADIS Design & Consultancy for natural and built assets

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Subject:
NYSEG Cortland-Homer Former MGP Site
Homer, New York
NYSDEC Site #7-12-005
2017 Annual Groundwater Monitoring Report and
Groundwater Monitoring Well Decommissioning Summary

ENVIRONMENT

Date:
November 14, 2017

Contact:
John C. Brussel, PE

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Email:
John.Brussel@arcadis.com

Our ref:
B0013123.0019 #11

Dear Mr. Omorogbe:

On behalf of New York State Electric & Gas Corporation (NYSEG), this report summarizes the annual groundwater monitoring, monitoring well repair, and monitoring well decommissioning work completed in 2017 at the Cortland-Homer former manufactured gas plant (MGP) site in Homer, New York (the Site). Arcadis of New York, Inc. (Arcadis) implemented the groundwater monitoring event during September 2017 and the well repair/decommissioning on various dates between May and September 2017.

As summarized herein, the analytical data from the 2017 annual groundwater monitoring event indicate that the area of groundwater impacted by the former MGP is relatively small and the exceedances of groundwater quality standards/ guidance values continue to be relatively minor. The data demonstrate that the upland soil remedy is effective. Monitoring wells no longer needed for the groundwater monitoring program have been decommissioned, and the remaining wells are appropriate for future monitoring.

Relevant background information is presented below, followed by a summary of the groundwater monitoring fieldwork/findings and well repair and decommissioning activities.

I. BACKGROUND

Remedial activities at the Site were substantially completed between July 2012 and February 2013, and final site restoration was performed in May/June 2013. The remedial activities primarily involved: (1) in-situ soil solidification (ISS) of

approximately 55,000 cubic yards of soil in two separate operable units on opposite sides of US Route 11 (i.e., Operable Units OU-1 and OU-2 located on the west and east sides of the roadway, respectively); and (2) installation of two vertical barrier walls (sealed steel sheet pile walls) connecting the ISS monoliths in OU-1 and OU-2 and extending beneath Route 11. The OU-1 and OU-2 locations, ISS remedial limits, and vertical barrier wall locations are shown on Figure 1. ISS treatment columns extended vertically into an underlying silt/clay layer up to 50 feet below ground surface. ISS was performed to encapsulate coal tar dense non-aqueous phase liquid (DNAPL) and site-related chemical constituents in soil to reduce or eliminate: (1) the release of constituents from soil to groundwater; and (2) migration of coal tar DNAPL beyond site boundaries. The vertical barrier walls beneath Route 11 were driven into the clay confining layer to divert groundwater around potentially-impacted soils below the roadway.

Groundwater monitoring was performed in June 2012 (approximately one month prior to the start of remedial construction) to evaluate baseline conditions. Post-remediation groundwater monitoring was performed in November 2013, September 2015, and October 2016 to assess groundwater flow patterns and water quality following remediation. In addition, an investigation was performed from October to December 2013 to assess the nature, extent, and recoverability of an area of petroleum-based light non-aqueous phase liquid (LNAPL) encountered during remediation in the southeastern corner of OU-1, around monitoring well MW-11. Eight wells were gauged for LNAPL weekly throughout November and December 2013. The investigation findings indicated that recoverable LNAPL was limited to the immediate vicinity of MW-11, but MW-11 was not ideally constructed to recover LNAPL. Arcadis subsequently installed a new well (MW-36) adjacent to MW-11 in April 2014. Additional LNAPL gauging was performed weekly in April and May 2014, and then monthly from June 2014 through January 2015. The LNAPL gauging results, which are presented in January 30, 2015 e-mail correspondence from Arcadis to the New York State Department of Environmental Conservation (NYSDEC), indicated that no recoverable NAPL was encountered during the gauging period except for 0.7 gallons removed from MW-11 (mixture of LNAPL and water).

II. 2017 GROUNDWATER MONITORING SUMMARY

The 2017 annual groundwater monitoring event is the fourth post-remediation groundwater monitoring event performed at the site. This event marks the last of the annual post-remediation groundwater monitoring events as required by the NYSDEC in a December 18, 2015 letter to NYSEG. The NYSDEC indicated it would consider reducing the monitoring frequency after the annual events of 2016 and 2017, assuming concentrations continued to remain stable or were decreasing. The 2017 annual groundwater monitoring was performed on September 12 and 13, 2017 in accordance with the protocols presented in the NYSDEC-approved Site Management Plan (SMP; Arcadis, March 2016). The wells included in the 2017 groundwater monitoring event were those identified in a November 6, 2015 letter from Arcadis to the NYSDEC (the “2015 Annual Groundwater Monitoring Report”), plus two additional wells as requested in the above-referenced December 18, 2015 NYSDEC letter.

The fieldwork and results of the 2017 annual groundwater monitoring are summarized below.

A. Groundwater Monitoring Activities

The 2017 annual groundwater monitoring event included: (1) collecting a synoptic round of water-level measurements; (2) checking each well for LNAPL and DNAPL with a dual-interface probe; and (3) sampling groundwater from wells in the monitoring well network (refer to Figure 1 for the well locations). Arcadis measured water levels and performed NAPL gauging on September 12, 2017. Arcadis collected groundwater samples on September 12 and 13, 2017. The fieldwork was performed in accordance with the protocols presented in Section 3.3.1 of the SMP.

Before beginning sampling, Arcadis measured water levels from the following 15 monitoring wells:

- One well west of the railroad tracks (MW-1).
- Seven wells between the railroad tracks and US Route 11 (MW-11, MW-12, MW-30S, MW-31A, MW-32A, MW-33, and MW-36).
- Seven wells between US Route 11 and the Tioughnioga River (MW-6, MW-13, MW-14R, MW-17, MW-18, MW-28S, and MW-28D).

Arcadis obtained depth-to-bottom measurements from each of the above-identified wells. Trace LNAPL was encountered in MW-11 and MW-36 (i.e., approximately 0.08 feet in MW-11 and 0.02 feet in MW-36). LNAPL had previously been observed in both of these wells. LNAPL was not observed in wells MW-31A and MW-32A (north and south of MW-11), unlike in October 2016. The water-level measurements and calculated groundwater elevations are presented in Table 1. The groundwater elevations were used to prepare a map of the water table (Figure 1). Similar to previous observations, groundwater near the site continues to flow toward the east/southeast. Locally, groundwater is directed around the ISS monoliths and vertical barrier walls. Groundwater elevations are within the range of historical measurements and most closely resemble the groundwater elevations measured in November 2013.

Groundwater samples were collected from 10 monitoring wells (wells MW-1, MW-6, MW-12, MW-13, MW-14R, MW-17, MW-18, MW-28S, MW-28D, and MW-30S). The groundwater samples were collected using the low-flow method described in Section 3.3.1.1 of the SMP. Field-parameter measurements obtained during well purging prior to sampling are presented on the groundwater sampling logs included as Attachment A to this letter.

The groundwater samples were submitted to Test America of Amherst, New York where they were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), and total cyanide. One set of quality assurance/quality control samples, consisting of a field duplicate, matrix spike, matrix spike duplicate, and a trip blank, was also collected and analyzed.

B. Groundwater Monitoring Results

Arcadis validated the groundwater analytical results, and found the results to be useable as intended. The data validation report and full laboratory analytical data report (NYSDEC Analytical Services Protocol

Category B data deliverables package) are provided on the attached CD. The electronic data deliverables (EDDs) are being e-mailed to the NYSDEC separately for upload to the NYSDEC's EQuIS database.

The validated groundwater analytical results are presented in Table 2. This table also provides the corresponding ambient water quality standards and guidance values for each analyte as presented in the NYSDEC Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1) document titled "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations", last updated June 2004. Results that exceed these criteria are shaded in the table. Groundwater analytical results for constituents exceeding the water quality standards/guidance values are shown on Figure 2.

The groundwater analytical results are summarized as follows:

- BTEX were not detected in any of the samples collected from the 10 wells. This is the first monitoring event at this site where this has occurred.

- PAHs were not identified at concentrations exceeding the groundwater quality standards or guidance values in 9 of the 10 wells that were sampled. Acenaphthene was identified in the sample from MW-17 at a concentration of 29 parts per billion (ppb) vs. the 20 ppb groundwater quality guidance value. The acenaphthene concentration at MW-17 is consistent with the concentrations observed in previous post-remediation groundwater monitoring events (22.1 ppb to 33 ppb), but an order of magnitude less than the 168 ppb concentration identified in this well prior to remediation.

- Total cyanide was not identified at concentrations exceeding the 200 ppb groundwater quality standard in 8 of the 10 wells that were sampled. Cyanide was detected in the samples collected from MW-12 (estimated 5,800 ppb in the sample and 6,000 ppb in the duplicate) and MW-28S (estimated 260 ppb), which are north of and hydraulically side-gradient to the soil remediation footprint. The total cyanide concentrations at MW-12 and MW-28S were generally consistent with the concentrations identified during the previous monitoring events. The post-remediation groundwater analytical data show that total cyanide has attenuated between MW-12 (upgradient well) and MW-28S (downgradient well), which are screened at approximately the same intervals, and concentrations at MW-28S are at or only slightly above the groundwater quality standard.

C. Groundwater Monitoring Conclusions and Recommendations

Overall, the BTEX, PAH, and cyanide groundwater analytical results for September 2017 are lower than, or approximately the same as, those from the three previous post-remediation monitoring events, and the BTEX and PAH results are much lower than those from the baseline monitoring event in June 2012 (before remediation). BTEX were not detected at any of the 10 wells sampled in 2017. PAH exceedances of groundwater quality standards/guidance values were limited to only one constituent (acenaphthene) identified at only one well (MW-17) in 2017. Cyanide exceedances of the groundwater quality standard were limited to two wells (MW-12 and MW-28S). The observation of trace amounts of LNAPL in wells MW-11 and MW-36 in September 2017 is consistent with previous observations during the weekly or monthly gauging in 2013 and 2014. The data continue to indicate that a trace amount of LNAPL is limited to the southeast corner of OU-1.

Considering the overall improvement in groundwater quality observed since remediation, the relatively small area of impacted groundwater remaining, the relatively minor exceedances of groundwater quality standards/guidance values, the lack of groundwater use at and near the Site, and existing groundwater use laws codified in 10 NYCRR 5-1.31(b) that prohibit the installation of private wells where public supply is available (unless approval is expressly granted by the public water authority), the potential for human exposure to constituents in groundwater at this Site continues to be limited.

NYSEG proposes changing the groundwater monitoring program to further focus the sampling locations and reduce the sampling frequency in a graduated process. This is supported based on: (1) the groundwater sampling results showing that concentrations are decreasing or remaining stable; (2) the limited potential for human exposure. The revised groundwater monitoring program is outlined in the table below.

Frequency/Task	Monitoring Wells	Analytical Parameters
Annual Monitoring Event (2018 and 2019)		
Measure water levels and gauge LNAPL	MW-1, MW-6, MW-11, MW-12, MW-13, MW-14R, MW-17, MW-18, MW-28S/D, MW-30S, MW-31A, MW-32A, MW-33, and MW-36	Not Applicable
Collect groundwater samples	MW-17	BTEX and PAHs
	MW-12 and MW-28S	Total Cyanide
Triennial Monitoring Event (Once Every Three Years, Starting in 2020)		
Measure water levels and gauge LNAPL	same wells to be used for the annual monitoring event	Not Applicable
Collect groundwater samples	MW-1, MW-6, MW-12, MW-13, MW-14R, MW-17, MW-18, MW-28S/D, and MW-30S	BTEX, PAHs, and Total Cyanide

NYSEG proposes to continue the triennial monitoring until 2026, when there will be 8 rounds of data for MW-6, MW-12, MW-13, MW-14R, MW-17, MW-18, and MW-28S/D. The proposed sampling period is subject to change based on such factors as a shift in groundwater flow direction, an increase in LNAPL observed, or a spike of BTEX, PAH, or total cyanide concentrations (i.e., at least an order of magnitude greater than historical data at the same well). An increase in LNAPL will be defined as the observation of more than the historical record of 1.25 inches of LNAPL at a single well or the observation of more than 0.5 inches of LNAPL separately in four wells during a single gauging event.

NYSEG proposes summarizing the results of the annual groundwater monitoring in e-mail correspondence to the NYSDEC within approximately 30 days of receiving the validated data. The e-mail correspondence will also identify changes in data trends (if any), propose changes to the groundwater monitoring program (if necessary), and be supported by updated groundwater elevation and groundwater results tables (groundwater results may be limited to the results for MW-12, MW-17, and MW-28S), a potentiometric surface map, and an updated groundwater results figure.

The results of the triennial monitoring will be summarized in the Periodic Review Report (PRR) for that period (once the Certificate of Completion is awarded). If the PRR is not scheduled to be prepared within six months of the groundwater sampling event, the results will be summarized in a letter report supported by updated tables, figures, groundwater monitoring logs, laboratory analytical reports, and data validation reports.

NYSEG will also provide the NYSDEC with updated groundwater data as an electronic data deliverable (EDD) for the NYSDEC's EQuIS database, following the data validation for each monitoring event.

III. 2017 WELL REPAIR AND DECOMMISSIONING SUMMARY

During the 2017 annual groundwater monitoring event, Arcadis noticed that the concrete pad at monitoring well MW-30 had disintegrated and the steel cover was missing. The well continued to be sealed via the j-plug. Arcadis repaired the surface completion at MW-30S on May 23, 2017. The repair consisted of removing the damaged pad/curb box and installing a new steel curb box set inside a new flush-mount concrete pad.

A total of 9 offsite groundwater monitoring wells were decommissioned by Arcadis between May and September 2017. The well decommissioning included the wells identified in the 2015 Post-ISS Groundwater Monitoring Report contained in a November 6, 2015 letter from Arcadis to the NYSDEC, as accepted by the NYSDEC on December 18, 2015. The table below identifies what wells were decommissioned and the corresponding decommissioning date:

Well Decommissioning Date	Monitoring Well Decommissioned
May 23, 2017	MW-27S, MW-29S, MW-29D, MW-30D, MW-31
July 13, 2017	MW-25, MW-26
September 25, 2017	MW-22, MW-23

Monitoring well MW-32 was also proposed for decommissioning, but Arcadis was unable to locate the well using Global Positioning System (GPS) and coordinates from previous survey. The well is assumed to be lost or destroyed.

The well decommissioning was conducted during three mobilizations to accommodate the offsite property owners and avoid inclement weather. The wells decommissioned in September had been planned for decommissioning in July, but the property owner requested a postponement because of extremely wet conditions and concerns that vehicle travel over his property would damage his lawn.

The well decommissioning was performed in general accordance with the protocols presented in NYSDEC's policy document titled "CP-43: Groundwater Monitoring Well Decommissioning Policy", dated November 2009. In general, decommissioning was performed via tremie-grouting with a standard mixture of cement/bentonite grout (in proportions of one 94-pound bag of Type I Portland cement, approximately 4 to 5 pounds powdered bentonite, and approximately 5 to 9 gallons of potable water, per batch, with one or two batches used at each well). Grout was pumped into each well through a tremie pipe, from the bottom upwards. Ferrous metal markers were placed in the top of the grout for each well for future

identification, as needed. Existing surface completions (concrete pad, flush-mount curb box, stick-up riser casing, etc.) were removed following grouting. The well casings were subsequently removed to depths of between 2 feet below ground surface (bgs) and 6.7 feet bgs, depending on location. After the casings were removed, the annular space was backfilled using bentonite chips and/or surrounding soils to 0.5 feet bgs. The top 0.5 feet of the open hole was restored to match the surrounding surface area. Monitoring well decommissioning logs are included as Attachment B to this letter.

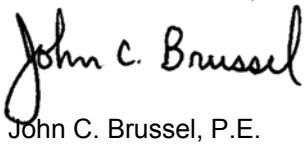
IV. CLOSING

Following NYSDEC review and approval of the proposed changes to the groundwater monitoring program as outlined in Section I.C. (including any additional changes, if needed, based on NYSDEC's review), NYSEG will update the SMP to incorporate the revised groundwater monitoring program into the document. No further monitoring well decommissioning is proposed, and no additional well repairs are needed at this time.

Please feel free to contact Tracy Blazicek (NYSEG) at 607.764.8839 or me at 315.671.9441 if you have any comments/questions or need additional information.

Sincerely,

Arcadis of New York, Inc.



John C. Brussel, P.E.
Principal Engineer

Copies:
Mr. Tracy L. Blazicek, CHMM, PMP, NYSEG (via e-mail & US Mail)
Mr. Keith A. White, CPG, Arcadis (via e-mail)

Enclosures:

Tables

1 Summary of NAPL and Water Level Gauging Data
2 Groundwater Analytical Results

Figures

1 Water-Table Map – October 18, 2016
2 Groundwater Analytical Results

Attachment

A Groundwater Sampling Logs
B Monitoring Well Decommissioning Logs

TABLES

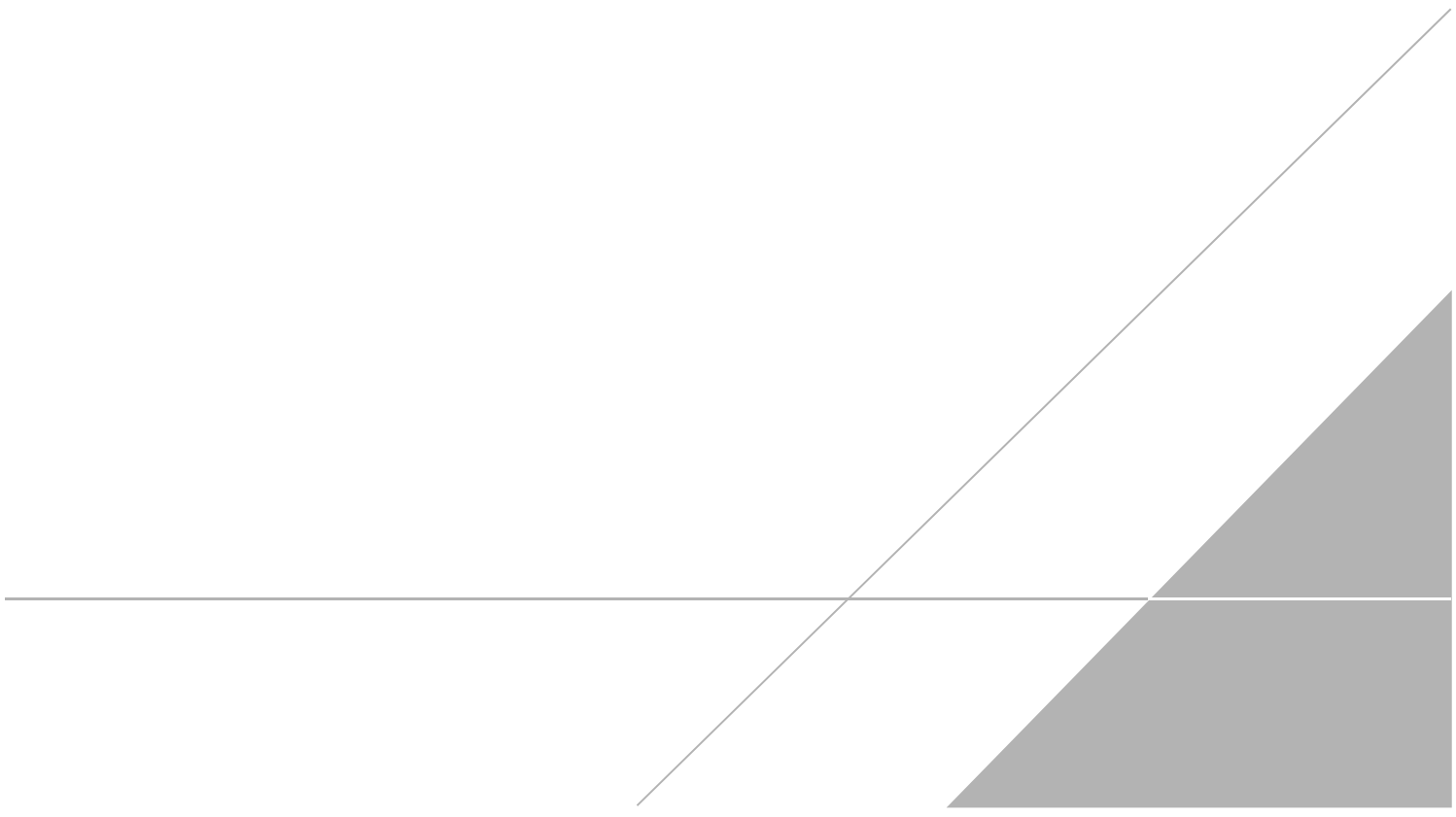


Table 1
Summary of NAPL and Water Level Gauging Data

2017 Annual Groundwater Monitoring Report
Cortland-Homer Former MGP Site - Homer, New York

Monitoring Well ID	Top of Inner Casing (TIC) Elevation (feet AMSL)	Depth to Water (feet below TIC)					Depth to Bottom (feet below TIC)					Approximate LNAPL Thickness* (feet)					Groundwater Elevation (feet amsl)				
		6/25/12	11/5/13	9/14/15	10/18/16	9/12/17	6/25/12	11/5/13	9/14/15	10/18/16	9/12/17	6/25/12	11/5/13	9/14/15	10/18/16	9/12/17	6/25/12	11/5/13	9/14/15	10/18/16	9/12/17
MW-1	1116.25	-	5.79	6.98	7.80	6.04	-	23.6	23.8	23.9	23.6	0.00	0.00	0.00	0.00	0.00	-	1110.46	1109.27	1108.45	1110.21
MW-6	1113.07	4.67	4.20	5.04	5.22	4.61	20.1	25.4	26.1	26.4	25.4	0.00	0.00	0.00	0.00	0.00	1108.40	1108.87	1108.03	1107.85	1108.46
MW-11	1114.97	6.68	6.05	7.31	buried***	6.82	11.2	-	11.5	buried***	-	0.22	0.30	0.00	0.00	0.08	1108.29	1109.19**	1107.66	buried***	1108.15
MW-12	1115.23	6.46	5.61	6.51	6.65	6.10	11.4	11.6	11.6	11.5	11.8	0.00	0.00	0.00	0.00	0.00	1108.77	1109.62	1108.72	1108.58	1109.13
MW-13	1113.47	5.09	4.55	5.51	5.70	4.97	31.5	31.7	31.8	31.6	31.7	0.00	0.00	0.00	0.00	0.00	1108.38	1108.92	1107.96	1107.77	1108.50
MW-14R	1112.78	-	4.09	4.88	4.88	4.50	-	13.1	13.0	12.5	13.0	0.00	0.00	0.00	0.00	0.00	-	1108.69	1107.90	1107.90	1108.28
MW-17	1114.75	6.68	6.12	6.86	7.11	6.73	10.5	10.5	10.6	10.6	10.1	0.00	0.00	0.00	0.00	0.00	1108.07	1108.63	1107.89	1107.64	1108.02
MW-18	1114.81	6.57	6.01	6.76	6.93	6.51	30.0	30.1	30.1	30.1	30.1	0.00	0.00	0.00	0.00	0.00	1108.24	1108.80	1108.05	1107.88	1108.30
MW-28S	1111.68	3.34	2.77	3.58	3.67	3.25	13.1	13.2	13.3	13.2	13.2	0.00	0.00	0.00	0.00	0.00	1108.34	1108.91	1108.10	1108.01	1108.43
MW-28D	1111.50	3.22	2.65	6.43	3.55	3.15	21.6	26.8	26.8	26.8	26.8	0.00	0.00	0.00	0.00	0.00	1108.28	1108.85	1105.07	1107.95	1108.35
MW-30S	1115.08	5.89	5.46	6.15	6.58	5.44	9.9	12.1	12.1	11.8	11.2	0.00	0.00	0.00	0.00	0.00	1109.19	1109.62	1108.93	1108.50	1109.64
MW-31A	1115.30	-	6.42	7.31	8.10	6.73	-	14.0	14.0	-	14.1	0.00	0.00	Trace	0.30	0.00	-	1108.88	1107.99	1107.20	1108.57
MW-32A	1115.78	-	6.75	7.77	8.21	7.15	-	14.4	-	-	14.4	0.00	0.00	0.06	0.01	0.00	-	1109.03	1108.01	1107.57	1108.63
MW-33	1116.17	-	7.10	8.02	8.56	7.46	-	13.6	13.5	13.6	13.6	0.00	0.00	0.00	0.00	0.00	-	1109.07	1108.15	1107.61	1108.71
MW-36	1114.96	-	-	7.16	7.78	6.64	-	-	13.4	13.5	-	0.00	0.00	0.00	0.09	0.02	-	-	1107.80	1107.18	1108.32

Notes:
1. Elevations are shown in feet above mean sea level (AMSL) relative to the North Americal Vertical Datum of 1988 (NAVD88).
2. - = not available; NAPL = Non-Aqueous Phase Liquid; LNAPL= Light Non-Aqueous Phase Liquid; DNAPL = Dense Non-Aqueous Phase Liquid.
3. TIC = Top of Inner Casing.
4. * = No DNAPL has been identified in any of the monitoring wells during the groundwater monitoring events.
5. ** The groundwater elevation at MW-11 has been corrected for the presence of LNAPL, using an estimated LNAPL density of 0.9.
6. *** = MW-11 was buried under concrete during the October 2016 sampling event and later events. It could not be accessed.

Table 2
Groundwater Analytical Results (ppb)

2017 Annual Groundwater Monitoring Report
Cortland-Homer Former MGP Site - Homer, New York

Location ID:	NYSDEC Groundwater Standards/ *Guidance Values*	MW-1			MW-6					MW-11
Screen Interval (ft bgs):		15.5 - 20.5			26 - 31					7 - 13
Date Collected:		11/06/13	10/19/16	09/12/17	06/26/12	11/05/13	09/14/15	10/19/16	09/13/17	09/16/15
Volatile Organics										
Benzene	1	<0.500	<1.00	<1.00	<0.500	<0.500 J	<0.500 J [<0.500 J]	<1.00	<1.00	0.820 J
Ethylbenzene	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 J [<1.00 J]	<1.00	<1.00	<1.00 J
Toluene	5	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 J [<1.00 J]	<1.00	<1.00	0.290 J
Xylenes (total)	5	<1.00	<2.00	<2.00	<1.00	<1.00	<1.00 J [<1.00 J]	<2.00	<2.00	0.330 J
Polycyclic Aromatic Hydrocarbons										
2-Methylnaphthalene	- -	<2.40	<24.0	<5.40	<2.20	<2.50	<2.00 [0.0440 J]	<24.0	<5.60	<2.00
Acenaphthene	20	<2.40	<24.0	<5.40	<2.20	<2.50	0.0370 J [0.0380 J]	<24.0	<5.60	4.60
Acenaphthylene	- -	<2.40	<24.0	<5.40	<2.20	<2.50	0.130 [0.120]	<24.0	<5.60	0.260
Anthracene	*50*	<2.40	<24.0	<5.40	<2.20	<2.50	<0.100 [<0.100]	<24.0	<5.60	0.110
Benzo(a)anthracene	*0.002*	<2.40	<24.0	<5.40	<2.20	<2.50	<0.0510 [<0.0500]	<24.0	<5.60	<0.0510
Benzo(a)pyrene	ND	<2.40	<24.0	<5.40	<2.20	<2.50	<0.100 [<0.100]	<24.0	<5.60	<0.100
Benzo(b)fluoranthene	*0.002*	<2.40	<24.0	<5.40	<2.20	<2.50	<0.0510 J [<0.0500 J]	<24.0	<5.60	<0.0510 J
Benzo(g,h,i)perylene	- -	<2.40	<24.0	<5.40	<2.20	<2.50	<0.100 [<0.100]	<24.0	<5.60	<0.100
Benzo(k)fluoranthene	*0.002*	<2.40	<24.0	<5.40	<2.20	<2.50	<0.100 [<0.100]	<24.0	<5.60	<0.100
Chrysene	*0.002*	<2.40	<24.0	<5.40	<2.20	<2.50	<0.100 [<0.100]	<24.0	<5.60	**0.0160 J**
Dibenzo(a,h)anthracene	- -	<2.40	<24.0	<5.40	<2.20	<2.50	<0.100 [<0.100]	<24.0	<5.60	<0.100
Fluoranthene	*50*	<2.40	<24.0	<5.40	<2.20	<2.50	0.0450 J [0.0510 J]	<24.0	<5.60	0.0460 J
Fluorene	*50*	<2.40	<24.0	<5.40	<2.20	<2.50	<0.100 [0.0200 J]	<24.0	<5.60	1.10
Indeno(1,2,3-cd)pyrene	*0.002*	<2.40	<24.0	<5.40	<2.20	<2.50	<0.100 [<0.100]	<24.0	<5.60	<0.100
Naphthalene	*10*	<2.40	<24.0	<5.40	<2.20 B	<2.50	0.0230 J [0.0270 J]	<24.0	<5.60	0.250 J
Phenanthrene	*50*	<2.40	<24.0	<5.40	<2.20	<2.50	<0.0510 [0.0300 J]	<24.0	<5.60	0.0380 J
Pyrene	*50*	<2.40	<24.0	<5.40	<2.20	<2.50	0.0580 J [0.0650 J]	<24.0	<5.60	0.150
Cyanide										
Total Cyanide	200	<10.0	<10.0 J	<10.0	<10.0	<10.0	<10.0 J [<10.0 J]	<10.0	<10.0	**370**

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Table 2
Groundwater Analytical Results (ppb)

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Cortland-Homer Former MGP Site - Homer, New York

Location ID:	NYSDEC Groundwater Standards/ *Guidance Values*	MW-12					MW-13				
Screen Interval (ft bgs):		8 - 13					35.5 - 40.5				
Date Collected:		06/27/12	11/06/13	09/16/15	10/19/16	09/12/17	06/27/12	11/06/13	09/16/15	10/19/16	09/13/17
Volatile Organics											
Benzene	1	<0.500	<0.500	<0.500 J	<1.00	<1.00 [<1.00]	<0.500	<0.500	<0.500 J	<1.00	<1.00
Ethylbenzene	5	<1.00	<1.00	<1.00 J	<1.00	<1.00 [<1.00]	<1.00	<1.00	<1.00 J	<1.00	<1.00
Toluene	5	<1.00	<1.00	<1.00 J	<1.00	<1.00 [<1.00]	<1.00	<1.00	<1.00 J	<1.00	<1.00
Xylenes (total)	5	<1.00	<1.00	<1.00 J	<2.00	<2.00 [<2.00]	<1.00	<1.00	<1.00 J	<2.00	<2.00
Polycyclic Aromatic Hydrocarbons											
2-Methylnaphthalene	- -	<2.30	<2.50	<2.00 B	<5.10	<5.00 [<5.10]	<2.20	<2.40	<2.00	<5.00	<5.20
Acenaphthene	20	<2.30	<2.50	<0.100	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.100	<5.00	<5.20
Acenaphthylene	- -	<2.30	<2.50	<0.100	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.100	<5.00	<5.20
Anthracene	*50*	<2.30	<2.50	<0.100	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.100	<5.00	<5.20
Benzo(a)anthracene	*0.002*	<2.30	<2.50	<0.0510	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.0510	<5.00	<5.20
Benzo(a)pyrene	ND	<2.30	<2.50	<0.100	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.100	<5.00	<5.20
Benzo(b)fluoranthene	*0.002*	<2.30	<2.50	<0.0510 J	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.0510 J	<5.00	<5.20
Benzo(g,h,i)perylene	- -	<2.30	<2.50	<0.100	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.100	<5.00	<5.20
Benzo(k)fluoranthene	*0.002*	<2.30	<2.50	<0.100	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.100	<5.00	<5.20
Chrysene	*0.002*	<2.30	<2.50	<0.100	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.100	<5.00	<5.20
Dibenzo(a,h)anthracene	- -	<2.30	<2.50	<0.100	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.100	<5.00	<5.20
Fluoranthene	*50*	<2.30	<2.50	<0.100	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.100	<5.00	<5.20
Fluorene	*50*	<2.30	<2.50	<0.100	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.100	<5.00	<5.20
Indeno(1,2,3-cd)pyrene	*0.002*	<2.30	<2.50	<0.100	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.100	<5.00	<5.20
Naphthalene	*10*	<2.30	<2.50	<2.00 B	<5.10	<5.00 [<5.10]	<2.20	<2.40	<2.00	<5.00	<5.20
Phenanthrene	*50*	<2.30	<2.50	<0.0510	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.0510	<5.00	<5.20
Pyrene	*50*	<2.30	<2.50	<0.100	<5.10	<5.00 [<5.10]	<2.20	<2.40	<0.100	<5.00	<5.20
Cyanide											
Total Cyanide	200	**2,600**	**3,000**	**6,500**	**7,300 J**	**5,800 [6,000]**	<10.0	<10.0	<10.0	<10.0 J	<10.0

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Table 2
Groundwater Analytical Results (ppb)

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Location ID:	NYSDEC Groundwater	MW-14	MW-14R				MW-17				
Screen Interval (ft bgs):	Standards/	6.5 - 11.5	2.8 - 12.8				6 - 11				
Date Collected:	*Guidance Values*	06/26/12	11/05/13	09/14/15	10/19/16	09/13/17	06/25/12	11/05/13	09/14/15	10/18/16	09/13/17
Volatile Organics											
Benzene	1	**14.5**	**17.0 J**	<0.500 J	<1.00	<1.00	**291 [304]**	**14.1 J**	**5.30 J**	**38.0**	<1.00
Ethylbenzene	5	<1.00	<1.00	<1.00 J	<1.00	<1.00	**258 [257]**	**17.5**	0.790 J	**14.0**	<1.00
Toluene	5	<1.00	<1.00	<1.00 J	<1.00	<1.00	**16.0 [17.1]**	1.10	<1.00 J	0.900 J	<1.00
Xylenes (total)	5	<1.00	<1.00	<1.00 J	<2.00	<2.00	**157 J [144]**	1.70	0.240 J	**6.60**	<2.00
Polycyclic Aromatic Hydrocarbons											
2-Methylnaphthalene	- -	<2.10	<2.40	<2.00	<4.70	<5.20	<2.20 [<2.20]	26.8	<2.10	<25.0	<5.00
Acenaphthene	20	3.00	13.6	<0.100	<4.70	<5.20	**168 [146]**	**22.5**	**22.1**	**33.0**	**29.0**
Acenaphthylene	- -	<2.10	<2.40	<0.100	<4.70	<5.20	<2.20 [<2.20]	<2.60	1.50	<25.0	<5.00
Anthracene	*50*	<2.10	<2.40	<0.100	<4.70	<5.20	2.90 [2.80]	0.730 J	1.10	<25.0	0.790 J
Benzo(a)anthracene	*0.002*	<2.10	<2.40	<0.0510	<4.70	<5.20	<2.20 [<2.20]	<2.60	<0.0520	<25.0	<5.00
Benzo(a)pyrene	ND	<2.10	<2.40	<0.100	<4.70	<5.20	<2.20 [<2.20]	<2.60	<0.100	<25.0	<5.00
Benzo(b)fluoranthene	*0.002*	<2.10	<2.40	<0.0510 J	<4.70	<5.20	<2.20 [<2.20]	<2.60	<0.0520 J	<25.0	<5.00
Benzo(g,h,i)perylene	- -	<2.10	<2.40	<0.100	<4.70	<5.20	<2.20 [<2.20]	<2.60	<0.100	<25.0	<5.00
Benzo(k)fluoranthene	*0.002*	<2.10	<2.40	<0.100	<4.70	<5.20	<2.20 [<2.20]	<2.60	<0.100	<25.0	<5.00
Chrysene	*0.002*	<2.10	<2.40	<0.100	<4.70	<5.20	<2.20 [<2.20]	<2.60	<0.100	<25.0	<5.00
Dibenzo(a,h)anthracene	- -	<2.10	<2.40	<0.100	<4.70	<5.20	<2.20 [<2.20]	<2.60	<0.100	<25.0	<5.00
Fluoranthene	*50*	<2.10	<2.40	<0.100	<4.70	<5.20	1.50 J [1.50 J]	<2.60	0.520	<25.0	0.630 J
Fluorene	*50*	<2.10	<2.40	<0.100	<4.70	<5.20	39.0 [35.2]	6.70	9.10	8.00 J	9.40
Indeno(1,2,3-cd)pyrene	*0.002*	<2.10	<2.40	<0.100	<4.70	<5.20	<2.20 [<2.20]	<2.60	<0.100	<25.0	<5.00
Naphthalene	*10*	<2.10 B	<2.40	0.0160 J	<4.70	<5.20	**1,870 D [<1,740 BD]**	0.730 J	0.340 J	8.20 J	<5.00
Phenanthrene	*50*	<2.10	<2.40	<0.0510	<4.70	<5.20	33.9 [32.5]	7.40	0.770	2.40 J	<5.00
Pyrene	*50*	<2.10	<2.40	<0.100	<4.70	<5.20	1.10 J [1.10 J]	<2.60	0.460	<25.0	0.580 J
Cyanide											
Total Cyanide	200	100	130	81.0 J	**880 J**	61	**310 [330]**	30.0	<10.0 J	150 J	30

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Groundwater Analytical Results (ppb)

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Location ID:	NYSDEC Groundwater	MW-18					MW-21		MW-25		MW-26	MW-27D	
Screen Interval (ft bgs):	Standards/	24.6 - 29.6					32 - 37	32 - 37	4 - 14		50 - 60	24 - 34	
Date Collected:	*Guidance Values*	06/25/12	11/05/13	09/14/15	10/18/16	09/13/17	06/27/12	11/06/13	06/27/12	11/06/13	11/06/13	06/26/12	11/05/13
Volatile Organics													
Benzene	1	0.650	<0.500 J	<0.500 J	<1.00	<1.00	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500 J
Ethylbenzene	5	<1.00	<1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Toluene	5	<1.00	<1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Xylenes (total)	5	<1.00	<1.00	<1.00 J	<2.00	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Polycyclic Aromatic Hydrocarbons													
2-Methylnaphthalene	- -	<2.20	<2.40	0.0170 J	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Acenaphthene	20	<2.20	0.580 J	4.10	<5.40	8.40 J	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Acenaphthylene	- -	<2.20	<2.40	1.20	<5.40	1.60 J	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Anthracene	*50*	<2.20	<2.40	0.0440 J	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Benzo(a)anthracene	*0.002*	<2.20	<2.40	<0.0520	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Benzo(a)pyrene	ND	<2.20	<2.40	<0.100	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Benzo(b)fluoranthene	*0.002*	<2.20	<2.40	<0.0520 J	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Benzo(g,h,i)perylene	- -	<2.20	<2.40	<0.100	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Benzo(k)fluoranthene	*0.002*	<2.20	<2.40	<0.100	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Chrysene	*0.002*	<2.20	<2.40	<0.100	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Dibenzo(a,h)anthracene	- -	<2.20	<2.40	<0.100	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Fluoranthene	*50*	<2.20	<2.40	0.170	<5.40	0.400 J	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Fluorene	*50*	<2.20	<2.40	0.270	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Indeno(1,2,3-cd)pyrene	*0.002*	<2.20	<2.40	<0.100	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Naphthalene	*10*	<2.20 B	<2.40	0.0320 J	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50 J
Phenanthrene	*50*	<2.20	<2.40	0.0510 J	<5.40	<5.00	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Pyrene	*50*	<2.20	<2.40	0.170	<5.40	0.360 J	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Cyanide													
Total Cyanide	200	<10.0	<10.0	<10.0 J	<10.0 J	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0

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Table 2
Groundwater Analytical Results (ppb)

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Location ID:	NYSDEC Groundwater Standards/ *Guidance Values*	MW-27S			MW-28D					MW-28S				
Screen Interval (ft bgs):		5 - 15			18 - 28					4 - 14				
Date Collected:		06/26/12	11/05/13	09/16/15	06/25/12	11/05/13	09/15/15	10/18/16	09/13/17	06/25/12	11/05/13	09/15/15	10/18/16	09/13/17
Volatile Organics														
Benzene	1	<0.500	<0.500 J [<0.500 J]	<0.500 J	<0.500	<0.500 J	<0.500 J	<1.00	<1.00	<0.500	<0.500 J	<0.500 J	<1.00	<1.00
Ethylbenzene	5	<1.00	<1.00 [<1.00]	<1.00 J	<1.00	<1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00	<1.00 J	<1.00	<1.00
Toluene	5	<1.00	<1.00 [<1.00]	<1.00 J	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Xylenes (total)	5	<1.00	<1.00 [<1.00]	<1.00 J	<1.00	<1.00	<1.00 J	<2.00	<2.00	<1.00	<1.00	<1.00 J	0.780 J	<2.00
Polycyclic Aromatic Hydrocarbons														
2-Methylnaphthalene	- -	<2.40	<2.50 [<2.40]	<2.30 B	<2.00	<2.20	<2.00 B	<4.80	<5.00	<2.40	<2.50	<2.00 B	<4.70	<5.00
Acenaphthene	20	<2.40	<2.50 J [16.4 J]	<0.110	3.80	<2.20	4.30	4.90	14.0	9.90	4.50	5.10	5.90	9.70
Acenaphthylene	- -	<2.40	<2.50 [0.930 J]	<0.110	0.870 J	<2.20	1.40	1.10 J	3.30 J	3.10	1.00 J	1.50	1.40 J	2.30 J
Anthracene	*50*	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<5.00	<2.40	<2.50	0.0150 J	<4.70	<5.00
Benzo(a)anthracene	*0.002*	<2.40	<2.50 [<2.40]	<0.0570	<2.00	<2.20	<0.0510	<4.80	<5.00	<2.40	<2.50	<0.0510	<4.70	<5.00
Benzo(a)pyrene	ND	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<5.00	<2.40	<2.50	<0.100	<4.70 J	<5.00
Benzo(b)fluoranthene	*0.002*	<2.40	<2.50 [<2.40]	<0.0570 J	<2.00	<2.20	<0.0510 J	<4.80	<5.00	<2.40	<2.50	<0.0510 J	<4.70	<5.00
Benzo(g,h,i)perylene	- -	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<5.00	<2.40	<2.50	<0.100	<4.70 J	<5.00
Benzo(k)fluoranthene	*0.002*	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<5.00	<2.40	<2.50	<0.100	<4.70	<5.00
Chrysene	*0.002*	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<5.00	<2.40	<2.50	<0.100	<4.70 J	<5.00
Dibenzo(a,h)anthracene	- -	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<5.00	<2.40	<2.50	<0.100	<4.70 J	<5.00
Fluoranthene	*50*	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<5.00	<2.40	<2.50	<0.100	<4.70	<5.00
Fluorene	*50*	<2.40	<2.50 [5.10]	<0.110	<2.00	<2.20	0.150	<4.80	<5.00	<2.40	<2.50	<0.100	<4.70	<5.00
Indeno(1,2,3-cd)pyrene	*0.002*	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<5.00	<2.40	<2.50	<0.100	<4.70 J	<5.00
Naphthalene	*10*	<5.40 B	<2.50 [<2.40]	<2.30 B	<2.00 B	<2.20	<2.00 B	<4.80	<5.00	<2.40	<2.50	<2.00 B	<4.70	<5.00
Phenanthrene	*50*	<2.40	<2.50 [5.70]	<0.0570	<2.00	<2.20	0.0300 J	<4.80	<5.00	<2.40	<2.50	0.0270 J	<4.70	<5.00
Pyrene	*50*	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<5.00	<2.40	<2.50	<0.100	<4.70	<5.00
Cyanide														
Total Cyanide	200	<10.0	<10.0 [<10.0]	<10.0	<10.0	<10.0	2.40 B	<10.0 J	<10.0	**240**	200	**270**	200 J	**260**

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Table 2
Groundwater Analytical Results (ppb)

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Location ID:	NYSDEC Groundwater	MW-29D			MW-29S		MW-30D		MW-30S			
Screen Interval (ft bgs):	Standards/	35 - 45			5 - 15		24 - 34		5 - 15			
Date Collected:	*Guidance Values*	06/26/12	11/06/13	09/15/15	11/06/13	09/15/15	06/26/12	11/06/13	06/27/12	11/06/13	10/18/16	09/12/17
Volatile Organics												
Benzene	1	<0.500	<0.500	<0.500 J	<0.500	<0.500 J	<0.500	<0.500	<0.500	<0.500	<1.00 [<1.00]	<1.00
Ethylbenzene	5	<1.00	<1.00	<1.00 J	<1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00	<1.00 [<1.00]	<1.00
Toluene	5	<1.00	<1.00	<1.00	<1.00	<1.00	1.20	<1.00	<1.00	<1.00	<1.00 [<1.00]	<1.00
Xylenes (total)	5	<1.00	<1.00	<1.00 J	<1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00	<2.00 [<2.00]	<2.00
Polycyclic Aromatic Hydrocarbons												
2-Methylnaphthalene	- -	<2.20	<2.40	<2.40 B	<2.40	<2.00 B	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Acenaphthene	20	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Acenaphthylene	- -	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Anthracene	*50*	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Benzo(a)anthracene	*0.002*	<2.20	<2.40	<0.0590	<2.40	<0.0500	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Benzo(a)pyrene	ND	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Benzo(b)fluoranthene	*0.002*	<2.20	<2.40	<0.0590 J	<2.40	<0.0500 J	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Benzo(g,h,i)perylene	- -	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Benzo(k)fluoranthene	*0.002*	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Chrysene	*0.002*	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Dibenzo(a,h)anthracene	- -	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Fluoranthene	*50*	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Fluorene	*50*	<2.20	<2.40	0.0180 J	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Indeno(1,2,3-cd)pyrene	*0.002*	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Naphthalene	*10*	<2.20	<2.40	<2.40 B	<2.40	<2.00 B	<2.20 B	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Phenanthrene	*50*	<2.20	<2.40	0.0270 J	<2.40	<0.0500	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Pyrene	*50*	<2.20	<2.40	0.0200 J	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]	<5.00
Cyanide												
Total Cyanide	200	<10.0	<10.0	<10.0	110	7.60 B	<10.0	<10.0	16.0	14.0	**220 J [<10.0 J]**	9.7 J

See Notes on Page 7

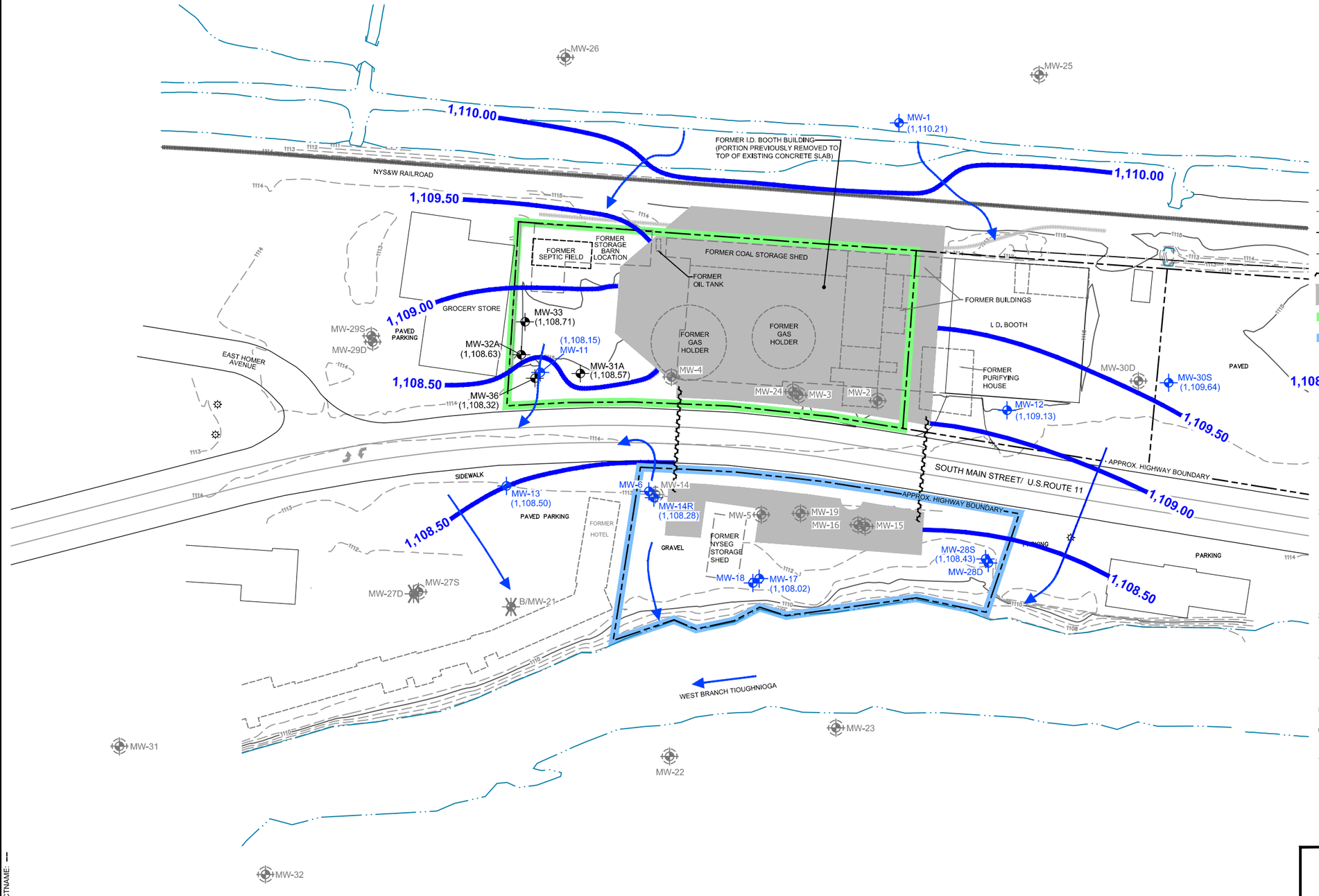
Table 2
Groundwater Analytical Results (ppb)

2017 Annual Groundwater Monitoring Report
Cortland-Homer Former MGP Site - Homer, New York

Notes:

1. Baseline samples collected by Arcadis of New York, Inc. from June 25-27, 2012, and post-in-situ soil solidification (ISS) samples collected by Arcadis from November 2013 to September 2017.
2. Laboratory analysis was performed by SGS Accutest Laboratories of Marlborough, Massachusetts (before the 2016 monitoring event) or TestAmerica of Amherst, New York for the 2016 and 2017 monitoring events) for:
   - BTEX (benzene, toluene, ethylbenzene, xylenes) using United States Environmental Protection Agency (USEPA) SW-846 Method 8260B.
   - Polycyclic aromatic hydrocarbons (PAHs) using USEPA SW-846 Method 8270C.
   - Total cyanide using USEPA SW-846 Method 9012.
3. Concentrations reported in micrograms per liter (ug/L), which is equivalent to parts per billion (ppb).
4. Data qualifiers are defined as follows:
   J - Indicates an estimated value.
   < - Indicates that the compound was analyzed for but not detected. The associated value is the compound quantitation limit
   B - Indicates that the analyte was also detected in the associated method blank.
   D - Indicates that the analyte was quantified using a second dilution.
5. NYSDEC groundwater standards/guidance values are from the NYSDEC Division of Water, Technical and Operational Guidance Series (TOGS) document titled "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (TOGS 1.1.1) dated June 1998, revised April 2000 and June 2004.
6. Shading indicates that the result exceeds the water quality standard/guidance value.
7. -- Indicates that no water quality standard or guidance value is available for this compound.
8. [ ] Results shown in brackets represent field duplicates.
9. ND = non-detect.
10. bgs = below ground surface.
11. Results have been validated in accordance with USEPA National Functional Guidelines of October 1999, USEPA Region II Standard Operating Procedures, and the NYSDEC Analytical Services Protocol.

FIGURES



LEGEND:

- EXISTING MONITORING WELL IN GAUGING AND SAMPLING NETWORK
- EXISTING MONITORING WELL IN GAUGING NETWORK
- DECOMMISSIONED MONITORING WELL
- WELLS DESTROYED DURING BUILDING DEMOLITION
- REMOVED/FORMER BUILDINGS
- FORMER MGP STRUCTURE
- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE HIGHWAY BOUNDARY
- VERTICAL BARRIER WALL (VBW)
- ISS MONOLITH
- OPERABLE UNIT 1
- OPERABLE UNIT 2
- (1,109.64) GROUNDWATER ELEVATION (FT AMSL)
- 1,108.50 GROUNDWATER ELEVATION CONTOUR (FT AMSL)
- GROUNDWATER FLOW DIRECTION (DASHED WHERE INFERRED)

NOTES:

1. BASEMAP SUPPLIED BY AECOM OF LATHAM, NEW YORK DRAWING NUMBER 3 AT A SCALE OF 1"=60', ENTITLED "NYSEG - REMEDIAL DESIGN FOR FORMER CORTLAND-HOMER MGP SITE" DATED APRIL 16, 2012.
2. BASE MAPPING COMPILED FROM VARIOUS SOURCES INCLUDING NEW YOUR STATE ELECTRIC & GAS (NYSEG) EXISTING PLANIMETRIC AND UTILITY INFORMATION, DIGITIZED INFORMATION FROM NYSDOT RECORD PLANS TITLED RECONSTRUCTION OF ROUTE 11 IN THE TOWN OF CORTLANDVILLE AND VILLAGE OF HOMER - DATED 5-17-02, DIGITIZED AERIAL IMAGERY FROM THE NEW YORK STATE GIS CLEARINGHOUSE, AND A FIELD SURVEY PERFORMED BY AECOM - DATED MAY 13, 2011.
3. FORMER SEPTIC SYSTEM AND OIL TANK TAKEN FROM A PLAN ENTITLED "INVESTIGATION OF FORMER COAL GASIFICATION SITES", DATED 1987 BY E.C. JORDAN CO.
4. THE LOCATION OF MONITORING WELLS MW-6, -11, -14R, -17, -18, -31, -32 AND -33 WERE SURVEYED ON NOVEMBER 21, 2013 BY J. OLMSTEAD & S. HOPE. ALL OTHER MONITORING WELL LOCATIONS ARE APPROXIMATE.
5. ISS = IN-SITU STABILIZATION.
6. VBW = CONSISTS OF STEEL SHEET PILES DRIVEN INTO CONFINING LAYER.
7. MW-32 COULD NOT BE LOCATED FOR DECOMMISSIONING. IT IS ASSUMED THAT MW-32 HAS BEEN DESTROYED BY THE RIVER AND ICE.

0 80' 160'

GRAPHIC SCALE

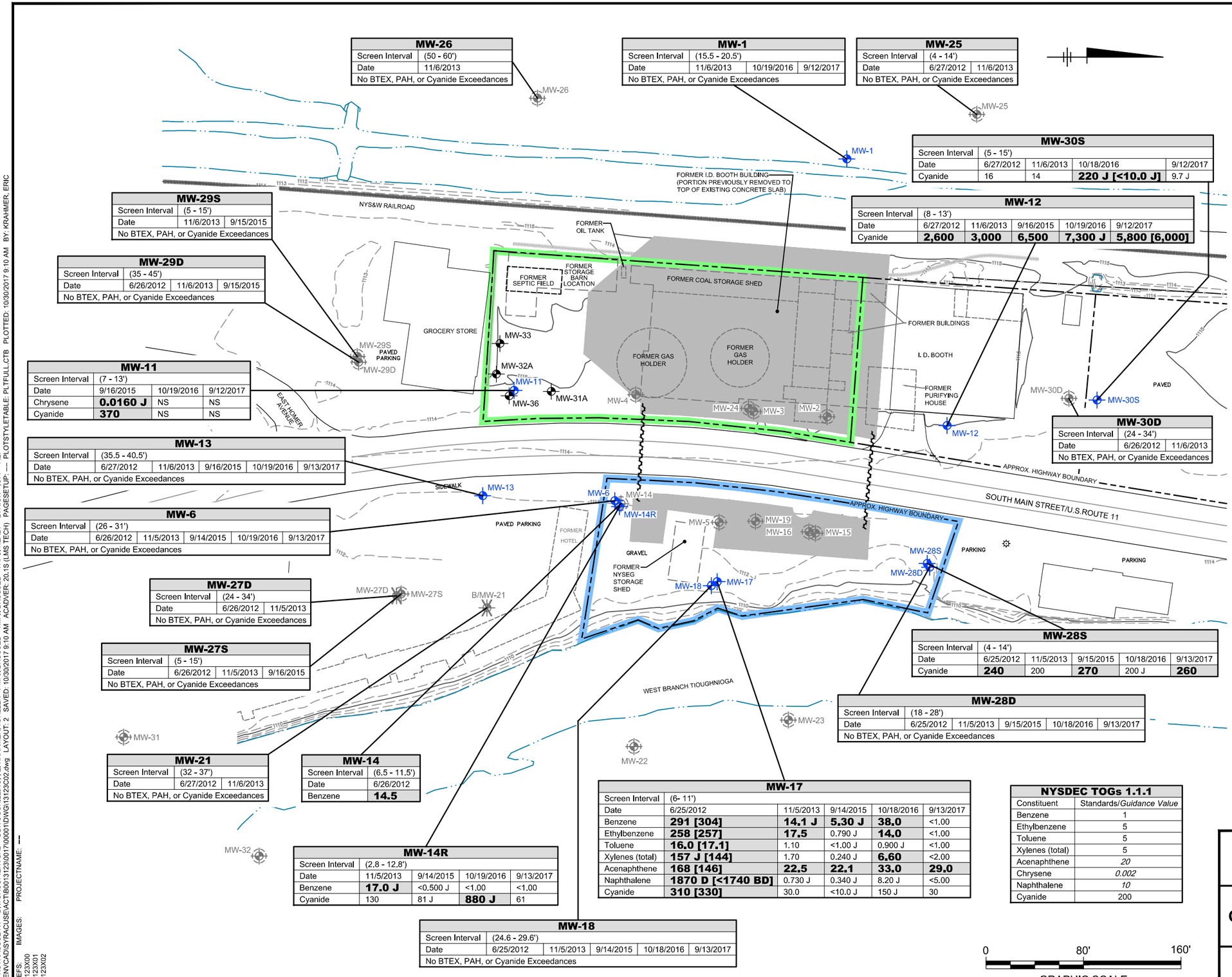
NYSEG
CORTLAND-HOMER FORMER MGP SITE
HOMER, NEW YORK
2017 ANNUAL GROUNDWATER MONITORING REPORT

WATER-TABLE MAP - SEPTEMBER 12, 2017

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

CITY:SYRACUSE NY DIV/GROUP:ENV/CAD DB: A. SCHILLING, , E. KRAHMER, R. ALLEN PM: J. BRUSSEL TM: J. BRUSSEL TR: C. HEALY LYR:ON=*;OFF=*REF*
C:\ENVCAD\SYRACUSE\ACTIVE\60013123\0017\00001\DWG\13123W01.dwg LAYOUT: 1 SAVED: 10/30/2017 1:11 PM ACADVER: 20.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 10/31/2017 7:36 AM BY: KRAHMER, ERIC
XREFS: PROJECTNAME: ---
IMAGES:
13123X00
13123X01
13123X02



MW-26

Screen Interval	(50 - 60')
Date	11/6/2013
No BTEX, PAH, or Cyanide Exceedances	

MW-1

Screen Interval	(15.5 - 20.5')		
Date	11/6/2013	10/19/2016	9/12/2017
No BTEX, PAH, or Cyanide Exceedances			

MW-25

Screen Interval	(4 - 14')	
Date	6/27/2012	11/6/2013
No BTEX, PAH, or Cyanide Exceedances		

MW-30S

Screen Interval	(5 - 15')			
Date	6/27/2012	11/6/2013	10/18/2016	9/12/2017
Cyanide	16	14	**220 J [<10.0 J]**	9.7 J

MW-12

Screen Interval	(8 - 13')				
Date	6/27/2012	11/6/2013	9/16/2015	10/19/2016	9/12/2017
Cyanide	**2,600**	**3,000**	**6,500**	**7,300 J**	**5,800 [6,000]**

MW-29S

Screen Interval	(5 - 15')	
Date	11/6/2013	9/15/2015
No BTEX, PAH, or Cyanide Exceedances		

MW-29D

Screen Interval	(35 - 45')		
Date	6/26/2012	11/6/2013	9/15/2015
No BTEX, PAH, or Cyanide Exceedances			

MW-11

Screen Interval	(7 - 13')		
Date	9/16/2015	10/19/2016	9/12/2017
Chrysene	**0.0160 J**	NS	NS
Cyanide	**370**	NS	NS

MW-13

Screen Interval	(35.5 - 40.5')				
Date	6/27/2012	11/6/2013	9/16/2015	10/19/2016	9/13/2017
No BTEX, PAH, or Cyanide Exceedances					

MW-6

Screen Interval	(26 - 31')				
Date	6/26/2012	11/5/2013	9/14/2015	10/19/2016	9/13/2017
No BTEX, PAH, or Cyanide Exceedances					

MW-27D

Screen Interval	(24 - 34')	
Date	6/26/2012	11/5/2013
No BTEX, PAH, or Cyanide Exceedances		

MW-27S

Screen Interval	(5 - 15')		
Date	6/26/2012	11/5/2013	9/16/2015
No BTEX, PAH, or Cyanide Exceedances			

MW-21

Screen Interval	(32 - 37')	
Date	6/27/2012	11/6/2013
No BTEX, PAH, or Cyanide Exceedances		

MW-14

Screen Interval	(6.5 - 11.5')
Date	6/26/2012
Benzene	**14.5**

MW-14R

Screen Interval	(2.8 - 12.8')			
Date	11/5/2013	9/14/2015	10/19/2016	9/13/2017
Benzene	**17.0 J**	<0.500 J	<1.00	<1.00
Cyanide	130	81 J	**880 J**	61

MW-18

Screen Interval	(24.6 - 29.6')				
Date	6/25/2012	11/5/2013	9/14/2015	10/18/2016	9/13/2017
No BTEX, PAH, or Cyanide Exceedances					

MW-28S

Screen Interval	(4 - 14')				
Date	6/25/2012	11/5/2013	9/15/2015	10/18/2016	9/13/2017
Cyanide	**240**	200	**270**	200 J	**260**

MW-28D

Screen Interval	(18 - 28')				
Date	6/25/2012	11/5/2013	9/15/2015	10/18/2016	9/13/2017
No BTEX, PAH, or Cyanide Exceedances					

MW-17

Screen Interval	(6- 11')				
Date	6/25/2012	11/5/2013	9/14/2015	10/18/2016	9/13/2017
Benzene	**291 [304]**	**14.1 J**	**5.30 J**	**38.0**	<1.00
Ethylbenzene	**258 [257]**	**17.5**	0.790 J	**14.0**	<1.00
Toluene	**16.0 [17.1]**	1.10	<1.00 J	0.900 J	<1.00
Xylenes (total)	**157 J [144]**	1.70	0.240 J	**6.60**	<2.00
Acenaphthene	**168 [146]**	**22.5**	**22.1**	**33.0**	**29.0**
Naphthalene	**1870 D [<1740 BD]**	0.730 J	0.340 J	8.20 J	<5.00
Cyanide	**310 [330]**	30.0	<10.0 J	150 J	30

MW-30D

Screen Interval	(24 - 34')	
Date	6/26/2012	11/6/2013
No BTEX, PAH, or Cyanide Exceedances		

NYSDEC TOGs 1.1.1

Constituent	Standards/*Guidance Value*
Benzene	1
Ethylbenzene	5
Toluene	5
Xylenes (total)	5
Acenaphthene	*20*
Chrysene	*0.002*
Naphthalene	*10*
Cyanide	200

0 80' 160'

GRAPHIC SCALE

LEGEND:

- EXISTING MONITORING WELL IN GAUGING AND SAMPLING NETWORK
- EXISTING MONITORING WELL IN GAUGING NETWORK
- DECOMMISSIONED MONITORING WELL
- WELLS DESTROYED DURING BUILDING DEMOLITION
- REMOVED/FORMER BUILDINGS
- FORMER MGP STRUCTURE
- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE HIGHWAY BOUNDARY
- VERTICAL BARRIER WALL (VBW)
- ISS MONOLITH
- OPERABLE UNIT 1
- OPERABLE UNIT 2

NOTES:

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4. THE LOCATION OF MONITORING WELLS MW-6, -11, -14R, -17, -18, -31, -32 AND -33 WERE SURVEYED ON NOVEMBER 21, 2013 BY J. OLMSTEAD & S. HOPE. ALL OTHER MONITORING WELL LOCATIONS ARE APPROXIMATE.
5. GROUNDWATER STANDARDS AND GUIDANCE VALUES ARE OBTAINED FROM THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION DOCUMENT ENTITLED "DIVISION OF WATER, TECHNICAL AND OPERATIONAL GUIDANCE VALUES AND GROUNDWATER EFFLUENT LIMITATIONS" (ISSUED JUNE 1998 AND REVISED IN APRIL 2000 AND JUNE 2004).
6. SCREEN INTERVAL DEPTHS ARE REPORTED IN FEET BELOW GROUND SURFACE.
7. FIGURE ONLY SHOWS RESULTS FOR BTEX, PAHs, AND CYANIDE EXCEEDING THE STANDARDS AND GUIDANCE VALUES PRESENTED IN TOGS 1.1.1.
8. SHADED AND BOLD VALUE INDICATES THAT THE CONSTITUENT CONCENTRATION EXCEEDS TOGs 1.1.1.
9. ALL CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/L) WHICH IS EQUIVALENT TO PARTS PER BILLION (ppb).
10. ABBREVIATIONS AND SYMBOLS:
    - B - INDICATES THAT THE ANALYTE WAS ALSO DETECTED IN THE ASSOCIATED METHOD BLANK.
    - BTEX - BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES.
    - D - INDICATES THAT THE ANALYTE WAS QUANTIFIED USING A SECOND DILUTION.
    - NS - NOT SAMPLED.
    - PAHs - POLYCYCLIC AROMATIC HYDROCARBONS.
    - ISS - IN-SITU STABILIZATION.
    - J - INDICATES AN ESTIMATED VALUE.
    - VBW - CONSISTS OF SEALED STEEL SHEET PILES DRIVEN INTO CONFINING LAYER.
    - < - CONSTITUENT NOT DETECTED AT A CONCENTRATION ABOVE THE LABORATORY REPORTED DETECTION LIMIT.
    - [ ] - DUPLICATE SAMPLE RESULTS.
11. DATA HAVE BEEN VALIDATED.
12. MW-11 WAS NOT SAMPLED IN 2017 DUE TO THE PRESENCE OF LIGHT NON-AQUEOUS PHASE LIQUID. MW-11 COULD NOT BE ACCESSED IN 2016.
13. MW-32 COULD NOT BE LOCATED FOR DECOMMISSIONING. IT IS ASSUMED THAT MW-32 HAS BEEN DESTROYED BY THE RIVER AND ICE.

NYSEG
CORTLAND-HOMER FORMER MGP SITE
HOMER, NEW YORK
2017 ANNUAL GROUNDWATER MONITORING REPORT

GROUNDWATER ANALYTICAL RESULTS

ARCADIS Design & Consultancy for natural and built assets

FIGURE **2**

CITY:SYRACUSE NY DIV/GROUP:ENVCAD DB: A. SCHILLING, E. KRAHMER R. ALLEN PM: J. BRUSSEL TM: J. BRUSSEL TR: C. HEALY LYR:ON=*OFF=*REF* C:\ENVCAD\SYRACUSE\ACTIB\00131230017\00001\DWG\131230C02.dwg LAYOUT: 2 SAVED: 10/30/2017 9:10 AM ACADVER: 20.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 10/30/2017 9:10 AM BY: KRAHMER, ERIC
XREFS: 13123X00 13123X01 13123X02 IMAGES: PROJECTNAME: ---

ATTACHMENT A

Groundwater Sampling Logs

NYSEG - Cortland Homer 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R. Hensel. K Roscoff **Well ID:** MW-1
Client / Job Number: **Date:** 9/12/17
Weather: Sunny **Time In:** 1220 **Time Out:** 1420

Well Information

Depth to Water (feet): 6.04 (from MP)
Total Depth (feet): 23.69 (from MP)
Length of Water Column (feet): 17.65
Volume of Water in Well (gal): 2.88
Intake depth for tubing (feet) ~ 20

Well Type: Flushmount (Stick-Up)
Well Material: Stainless Steel (PVC)
Well Locked: (Yes) No
Measuring Point Marked: ~~Yes~~ (No)
Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	Peristaltic	Grundfos	Other:
Tubing/Bailer	St. Steel	Polyethylene	Teflon	Other:
Sampling Method:	Bailer (VOCs)	Peristaltic	Grundfos	Other:

Pump Start Time 1225
Pump Stop Time 1410
Water-Quality Meter Type: Horiba U52
Total Volume Removed: ~5 (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1235	1240	1245	1250	1255	100	105	110	115
Volume Purged (mL)									
Rate (mL/min)	150	150	150	150	150	150	150	150	150
Depth to Water (ft.)	6.11	6.11	6.11	6.1	6.1	6.09	6.09	6.09	6.1
pH	7.42	7.44	7.44	7.42	8.22	8.60	8.77	8.93	9.07
Temp. (C)	18.06	16.98	17.14	16.71	16.65	15.66	15.86	15.96	15.89
Conductivity (mS/cm)	0.677	0.700	0.702	0.717	0.716	0.736	0.735	0.733	0.731
Dissolved Oxygen (mg/L)	1.72	1.42	1.30	1.19	1.07	1.11	1.06	1.02	1.09
ORP (mV)	123	34	15	-6	-8	-8	-10	-8	-5
Turbidity (NTU)	40.8	45.3	48.3	37.6	29.9	18.9	18.9	13.7	11.0
Notes:									

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color:		
Odor:		
Appearance:		
Sample ID:	Sample Time:	
MS/MSD: Yes	No	
Duplicate: Yes	No	
Duplicate ID	Dup. Time:	

PID =

Problems/Observation

See Page 2

NYSEG - Cortland Homer 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R. Hensel & K Roskoff **Well ID:** MW-1
Client / Job Number: **Date:** 9/12/17
Weather: Sunny **Time In:** 1220 **Time Out:**

Well Information

Depth to Water (feet): 6.04 (from MP)
Total Depth (feet): 23.69 (from MP)
Length of Water Column (feet):
Volume of Water in Well (gal):
Intake depth for tubing (feet)

Well Type: Flushmount (Stick-Up)
Well Material: Stainless Steel (PVC)
Well Locked: (Yes) No
Measuring Point Marked: Yes (No)
Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	(Polyethylene)	Teflon	Other:
Sampling Method:	Bailer (VOCs)	(Peristaltic)	Grundfos	Other:

Pump Start Time 1225
Pump Stop Time 1410
Water-Quality Meter Type:
Total Volume Removed: ~5 (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of	1" ID	2" ID	4" ID	6" ID
water	0.041	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	120	125	130*	135	140	1345	1350	1355	1400
Volume Purged (mL)									
Rate (mL/min)									
Depth to Water (ft.)	6.1	6.1	6.1	6.1	6.11	6.1	6.1	6.1	
pH	9.15	8.00	*	8.77	8.94	9.08	7.38	7.37	7.37
Temp. (C)	16.05	16.06	*	15.82	15.50	15.32	15.38	15.28	15.27
Conductivity (mS/cm)	0.733	0.729	*	0.732	0.736	0.739	0.738	0.739	0.735
Dissolved Oxygen (mg/L)	1.54	2.29	*	1.96	1.78	1.63	1.53	1.46	1.41
ORP (mV)	1	7	*	22	24	27	29	32	34
Turbidity (NTU)	10.0	12.3	*	13.5	15.8	15.3	18.2	20.5	21.9
Notes:									

1405 SAMPLE

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color:	None	
Odor:	None	
Appearance:	Clear	
Sample ID:	MW-1	Sample Time: 1405
MS/MSD:	Yes (No)	
Duplicate:	Yes (No)	
Duplicate ID	—	Dup. Time: —

PID = 0.0

Problems/Observation

* Battery of Horiba died

NYSEG - Cortland Homer 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: K Hensel K Roskoff **Well ID:** MW10

Client / Job Number: **Date:** 9/13/17

Weather: Sunny/Cloudy **Time In:** 1115 **Time Out:** 1225

Well Information

Depth to Water (feet): 4.61 (from MP)

Total Depth (feet): 25.41 (from MP)

Length of Water Column (feet): 20.8

Volume of Water in Well (gal): 3.39

Intake depth for tubing (feet)

Well Type: Flushmount Stick-Up

Well Material: Stainless Steel PVC

Well Locked: Yes No

Measuring Point Marked: Yes No

Well Diameter: 1" 2" Other:

Purging Information

Purging Method:	Bailer	Peristaltic	Grundfos	Other:	
Tubing/Bailer	St. Steel	Polyethylene	Teflon	Other:	
Sampling Method:	Bailer (VOCs)	Peristaltic	Grundfos	Other:	

Pump Start Time 1120

Pump Stop Time 1220

Water-Quality Meter Type: HORIBA U52

Total Volume Removed: ~5 (gal) Did well go dry: Yes No

Conversion Factors

gal / ft. of	1" ID	2" ID	4" ID	6" ID
water	0.041	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9	
Time	1130	1135	1140	1145	1150	1155	1200	1205	1210	1215
Volume Purged (mL)										
Rate (mL/min)	300	300	300	300	300	300	300	300	300	
Depth to Water (ft.)	4.69	4.69	4.69	4.70	4.70	4.70	4.70	4.70	4.70	S
pH	9.17	9.48	9.63	9.72	9.66	9.50	9.47	9.49	9.51	A
Temp. (C)	15.64	15.33	15.28	15.16	15.09	14.94	14.91	14.98	14.97	M
Conductivity (mS/cm)	0.736	0.735	0.735	0.737	0.786	0.805	0.810	0.813	0.814	P
Dissolved Oxygen (mg/L)	1.66	1.34	1.20	1.11	0.98	0.94	0.90	0.87	0.87	L
ORP (mV)	67	66	65	64	64	-51	-72	-79	-82	E
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	1.8	3.1	5.2	8.9	
Notes:										

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color: None		
Odor: None		
Appearance: Clear		
Sample ID: MW10	Sample Time: 1215	
MS/MSD: Yes No		
Duplicate: Yes No		
Duplicate ID ~	Dup. Time: ~	

PID = 0.0

Problems/Observation

Pg 1 of 1

NYSEG - Cortland Homer 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R Hensel / K Roskopf **Well ID:** MW-12
Client / Job Number: **Date:** 9/12/17
Weather: Sunny **Time In:** 1648 **Time Out:**

Well Information

Depth to Water (feet): 6.1 (from MP)
Total Depth (feet): 11.8 (from MP)
Length of Water Column (feet): 5.7
Volume of Water in Well (gal): 0.93
Intake depth for tubing (feet) ~9

Well Type: (Flushmount) Stick-Up
Well Material: (Stainless Steel) PVC
Well Locked: Yes (No)
Measuring Point Marked: (Yes) No
Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	(Polyethylene)	Teflon	Other:
Sampling Method:	Bailer (VOCs)	(Peristaltic)	Grundfos	Other:

Pump Start Time 1655
Pump Stop Time 1800
Water-Quality Meter Type: YSI 52

Total Volume Removed: ~2.5 (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469

1 gal = 3.785 L = 3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1705	1710	1715	1720	1725	1730	1735	1740	1745
Volume Purged (mL)									
Rate (mL/min)	120	80	80	80	120	120	120	120	120
Depth to Water (ft.)	6.84	6.84	6.84	6.84	6.87	6.87	7.04	7.04	7.04
pH	7.18	7.60	7.32	8.23	8.08	8.45	8.67	8.72	8.76
Temp. (C)	18.46	18.19	18.16	18.02	17.63	18.24	17.18	16.89	16.89
Conductivity (mS/cm)	1.31	1.34	1.35	1.34	1.35	1.35	1.36	1.33	1.34
Dissolved Oxygen (mg/L)	9.02	9.93	10.66	9.33	3.57	5.30	2.3	1.14	1.22
ORP (mV)	270	259	254	255	257	259	281	255	255
Turbidity (NTU)	3.0	1.7	6.1	13.9	5.5	7.2	58	17.2	15.6
Notes:									

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color: None		
Odor: None		
Appearance:		
Sample ID: MW-12 Sample Time: 1755		
MS/MSD: Yes (No)		
Duplicate: (Yes) No		
Duplicate ID: Dup - 20170912 Dup. Time:		

PID = 0.0

Problems/Observation

Obstruction observed at 6 bgs able to get Bailer down but Tight.

NYSEG - Cortland Homer 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R Hensel / K Roskoff **Well ID:** MW-12
Client / Job Number: **Date:** 9/12/17
Weather: Sunny **Time In:** 1648 **Time Out:**

Well Information

Depth to Water (feet):	(from MP)	Well Type: Flushmount	Stick-Up
Total Depth (feet):	(from MP)	Well Material:	Stainless Steel PVC
Length of Water Column (feet):		Well Locked:	Yes No
Volume of Water in Well (gal):		Measuring Point Marked:	Yes No
Intake depth for tubing (feet)		Well Diameter: 1"	2" Other:

Purging Information					Conversion Factors				
Purging Method:	Bailer	Peristaltic	Grundfos	Other:	gal / ft. of	1" ID	2" ID	4" ID	6" ID
Tubing/Bailer	St. Steel	Polyethylene	Teflon	Other:	water	0.041	0.163	0.653	1.469
Sampling Method:	Bailer (VOCs)	Peristaltic	Grundfos	Other:	1 gal = 3.785 L =3875 ml = 0.1337				

Pump Start Time
Pump Stop Time
Water-Quality Meter Type:

Total Volume Removed: (gal) Did well go dry: Yes No

Unit Stability			
pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1750	1755							
Volume Purged (mL)									
Rate (mL/min)		9							
Depth to Water (ft.)		A							
pH	8.80	M							
Temp. (C)	10.81	P							
Conductivity (mS/cm)	1.35	L							
Dissolved Oxygen (mg/L)	1.18	E							
ORP (mV)	257								
Turbidity (NTU)	12.4								
Notes:									

Sampling Information **Problems/Observation**

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color:		
Odor:		
Appearance:		
Sample ID:	Sample Time:	
MS/MSD: Yes	No	
Duplicate: Yes	No	
Duplicate ID	Dup. Time:	

PID =

See Page 1

NYSEG - Cortland Homer 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: K Hensel / K Roskopf **Well ID:** MW-13
Client / Job Number: **Date:** 9/13/17
Weather: Cloudy/Sunny **Time In:** 1235 **Time Out:** 1425

Well Information

Depth to Water (feet): 4.97 (from MP)
Total Depth (feet): 31.67 (from MP)
Length of Water Column (feet): 26.7
Volume of Water in Well (gal): ~~30.36~~ 4.35
Intake depth for tubing (feet) ~25

Well Type: Flushmount Stick-Up
Well Material: Stainless Steel PVC
Well Locked: Yes No
Measuring Point Marked: Yes No
Well Diameter: 1" 2" Other:

Purging Information

Purging Method:	Bailer	Peristaltic	Grundfos	Other:
Tubing/Bailer	St. Steel	Polyethylene	Teflon	Other:
Sampling Method:	Bailer (VOCs)	Peristaltic	Grundfos	Other:

Pump Start Time 1240
Pump Stop Time 1420
Water-Quality Meter Type: ~~E~~ Horiba U52

Total Volume Removed: ~5 (gal) Did well go dry: Yes No

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469
1 gal = 3.785 L =3875 ml = 0.1337				

Unit Stability			
pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1250	1255	1300	1305	1310	1315	1320	1325	1330
Volume Purged (mL)									
Rate (mL/min)	140	240	240	240	240	240	240	240	240
Depth to Water (ft.)	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
pH	9.56	9.57	9.60	9.65	9.71	9.74	9.76	9.78	9.79
Temp. (C)	10.08	15.48	15.19	15.12	14.99	14.99	15.14	15.16	15.04
Conductivity (mS/cm)	0.763	0.762	0.763	0.764	0.762	0.762	0.762	0.761	0.767
Dissolved Oxygen (mg/L)	5.55	5.28	4.44	3.31	2.14	1.69	1.45	1.39	1.90
ORP (mV)	87	89	90	88	85	79	75	69	23
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	0.0	4.2	12.7	19.1
Notes:									

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color: NONE		
Odor: NONE		
Appearance: CLEAR		
Sample ID: MW-13	Sample Time:	
MS/MSD: Yes No		
Duplicate: Yes No		
Duplicate ID —	Dup. Time: —	

PID = 0.6

Problems/Observation

NYSEG - Cortland Homer 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R Hansel / K Roskopp **Well ID:** MW-13
Client / Job Number: **Date:** 9/13/17
Weather: Cloudy / Sunny **Time In:** 1335 **Time Out:**

Well Information

Depth to Water (feet):	(from MP)	Well Type: Flushmount	Stick-Up
Total Depth (feet):	(from MP)	Well Material:	Stainless Steel PVC
Length of Water Column (feet):		Well Locked:	Yes No
Volume of Water in Well (gal):		Measuring Point Marked:	Yes No
Intake depth for tubing (feet)		Well Diameter: 1" 2"	Other:

Purging Information

Purging Method:	Bailer	Peristaltic	Grundfos	Other:
Tubing/Bailer	St. Steel	Polyethylene	Teflon	Other:
Sampling Method:	Bailer (VOCs)	Peristaltic	Grundfos	Other:

Pump Start Time

Pump Stop Time

Water-Quality Meter Type:

Total Volume Removed: (gal) Did well go dry: Yes No

Conversion Factors

gal / ft. of	1" ID	2" ID	4" ID	6" ID
water	0.041	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1335	1340	1345	1350	1355	1400	1405	1410	1415
Volume Purged (mL)									
Rate (mL/min)	240	240	240	240	240	240	240	240	S
Depth to Water (ft.)	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	A
pH	7.45	8.63	9.20	9.42	9.00	9.32	9.36	9.39	M
Temp. (C)	15.11	15.13	15.09	15.12	14.81	14.90	14.82	14.78	P
Conductivity (mS/cm)	0.772	0.774	0.777	0.786	0.785	0.785	0.785	0.784	L
Dissolved Oxygen (mg/L)	2.77	3.34	3.96	4.37	4.48	4.56	4.04	4.07	E
ORP (mV)	-2	-1	1	1	4	10	9	13	
Turbidity (NTU)	25.4	27.1	34.5	37.5	39.7	4.4	0.4	2.1	
Notes:									

Sampling Information **Problems/Observation**

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color: NONE		
Odor: NONE		
Appearance: CLEAR		
Sample ID: MW-13	Sample Time: 1415	
MS/MSD: Yes (No)		
Duplicate: Yes (No)		
Duplicate ID —	Dup. Time: —	

PID = 0.0

NYSEG - Cortland Homer 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R Hensel / K Roskoff **Well ID:** MW 14R
Client / Job Number: **Date:** 9/13/17
Weather: Sunny / Cloudy **Time In:** 1115 **Time Out:** 1220

Well Information

Depth to Water (feet): 4.50 (from MP)
Total Depth (feet): 13.02 (from MP)
Length of Water Column (feet): 8.52
Volume of Water in Well (gal): 1.39
Intake depth for tubing (feet) ~10

Well Type: (Flushmount) Stick-Up
Well Material: Stainless Steel (PVC)
Well Locked: Yes (No)
Measuring Point Marked: Yes (No)
Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	(Polyethylene)	Teflon	Other:
Sampling Method:	Bailer (VOCs)	(Peristaltic)	Grundfos	Other:

Pump Start Time 1120
Pump Stop Time 1215
Water-Quality Meter Type: Horiba U52
Total Volume Removed: ~5 (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469

1 gal = 3.785 L = 3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1130	1135	1140	1145	1150	1155	1200	1205	1210
Volume Purged (mL)									
Rate (mL/min)	200	200	200	200	200	200	200	200	S
Depth to Water (ft.)	4.83	4.83	4.83	4.83	4.83	4.83	4.83	4.83	A
pH	7.37	7.37	7.33	7.32	7.30	7.36	7.29	7.29	M
Temp. (C)	17.81	17.96	17.88	17.86	17.82	17.78	17.75	17.80	P
Conductivity (mS/cm)	2.12	2.21	2.36	2.42	2.47	2.50	2.53	2.55	L
Dissolved Oxygen (mg/L)	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	E
ORP (mV)	-129	-78	-58	-49	-44	-40	-35	-33	
Turbidity (NTU)	44.6	11.0	5.3	3.8	3.9	3.9	0.6	0.6	
Notes:									

Sampling Information **Problems/Observation**

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color:	None	
Odor:	None	
Appearance:	Clear	
Sample ID: MW-14R	Sample Time:	
MS/MSD:	Yes (No)	
Duplicate:	Yes (No)	
Duplicate ID —	Dup. Time: —	

PID = 0.0

NYSEG - Cortland Homer 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R. Hensel **Well ID:** MW-17
Client / Job Number: **Date:** 9/13/17
Weather: Sunny **Time In:** 935 **Time Out:**

Well Information

Depth to Water (feet): 6.73 (from MP)
Total Depth (feet): 10.14 (from MP)
Length of Water Column (feet): 3.41
Volume of Water in Well (gal): .55
Intake depth for tubing (feet) ~8

Well Type: Flushmount (Stick-Up)
Well Material: Stainless Steel (PVC)
Well Locked: (Yes) No
Measuring Point Marked: (Yes) No
Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:	
Tubing/Bailer	St. Steel	(Polyethylene)	Teflon	Other:	
Sampling Method:	(Bailer (VOCs))	Peristaltic	Grundfos	Other:	

Pump Start Time 940
Pump Stop Time 1040
Water-Quality Meter Type: Horriba U52
Total Volume Removed: ~3.5 (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of	1" ID	2" ID	4" ID	6" ID
water	0.041	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9	
Time	950	955	1000	1005	1010	1015	1020	1025	1030	1035
Volume Purged (mL)										
Rate (mL/min)	200	200	200	200	200	200	200	200	200	S
Depth to Water (ft.)	6.76	6.74	6.916.75		6.75	6.75	6.76	6.75	6.75	A
pH	6.85	6.90	6.91	6.87	6.7.20	7.37	7.48	7.52	7.52	M
Temp. (C)	16.54	16.48	16.71	16.62	16.70	16.77	1669	16.71	1689	P.
Conductivity (mS/cm)	0.824	0.824	0.818	0.819	0.818	0.817	0.816	0.816	0.815	L
Dissolved Oxygen (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	E
ORP (mV)	-179	-183	-184	-185	-187	-211	-216	-218	-216	
Turbidity (NTU)	59.4	26.4	8.4	13.0	2.9	8.6	9.6	0.0	0.0	
Notes:										

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color:		
Odor:		
Appearance:		
Sample ID: MW-17	Sample Time: 1035	
MS/MSD:	Yes (No)	
Duplicate: —	Yes (No)	
Duplicate ID —	Dup. Time: —	
PID = 0.0		

Problems/Observation

+ 6bStretton @ ~4bgs Had to Pump Samples
Bailer did not fit.

NYSEG - Cortland Homer 2017 Groundwater Sampling

Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R Henry / K Roxoff **Well ID:** MW-18

Client / Job Number: **Date:** 9/13/17

Weather: SUNNY **Time In:** 935 **Time Out:**

Well Information

Depth to Water (feet): 6.51 (from MP)

Total Depth (feet): 30.08 (from MP)

Length of Water Column (feet): 24.29

Volume of Water in Well (gal): 29.74

Intake depth for tubing (feet)

Well Type: Flushmount (Stick-Up)

Well Material: (Stainless Steel) PVC

Well Locked: (Yes) No

Measuring Point Marked: Yes (No)

Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	~~Peristaltic~~	Grundfos	Other:
Tubing/Bailer	St. Steel	~~Polyethylene~~	Teflon	Other:
Sampling Method:	Bailer (VOCs)	~~Peristaltic~~	Grundfos	Other:

Pump Start Time 940

Pump Stop Time 1035

Water-Quality Meter Type: Horiba U52

Total Volume Removed: 12.5 (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of	1" ID	2" ID	4" ID	6" ID
water	0.041	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	950	955	1000	1005	1010	1015	1020	1025	1030
Volume Purged (mL)									
Rate (mL/min)	120	120	120	120	120	120	120	120	S
Depth to Water (ft.)	6.53	6.53	6.53	6.53	6.53	6.53	6.53	6.53	A
pH	8.30	8.30	8.31	8.20	7.64	7.52	7.52	7.51	M
Temp. (C)	14.91	14.85	14.82	14.86	14.80	14.79	14.63	14.66	P
Conductivity (mS/cm)	0.590	0.589	0.590	0.615	0.793	0.815	0.820	0.824	L
Dissolved Oxygen (mg/L)	1.58	1.36	1.16	1.09	1.04	1.03	0.99	0.97	E
ORP (mV)	70	67	26	-109	-120	-126	-131	-136	
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	3.9	1.2	2.7	
Notes:									

Sampling Information

Analyses	#	Laboratory
BTEX	3 ✓	Test America
TCN	1 ✓	Test America
PAH	2 ✓	Test America
Color: NONE		
Odor: NONE		
Appearance: CLEAR		
Sample ID: MW18	Sample Time: 1030	
MS/MSD: Yes (No)		
Duplicate: Yes (No)		
Duplicate ID ~	Dup. Time: ~	

PID = 0.0

Problems/Observation

NYSEG - Cortland Homer 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: L. Hensel . K Roskoff **Well ID:** MW-28S
Client / Job Number: NySEG **Date:** 9/13/17
Weather: Sunny **Time In:** ~~815~~ 755 **Time Out:** 905

Well Information

Depth to Water (feet): 3.25 (from MP)
Total Depth (feet): 13.15 (from MP)
Length of Water Column (feet): 9.25
Volume of Water in Well (gal): 1.62
Intake depth for tubing (feet) ~ 10

Well Type: (Flushmount) Stick-Up
Well Material: Stainless Steel (PVC)
Well Locked: Yes (No)
Measuring Point Marked: Yes (No)
Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	(Polyethylene)	Teflon	Other:
Sampling Method:	(Bailer (VOCs))	(Peristaltic)	Grundfos	Other:

Pump Start Time 805
Pump Stop Time 900
Water-Quality Meter Type: Horiba U-52
Total Volume Removed: 3 (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of	1" ID	2" ID	4" ID	6" ID
water	0.041	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9	
Time	~~810~~ 810	815	820	825	830	835	840	845	850	855
Volume Purged (mL)										~3gal
Rate (mL/min)	200	200	200	200	200	200	200	200	200	200
Depth to Water (ft.)	3.36	3.36	3.36	3.36	3.36	3.36	3.36	336	336	3.36
pH	6.34	6.39	6.43	6.50	6.51	6.53	6.55	6.58	6.59	6.61
Temp. (C)	14.68	15.00	15.03	14.85	15.01	15.02	15.07	15.09	15.13	15.12
Conductivity (mS/cm)	3.03	2.94	2.86	2.66	2.69	2.71	2.57	2.44	2.42	2.40
Dissolved Oxygen (mg/L)	1.25	1.0	0.66	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ORP (mV)	-170	-185	-193	-192	-183	-166	-167	-167	-167	-169
Turbidity (NTU)	301	221	85.6	0.0	853	826	46.1	21.4	20.1	21.2
Notes:										

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color: None		
Odor: None		
Appearance: Brown		
Sample ID: MW-28S	Sample Time: 900	
MS/MSD: Yes (No)		
Duplicate: Yes (No)	—	
Duplicate ID —	Dup. Time: —	

PID =

Problems/Observation

900 Sample

NYSEG - Cortland Homer 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: K Roskoff / K Hunsi **Well ID:** MW-28D
Client / Job Number: **Date:** 9/13/2017
Weather: Sunny **Time In:** 800 **Time Out:** 9:00

Well Information

Depth to Water (feet):	3.15	(from MP)	
Total Depth (feet):	26.82	(from MP)	
Length of Water Column (feet):	23.67		
Volume of Water in Well (gal):	3.86		
Intake depth for tubing (feet)	~23		

Well Type: Flushmount / Stick-Up
Well Material: Stainless Steel / PVC
Well Locked: Yes / No
Measuring Point Marked: Yes / No
Well Diameter: 1" / 2" / Other:

Purging Information

Purging Method:	Bailer	Peristaltic	Grundfos	Other:
Tubing/Bailer	St. Steel	Polyethylene	Teflon	Other:
Sampling Method:	Bailer (VOCs)	Peristaltic	Grundfos	Other:

Conversion Factors				
gal / ft. of	1" ID	2" ID	4" ID	6" ID
water	0.041	0.163	0.653	1.469
1 gal = 3.785 L =3875 ml = 0.1337				

Pump Start Time 805
Pump Stop Time 855
Water-Quality Meter Type: Horiba U52
Total Volume Removed: ~3 (gal) Did well go dry: Yes / No

Unit Stability			
pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	810	815	820	825	830	835	340	345	850
Volume Purged (mL)									
Rate (mL/min)	200	200	200	240	240	240	240	240	S
Depth to Water (ft.)	3.19	3.18	3.18	3.18	3.18	3.18	3.18	3.18	A
pH	7.33	7.33	7.34	7.36	7.37	7.39	7.40	7.41	M
Temp. (C)	12.91	13.20	13.09	13.02	13.08	13.07	13.10	13.11	P
Conductivity (mS/cm)	0.730	0.745	0.769	0.776	0.781	0.787	0.790	0.791	L
Dissolved Oxygen (mg/L)	1.76	1.45	1.32	1.21	1.17	1.12	1.09	1.04	E
ORP (mV)	-1	-25	-47	-68	-75	-82	-86	-92	
Turbidity (NTU)	22.4	47.2	41.4	35.5	43.2	41.7	19.3	15.4	
Notes:									

Sampling Information **Problems/Observation**

Analyses	#	Laboratory
BTEX	3 ✓	Test America
TCN	1 ✓	Test America
PAH	2 ✓	Test America
Color: NONE		
Odor: NONE		
Appearance: CLEAR		
Sample ID: MW-28D	Sample Time: 850	
MS/MSD: Yes / No		
Duplicate: Yes / No		
Duplicate ID —	Dup. Time: —	

PID = 0.0

NYSEG - Cortland Homer 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: K Hensel / K Roskoff **Well ID:** MW-30S
Client / Job Number: NYSEG **Date:** 9/12/17
Weather: Sunny **Time In:** 1435 **Time Out:**

Well Information

Depth to Water (feet):	5.44	(from MP)	
Total Depth (feet):	11.18	(from MP)	
Length of Water Column (feet):	5.74		
Volume of Water in Well (gal):	0.936		
Intake depth for tubing (feet)	~9		

Well Type: Flushmount / Stick-Up
Well Material: Stainless Steel / PVC
Well Locked: Yes / No
Measuring Point Marked: Yes / No
Well Diameter: 1" / 2" / Other:

Purging Information

Purging Method:	Bailer	Peristaltic	Grundfos	Other:	
Tubing/Bailer	St. Steel	Polyethylene	Teflon	Other:	
Sampling Method:	Bailer (VOCs)	Peristaltic	Grundfos	Other:	

Pump Start Time 1440
Pump Stop Time 1605
Water-Quality Meter Type: Horiba U52
Total Volume Removed: ~5 (gal) Did well go dry: Yes / No

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1445	1450	1455	1500	1505	1510	1515	1520	1525
Volume Purged (mL)									
Rate (mL/min)	150	150*	150	150	150	150	150	150	*150
Depth to Water (ft.)	6.37	6.71	6.85	6.97	6.95	6.96	6.96	6.96	6.98
pH	8.17	8.64	7.18	7.19	7.97	7.21	7.22	7.22	7.23
Temp. (C)	19.56	20.39	20.44	20.28	20.41	20.40	20.40	20.30	20.09
Conductivity (mS/cm)	3.35	3.25	3.19	3.22	3.25	3.19	3.14	3.09	3.04
Dissolved Oxygen (mg/L)	1.31	1.08	1.07	1.05	1.03	1.05	1.07	1.11	1.13
ORP (mV)	99	87	82	74	54	35	25	10	3
Turbidity (NTU)	300	154	118	95.5	82	86.1	92.1	94.3	99.6
Notes:		Lowest Rate							

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color:		
Odor: None		
Appearance: Brownish		
Sample ID: MW-30S	Sample Time: 1600	
MS/MSD: Yes / No		
Duplicate: Yes / No		
Duplicate ID —	Dup. Time: —	

PID = 0-0

Problems/Observation

* Very Turbid

NYSEG - Cortland Homer — 2017 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R Hensel / R Rosko ff — **Well ID:** MW-305
Client / Job Number: Nyseg — **Date:** 9/12/17
Weather: Sunny — **Time In:** 1435 **Time Out:** 1610

Well Information

Depth to Water (feet):	5.44 (from MP)	Well Type:	Flushmount / Stick-Up
Total Depth (feet):	11.18 (from MP)	Well Material:	Stainless Steel / PVC
Length of Water Column (feet):		Well Locked:	Yes / No
Volume of Water in Well (gal):		Measuring Point Marked:	Yes / No
Intake depth for tubing (feet)		Well Diameter:	1" / 2" / Other:

Purging Information

Purging Method:	Bailer	Peristaltic	Grundfos	Other:
Tubing/Bailer	St. Steel	Polyethylene	Teflon	Other:
Sampling Method:	Bailer (VOCs)	Peristaltic	Grundfos	Other:

Pump Start Time: 1440
Pump Stop Time: 1605
Water-Quality Meter Type:
Total Volume Removed: ~5 (gal) — Did well go dry: Yes / No

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469

1 gal = 3.785 L = 3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1530	1535	1540	1545	1550	1555	1600		
Volume Purged (mL)							~5		
Rate (mL/min)	170	170	170	170	170	170	S		
Depth to Water (ft.)	7.1	7.06	7.06	7.08	7.03	7.04	A		
pH	7.23	7.23	7.23	7.24	7.25	7.24	M		
Temp. (C)	20.11	19.98	19.95	19.85	19.70	19.74	P		
Conductivity (mS/cm)	2.98	2.96	2.98	2.94	2.87	2.82	L		
Dissolved Oxygen (mg/L)	1.15	1.15	1.14	1.21	1.20	1.20	E		
ORP (mV)	-50	-62	-75	-85	-91	-91			
Turbidity (NTU)	602.6	53.9	67.1	89.2	120	107			
Notes:									

Sampling Information — **Problems/Observation**

Analyses	#	Laboratory
BTEX	3 ✓	Test America
TCN	1 ✓	Test America
PAH	2 ✓	Test America
Color: Brownish hue		
Odor: NONE		
Appearance: BROWNISH HUE		
Sample ID: MW-305	Sample Time: 1600	
MS/MSD: (Yes) / No		
Duplicate: (Yes) / No		
Duplicate ID —	Dup. Time: —	

PID = 0.0

ATTACHMENT B

Monitoring Well Decommissioning Logs

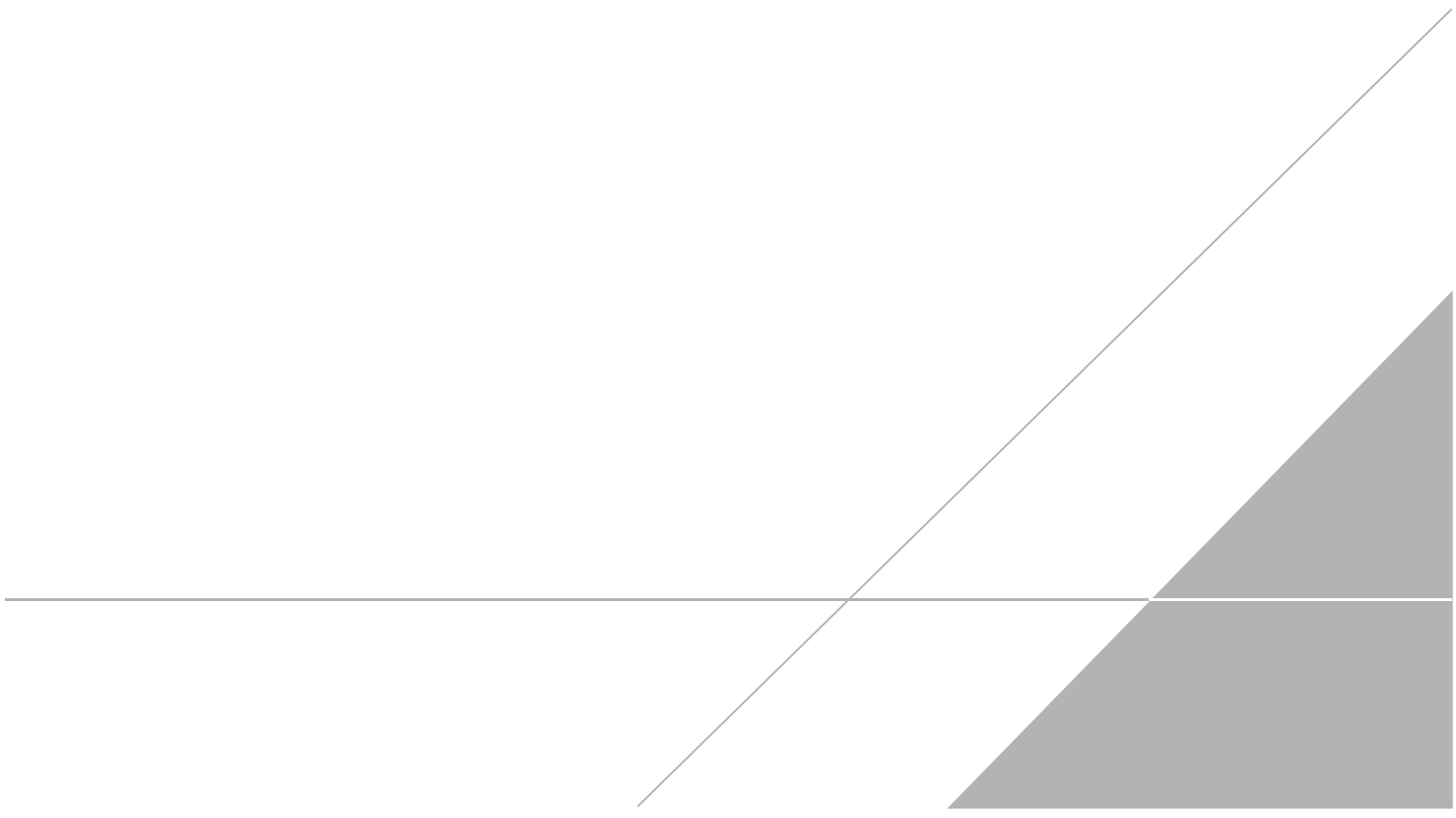


FIGURE 3

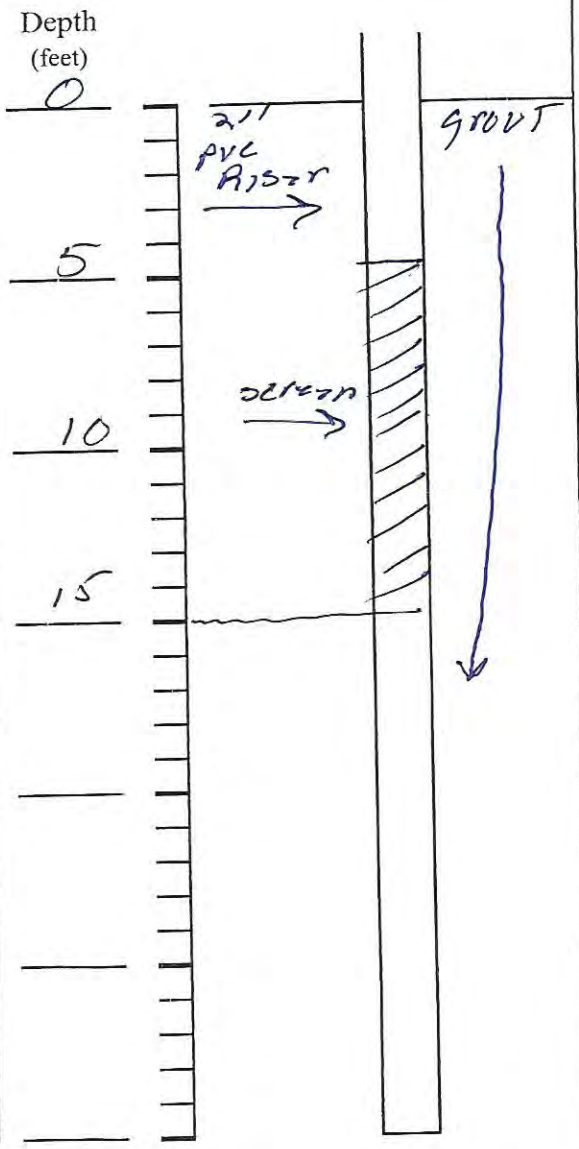
WELL DECOMMISSIONING RECORD

Site Name: Cortland Homer Former MGP 3.75	Well I.D.: MW 27S
Site Location: Homer N.Y.	Driller: D G. Richmond
Drilling Co.: ARCADIS	Inspector: Inez Whalen.
	Date: 5/23/17

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	1 7/8 Steel Rod
Number of perforations/foot	
Size of perforations	1 7/8
Interval perforated	Bottom
GROUTING	
Interval grouted (FBLS)	15'
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	8
Quantity of cement used (lbs.)	94
Cement type	portland
Quantity of bentonite used (lbs.)	4
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	9.5
Volume of grout used (gal.)	9.5

WELL SCHEMATIC*



COMMENTS: Knock out Bottom of Well grout Bottom To Top Using Tremie pipe. Remove Surface Completion and Top 2' of PVC Casing

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

ARCADIS
Drilling Contractor

Douglas Richmond, CWD. 3C32457
Department Representative

FIGURE 3

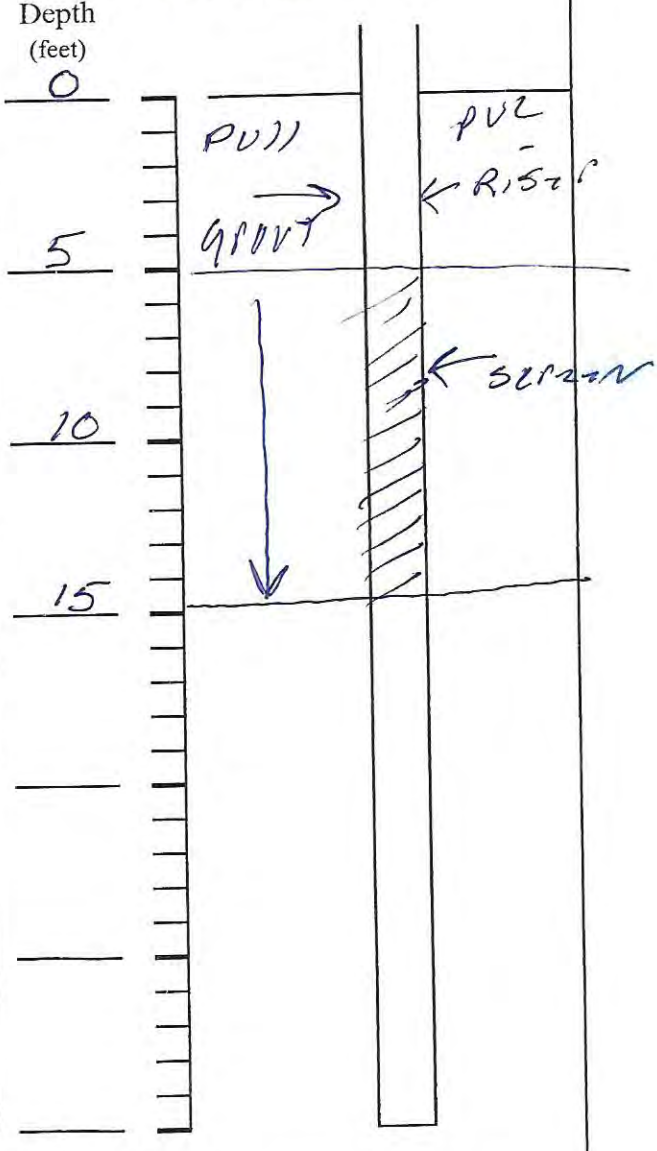
WELL DECOMMISSIONING RECORD

Site Name: Cortland - Homer Former MGP Site	Well I.D.: MW 29 S.
Site Location: Homer NY.	Driller: Doug Richmond
Drilling Co.: AreADis.	Inspector: Lance Whelan
	Date: 5-23-17

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	Pull
Casing retrieved (feet)	4'
Casing type/dia. (in)	2" PVC
CASING PERFORATING	
Equipment used	Steel Rods
Number of perforations/foot	—
Size of perforations	1 7/8"
Interval perforated	Bottom
GROUTING	
Interval grouted (FBLS)	14, 92
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	8
Quantity of cement used (lbs.)	94
Cement type	Portland
Quantity of bentonite used (lbs.)	4
Quantity of calcium chloride used (lbs.)	—
Volume of grout prepared (gal.)	9.5
Volume of grout used (gal.)	9.5

WELL SCHEMATIC*



COMMENTS: knock out Bottom of well grout Bottom to Top pull Top 5' of PVC Riser out.

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

AreADis
Drilling Contractor

Douglas Richmond CWD.
Department Representative
#3032457

FIGURE 3

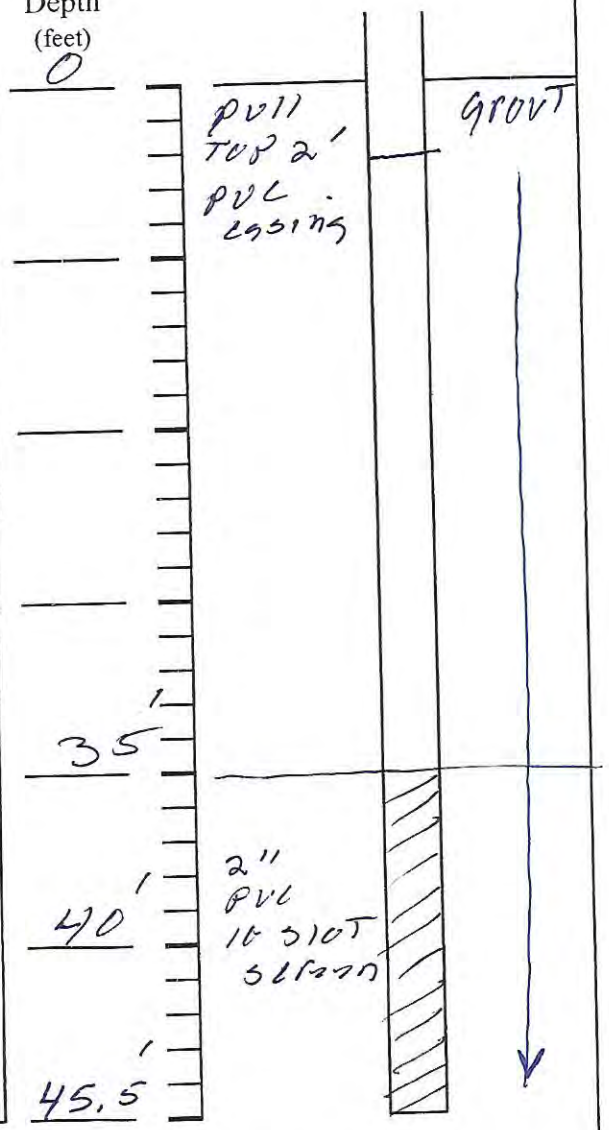
WELL DECOMMISSIONING RECORD

Site Name: Cortland-Homer Former MGP Site	Well I.D.: MW 29D
Site Location: Homer N.Y.	Driller: Doug Richmond
Drilling Co.: ArcADis Inc	Inspector: Jance Whalen
	Date: 5-23-17

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	Pull
Casing retrieved (feet)	2.0
Casing type/dia. (in)	2" PVC
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	45.5
# of batches prepared	2
For each batch record:	
Quantity of water used (gal.)	16
Quantity of cement used (lbs.)	188
Cement type	Portland
Quantity of bentonite used (lbs.)	8
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	19
Volume of grout used (gal.)	17

WELL SCHEMATIC*



COMMENTS: Grout will Bottom to Top using 1" Tremie pipe pull Top 2' of PVC casing

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

ArcADis
Drilling Contractor

Douglas Richmond CWD
Department Representative
#303245 7

FIGURE 3

WELL DECOMMISSIONING RECORD

Site Name: Cortland Homer Former MGP Site	Well I.D.: MW 30D
Site Location: Homer N.Y.	Driller: D. G. Richmond
Drilling Co.: ARCADIS	Inspector: Jance Whalen.
	Date: 5/23/17

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING
- Interval Drilled
- Drilling Method(s)
- Borehole Dia. (in.)
- Temporary Casing Installed? (y/n)
- Depth temporary casing installed
- Casing type/dia. (in.)
- Method of installing

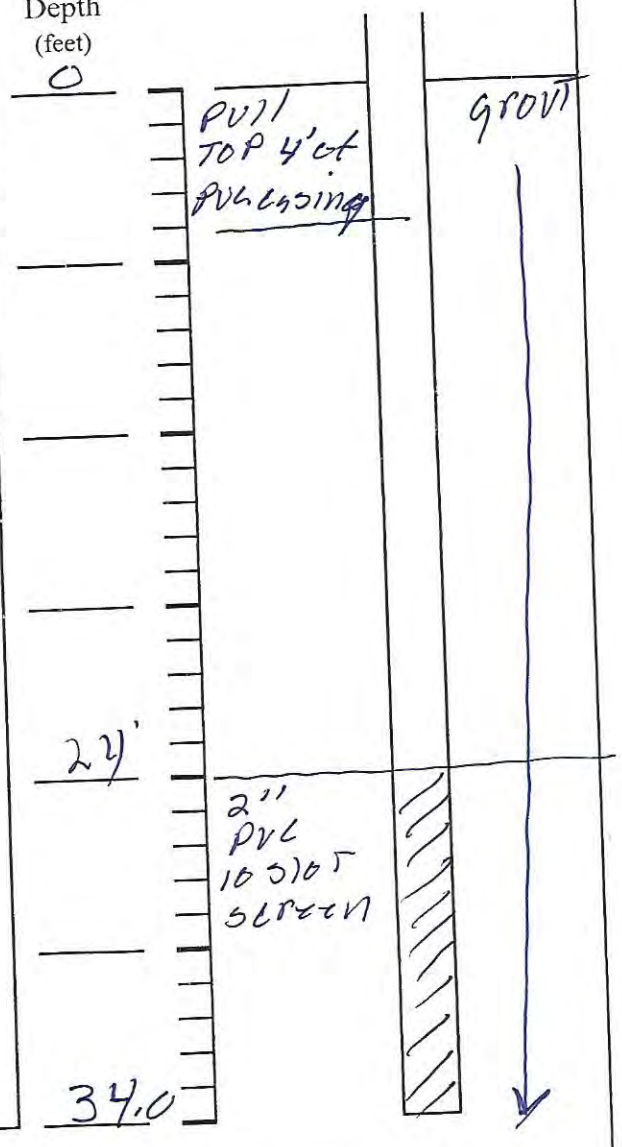
CASING PULLING
- Method employed
- Casing retrieved (feet)
- Casing type/dia. (in)

CASING PERFORATING
- Equipment used
- Number of perforations/foot
- Size of perforations
- Interval perforated

GROUTING

Interval grouted (FBLS)	34.0
# of batches prepared	2
For each batch record:	
Quantity of water used (gal.)	16
Quantity of cement used (lbs.)	188
Cement type	Portland
Quantity of bentonite used (lbs.)	8
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	19.0
Volume of grout used (gal.)	17.5

WELL SCHEMATIC*



COMMENTS: Tremie grout Bottom To Top Remove Switzer completion & ~~surface~~ Top 4' of PVC casing, Restore with Asphalt.

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

ARCADIS inc
Drilling Contractor

Douglas Richmond CWD
Department Representative
303245

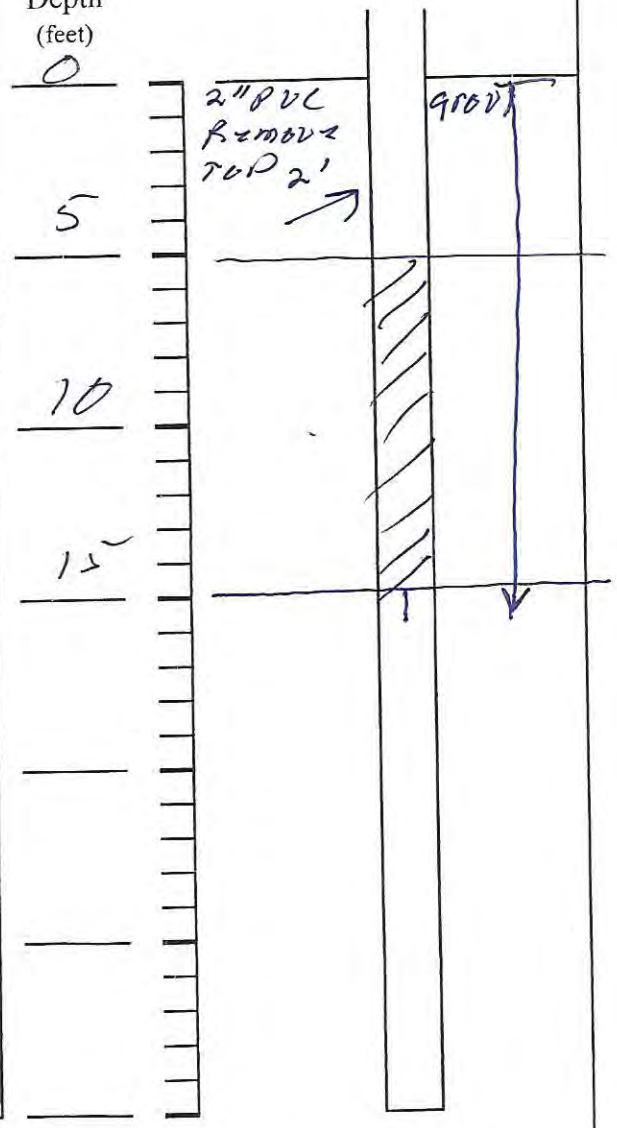
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: Cortland Homer Former M&P site	Well I.D.: MW 31
Site Location: Homer N.Y.	Driller: D G Richmond
Drilling Co.: ARCADIS	Inspector: James Whalen
	Date: 5/23/17

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	Steel Rod
Number of perforations/foot	
Size of perforations	1 7/8"
Interval perforated	Bottom
GROUTING	
Interval grouted (FBLS)	15,10'
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	9.0 gal
Quantity of cement used (lbs.)	94
Cement type	portland
Quantity of bentonite used (lbs.)	4
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	9.5
Volume of grout used (gal.)	9.0

WELL SCHEMATIC*



COMMENTS: Knock out Bottom, grout Bottom to Top, Remove surface completion and Top 2' of PVC casing Restore with Asphalt

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

ARCADIS
Drilling Contractor

Dave Richmond EWD
Department Representative

#3032457

FIGURE 3

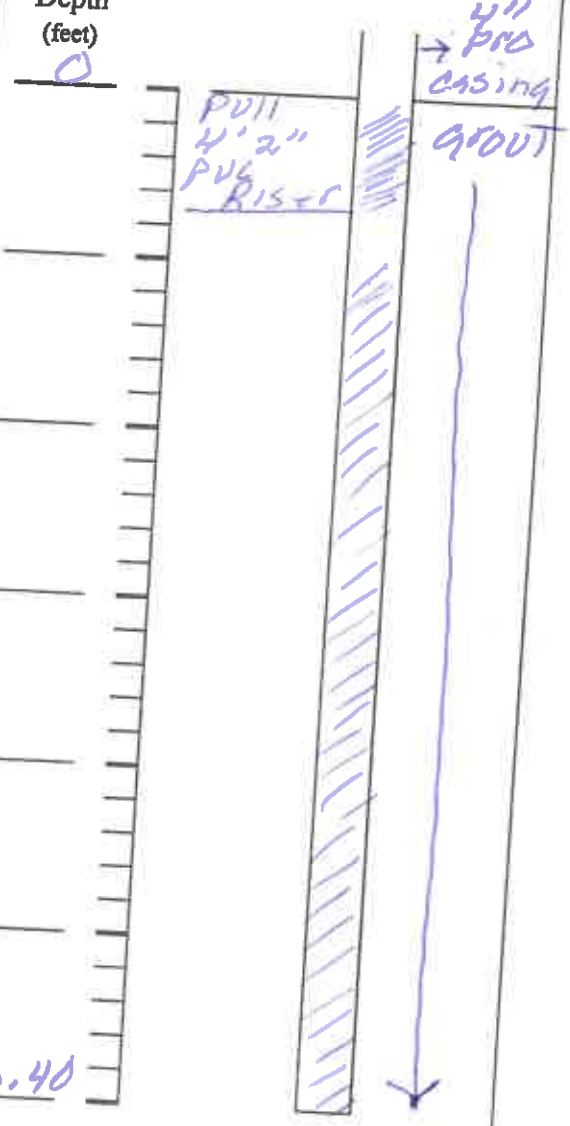
WELL DECOMMISSIONING RECORD

Site Name: NYSEG. Cortland Homer	Well I.D.: MW-25
Site Location: Homer, NY.	Driller: D. Richmond
Drilling Co.: ARCADIS	Inspector: T. O'Rourke
	Date: 7-13-17

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	13.40
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	5
Quantity of cement used (lbs.)	94
Cement type	TYPE I
Quantity of bentonite used (lbs.)	5
Quantity of calcium chloride used (lbs.)	—
Volume of grout prepared (gal.)	9
Volume of grout used (gal.)	9

WELL SCHEMATIC*



COMMENTS: Tremie grout Bottom to top
Pull 4" PVC casing & top 4' of 2" PVC Riser backfill with native material.

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

ARCADIS — M. Richmond C.W.D. 3032457
Drilling Contractor

Department Representative

FIGURE 3

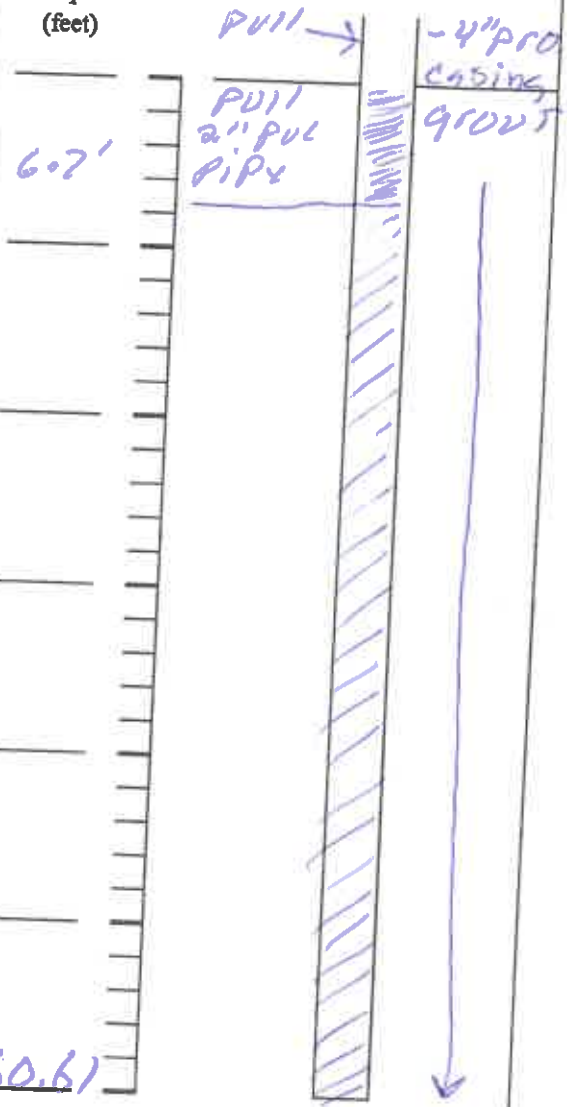
WELL DECOMMISSIONING RECORD

Site Name: NYSEG. Cortland Homer	Well I.D.: MW-26
Site Location: Homer N.Y.	Driller: D. Richmond
Drilling Co.: ARCADIS	Inspector: T. O'Rourke
	Date: 7-13-17

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	60.61
# of batches prepared	2
For each batch record:	
Quantity of water used (gal.)	10
Quantity of cement used (lbs.)	188
Cement type	TYPE I
Quantity of bentonite used (lbs.)	10
Quantity of calcium chloride used (lbs.)	—
Volume of grout prepared (gal.)	24.0
Volume of grout used (gal.)	22.0

WELL SCHEMATIC*



COMMENTS: Tremie grout bottom to top. Jack Hammer out concrete pad & pull top 6.7' of PVC Riser Backfill with native material.

ARCADIS / M. Richmond CVD 8032457

Drilling Contractor

Department Representative

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

FIGURE 3

WELL DECOMMISSIONING RECORD

Site Name: Former MGP Site	Well I.D.: MW-23
Site Location: Cortland Homer N.Y	Driller: D. Richmond
Drilling Co.: ARCADIS, INC	Inspector: J. MILLER
	Date: 9-25-17

DECOMMISSIONING DATA
(Fill in all that apply)

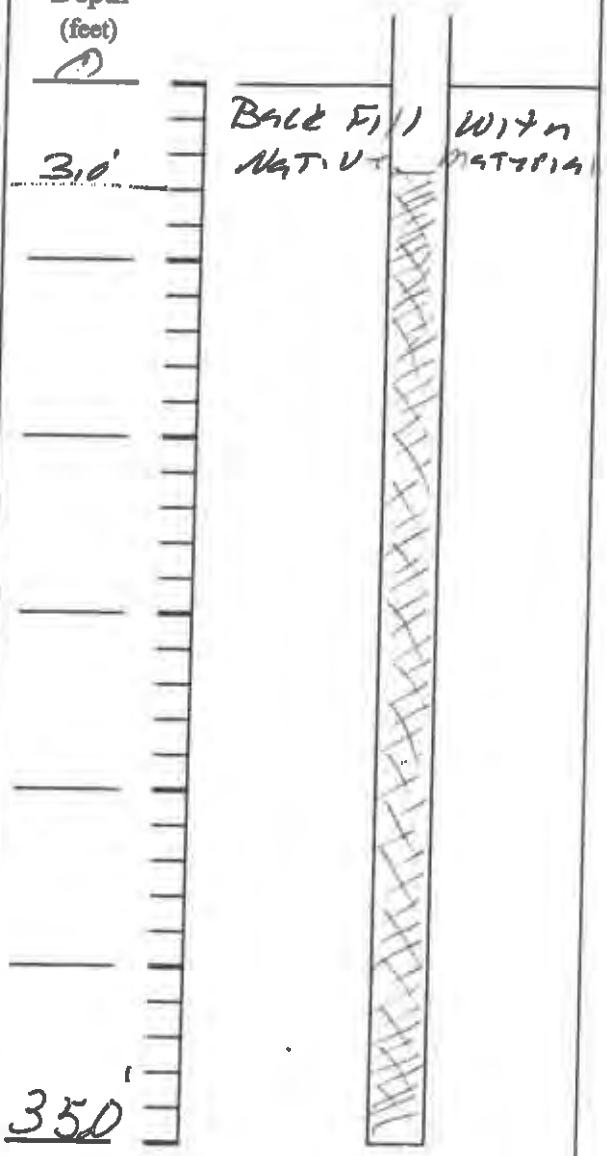
OVERDRILLING
- Interval Drilled
- Drilling Method(s)
- Borehole Dia. (in.)
- Temporary Casing Installed? (y/n)
- Depth temporary casing installed
- Casing type/dia. (in.)
- Method of installing

CASING PULLING
- Method employed
- Casing retrieved (feet)
- Casing type/dia. (in)

CASING PERFORATING
- Equipment used
- Number of perforations/foot
- Size of perforations
- Interval perforated

GROUTING
- Interval grouted (FBLS): 0-35.0'
- # of batches prepared: 1
- For each batch record:
  - Quantity of water used (gal.): 7
  - Quantity of cement used (lbs.): 94
  - Cement type: Portland
  - Quantity of bentonite used (lbs.): 5
  - Quantity of calcium chloride used (lbs.): 0
  - Volume of grout prepared (gal.): 9.0
  - Volume of grout used (gal.): 9.0

WELL SCHEMATIC*



COMMENTS: grout, Bottom to Top using 1" Tremie pipe, Remove Flushmount & Top 2' of PVC pipe, Back Fill With native material. (Remove to 3.0')

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

ARCADIS, INC
Drilling Contractor

Douglas Richmond CWD
Department Representative

#3032457

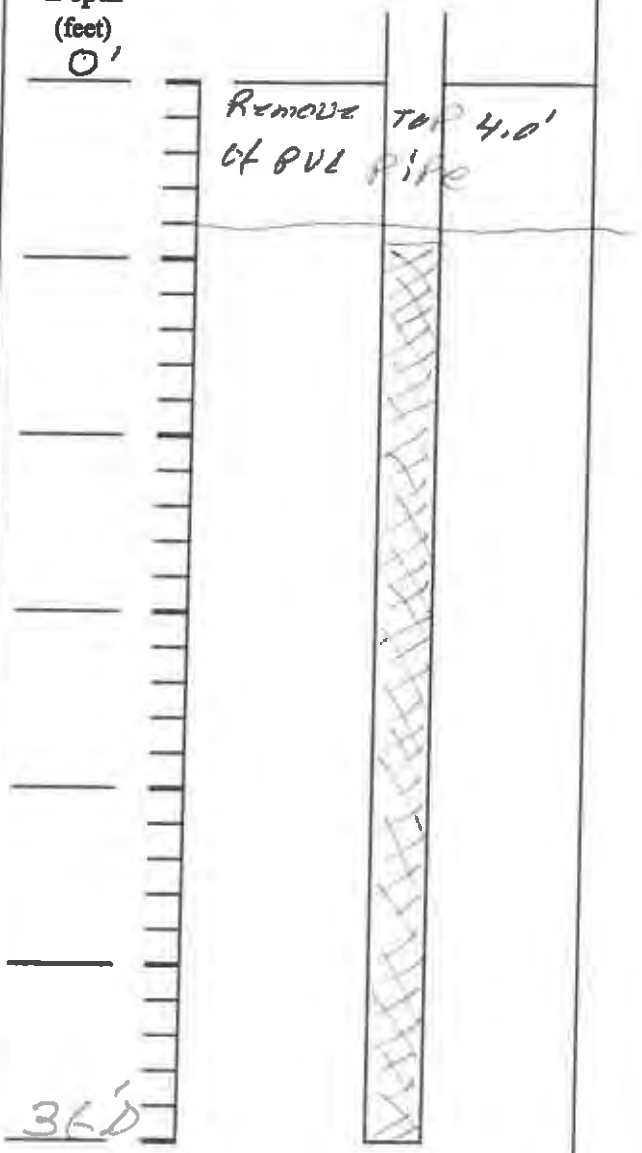
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: Farmers mkt site	Well I.D.: MW-22
Site Location: Cortland Homes NW	Driller: D. Richmond
Drilling Co.: ARCADIS inc	Inspector: Je Miller
	Date: 9-25-17

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	0-36'
# of batches prepared	2
For each batch record:	
Quantity of water used (gal.)	7
Quantity of cement used (lbs.)	94
Cement type	Portland
Quantity of bentonite used (lbs.)	5
Quantity of calcium chloride used (lbs.)	0
Volume of grout prepared (gal.)	16
Volume of grout used (gal.)	15

WELL SCHEMATIC*



COMMENTS: Grout Bottom to Top using 1" Tremie pipe. Remove Flushmount cover and Top 4.0' of PVC pipe. Backfill with native material.

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

ARCADIS inc.
Drilling Contractor

Douglas Richmond CWD
Department Representative

#303 2457

FIGURE 3

WELL DECOMMISSIONING RECORD

Site Name: Former M&T SITE	Well I.D.: MW-32
Site Location: Homer Cortland NY	Driller: D. Richmond
Drilling Co.: ARCADIS	Inspector: J Miller
	Date: 9-25-17

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING
- Interval Drilled
- Drilling Method(s)
- Borehole Dia. (in.)
- Temporary Casing Installed? (y/n)
- Depth temporary casing installed
- Casing type/dia. (in.)
- Method of installing

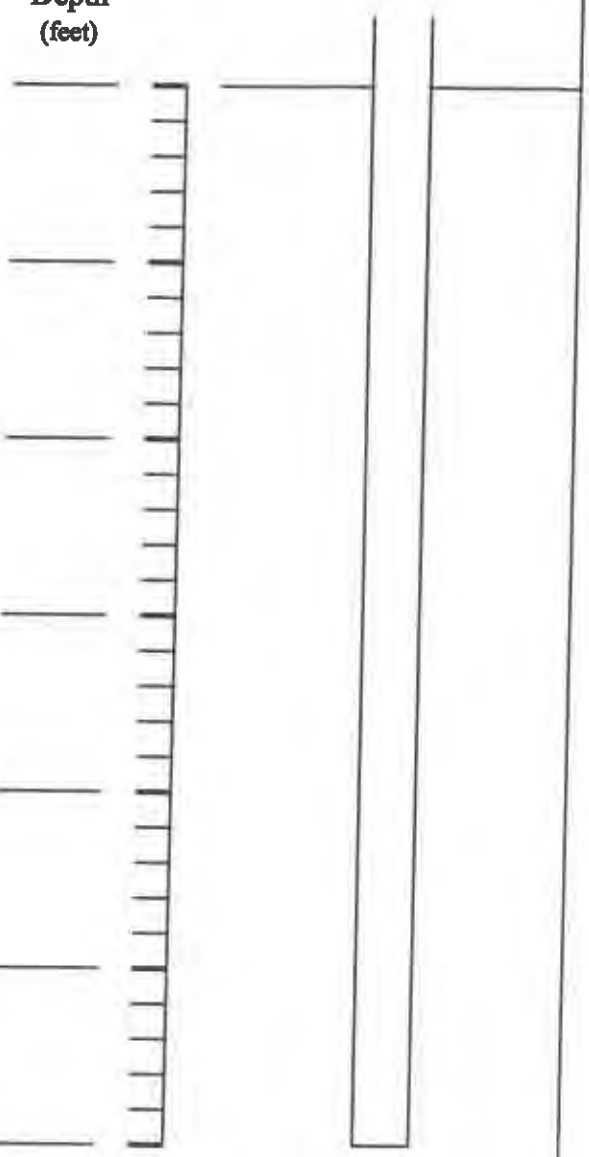
CASING PULLING
- Method employed
- Casing retrieved (feet)
- Casing type/dia. (in)

CASING PERFORATING
- Equipment used
- Number of perforations/foot
- Size of perforations
- Interval perforated

GROUTING
- Interval grouted (FBLS)
- # of batches prepared

For each batch record:
- Quantity of water used (gal.)
- Quantity of cement used (lbs.)
- Cement type
- Quantity of bentonite used (lbs.)
- Quantity of calcium chloride used (lbs.)
- Volume of grout prepared (gal.)
- Volume of grout used (gal.)

WELL SCHEMATIC*



COMMENTS: ARCADIS used GPS. To locate where well should be, but it is gone. Assumed damaged by river & Ice.?

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

ARCADIS inc.
Drilling Contractor

Douglas Richmond CWD.
Department Representative

#3032457