



September 2, 2015

Mr. Carl Hoffman, P.E.
Environmental Engineer II
Division of Environmental Remediation
NYSDEC
625 Broadway, 12th Floor
Albany, New York 12233-7013

Subject: 2015 Annual Post-Closure Monitoring Report
Town of Ramapo Landfill
STERLING File #20010 (Task 200)

Dear Mr. Hoffman,

This Annual Post-Closure Monitoring (PCM) Report for the Town of Ramapo Landfill (Landfill) provides a summary of the 2015 Annual PCM event, conducted on July 14-16, 2015. The Report provides an overview of work performed, Landfill conditions, air quality, groundwater monitoring, and leachate/groundwater monitoring results. The New York State Department of Environmental Conservation (NYSDEC) approved a variance request on October 27, 2003, reducing the monitoring frequency to once every year with the monitoring event being rotated to the next quarter for each year.

OVERVIEW

The following information was collected in support of the Annual PCM of the Landfill:

- The Annual PCM inspection of the Landfill was performed by Sterling Environmental Engineering, P.C. (STERLING) on July 14 - 16, 2015. A Site Location Map and Property Features Map are provided as Figures 1 and 2. The 2015 Landfill inspection documents the physical integrity and stability of the Landfill cover system and assesses the condition and capability of existing surface water drainage and erosion control features at the Landfill. An inspection checklist, institutional and engineering control form, and photograph log was prepared to document these observations (Appendix A).
- Groundwater samples were collected from monitoring wells 1-OS, 2-OS, 3-OS/I, 4-OS, 5-OS, 7-OS, 8-OS, 8-I, 8-R, 9-OS, 9-I, 9-R, 10-OS, 10-I, 10-R, private water supply wells PW-1 and PW-2, and public water supply wells SVWC-93, SVWC-94, SVWC-95, and SVWC-96. Well locations are shown on Figure 3. The groundwater samples were analyzed for parameters listed in Table B-1. A summary of field parameters and analytical results for each well is summarized in Tables B-2, B-3, and B-4; analytical reports are provided in Appendix B. In addition, static water level readings were obtained at all of the sampled monitoring wells as well as monitoring wells 1-R, 2-R, 3-R, 4-R, 5-R, 6-I, 6-R, 7-I, and 7-R.
- Historical data for selected parameters are provided in Tables C-1 through C-14 (Appendix C).

"Serving our clients and the environment since 1993"

- Reported discharge volumes pumped from the groundwater/leachate extraction wells, located on the downgradient side of the Landfill, to the Rockland County Sewer District (RCSD) #1 Publicly Owned Treatment Works (POTW) were provided to STERLING by the Town of Ramapo. The information is provided in Table D-1 of Appendix D.
- Analytical results from 2009 through the 2015 sampling event for leachate/groundwater pumped to the POTW are provided in Appendix E and summarized in Table E-1 of Appendix E.
- The 2015 air quality monitoring event was conducted on July 14 - 16, 2015. Air monitoring locations are shown on Figure 3 and results are summarized on Table B-5 of Appendix B.

SITE INSPECTION

The site inspection was conducted between August 14 and 16, 2015 to assess the condition of the following Landfill components: vegetative growth, surface water drainage structures, site fencing and gate/access road, Landfill cover, gas vents, gabion retaining walls, fences and gates, slope stability, and evidence of vector populations (i.e., burrow holes). A completed Inspection Checklist, Institutional and Engineering Control Form, and select photographs from the site inspection are provided in Appendix A; photograph locations are shown on Figure 4. The Landfill is secure, stable, and the Landfill cover is intact with no evidence of stressed vegetation or damage due to erosion, settlement or active vectors.

Vegetative growth is present along specific sections of the Landfill's offsite drainage structures, listed as follows:

- Adjacent to the Baler Building in the drainage channel (see Photographs 6 & 7) and at the easternmost border of Landfill just northwest of the Baler Building (see Photograph 8).
- Several small saplings were observed growing within the Landfill's drainage structures along the southeastern portion of the Landfill (see Photographs 12, 13, & 14).

STERLING recommends that excessive vegetative growth from the above stated areas be periodically removed, as necessary, to allow stormwater runoff to drain properly off and away from the Landfill.

One (1) six-inch diameter vector burrow was observed east of the compact windrows on the northeastern portion of the Landfill (see Photograph 16). The burrow was observed to be vacant and inactive. STERLING recommends the filling of the vector burrow to maintain the integrity of the Landfill cover and to prevent inhabitation.

Bedrock monitoring wells MW 3-R and 5-R do not close properly. STERLING recommends the tops of the protective casings be repaired to ensure security and maintain integrity of data collected from these monitoring points.

GROUNDWATER MONITORING

Groundwater Flow

Depth to water measurements was collected at or near the Landfill perimeter to determine groundwater elevations in the shallow overburden and bedrock aquifer systems. Groundwater flow direction in the overburden aquifer is to the northwest and/or west towards Torne Brook (see Figure 5). Groundwater flow direction in the bedrock aquifer is similar (see Figure 6). Groundwater gradients are similar in both aquifer systems and downward vertical gradients are noted throughout the Landfill perimeter, except at monitoring well clusters 8 and 10, which were observed to be slightly upward. These vertical gradients are consistent with historical trends.

Groundwater Analytical Results

All samples were analyzed by Alpha Analytical located in Westborough, Massachusetts following established USEPA methodologies and protocols. A copy of the analytical reports, prepared in accordance with NYSDEC Analytical Services Protocol (ASP) Category A reporting requirements, are provided as Appendix B.

Static water level and water quality field parameters (temperature, specific conductivity, pH, and oxidation-reduction potential (ORP)) readings were measured in the field and are presented on Table B-2 of Appendix B.

The summary of 2015 PCM groundwater analytical results are provided on Tables B-3 and B-4 of Appendix B. A duplicate sample was collected from intermediate monitoring well 8-I and is labeled "Duplicate".

Analytical results for monitoring well samples are compared with the NYSDEC Division of Water Technical and Operational Guidance Series 1.1.1 (TOGS 1.1.1), Ambient Water Quality Standards and Guidance Values (June 1998). Analytical results for the private and municipal drinking water supply wells (PW-1, PW-2, SVWC-93, SVWC-94, SVWC-95, and SVWC-96) are compared with the 10 NYCRR Part 5 Maximum Contaminant Levels (MCLs) and the USEPA MCLs for Primary Drinking Water Regulations. One or more MCL exceedances were noted at eight (8) shallow overburden monitoring wells (1-OS, 3-OS/I, 4-OS, 5-OS, 7-OS, 8-OS, 9-OS, and 10-OS) and one (1) intermediate overburden monitoring well (10-I). Exceedances of TOGS 1.1.1 for iron and manganese were noted at one (1) public water supply well (SVWC-95). TOGS 1.1.1 exceedances were observed at nine (9) shallow overburden monitoring wells (1-OS, 2-OS, 3-OS/I, 4-OS, 5-OS, 7-OS, 8-OS, 9-OS, and 10-OS), two (2) intermediate overburden monitoring wells (8-I and 10-I), and two (2) of the downgradientmost bedrock monitoring wells (8-R and 9-R). A detailed summary of reported parameter exceedances is provided below.

Reported concentrations for the following parameters exceed the applicable water quality standard:

Parameter Exceeding Water Quality Standard (1:TOGS 1.1.1; 2: USEPA MCL)	Onsite Monitoring Well Location (Analytical Result)
Aluminum (2: 0.05 - 0.2 mg/L)	1-OS (3.22 mg/L), 4-OS (0.304 mg/L), 5-OS (6.58 mg/L), 7-OS (0.723 mg/L), 9-OS (0.75 mg/L), 10-OS (0.608 mg/L), and 10-I (0.24 mg/L)
Chromium (1: 0.05 mg/L; 2: 0.1 mg/L)	1-OS (6.604 mg/L), 2-OS (0.0622 mg/L), 3-OS/I (0.2288 mg/L), 4-OS (0.1329 mg/L), 7-OS (0.2542 mg/L), 8-OS (0.2304 mg/L), and 9-OS (0.0567 mg/L)
Iron (1: 0.3 mg/L*)	1-OS (53.6 mg/L), 2-OS (2.31 mg/L), 3-OS/I (2.75 mg/L), 4-OS (2.5 mg/L), 5-OS (7.8 mg/L), 7-OS (5.57 mg/L), 8-OS (1.28 mg/L), 8-I (11.6 mg/L), 8-R (0.311 mg/L), 9-OS (1.76 mg/L), 9-R (9.27 mg/L), 10-I (0.331 mg/L), and SVWC-95 (0.48 mg/L)
Magnesium (1: 35 mg/L)	8-R (41.5 mg/L)
Manganese (1: 0.3 mg/L*)	1-OS (12.55 mg/L), 2-OS (0.3633 mg/L), 3-OS/I (0.2713 mg/L), 4-OS (0.2759 mg/L), 5-OS (0.0651 mg/L), 7-OS (0.173 mg/L), 8-OS (0.1784 mg/L), 8-I (2.56 mg/L), 8-R (2.162 mg/L), 9-OS (0.047 mg/L), 9-R (4.458 mg/L), and SVWC-95 (1.81 mg/L)
Nickel (1: 0.1 mg/L)	1-OS (0.4057 mg/L), 2-OS (0.1516 mg/L), and 3-OS/I (0.0825 mg/L)
Sodium (1: 20 mg/L)	1-OS (118 mg/L), 3-OS/I (20.5 mg/L), 4-OS (35.6 mg/L), 8-OS (31 mg/L), 8-I (122 mg/L), 8-R (42.8 mg/L), and 9-R (47.2 mg/L).

* The sum of iron and manganese should not exceed 0.5 mg/L.

CONCENTRATION VERSUS TIME TRENDS

Historical data tables of reported concentrations for specific parameters (aluminum, antimony, arsenic, beryllium, cadmium, copper, chromium, iron, lead, magnesium, manganese, nickel, sodium, and thallium) where water quality standards or guidance values are or have been exceeded are provided in Tables C-1 through C-14 and include time versus concentration plots to enable data trend analysis (Appendix C). Historical data for antimony (Table C-5), arsenic (Table C-6), beryllium (Table C-2), cadmium (Table C-3), copper (Table C-4), lead (Table C-9), and thallium (Table C-12) are provided. Reported concentrations for these parameters were less than the applicable drinking water or water quality standard for all groundwater samples collected during the 2015 PCM event.

General trends indicate manganese and sodium are increasing with time while chromium, magnesium, nickel, and sodium are stable for applicable onsite monitoring wells. Concentrations of aluminum and iron are decreasing with time. No site related VOCs were detected at or above the USEPA MCL, TOGS 1.1.1, and/or NYSDOH Part 5 parameters (Table B-3). Analytical results for the drinking water supply well samples for the 2015 PCM sampling event indicate that there is no reported USEPA MCL

exceedances at the public water supply wells although TOGS 1.1.1 and NYSDOH Part 5 exceedances for iron and manganese were reported at public water supply well SVWC-95.

The concentration trends over time for parameters with exceedances reported for this event are presented in plots shown in Tables C-1, C-7, C-8, C-10, and C-14 of Appendix C and are summarized below:

Aluminum (Table C-1)

The following wells exceeded TOGS 1.1.1, NYSDOH Part 5 or USEPA MCL standards: 1-OS, 2-OS, 4-OS, 5-OS, 7-OS, 9-OS, 10-OS, 10-I, and 10-R. No drinking water supply or public water supply wells exceeded an applicable water quality standard.

The following monitoring wells show a slightly increasing trend over time: 10-OS.

The following monitoring wells show a decreasing trend over time: 1-OS, 2-OS, 4-OS, 5-OS, 7-OS, 8-OS, 8-I, 9-OS, 9-I, 10-I, and 10-R.

The following well shows no discernible trend over time: 3-OS/I, 8-R, and 9-R.

Chromium (Table C-7)

The following wells exceeded TOGS 1.1.1, NYSDOH Part 5 or USEPA MCL standards: 1-OS, 2-OS, 3-OS/I, 4-OS, 7-OS, 8-OS, and 9-OS. The following overburden monitoring wells displayed a decreasing trend in chromium concentrations with time: 2-OS, 3-OS/I, 4-OS, and 9-OS. The following monitoring wells show a slightly increasing trend over time: 8-OS. The review of historical chromium concentrations at wells 1-OS and 7-OS revealed no discernible trend over time.

Iron (Table C-8)

The following wells exceeded TOGS 1.1.1, NYSDOH Part 5 or USEPA MCL standards: 1-OS, 2-OS, 3-OS/I, 4-OS, 5-OS, 7-OS, 8-OS, 8-I, 8-R, 9-OS, 9-R, 10-I, and public water supply well SVWC-95 (NYSDOH Part 5 parameters only).

The following wells show a slightly increasing trend over time: SVWC-95.

The following wells show a decreasing trend over time: 2-OS, 3-OS/I, 4-OS, 5-OS, 8-I, and 10-I.

The following well shows no discernible trend over time: 1-OS, 5-OS, 7-OS, 8-OS, 8-R, 9-OS, 9-R.

The following well shows a relative stable trend over time: 8-I.

This is the first NYSDOH Part 5 exceedance of iron at drinking water supply well SVWC-95.

Magnesium (Table C-10)

The following well exceeded TOGS 1.1.1, NYSDOH Part 5 or USEPA MCL standards: 8-R. The magnesium concentration in well 8-R is slightly increasing over time. The concentration of magnesium at monitoring well 5-OS is variable from 2000 to 2015, and since 2010, the concentrations have indicated a decreasing trend.

Manganese (Table C-11)

The following wells exceeded TOGS 1.1.1, NYSDOH Part 5 or USEPA MCL standards: 1-OS, 2-OS, 8-I, 8-R, 9-R, and public water supply well SVWC-95 (NYSDOH Part 5 parameters only).

The following wells show a slight increasing trend over time: 1-OS, 8-I, 9-R, and SVWC-95.

The following well shows a decreasing trend over time: 2-OS.

The following wells show a stable trend over time: 8-R.

This is the first exceedance of manganese at drinking water supply well SVWC-95 (NYSDOH Part 5 parameters only).

Nickel (Table C-12)

The following wells exceeded TOGS 1.1.1, NYSDOH Part 5 or USEPA MCL standards: 1-OS and 2-OS. Wells 1-OS and 2-OS show a stable trend over time.

Sodium (Table C-13)

The following wells exceeded TOGS 1.1.1, NYSDOH Part 5 or USEPA MCL standards: 1-OS, 3-OS/I, 4-OS, 8-OS, 8-I, 8-R, and 9-R.

The following wells show an increasing trend over time: 1-OS, 4-OS, 8-OS, 8-I, and 9-R.

The following well shows a relatively stable trend over time: 3-OS/I.

The following well shows a decreasing trend over time: 8-R.

The NYSDEC drinking water quality standard for sodium is 20 mg/L. Sodium is included on the USEPA's Drinking Water Contaminant Candidate List (CCL). The CCL is a list of contaminants which, at the time of publication, are not subject to any proposed or promulgated National Primary Drinking Water Regulation (NPDWR), are known or anticipated to occur in public water systems, and may require regulations under the Safe Drinking Water Act (SDWA). The sodium results at SVWC-93, SVWC-94, SVWC-95, and SVWC-96 are increasing over time.

EXTRACTION WELL DISCHARGE VOLUMES AND OPERATION PERIODS

Leachate/groundwater volumes pumped from the Landfill to the RCSD #1 POTW from 1995 up to August 6, 2015 are provided in Appendix D. The volume of leachate/groundwater pumped from Landfill extraction wells to the RCSD #1 POTW has averaged slightly greater than 12.7 million gallons per year between 2010 and 2014.

EXTRACTED LEACHATE/GROUNDWATER QUALITY DATA

Through June 2011, leachate and groundwater from the Landfill extraction well network were pumped to the RCSD #1 POTW located at 4 Route 340, Orangeburg, New York. Starting in June 2011, leachate/groundwater collected by the Landfill extraction wells has been pumped to the RCSD #1 Western Ramapo Treatment Plant in Hillburn, New York. Analytical testing of the Landfill leachate/groundwater occurs on a biannual basis from a manhole located upstream of the discharge to the leachate wet well.

Analytical results from August 2009 to April 16, 2015 are summarized in Table E-1 of Appendix E. Reported parameter concentrations are compared with maximum concentration limits set by RCSD #1. There are no reported exceedances for any of the listed sampling events.

Leachate/groundwater collected from the Landfill and discharged to the RCSD #1 meets the industrial permit requirements for samples collected from August 2009 to April 16, 2015. Sampling of the discharge from the Landfill continues to be collected from the same location described above on a biannual basis.

AIR MONITORING

Air quality monitoring consisted of measuring concentrations of explosive gas (measured in % of lower explosive limit (LEL)), Hydrogen Sulfide (H_2S), and Volatile Organic Compounds (VOCs) in the headspace of each monitoring well, leachate manhole A-5, lift stations A-10 and W-20, and ambient breathing space at the Baler Building and along the Landfill perimeter at designated locations shown on Figure 3. Air quality monitoring results are summarized in Table B-5. Explosive gas and H_2S measurements were obtained with a QRAE multi-gas monitor while VOC measurements were obtained with a miniRAE 3000 photoionization detector (PID).

VOCs readings were observed in the Baler Building, located along the northeast location of the Landfill. However, these results were de minimus and do not present potential migration of landfill gases. All other VOC, H_2S , and explosive gas readings were 0.0 ppm or 0%.

The July 2015 air quality monitoring survey for explosive gas, H_2S , and VOCs indicated the Landfill is in full compliance with the requirements set forth in 6 NYCRR 360-2.15(k)(4).

CONCLUSIONS

The following conclusions were made based on analytical results and observations during the 2015 PCM event:

- The Landfill is secure, stable, and the Landfill cover is intact with no evidence of stressed vegetation or damage due to erosion, settlement or active vectors.
- Vegetative growth is present along specific sections of the Landfill's offsite drainage structures.
- Groundwater flow direction in the overburden and bedrock aquifer systems is to the northwest and/or west towards Torne Brook and the Ramapo River. Groundwater gradients are similar in both aquifer systems and downward vertical gradients are noted throughout the Landfill perimeter, except at monitoring well clusters 8 and 10, which were observed to be slightly upward.
- No site related VOCs were detected at or above the USEPA MCL, TOGS 1.1.1, and/or NYSDOH Part 5 parameters.
- Applicable drinking water or water quality standards were exceeded for aluminum, chromium, iron, magnesium, manganese, nickel, and sodium at one or more monitoring wells.
- Historical trends are relatively consistent with the 2015 PCM analytical results; however, this was the first NYSDOH Part 5 exceedance of iron and manganese at drinking water supply well SVWC-95.
- The volume of leachate/groundwater pumped from Landfill extraction wells to the RCSD #1 POTW has averaged slightly greater than 12.7 million gallons per year between 2010 and 2014.
- There were no reported exceedances for the leachate/groundwater extracted and pumped to the RCSD #1.
- There were no explosive gas or VOC detections at any of the monitoring wells, Landfill perimeter locations, and manholes. There were minor detections of VOCs within the Baler Building; however, these do not present a danger to human health or the environment. These detections do not indicate migration of Landfill gases.
- The July 2015 air quality monitoring survey for explosive gas, H₂S, and VOCs indicated the Landfill is in full compliance with the requirements set forth in 6 NYCRR 360-2.15(k)(4).

Recommendations

- STERLING recommends that excessive vegetative growth from the above stated areas be periodically removed, as necessary, to allow stormwater runoff to drain properly off and away from the Landfill.
- STERLING recommends the filling of an inactive and vacant vector burrow to maintain the integrity of the Landfill cover and to prevent inhabitation.
- STERLING recommends the tops of the protective casings be repaired to ensure security and maintain integrity of data collected from these monitoring points.
- As a result of historical trends, it is recommended to continue monitoring in accordance with PCM and Site Management Plan requirements.

The next annual sampling event is scheduled for the fourth quarter of 2016. Please contact me should you have any questions or comments.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.



Mark A. Williams, P.G. (Pa)

Associate Geologist

mark.williams@sterlingenvironmental.com

MAW/bc

Email Only (NYSDEC)

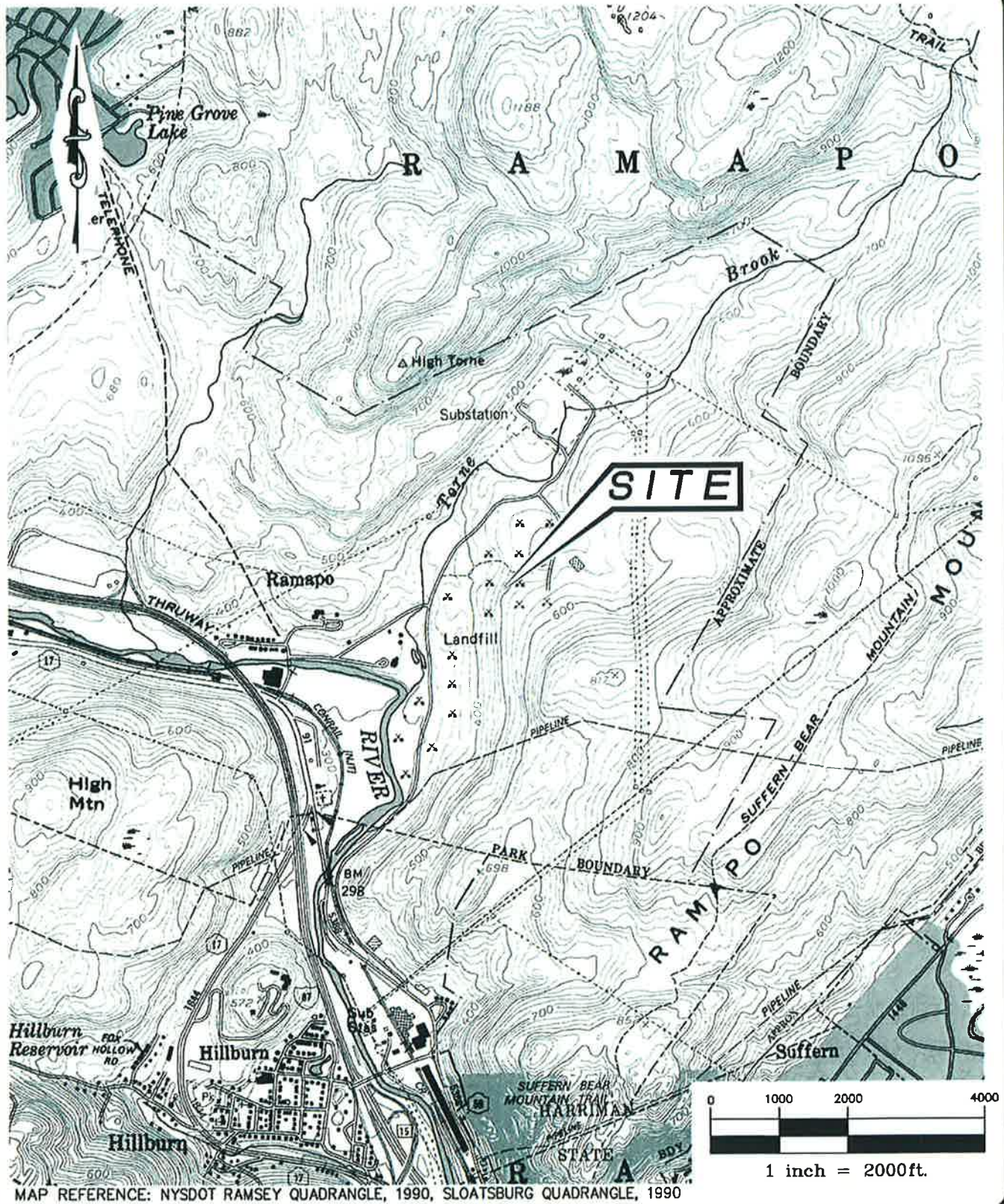
Attachments (Figures 1-7, Appendices A-E and Excel Tables)

cc: George Jacob, USEPA
Anthony Perretta, NYSDOH (Email Only) *
John Mace, United Water New York *
Gerry Remsen, United Water New York*
John France, Torne Brook Farm **
Rosie Digianni, 20 Torne Brook Road **
Arlene Lapidos, Ramapo Land Co., Inc. *
Edward Dzurinko, Town of Ramapo
Ed Moran, Town of Ramapo

* letter, figures, and Tables B-1 through B-5 only

** letter and Table B-4 only

FIGURES 1 - 7



STERLING

Sterling Environmental Engineering, P.C.

24 Wade Road ♦ Latham, New York 12110

SITE LOCATION
TOWN OF RAMAPO LANDFILL

TOWN OF RAMAPO

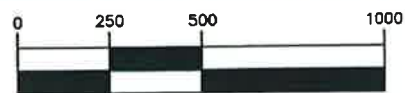
ROCKLAND CO., N.Y.

PROJ. No.: 20010 | DATE: 8/1/14 | SCALE: 1" = 2000' | DWG. NO. 20010035 | FIGURE 1



LEGEND:

--- APPROXIMATE PROPERTY BOUNDARY



1 inch = 500 ft.

MAP REFERENCE: NEW YORK STATEWIDE DIGITAL ORTHOIMAGERY PROGRAM, PHOTOGRAPHY CIRCA 2013.

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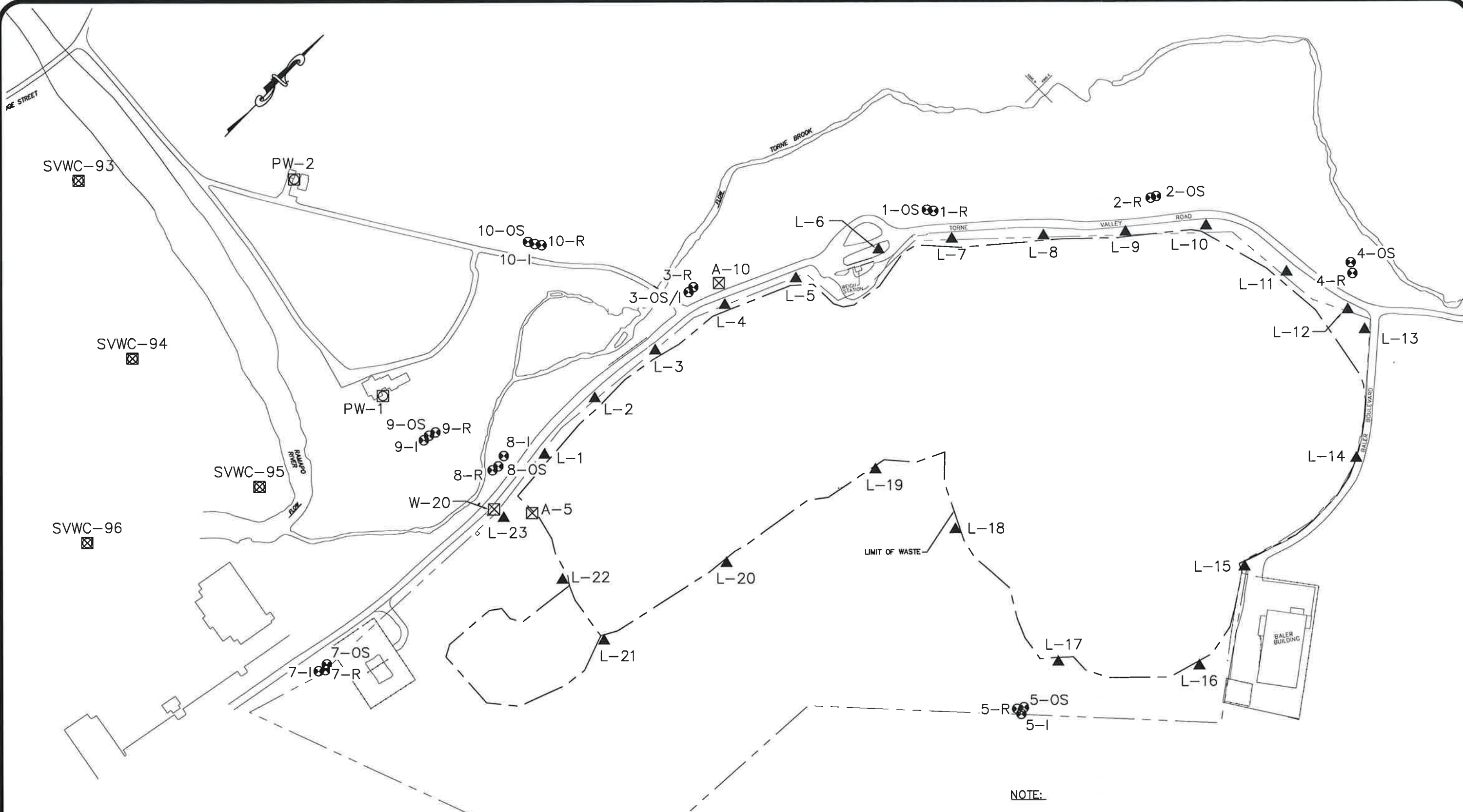
PROPERTY FEATURES
TOWN OF RAMAPO LANDFILL

TOWN OF RAMAPO

ROCKLAND CO., N.Y.

PROJ. No.: 20010 | DATE: 8/1/14 | SCALE: 1" = 500' | DWG. NO. 20010036 | FIGURE 2

S:\Drawings\20010 - Town of Ramapo\20010037 GroundwaterAndAirQualityLoc.dwg(1/2015 9:21 AM)



NOTE:

1. BASE MAP FROM DWG. NO. 32, MODIFICATIONS TO LEACHATE COLLECTION SYSTEM PLAN, BY URS CONSULTANTS, INC., BUFFALO, NY, JUNE 1994.

LEGEND:

- L-1 ▲ LANDFILL PERIMETER AIR MONITORING POINT
- A-10 ☒ ON-SITE RECEPTOR STRUCTURE
- 5-OS ● MONITORING WELL
- PW-1 □ EXISTING PRIVATE WATER SUPPLY WELL
- SVWC-93 ☒ EXISTING SUPPLY WELL (UNITED WATER)

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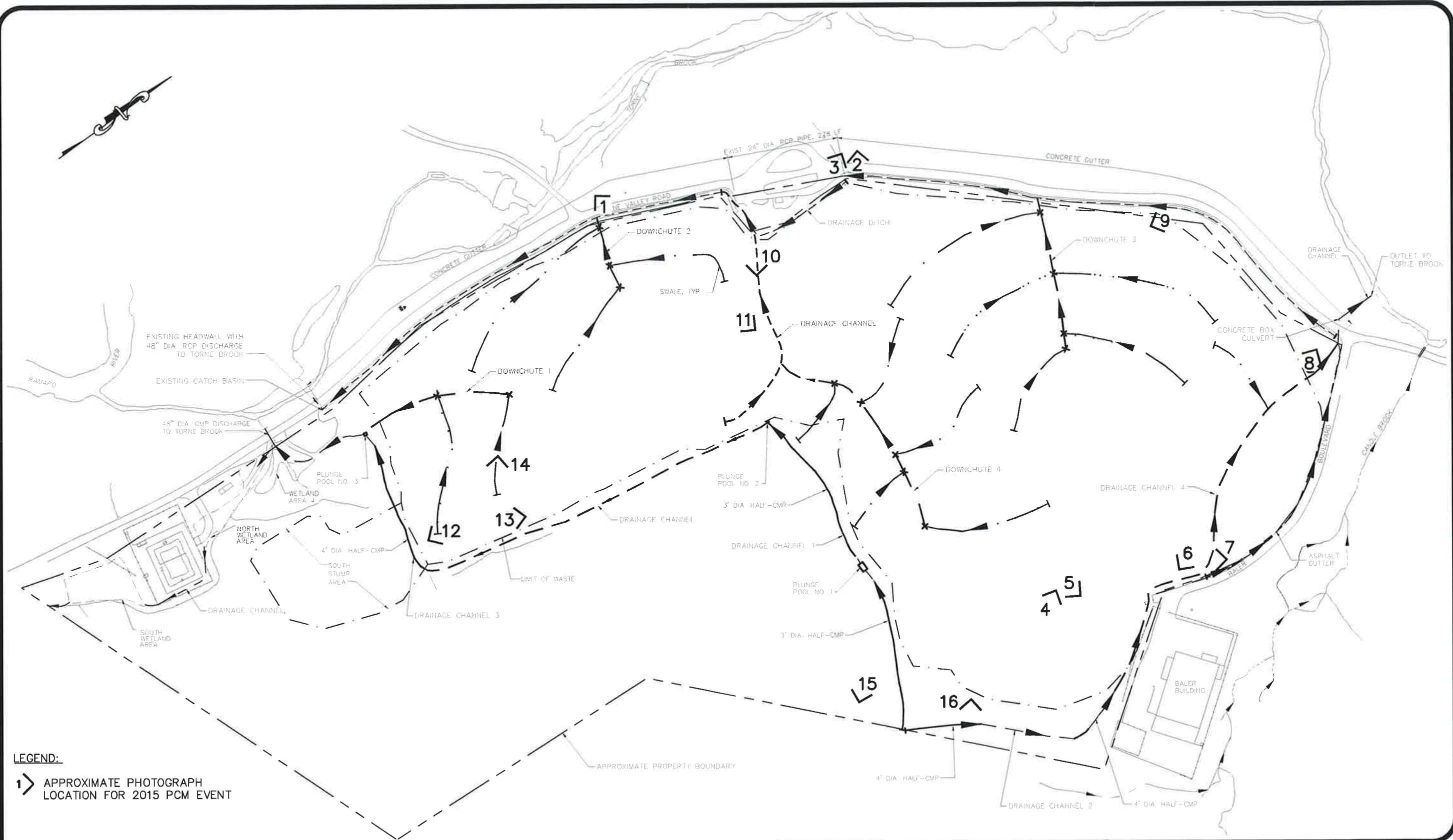
AIR QUALITY AND
GROUNDWATER MONITORING LOCATIONS
TOWN OF RAMAPO LANDFILL

TOWN OF RAMAPO

ROCKLAND CO., N.Y.

PROJ. No.: 20010 | DATE: 8/25/15 | SCALE: N.T.S. | DWG. NO. 20010037 | FIGURE 3

/Users/aeetec/Documents/STERLING ENVIRONMENTAL/2001/200108RamapoLandfill/20010041_SurfaceWaterAndControlFeatures.dwg 8/21/2015 9:11 AM



LEGEND:

- 1) APPROXIMATE PHOTOGRAPH LOCATION FOR 2015 PCM EVENT

NOTES:

1. BASE MAP FROM DWG. NO. 31, SURFACE DRAINAGE PLAN, BY URS CONSULTANTS, INC., BUFFALO, NY, JUNE 1994.
2. INFORMATION SHOWN FOR EXISTING PIPE SIZES ARE AS PROVIDED B A.R. SPARACO, JR., P.L.S., POMONA, NEW YORK

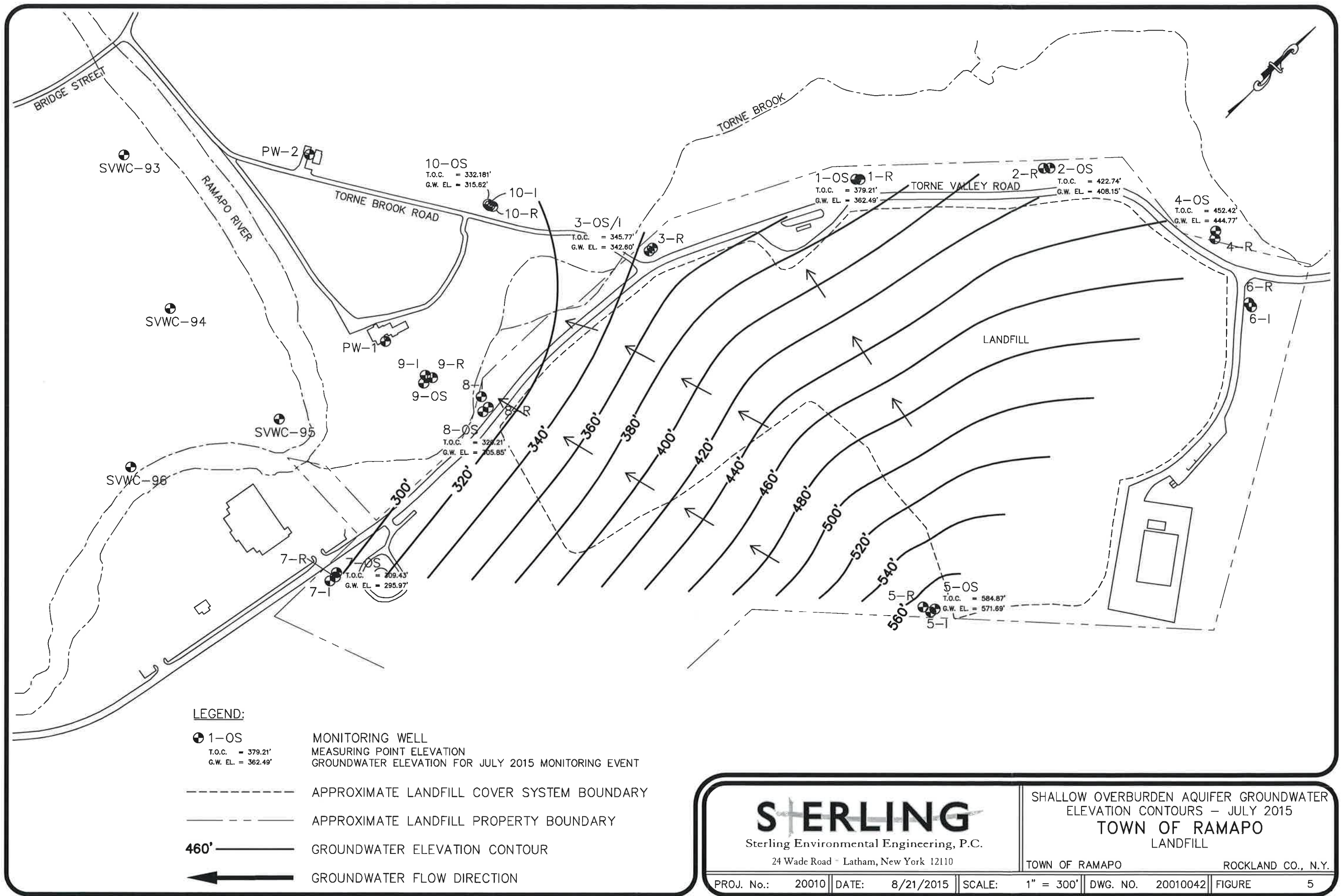


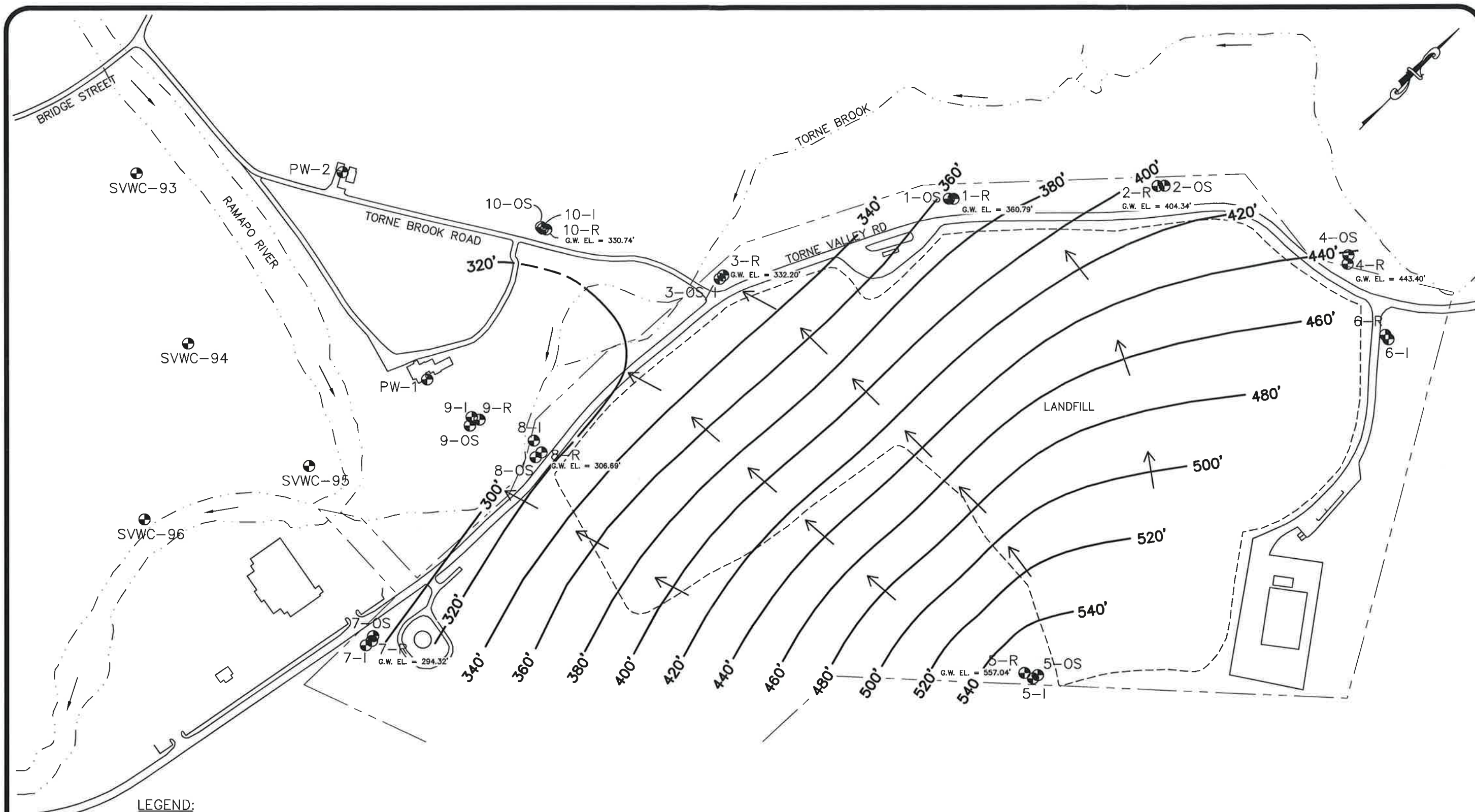
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SURFACE WATER DRAINAGE AND EROSION
CONTROL FEATURES, WITH PHOTOGRAPH LOCATIONS
TOWN OF RAMAPO LANDFILL

TOWN OF RAMAPO ROCKLAND CO., N.Y.

PROJ. No.: 20010 DATE: 8/21/2015 SCALE: 1" = 250' DWG. NO. 20010041 FIGURE 4





LEGEND:

- 
1-R
 G.W. EL. = 360.79'
 - 
 APPROXIMATE LANDFILL COVER SYSTEM BOUNDARY
 - 
 APPROXIMATE LANDFILL PROPERTY BOUNDARY
 - 
360'
 - 
- MONITORING WELL
GROUNDWATER ELEVATION FOR JULY 2015 MONITORING EVENT
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION

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BEDROCK AQUIFER GROUNDWATER ELEVATION
CONTOURS - JULY 2015

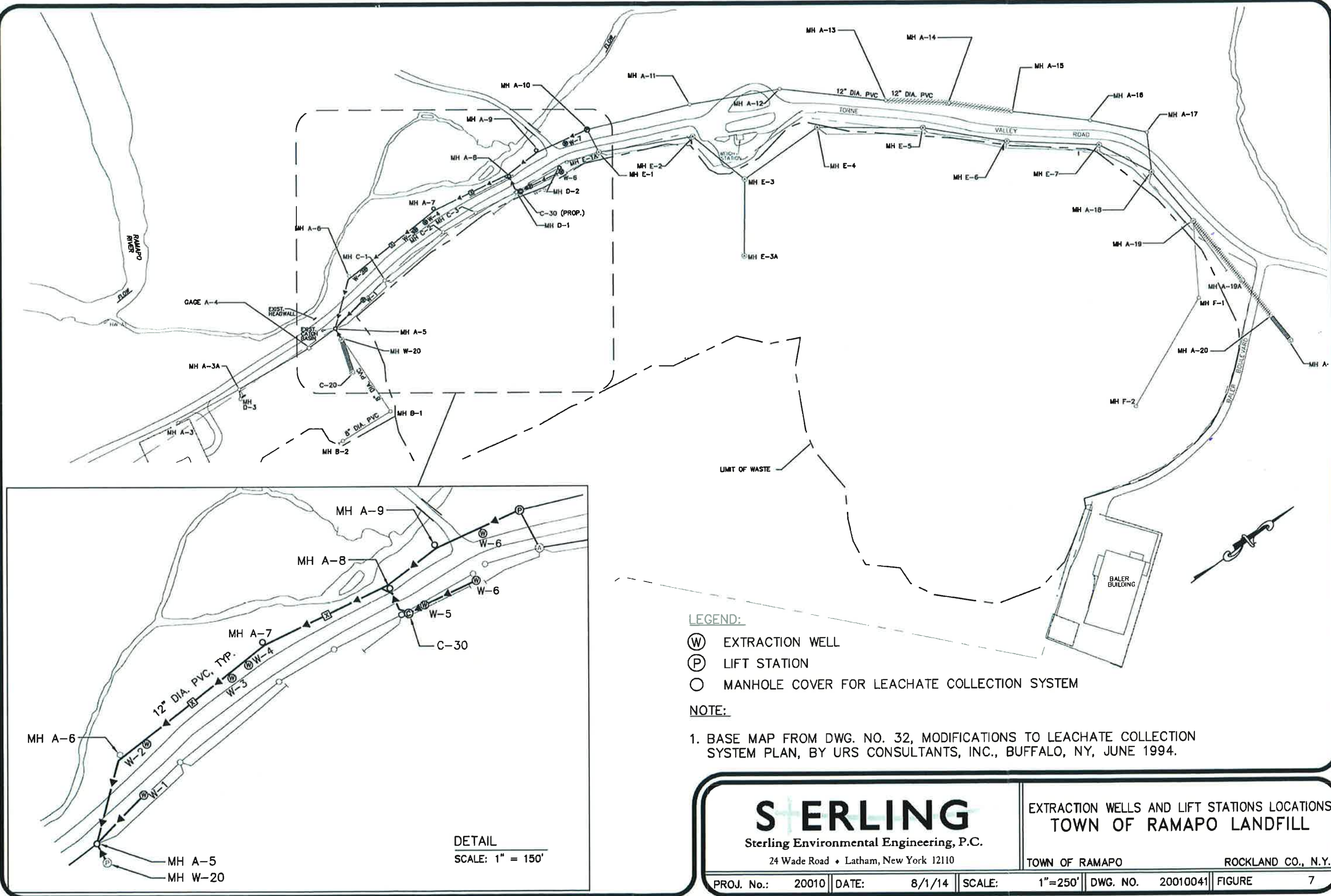
TOWN OF RAMAPO LANDFILL

TOWN OF RAMAPO

ROCKLAND CO., N.Y.

PROJ. No.: 20010 | DATE: 8/21/2015 | SCALE: 1" = 300' | DWG. NO. 20010043 | FIGURE 6

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APPENDIX A

INSPECTION CHECKLIST, PHOTOGRAPH LOG & INSTITUTIONAL AND ENGINEERING CONTROLS EVALUATION FORM

**TOWN OF RAMAPO LANDFILL
POST-CLOSURE ANNUAL SITE INSPECTION CHECKLIST**

Date: 7/16/15

Inspected By: Cody Sargood & Amanda Castignetti – Sterling Environmental Engineering, P.C.

Landfill Property Item	Condition: (Check applicable items)			Remarks
	Acceptable	Not Acceptable	Not Present	
1. Vegetative Cover	X			Good condition – No problems noted.
2. Surface Water Drainage Structures (Swales, Downchutes, Channels, Plunge Pools, Outfalls to Torne Brook).		X		Overgrown vegetation is present in many of the drainage channels along the perimeter of the Landfill (see Photographs 6, 7, 8, 12, and 13). Landfill Downchutes are in acceptable condition.
a. Sediment Build-Up in Drainage Structures	X			Good condition – No problems noted.
b. Pooling or Ponding			X	Three (3) plunge pools (Plunge Pool No.'s 1, 2 and 3) are part of the drainage system, but are not on the Landfill cover (see Figure 4).
c. Slope Integrity	X			Good condition – No problems noted.
d. Overall Adequacy	X			
e. Concrete Lining	X			
f. Gabion Lining	X			
g. Corrugated Metal Pipe (CMP) Lining	X			Good condition – No problems noted.
3. Access Road	X			
4. Landfill Cover System	X			Good condition – No problems noted.
a. Erosion Damage			X	
b. Leachate Seeps			X	
c. Settlement			X	
d. Stone Aprons	X			

Landfill Property Item	Condition: (Check applicable items)			Remarks
	Acceptable	Not Acceptable	Not Present	
5. Gabion Retaining Walls	X			Good condition – No problems noted.
a. Structural	X			
b. Drainage Media Behind Wall	X			
6. Fence and Gates	X			Good condition – No problems noted.
7. Slope Stability	X			Good condition – No problems noted.
a. Landfill	X			
b. Mountain Side	X			
8. Gas Vents	X			Good condition – No problems noted.
a. Are Openings Unobstructed?	X			
b. Pipe Condition	X			
9. Burrow Holes	X			One inactive six (6) inch diameter burrow hole was observed on the northeastern portion of the Landfill, immediately east of the compost windrows (see Photograph 16).

Other	Yes	No
Obtain Groundwater Extraction Well Operation Period Records and Maintenance Records for Current Year	X	

Miscellaneous Comments:

Monitoring wells MW-3R and MW-5R have steel protective caps, but do not close properly. MW-3R is locked, but there is no J-Plug over the well's casing to completely shield it from the elements (see photograph 1). MW-5R does have a J-Plug, however, the monitoring well's steel protective cap cannot be closed and locked (see photograph 15).



Photograph 1: Monitoring well 3-R locks, however, does not close properly and is open to the elements (east to west).



Photograph 2: Location of the monitoring well 1 cluster is overgrown with vegetation and fallen branches (southeast to northwest).



Photograph 3: Monitoring well 1-OS is barely visible due to the presence of overgrown vegetation and down trees (south to north).



Photograph 4: Landfill cover has suitable vegetation and no evidence of erosion was observed (southeast to northwest).



Photograph 5: View of Baler Building from Landfill (west to east).



Photograph 6: Overgrown vegetation present within perimeter drainage structure along the northeastern edge of the Landfill (north to south).



Photograph 7: More evidence of overgrown vegetation within the perimeter drainage structure along the northeastern edge of the Landfill (southwest to northeast).



Photograph 8: Overgrown vegetation present within the drainage swale on the northernmost edge of the Landfill (south to north).



Photograph 9: Landfill is covered with suitable vegetation and has been mowed recently (northeast to southwest).



Photograph 10: Center drainage channel is in good condition located on the central portion of the Landfill (northwest to southeast).



Photograph 11: View of central drainage structures with no signs of erosion (west to east).



Photograph 12: A juvenile tree present in the perimeter Drainage Channel 3 near the southeastern corner of the Landfill (north to south).



Photograph 13: Occasional saplings and slightly overgrown vegetation present in the drainage channel on the southeastern portion of the Landfill (southwest to northeast).



Photograph 14: Sapling growing adjacent to a side drainage channel to Downchute 1 on the southeastern portion of the Landfill (southeast to northwest).



Photograph 15: Monitoring well 5-R cannot be properly closed and locked due to the PVC casing being longer than the steel protective casing (northwest to southeast).



Photograph 16: Six (6) inch diameter inactive vector burrow located east of the compost windrows on the northeastern portion of the Landfill (southeast to northwest).

INSTITUTIONAL AND ENGINEERING CONTROL EVALUATION FORM

I. Site Background Information

A. Site Name and Location:

Site name as it appears on the Environmental Easement: Ramapo Landfill Site

Name of the current property owner(s): Town of Ramapo

Site Street Address: 198 Torne Valley Road (or 200-300 Torne Valley Road)

Municipality (-ies): Town of Ramapo County (-ies): Rockland

Blocks: 3

Lots: 1

Source information obtained from: Town of Ramapo 2015 Assessment Roll

B. Person responsible for preparing Institutional and Engineering Control Evaluation Form:

Person's Name: Mark P. Millspaugh, P.E.

Person's Title: President

Company Name: Sterling Environmental Engineering, P.C.

Relationship to the Site (check as appropriate): Owner _____ Operator _____

Lessee _____ Person Who Conducted the Cleanup _____

Other (describe) Environmental Consultant to Owner

Street Address: 24 Wade Road

City: Latham State: New York

Telephone Number: (518) 456 4900

Fax Number: (518) 456 - 3532

E-mail Address: mark.millspaugh@sterlingenvironmental.com

C. Case Specific Information (Complete all that apply)

- Site Name: Ramapo Landfill Site
- Site Registry Number: 344004
- Date of final Remediation Report and/or Certificate of Completion: September 30, 1997
- Name and program of assigned Project Manager at issuance of Environmental Easement:
Robert W. Shick, Director, Division of Environmental Remediation

D. Existing Site Conditions

- Describe the physical characteristics of the site (features, topography, drainage, vegetation, access, etc.). If necessary, attach additional sheets.

See #1 Attached.

- Describe the current site operations/use. If necessary, attach additional sheets.

See #2 Attached.

- Describe visual integrity/condition engineering control. If necessary, attach additional sheets.

See #3 Attached.

II. Protectiveness Evaluation

A. Environmental Easement and Engineering Control Information (Complete below)

- Provide the following information for the recorded Environmental Easement:

Book Number: _____

Page Number: _____

Date the date the Environmental Easement was filed in the office of the county recording officer: June 28, 2012 - Town of Ramapo Supervisor
(accepted by the State of NY July 12, 2012)

- Have any amendments and/or additional filings been recorded that may modify or supersede the Environmental Easement?

Yes _____ No x

If "Yes", provide an explanation. If necessary, attach additional sheets.

B. Evaluation of Institutional and Engineering Controls

1. Zoning or Land Use Changes (Complete below)

- a. Land use at the time the Environmental Easement was filed (check all that apply):

Non-Residential x Residential _____ Agricultural _____ Other _____

- b. Current land use (check all that apply):

Non-Residential x Residential _____ Agricultural _____ Other _____

- c. Has there been an actual or pending zoning or land-use change?

Yes _____ No x

2. Inspections (Complete below)

Have periodic inspections of the site identified any excavation or other disturbance activities that have taken place within the restricted areas?

Yes _____ No x

Date(s) of Disturbance: _____

Duration of Disturbance: Years _____ Months _____ Days _____

Date the NYSDEC was notified: _____

Date Work Plan Approved: _____

Description of the disturbance and methods to address the disturbance. If necessary, attach additional sheets.

Name of Contact Person Relative to the Disturbance:

Title: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Telephone Number: _____

Email Address: _____

3. Changes to Laws and Regulations (Complete below)

- a. Are there any subsequently promulgated or modified environmental laws or regulations, which apply to the site?

Yes ____ No x

- b. If "Yes", has the evaluation also determined that the Environmental Easement and engineering control, as applicable, meets the requirements of the new laws and regulations?

Yes ____ No ____

- c. The Environmental Easement and engineering control, as applicable that did not meet the requirements of the new laws and regulations has been addressed in the following manner to bring them into compliance. If necessary, attach additional sheets.

1: The Ramapo Landfill Site encompasses 86.07 acres and is located east of Torne Valley Road and just south of Baler Boulevard. The Baler Building, which is actively accepting waste, is located on Baler Boulevard and is adjacent to the Landfill to the northeast. The highest elevation of the site is located on the most eastern edge of the site. The Landfill slopes downward in a westerly direction towards Torne Brook. The lowest elevation of the site is located along the southwestern edge of the property. Stone and concrete drainage ditches are present along the perimeter of the Landfill. Several stone drainage channels and swales are connected to four (4) main stone drainage downchutes that drain into the western perimeter drainage ditch of the Landfill. The site is covered with suitable shallow rooted vegetation with no evidence of erosion. Some deeper rooted vegetation is present in drainage structures across the Landfill. The Landfill is surrounded by perimeter fencing and can only be accessed through an access gate to the northeast edge of the Landfill adjacent to Baler Boulevard.

2: The landfill stages compost wind rows on the upper east edge of the property, as well as a shooting range for the Town of Ramapo Police department. The Landfill is mowed regularly to prevent deep rooted vegetation to grow and damage the cover; however, portions of the landfill are not mowed due to Timber Rattlesnake habitats.

3: The Ramapo Landfill Site was observed to be in good condition during inspection on July 14 through July 16, 2015. The Landfill cover was observed to be in good condition with no evidence of surface water ponding or erosion. No evidence of sloughing was observed and the overall physical integrity of the Landfill is in good condition. The majority of the drainage structures onsite are in good working condition. Some deeper rooted vegetation is present within the Landfill drainage structures identified on the Landfill Inspection Form in Appendix A and should be maintained.

APPENDIX B
TABLES B-1 - B-5
&
LABORATORY ANALYTICAL REPORTS

Table B-1

**TOWN OF RAMAPO LANDFILL
Analytical Parameters and Method References**

<u>Parameter</u>	<u>Document/Method No.</u>	<u>Reference</u>
Specific Conductance	120.1	1
Temperature	170.1	1
Static Water Level	---	---
Floaters or Sinkers	---	---
pH	150.1	1
Eh	D1498	2
Field Observations	---	---
TKN	351.3	1
COD	5220D	1
Alkalinity	2320B	1
Hardness as CaCO ₃	130.1	1
Site Related Volatiles:		
1, 1-Dichloroethane	624	1
Vinyl Chloride	624	1
Benzene	625	1
Chlorobenzene	625	1
TAL Metals	NYSDEC ASP	1

References:

1. New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) 9/89, 12/91 Revisions
2. American Society for Testing & Materials, ASTM, 1989

--- Parameters will be measured by Field Personnel or Reference is not available

Notes:

- (1) Revised in Accordance with the NYSDEC's October 27, 2003 post-closure monitoring variance approval
- (2) Laboratory reporting limits (RL) must be equal to or less than the applicable water quality standard. Specifically, the RL for Antimony must be 3.0 ug/L or less and for Thallium must be 0.5 ug/L or less.

TABLE B-2
POST - CLOSURE WATER QUALITY MONITORING
FIELD PARAMETER MEASUREMENTS FOR 7/14/15-7/16/15
TOWN OF RAMAPO LANDFILL

Parameter		Static Water Level [1]	Specific Conductivity	Temperature	pH	ORP	Turbidity
Units		feet	mS/cm ^{c or 3}	degrees C	pH Units	mV	NTU
Title 6 Part 703.5 Groundwater Standard		--	--	--	6.5<pH< 8.5	--	5.0
Well Sample ID	Date						
1-OS	7/16/2015	16.72	0.930	13.52	6.83	122.0	5.38
1-R	7/16/2015	18.80	---	---	---	---	---
2-OS	7/15/2015	14.59	0.779	12.76	7.45	76.3	5.13
2-I	7/15/2015	13.34	---	---	---	---	---
2-R	7/15/2015	17.67	---	---	---	---	---
3-OS/I	7/15/2015	13.17	0.664	15.38	6.77	103.7	7.35
3-R	7/15/2015	13.31	---	---	---	---	---
4-OS	7/16/2015	7.65	0.650	13.12	6.67	108.7	4.90
4-R	7/16/2015	9.44	---	---	---	---	---
5-OS	7/16/2015	13.18	0.071	12.46	6.43	148.1	11.08
5-I	7/16/2015	15.32	---	---	---	---	---
5-R	7/16/2015	27.71	---	---	---	---	---
6-I	7/14/2015	17.86	---	---	---	---	---
6-R	7/14/2015	30.57	---	---	---	---	---
7-OS	7/15/2015	13.46	0.358	14.03	6.79	106.7	6.77
7-I	7/15/2015	14.71	---	---	---	---	---
7-R	7/15/2015	15.03	---	---	---	---	---
8-OS	7/15/2015	14.36	0.332	14.45	6.67	103.0	4.71
8-I	7/15/2015	15.26	1.642	11.66	6.25	-37.5	3.51
8-R	7/15/2015	13.83	1.283	13.15	6.78	54.2	4.12
9-OS	7/14/2015	9.10	0.162	12.49	6.59	100.6	7.69
9-I	7/14/2015	11.49	0.149	9.91	6.49	106.1	4.39
9-R	7/14/2015	12.32	0.718	11.81	6.61	-29.3	3.11
10-OS	7/14/2015	16.40	0.132	10.42	5.65	234.3	1084
10-I	7/14/2015	15.05	0.101	9.18	6.42	134.1	7.74
10-R	7/15/2015	14.56	0.109	11.23	6.92	124.2	7.91
PW-1	7/14/2015	---	0.372	12.17	6.23	162.5	5.31
PW-2	7/14/2015	---	0.239	16.59	6.99	86.8	3.64
SVWC-93	7/14/2015	---	0.528	10.53	6.95	114.1	5.40
SVWC-94	7/14/2015	---	0.527	13.65	6.93	95.3	4.71
SVWC-95	7/14/2015	---	0.553	20.20	6.98	26.2	3.06
SVWC-96	7/14/2015	---	0.590	13.63	6.72	90.7	4.51

NOTES :

[1] Measured from the top of the PVC or stainless steel well casing to water surface.

Value in **BOLD** indicates an exceedance of applicable water quality standard or guidance value.

--- Denotes no standard or not measured.

Table B-3

Summary of Groundwater Analytical Results (7/14/15-7/16/15)
Town of Ramapo Landfill, Hillburn, New York

Analyte	Units	TOGS 1.1.1	USEPA MCL's	1-OS Downgradient 7/16/2015	2-OS Downgradient 7/15/2015	3-OS/I Downgradient 7/15/2015	4-OS Crossgradient 7/16/2015	5-OS Upgradient 7/16/2015	7-OS Crossgradient 7/15/2015	8-OS Downgradient 7/15/2015	8-I Downgradient 7/15/2015	Duplicate* Downgradient 7/15/2015	8-R Downgradient 7/15/2015	9-OS Downgradient 7/14/2015	9-I Downgradient 7/14/2015	9-R Downgradient 7/14/2015	10-OS Downgradient 7/14/2015	10-I Downgradient 7/14/2015	10-R Downgradient 7/15/2015
General Chemistry																			
Alkalinity, Total	mg/L	---	---	228	317	275	105	29.1	106	66.2	386	382	523	13	15.1	157	3.9	22.8	29.9
Chemical Oxygen Demand	mg/L	---	---	110	14 J	7.4 J	9.7 J	340	19 J	5.2 J	44	46	16 J	16 J	3.5 U	16 J	76	16 J	3.5 U
Hardness	mg/L	---	---	200	344.7	286.8	201.8	51.47	139.6	69.63	341.4	351.5	597.6	46	33.64	167.5	10.13	35.97	39.36
Total Kjeldahl Nitrogen	mg/L	---	---	1.38	0.323	0.245 J	0.266 J	1.24	0.328	0.372	18.1	19	1.06	0.364	0.194 J	3.95	0.322	0.292	0.152 J
VOCs (Site Related)																			
1,1-Dichloroethane	µg/L	5.0	5	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Benzene	µg/L	1.0	5	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Chlorobenzene	µg/L	5.0	100	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.76 J	0.57 J	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Vinyl chloride	µg/L	2.0	2	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Total Recoverable Metals																			
Aluminum	mg/L	---	0.05 - 0.2**	3.22	0.176	0.036	0.304	6.58	0.723	0.0099 J	0.018	0.019	0.002 J	0.75	0.008 J	0.008 J	0.608	0.24	0.09
Antimony	µg/L	3.0	6	0.00401	0.0001 J	0.0001 J	0.0001 U	0.0001 U	0.0001 J	0.0001 J	0.0001 U	0.0003 J	0.0001 J	0.0001 J	0.0001 U	0.0001 J	0.0001 J	0.0001 J	0.0009 J
Arsenic	mg/L	0.025	0.01	0.00732	0.0007	0.0003 J	0.0007	0.0031	0.001	0.0004 J	0.0068	0.0074	0.0006	0.001	0.0001 U	0.0038	0.0002 J	0.0002 J	0.0002 J
Barium	mg/L	1.0	2	0.1238	0.0229	0.0128	0.0255	0.2036	0.0463	0.0091	0.0803	0.0802	0.0132	0.02	0.0066	0.0293	0.0083	0.0031	0.0042
Beryllium	mg/L	0.003	0.004	0.00021 J	0.0002 U	0.0002 U	0.0002 U	0.0011	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Cadmium	mg/L	0.005	0.005	0.00029	0.0001 J	0.0001 U	0.0001 U	0.0004	0.0001 J	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0004	0.0001 U	0.0001 J	0.0001 J	0.0001 U	0.0001 U
Calcium	mg/L	---	---	57.6	107	93.8	52.3	11.2	41.6	20.5	90.3	91.9	171	12.9	9.37	45.2	3.12	9.68	12
Chromium	mg/L	0.05	0.1	6.604	0.0622	0.2288	0.1329	0.0406	0.2542	0.2304	0.0028	0.0042	0.0024	0.0567	0.0025	0.0024	0.0024	0.0015 J	0.0079
Cobalt	mg/L	---	---	0.01757	0.0031	0.0023	0.0016	0.0034	0.0045	0.0009	0.0044	0.005	0.011	0.0006	0.0001 U	0.0032	0.00045 J	0.0003 J	0.0006
Copper	mg/L	0.2	1.3	0.09526	0.0052	0.0047	0.0034	0.0376	0.02	0.0028	0.0003 U	0.0003 J	0.0008 J	0.004	0.0003 U	0.0003 J	0.012	0.0015	0.0012
Iron	mg/L	0.3***	---	53.6	2.31	2.75	2.5	7.8	5.57	1.28	11.6	11.5	0.311	1.76	0.023 J	9.27	0.273	0.331	0.085
Lead	mg/L	0.025	0.015	0.01055	0.0011	0.0001 U	0.0007 J	0.004	0.0013	0.0001 U	0.0001 U	0.0001 U	0.0001 J	0.0016	0.0001 U	0.0002 J	0.0002 J	0.0007 J	0.0001 U
Magnesium	mg/L	35	---	13.6	18.8	12.7	17.3	5.71	8.68	4.48	28.1	29.6	41.5	3.35	2.49	13.2	0.568	2.86	2.27
Manganese	mg/L	0.3***	---	12.55	0.3633	0.2713	0.2759	0.0651	0.173	0.1784	2.56	2.603	2.162	0.047	0.0318	4.458	0.0329	0.0083	0.0158
Mercury	mg/L	0.0007	0.002	0.00006 U	0.00006 U	0.00006 U	0.00006 U	0.00007 J	0.00006 U	0.00006 U	0.00006 U	0.00006 U	0.00006 U	0.00006 U	0.00006 U	0.00006 U	0.00006 U	0.00006 U	0.00006 U
Nickel	mg/L	0.1	---	0.4057	0.1516	0.0825	0.0375	0.012	0.0076	0.0129	0.0138	0.0153	0.0144	0.0034	0.0036	0.0039	0.0036	0.0022	0.0148
Potassium	mg/L	---	---	2.59	1.91	2.98	1.38	1.78	3.89	1.56	26.6	25.9	3.69	1.27	0.676	10.1	0.346	1.15	0.959
Selenium	mg/L	0.01	0.05	0.00103 J	0.001 U	0.001 U	0.001 U	0.009	0.002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Silver	mg/L	0.05	---	0.00015 J	0.0001 U	0.0001 U	0.0001 U	0.0005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Sodium	mg/L	20	---	118	15.1	20.5	35.6	4.09	15.8	31	122	132	42.8	9.77	9.96	47.2	2.15	4.21	6.95
Thallium	µg/L	0.5	2	0.00006 J	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Vanadium	mg/L	---	---	0.1102 U	0.0009 J	0.0006 J	0.0014 J	0.0163	0.0034 J	0.0011 J	0.0006 U	0.0006 U	0.0006 U	0.0024 J	0.0006 U	0.0006 U	0.0006 U	0.0008 J	0.0006 U
Zinc	mg/L	2.0	---	0.02991	0.0126	0.0058 J	0.0101	0.0385	0.0135	0.0038 J	0.0026 U	0.0026 U	0.0032 J	0.0471	0.0026 U	0.0027 J	0.0124	0.0099 J	0.0037 J

NOTES:

Bolded value indicates reported concentration exceeds T.O.G.S 1.1.1 water quality standards.

= Value indicates reported concentration exceeds USEPA Primary Drinking Water Standards.

J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

* Duplicate groundwater sample collected from intermediate monitoring well 8-I.

** = USEPA Secondary Drinking Water Standard.

*** = The sum of iron and manganese should not exceed 0.5 mg/L.

--- Denotes no standard applicable standard.

U = Analyte was not detected at or above laboratory method detection limit.

Table B-4
Analytical Results for Downgradient Drinking Supply Wells (July 14-16 2015)
Town of Ramapo Landfill, Hillburn, New York

Analyte	Units	NYDOH Part 5	USEPA MCL's	PW-1 7/14/2015	PW-2 7/14/2015	SVWC-93 7/14/2015	SVWC-94 7/14/2015	SVWC-95 7/14/2015	SVWC-96 7/14/2015
General Chemistry									
Alkalinity, Total	mg/L	---	---	18.2	66.1	51.3	53.7	58.2	52.4
Chemical Oxygen Demand	mg/L	---	---	7.4 J	3.5 U	23	23	14 J	21
Hardness	mg/L	---	---	63	86	74	72	79	92
Total Kjeldahl Nitrogen	mg/L	---	---	0.495	0.115 J	0.209 J	0.648	0.28 J	0.224 J
VOCs (Site Related)									
1,1,2-Trichloroethane	ug/L	5	5	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
Benzene	ug/L	5	5	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
Chlorobenzene	ug/L	5	100	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Vinyl chloride	ug/L	2	2	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Metals, Total Recoverable									
Aluminum	mg/L	---	0.05 - 0.2	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Antimony	ug/L	6	6	0.0001 U	0.00014 J	0.00014 J	0.00032 J	0.00016 J	0.00011 J
Arsenic	mg/L	0.01	0.01	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.00022 J	0.0002 U
Barium	mg/L	2	2	0.0156	0.00176	0.00854	0.0137	0.0095	0.0117
Beryllium	mg/L	0.004	0.004	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Cadmium	mg/L	0.005	0.005	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U
Calcium	mg/L	---	---	17	29	20	20	23	25
Chromium	mg/L	0.1	0.1	0.00027 J	0.00024 J	0.00021 J	0.00054 J	0.0002 U	0.00023 J
Cobalt	mg/L	---	---	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Copper	mg/L	---	1.3	0.111	0.024	0.00832	0.00752	0.0025	0.00766
Iron	mg/L	0.3*	---	0.03 J	0.09	0.02 U	0.02 U	0.48	0.02 U
Lead	mg/L	---	0.015	0.00783	0.00041 J	0.0002 U	0.00078 J	0.00026 J	0.00049 J
Magnesium	mg/L	---	---	4.6	3.4	5.5	5.4	5.2	6.9
Manganese	mg/L	0.3*	---	0.002 U	0.002 U	0.002 U	0.002 U	1.81	0.002 U
Mercury	mg/L	0.002	0.002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Nickel	mg/L	---	---	0.0005 J	0.0006 J	0.00054 J	0.0009 J	0.00499	0.00158
Potassium	mg/L	---	---	1.7 J	1.0 J	1.7 J	1.7 J	2.0 J	1.6 J
Selenium	mg/L	0.05	0.05	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
Silver	mg/L	0.1	---	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Sodium	mg/L	---	---	35	7.9	58	66	61	64
Thallium	ug/L	2	2	0.00003 U	0.00003 U	0.00003 U	0.00003 U	0.00006 J	0.00003 U
Vanadium	mg/L	---	---	0.00017 J	0.00011 J	0.00011 J	0.0003 J	0.00025 J	0.0001 U
Zinc	mg/L	5	---	0.0183	0.0199	0.00438 J	0.0134	0.0121	0.0146

Column Name Description

(1) NYDOH Part 5 NY DOH Part 5-SubPart5-1 Public Water Supply Stds.: MCLs Tables 1-7; Eff. 1 October 2007.

(2) USEPA MCL's USEPA - Primary Drinking Water Standards

(3) While there is no Maximum Contaminant Level (MCL) for Sodium, people on severely restricted Sodium diets should consult with the County Health Department for guidance if reported Sodium concentration is higher than 20 mg/L.

Bold = Value indicates reported concentration exceeds applicable NY DOH Part 5 water quality standards.

Yellow = Value indicates reported concentration exceeds USEPA Primary Drinking Water Standards.

J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

U = Analyte was not detected at or above the laboratory method detection limit.

* = If Iron and Manganese are present, the total concentration of both should not exceed 0.5 mg/L.

--- Denotes no standard or not measured.

TABLE B-5

**TOWN OF RAMAPO LANDFILL
AIR MONITORING RESULTS
July 14, 15 and 16, 2015**

Monitoring Location ⁽¹⁾	LEL Reading (% LEL)	H₂S Reading (ppm)	PID Reading (ppm)
Monitoring Wells:			
1-OS	0	0	0
1-R	0	0	0
2-OS	0	0	0
2-R	0	0	0
3-OS/I	0	0	0
3-R	0	0	0
4-OS	0	0	0
4-R	0	0	0
5-OS	0	0	0
5-R	0	0	0
6-I	0	0	0
6-R	0	0	0
7-OS	0	0	0
7-I	0	0	0
7-R	0	0	0
8-OS	0	0	0
8-I	0	0	0
8-R	0	0	0
9-OS	0	0	0
9-I	0	0	0
9-R	0	0	0
Baler Building (North Corner)	0	0	2.5
Baler Building (East Corner)	0	0	0.4
Baler Building (South Corner)	0	0	0.3
Baler Building (West Corner)	0	0	0.2
Manhole A-5	0	0	0
Lift Station A-10	0	0	0
Lift Station W-20	0	0	0
Landfill Perimeter (Breathing Zone)	0	0	0

NOTES:

LEL = Lower Explosive Limit (for Explosive Gas)

H₂S = Hydrogen Sulfide

PID = Photoionization Detector (measures VOCs)

ppm = parts per million

⁽¹⁾ See Figure 3 for Air Monitoring Locations

LABORATORY ANALYTICAL REPORTS



www.alphalab.com



Alpha Analytical

Laboratory Code: 11148

SDG Number: L1516505

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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Project Name: RAMAPO LANDFILL
Project Number: 20010

Lab Number: L1516505
Report Date: 07/23/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1516505-01	1-OS	WATER	HILLBURN	07/16/15 11:05	07/16/15
L1516505-02	5-OS	WATER	HILLBURN	07/16/15 10:25	07/16/15
L1516505-03	TRIP BLANK	WATER	HILLBURN	07/16/15 00:00	07/16/15
L1516505-04	4-OS	WATER	HILLBURN	07/16/15 09:40	07/16/15

Project Name: RAMAPO LANDFILL
Project Number: 20010

Lab Number: L1516505
Report Date: 07/23/15

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the

Project Name: RAMAPO LANDFILL
Project Number: 20010

Lab Number: L1516505
Report Date: 07/23/15

Case Narrative (continued)

MDL column.

Volatile Organics

L1516505-02: The sample vial contained sediment. The sample was transferred to a new vial, leaving the sediment behind, prior to analysis.

The WG804167-5 LCS recoveries for benzene (83%) and vinyl chloride (129%), associated with L1516505-01 through -04, are outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Metals

L1516505-01 has an elevated detection limit for vanadium due to the dilution required by matrix interferences encountered during analysis.

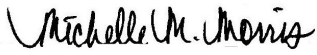
The WG803567-4 MS recoveries, performed on L1516505-01, are outside the acceptance criteria for cadmium (126%), nickel (129%), selenium (136%), and vanadium (0%). A post digestion spike was performed and yielded an unacceptable recovery for vanadium (54%); all other compounds were within acceptance criteria. This has been attributed to sample matrix.

The WG803567-4 MS recoveries for chromium (69%), iron (140%) manganese (134%), and sodium (170%), performed on L1516505-01, do not apply because the sample concentrations are greater than four times the spike amounts added.

Nitrogen, Total Kjeldahl

L1516505-02: The sample has an elevated detection limit due to the dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Report Date: 07/23/15

Title: Technical Director/Representative

List of Organic Method Qualifiers

Table 1

Qualifier (Q)	Description
B	Entered if the analyte is found in the associated blank as well as the sample.
C	Applied to pesticide results when the identification has been confirmed by GC/MS.
D	Included when the all identified compounds in the analysis are at the secondary dilution factor.
E	Identified compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
J	Indicates an estimated value, may indicate one of the following, depending on the situation: (1) The reported value is estimated and below the MDL. (2) Used when estimating a concentration for TIC where a 1:1 response is assumed or when the result indicates the presence of a compound that meets the identification criteria, but the results is less than the quantitation limit, but greater than zero. (3) QC associated with this analyte is within warning limits.
N	Included for TIC that indicate presumptive evidence of a compound.
U	Entered if the analyte was analyzed for, but not detected.
P	Used for a pesticide/Aroclor target analyte when the concentration difference between 2 GC columns is greater than 25%; the lower value is flagged with a "P".
EMPC	"Estimated Maximum Possible Concentration" – The amount of analyte cannot be accurately quantified, so a maximum concentration has been estimated for the compound.
"XYZ"	"Wildcard" or Laboratory defined qualifier.

Note: Form I allows only one character in each qualifier column. If multiple qualifiers are applicable, please assess qualifier priority in the following order: U, E, J, B, D, C, P, N. Reporting done in the EDD may include multiple qualifiers when applicable, separated by a single space.

(Information obtained from NYSDEC ASP Exhibit B, 7/2005, page 64)

List of Inorganic Method Qualifiers

Table 2

Qualifier	Column (1)	Description
Concentration qualifiers		
B	C	Entered if the reported value was less than the CRDL, but greater than the IDL.
U	C	Entered if the analyte was analyzed for, but not detected.
J	C	Entered if the reported value is estimated and below the MDL.
*	C	Duplicate precision exceeds RPD limit.
M	C	Replicate precision exceeds RPD limit.
"XYZ"	C	"Wildcard" or Laboratory defined qualifier.
Qualifier specific entries		
E	Q	Entered if the reported value is estimated because of the presence of interferences.
Method qualifiers		
A	M	Flame atomic absorption
AS	M	Semi-automated spectrophotometric
AV	M	Automated cold vapor atomic absorption
C	M	Manual spectrophotometric
F	M	Furnace atomic absorption
MS	M	Mass spectrometry (ICP-MS)
NR	M	Analyte is not required to be analyzed
P	M	Inductively coupled plasma (ICP)
" "	M	No data have been entered

(1) The term "Column" is used to indicate under which column heading in the reporting forms that the qualifier will be found under.

Note: Form I allows only one character in each qualifier column. If multiple qualifiers are applicable to column C, please assess qualifier priority in the following order: U, J, B. Reporting done in the EDD may include multiple qualifiers when applicable, separated by a single space.

(Information obtained from NYSDEC ASP Exhibit B, 7/2005, page 65)

Volatile Organics Instruments

Volatile Organics: Jack

Instrument: Agilent 5975MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon
Autosampler: EST Centurion
Purge time: 11 min

Column Type: RTX-VMS
Column Length: 20 Meters
df: 1.00um
ID: 0.18mm
Desorb: 2 min

Volatile Organics: Quimby

Instrument: Agilent 5973MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon
Autosampler: EST Centurion
Purge time: 11 min

Column Type: RTX-VMS
Column Length: 20 Meters
df: 1.00um
ID: 0.18mm
Desorb: 2 min

Volatile Organics: Curly

Instrument: Agilent 5972 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Tekmar 3000
Autosampler: Archon
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 um
ID: 0.18 mm
Desorb: 2 min

Volatile Organics: Elaine

Instrument: Agilent 5973 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Teledyne Velocity
Autosampler: Teledyne Solatek
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 um
ID: 0.18 mm
Desorb: 2 min



Volatile Organics: Gonzo

Instrument: Agilent 5973 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Teledyne Velocity
Autosampler: Teledyne Solatek
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 μ m
ID: 0.18 mm
Desorb: 2 min

Volatile Organics: VOA101

Instrument: Agilent 5975C inert XL MSD
Trap: EST K Trap (VOACARB 3000)
Concentrator: Encon Evolution
Autosampler: EST Centurion
Purge time: 11 min

Column Type: Restek RTX-VMS
Column Length: 30 Meters
df: 1.40 μ m
ID: 0.25 mm
Desorb: 1 min

Volatile Organics: Charlie/Voa100/Voa104

Instrument: Agilent 5975C MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Encon Evolution
Autosampler: EST Centurion
Purge time: 11 min

Column Type: Agilent DB-624
Column Length: 25 Meters
df: 1.12 μ m
ID: 0.20 mm
Desorb: 2 min

Volatile Organics: M

Instrument: Agilent 6890

Concentrator: Tekmar 2016
Autosampler: Tekmar 3100

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics: L/N

Instrument: Agilent 6890

Concentrator: Encon Evolution
Autosampler: EST Centurion

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics: O/P

Instrument: Agilent 7890A

Concentrator: Encon Evolution
Autosampler: EST Centurion

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics in Air Instruments

Volatile Organics in Air:

Instrument: Agilent 6890 GC / 5975 MSD	Column Type: Restek RTX-1
	Column Length: 60 Meters
Concentrator: Entech 7100A	df: 1.00 um
Autosampler: Entech 7016CA	ID: 0.52 mm
Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material	
Trap 2: Tenax: manufacturer-Entech: 20 cm packing material	

Semivolatile Organics Instruments

Semivolatile Organics (Acid/Base/Neutral Extractables): Buffy

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RTX-5MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Semivolatile Organics (Acid/Base/Neutral Extractables): Juliet/GCMS5/GCMS7

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RXI-5SIL MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM: Dakota/Mork

Instrument: Agilent 5973 MSD	Injection volume: 1 ul
Column Type: Restek RTX-5MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM: Mindy

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RXI-5SIL MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Pesticides/PCB : Pest 11/Pest2/Pest7/Pest12

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column Type: Restek RTX-CLP (Channel A)	df: 0.32 um
Column: Restek RTX-CLPPesticide II (Channel B)	df: 0.25 um
Column Length: 30 Meters (Both)	ID: 0.32 mm (Both)

Pesticides/PCB: Pest 10/ Pest9

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column Type: Restek STX-CLP (Channel A)	df: 0.32 um
Column: Restek STX-CLPPesticide II (Channel B)	df: 0.25 um
Column Length: 30 Meters (Both)	ID: 0.32 mm (Both)

Herbicides

Instrument: Agilent 6890 w/Dual Micro ECDs
Column Type: Restek RTX-1701 (Channel A)
Column Type: Restek RTX-5 (Channel B)
Column Length: 30 Meters (Both)

Injection Volume: 1uL
df: 0.25 um
df: 0.25 um
ID: 0.32 mm (Both)

Petro9

Instrument: Agilent 6890 w/FID
Column: Restek RTX-5
Column Length: 30 Meters

Injection Volume: 1uL
df: 0.25 um
ID: 0.32 mm

EPH Petro10/ Petro11

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5-MS
Column Length: 30 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.32 mm

Explosives

Instrument: Dionex ICS-3000, AS50 Autosampler and PDA-100 detectors.
Injection Volume: 100uL
Column: Phenomenex Synergi 4u Hydro-RP and Luna 5u Phenyl-Hexyl.

GC/MS Forensic Semivolatile Organic Instruments

Semivolatile Organics (ALK-PAH extractables): PAH1/PAH2/PAH3/PAH4

Instrument: Agilent 5973C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

Semivolatile Organics (ALK-PAH extractables): PAH8/PAH9/PAH10/PAH11/PAH12/PAH13/PAH14

Instrument: Agilent 5975C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

Semivolatile Organics (ALK-PAH extractables): PAH17/PAH18/PAH19

Instrument: Agilent 5975C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

GC/FID Forensic Semivolatile Organic Instruments

Semivolatile Organics (SHC extractables):PAH1/PAH2/PAH3/PAH4/PAH8

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm

Semivolatile Organics (SHC extractables): FID6 (dual column)/ FID9 (dual column)/ FID17 (dual column)

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm

Semivolatile Organics (SHC extractables):FID7 (dual column)

Instrument: Agilent 7890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm



Sample Delivery Group Form

Laboratory Job number: L1516505

Project Manager: Candace Fox

Review Date: 07/21/2015

Project Number: 20010

Project Name: RAMAPO LANDFILL

Received: 07/16/2015 17:47

Client Account: Sterling Environmental Eng

Received by: JK/RS

Samples Delivered by: COURIER

Call Tracker #

Bill Of Laden N/A

Trackingnum

Coc Present Present

Container Status Intact

Sample IDs

All Containers Accounted For? Yes

Were Extra Samples Received? No

Do Sample Labels and COC agree? Yes

Are Samples in Appropriate Containers? Yes

Are Samples Received within Holding time? Yes

pH of Samples upon Receipt <2

Are samples Properly Preserved? Yes

Initial pH preserved in house with

Final pH

Other Issues

Chlorine Check N/A

Are VOA/VPV Vials Present? Yes

Aqueous: Do Vials Contain Head Space? No

Soils: Is MeOH Covering the Soil? N/A

Reagent H2O Preserved vials Frozen on N/A

Frozen by Client N/A

Cooler	Seal	Ice Present	Blue Ice Present	Temp. (Celsius)	Frozen upon Receipt	Delivered Direct from Site
A	Absent	Yes	No	5.5 - IR Gun	No	No

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Jul 23 2015, 04:55 pm

Login Number: L1516505

Account: STERLINGENV Sterling Environmental EngProject: 20010

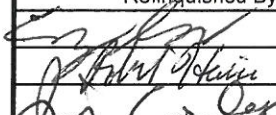
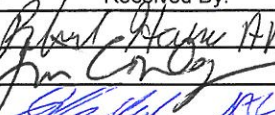
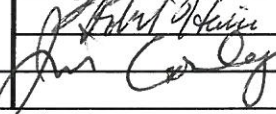
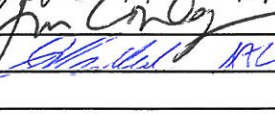
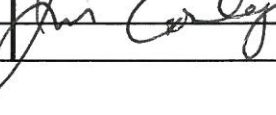
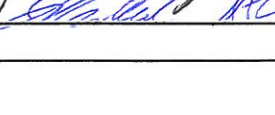
Sample # Client ID Received: 16JUL15 Due Date: 23JUL15
Mat PR Collected Container

L1516505-01 1-OS 1 S0 16JUL15 11:05 1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.12,3-Vial-B
8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting
list built) ASP-A Package Due Date: 07/23/15
624, ALK-T-2320, ASP-A, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-
6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-
6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351

L1516505-02 5-OS 1 S0 16JUL15 10:25 1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.12,3-Vial-B
8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting
list built) Package Due Date: 07/23/15
624, ALK-T-2320, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T,
CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-
6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351

L1516505-03 TRIP BLANK 1 S0 16JUL15 00:00 2-Vial-B
8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting
list built) Package Due Date: 07/23/15
624

L1516505-04 4-OS 1 S0 16JUL15 09:40 1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.12,3-Vial-B
8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting
list built) Package Due Date: 07/23/15
624, ALK-T-2320, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T,
CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-
6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351

 ALPHA ANALYTICAL Westborough, MA 01581 8 Walkup Dr. TEL: 508-898-9220 FAX: 508-898-9193	NEW YORK CHAIN OF CUSTODY Mansfield, MA 02048 320 Forbes Blvd TEL: 508-822-9300 FAX: 508-822-3288	Service Centers Mahwah, NJ 07430: 35 Whitney Rd, Suite 5 Albany, NY 12205: 14 Walker Way Tonawanda, NY 14150: 275 Cooper Ave, Suite 105	Page 1 of 1	Date Rec'd in Lab 7/17/15	ALPHA Job # L1516505														
		Project Information Project Name: Ramapo Landfill Project Location: Hillburn Project # 20010		Deliverables ☒ ASP-A ☐ ASP-B ☐ EQUIS (1 File) ☒ EQUIS (4 File) ☐ Other		Billing Information ☐ Same as Client Info PO #													
		Client Information Client: Sterling Environmental Eng. P.C. Address: 24 Wade Road Latham, NY 12110 Phone: 518-456-4900 Fax: Email: cody.sargood@sterlingenvironme		Regulatory Requirement ☒ NY TOGS ☐ NY Part 375 ☐ AWQ Standards ☐ NY CP-51 ☐ NY Restricted Use ☐ Other ☐ NY Unrestricted Use ☐ NYC Sewer Discharge		Disposal Site Information Please identify below location of applicable disposal facilities. Disposal Facility: ☐ NJ ☒ NY ☐ Other: NA													
Turn-Around Time Standard ☒ Due Date: Rush (only if pre approved) ☐ # of Days:			ANALYSIS																
These samples have been previously analyzed by Alpha ☐ Other project specific requirements/comments: cody.sargood@environmental.com			Sample Filtration ☐ Done ☐ Lab to do Preservation ☐ Lab to do (Please Specify below)																
Please specify Metals or TAL.			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>TKN/COD</th> <th>Alk</th> <th>TAL Metals / Hardness</th> <th>VOC (Site Specific)</th> <th>1,1-Dichloroethane</th> <th>Vinyl Chloride/benzene</th> <th>Chlorobenzene</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>			TKN/COD	Alk	TAL Metals / Hardness	VOC (Site Specific)	1,1-Dichloroethane	Vinyl Chloride/benzene	Chlorobenzene							
TKN/COD	Alk	TAL Metals / Hardness	VOC (Site Specific)	1,1-Dichloroethane	Vinyl Chloride/benzene	Chlorobenzene													
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TKN/COD	Alk	TAL Metals / Hardness	VOC (Site Specific)	1,1-Dichloroethane	Vinyl Chloride/benzene	Chlorobenzene	Sample Specific Comments						
	SVWC-93												6						
	SVWC-94												6						
	SVWC-95												6						
	SVWC-96												6						
	PW-1												6						
	PW-2												6						
16505 - 01	1-OS	7/16/15	1105	GW	CS/AE	1	1	1	3				6						
02	2-OS 5-OS	↓	1025	GW	CS/AE	1	1	1	3				6						
03	3-OS# Trip Blank	↓	—	GW	—				2				6						
04	4-OS	7/16/15	940	GW	CS/AC	1	1	1	3				6						
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other	Container Code P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle	Westboro: Certification No: MA935 Mansfield: Certification No: MA015		Container Type Preservative		P	P	P	V										
Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.																			
Relinquished By:		Date/Time		Received By:		Date/Time													
		7/16/15 1747				7-16-15 1747													
		7/16/15 2145				7-16-15 2145													
		7/17/15 0015				7/17/15 0015													

Organics

GC/MS 624

Analysis

Volatiles Sample Data

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-01
 Client ID : 1-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0722A08
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/16/15 11:05
 Date Received : 07/16/15
 Date Analyzed : 07/22/15 13:53
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-02
 Client ID : 5-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0722A07
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/16/15 10:25
 Date Received : 07/16/15
 Date Analyzed : 07/22/15 13:18
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-03
 Client ID : TRIP BLANK
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0722A05
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/16/15 00:00
 Date Received : 07/16/15
 Date Analyzed : 07/22/15 12:09
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-04
 Client ID : 4-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0722A06
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/16/15 09:40
 Date Received : 07/16/15
 Date Analyzed : 07/22/15 12:43
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804167-3
 Client ID : SVWC-94DUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0717N07
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/14/15 09:05
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 18:50
 Dilution Factor : 1
 Analyst : mm
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	5.0	0.65	U
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
67-66-3	Chloroform	ND	1.5	0.29	U
56-23-5	Carbon tetrachloride	ND	1.0	0.33	U
78-87-5	1,2-Dichloropropane	ND	3.5	0.28	U
124-48-1	Dibromochloromethane	ND	1.0	0.33	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
110-75-8	2-Chloroethylvinyl ether	ND	10	0.62	U
127-18-4	Tetrachloroethene	ND	1.5	0.38	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
75-69-4	Trichlorofluoromethane	ND	5.0	0.33	U
107-06-2	1,2-Dichloroethane	ND	1.5	0.36	U
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.30	U
75-27-4	Bromodichloromethane	ND	1.0	0.30	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.5	0.30	U
10061-01-5	cis-1,3-Dichloropropene	ND	1.5	0.32	U
75-25-2	Bromoform	ND	1.0	0.32	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.35	U
71-43-2	Benzene	ND	1.0	0.31	U
108-88-3	Toluene	ND	1.0	0.35	U
100-41-4	Ethylbenzene	ND	1.0	0.33	U
74-87-3	Chloromethane	ND	5.0	0.89	U
74-83-9	Bromomethane	1.4	5.0	1.3	J
75-01-4	Vinyl chloride	ND	1.0	0.30	U
75-00-3	Chloroethane	ND	2.0	0.31	U
75-35-4	1,1-Dichloroethene	ND	1.0	0.28	U
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.34	U



Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804167-3
 Client ID : SVWC-94DUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0717N07
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/14/15 09:05
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 18:50
 Dilution Factor : 1
 Analyst : mm
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.33	U
79-01-6	Trichloroethene	ND	1.0	0.33	U
95-50-1	1,2-Dichlorobenzene	ND	5.0	0.75	U
541-73-1	1,3-Dichlorobenzene	ND	5.0	0.93	U
106-46-7	1,4-Dichlorobenzene	ND	5.0	0.85	U
179601-23-1	p/m-Xylene	ND	2.0	0.66	U
95-47-6	o-Xylene	ND	1.0	0.30	U
1330-20-7	Xylene (Total)	ND	1.0	0.30	U
100-42-5	Styrene	ND	1.0	0.30	U
67-64-1	Acetone	ND	10	1.8	U
75-15-0	Carbon disulfide	ND	5.0	0.90	U
78-93-3	2-Butanone	ND	10	2.2	U
108-05-4	Vinyl acetate	ND	10	2.9	U
108-10-1	4-Methyl-2-pentanone	ND	10	2.4	U
591-78-6	2-Hexanone	ND	10	2.5	U
107-02-8	Acrolein	ND	8.0	1.9	U
107-13-1	Acrylonitrile	ND	10	1.9	U
74-95-3	Dibromomethane	ND	1.0	1.0	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804167-6
 Client ID : WG804167-6BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0722A04
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/22/15 11:34
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	5.0	0.65	U
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
67-66-3	Chloroform	ND	1.5	0.29	U
56-23-5	Carbon tetrachloride	ND	1.0	0.33	U
78-87-5	1,2-Dichloropropane	ND	3.5	0.28	U
124-48-1	Dibromochloromethane	ND	1.0	0.33	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
110-75-8	2-Chloroethylvinyl ether	ND	10	0.62	U
127-18-4	Tetrachloroethene	ND	1.5	0.38	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
75-69-4	Trichlorofluoromethane	ND	5.0	0.33	U
107-06-2	1,2-Dichloroethane	ND	1.5	0.36	U
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.30	U
75-27-4	Bromodichloromethane	ND	1.0	0.30	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.5	0.30	U
10061-01-5	cis-1,3-Dichloropropene	ND	1.5	0.32	U
75-25-2	Bromoform	ND	1.0	0.32	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.35	U
71-43-2	Benzene	ND	1.0	0.31	U
108-88-3	Toluene	ND	1.0	0.35	U
100-41-4	Ethylbenzene	ND	1.0	0.33	U
74-87-3	Chloromethane	ND	5.0	0.89	U
74-83-9	Bromomethane	1.7	5.0	1.3	J
75-01-4	Vinyl chloride	ND	1.0	0.30	U
75-00-3	Chloroethane	ND	2.0	0.31	U
75-35-4	1,1-Dichloroethene	ND	1.0	0.28	U
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.34	U



Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804167-6
 Client ID : WG804167-6BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0722A04
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/22/15 11:34
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.33	U
79-01-6	Trichloroethene	ND	1.0	0.33	U
95-50-1	1,2-Dichlorobenzene	ND	5.0	0.75	U
541-73-1	1,3-Dichlorobenzene	ND	5.0	0.93	U
106-46-7	1,4-Dichlorobenzene	ND	5.0	0.85	U
179601-23-1	p/m-Xylene	ND	2.0	0.66	U
95-47-6	o-Xylene	ND	1.0	0.30	U
1330-20-7	Xylene (Total)	ND	1.0	0.30	U
100-42-5	Styrene	ND	1.0	0.30	U
67-64-1	Acetone	ND	10	1.8	U
75-15-0	Carbon disulfide	ND	5.0	0.90	U
78-93-3	2-Butanone	ND	10	2.2	U
108-05-4	Vinyl acetate	ND	10	2.9	U
108-10-1	4-Methyl-2-pentanone	ND	10	2.4	U
591-78-6	2-Hexanone	ND	10	2.5	U
107-02-8	Acrolein	ND	8.0	1.9	U
107-13-1	Acrylonitrile	ND	10	1.9	U
74-95-3	Dibromomethane	ND	1.0	1.0	U

Metals

Inorganic Data (ICPMS Analysis)

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-01
 Client ID : 1-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 1,6020A
 Lab File ID : wg803617.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/16/15 11:05
 Date Received : 07/16/15
 Date Analyzed : 07/17/15 10:38
 Dilution Factor : 200
 Analyst : KL
 Instrument ID : ICPMSX
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-96-5	Manganese, Total	12.55	0.2000	0.06040	
7440-62-2	Vanadium, Total	ND	1.000	0.1102	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-01
 Client ID : 1-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 1,6020A
 Lab File ID : wg803617.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/16/15 11:05
 Date Received : 07/16/15
 Date Analyzed : 07/17/15 10:09
 Dilution Factor : 1
 Analyst : KL
 Instrument ID : ICPMSX
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-36-0	Antimony, Total	0.00401	0.00200	0.00006	
7440-38-2	Arsenic, Total	0.00732	0.00050	0.00012	
7440-39-3	Barium, Total	0.1238	0.00050	0.00006	
7440-41-7	Beryllium, Total	0.00021	0.00050	0.00015	J
7440-43-9	Cadmium, Total	0.00029	0.00020	0.00005	
7440-48-4	Cobalt, Total	0.01757	0.00020	0.00006	
7440-50-8	Copper, Total	0.09526	0.00100	0.00026	
7439-92-1	Lead, Total	0.01055	0.00100	0.00012	
7440-02-0	Nickel, Total	0.4057	0.00300	0.00008	
7440-09-7	Potassium, Total	2.59	0.100	0.0193	
7782-49-2	Selenium, Total	0.00103	0.00500	0.00100	J
7440-22-4	Silver, Total	0.00015	0.00025	0.00007	J
7440-28-0	Thallium, Total	0.00006	0.00020	0.00005	J
7440-66-6	Zinc, Total	0.02991	0.01000	0.00256	

Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516505-01
Client ID : 1-OS
Sample Location : HILLBURN
Sample Matrix : WATER
Analytical Method : 1,6020A
Lab File ID : wg803617.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516505
Project Number : 20010
Date Collected : 07/16/15 11:05
Date Received : 07/16/15
Date Analyzed : 07/17/15 10:05
Dilution Factor : 20
Analyst : KL
Instrument ID : ICPMSX
%Solids : N/A
Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	200.0	10.80	NA	
7429-90-5	Aluminum, Total	3.22	0.200	0.0338	
7440-70-2	Calcium, Total	57.6	2.00	0.640	
7440-47-3	Chromium, Total	6.604	0.1000	0.00506	
7439-89-6	Iron, Total	53.6	1.00	0.240	
7439-95-4	Magnesium, Total	13.6	1.40	0.446	
7440-23-5	Sodium, Total	118.	2.00	0.322	



Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516505-02
Client ID : 5-OS
Sample Location : HILLBURN
Sample Matrix : WATER
Analytical Method : 1,6020A
Lab File ID : wg803951.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516505
Project Number : 20010
Date Collected : 07/16/15 10:25
Date Received : 07/16/15
Date Analyzed : 07/18/15 09:39
Dilution Factor : 1
Analyst : KL
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	51.47	0.5400	0.5400	
7440-36-0	Antimony, Total	ND	0.0020	0.0001	U
7440-38-2	Arsenic, Total	0.0031	0.0005	0.0001	
7440-39-3	Barium, Total	0.2036	0.0005	0.0001	
7440-41-7	Beryllium, Total	0.0011	0.0005	0.0002	
7440-43-9	Cadmium, Total	0.0004	0.0002	0.0001	
7440-70-2	Calcium, Total	11.2	0.100	0.032	
7440-47-3	Chromium, Total	0.0406	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.0034	0.0002	0.0001	
7440-50-8	Copper, Total	0.0376	0.0010	0.0003	
7439-89-6	Iron, Total	7.80	0.050	0.012	
7439-92-1	Lead, Total	0.0040	0.0010	0.0001	
7439-95-4	Magnesium, Total	5.71	0.070	0.022	
7439-96-5	Manganese, Total	0.0651	0.0010	0.0003	
7440-02-0	Nickel, Total	0.0120	0.0030	0.0001	
7440-09-7	Potassium, Total	1.78	0.100	0.019	
7782-49-2	Selenium, Total	0.009	0.005	0.001	
7440-22-4	Silver, Total	0.0005	0.0004	0.0001	
7440-23-5	Sodium, Total	4.09	0.100	0.016	
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	0.0163	0.0050	0.0006	
7440-66-6	Zinc, Total	0.0385	0.0100	0.0026	

Form 1 METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-02
 Client ID : 5-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 1,6020A
 Lab File ID : wg803951.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/16/15 10:25
 Date Received : 07/16/15
 Date Analyzed : 07/18/15 09:36
 Dilution Factor : 20
 Analyst : KL
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	6.58	0.200	0.034	



Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516505-04
Client ID : 4-OS
Sample Location : HILLBURN
Sample Matrix : WATER
Analytical Method : 1,6020A
Lab File ID : wg803951.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516505
Project Number : 20010
Date Collected : 07/16/15 09:40
Date Received : 07/16/15
Date Analyzed : 07/18/15 09:45
Dilution Factor : 1
Analyst : KL
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.304	0.010	0.002	
7440-36-0	Antimony, Total	ND	0.0020	0.0001	U
7440-38-2	Arsenic, Total	0.0007	0.0005	0.0001	
7440-39-3	Barium, Total	0.0255	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	ND	0.0002	0.0001	U
7440-47-3	Chromium, Total	0.1329	0.0050	0.0003	
7440-48-4	Cobalt, Total	0.0016	0.0005	0.0001	
7440-50-8	Copper, Total	0.0034	0.0010	0.0003	
7439-89-6	Iron, Total	2.50	0.050	0.012	
7439-92-1	Lead, Total	0.0007	0.0010	0.0001	J
7439-96-5	Manganese, Total	0.2759	0.0010	0.0003	
7440-02-0	Nickel, Total	0.0375	0.0030	0.0001	
7440-09-7	Potassium, Total	1.38	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-23-5	Sodium, Total	35.6	0.100	0.016	
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	0.0014	0.0050	0.0006	J
7440-66-6	Zinc, Total	0.0101	0.0100	0.0026	

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-04
 Client ID : 4-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 1,6020A
 Lab File ID : wg803951.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/16/15 09:40
 Date Received : 07/16/15
 Date Analyzed : 07/18/15 09:42
 Dilution Factor : 20
 Analyst : KL
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	201.8	10.80	10.80	
7440-70-2	Calcium, Total	52.3	2.00	0.640	
7439-95-4	Magnesium, Total	17.3	1.40	0.446	

Inorganic Data (Mercury Analysis)

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-01
 Client ID : 1-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 1,7470A
 Lab File ID : Hg4072115B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/16/15 11:05
 Date Received : 07/16/15
 Date Analyzed : 07/21/15 19:37
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/21/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-02
 Client ID : 5-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 1,7470A
 Lab File ID : Hg4072115B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/16/15 10:25
 Date Received : 07/16/15
 Date Analyzed : 07/21/15 19:58
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/21/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	0.00007	0.00020	0.00006	J



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-04
 Client ID : 4-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 1,7470A
 Lab File ID : Hg4072115B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516505
 Project Number : 20010
 Date Collected : 07/16/15 09:40
 Date Received : 07/16/15
 Date Analyzed : 07/21/15 20:00
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/21/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Wet Chemistry

Total Kjeldahl Nitrogen Analysis

Results

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-01
 Client ID : 1-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150717-I
 Sample Amount :

Lab Number : L1516505
 Project Number: 20010
 Date Collected : 07/16/15 11:05
 Date Received : 07/16/15
 Date Analyzed : 07/17/15 22:41
 Dilution Factor : 2
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	1.38	0.600	0.186	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-02
 Client ID : 5-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150717-I
 Sample Amount :

Lab Number : L1516505
 Project Number: 20010
 Date Collected : 07/16/15 10:25
 Date Received : 07/16/15
 Date Analyzed : 07/17/15 22:42
 Dilution Factor : 5
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	1.24	1.50	0.465	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-04
 Client ID : 4-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150717-I
 Sample Amount :

Lab Number : L1516505
 Project Number: 20010
 Date Collected : 07/16/15 09:40
 Date Received : 07/16/15
 Date Analyzed : 07/17/15 22:43
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.266	0.300	0.093	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG803664-1
 Client ID : WG803664-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150717-I
 Sample Amount :

Lab Number : L1516505
 Project Number: 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/17/15 22:37
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.180	0.300	0.031	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG803664-3
 Client ID : MW-5DUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150717-I
 Sample Amount :

Lab Number : L1516505
 Project Number: 20010
 Date Collected : 07/16/15 13:10
 Date Received : 07/16/15
 Date Analyzed : 07/17/15 22:51
 Dilution Factor : 1
 Analyst : atran
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.237	0.300	0.093	J

Chemical Oxygen Demand Analysis

Results

Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516505-01
Client ID : 1-OS
Sample Location : HILLBURN
Sample Matrix : WATER
Analytical Method : 30,5220D
Lab File ID : WG804347.csv
Sample Amount :

Lab Number : L1516505
Project Number: 20010
Date Collected : 07/16/15 11:05
Date Received : 07/16/15
Date Analyzed : 07/20/15 20:17
Dilution Factor : 2
Analyst : TL
Instrument ID : GENSYS10VI
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	110	40	7.0	

Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516505-02
Client ID : 5-OS
Sample Location : HILLBURN
Sample Matrix : WATER
Analytical Method : 30,5220D
Lab File ID : WG804347.csv
Sample Amount :

Lab Number : L1516505
Project Number: 20010
Date Collected : 07/16/15 10:25
Date Received : 07/16/15
Date Analyzed : 07/20/15 20:19
Dilution Factor : 4
Analyst : TL
Instrument ID : GENSYS10VI
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	340	80	14.	

Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516505-04
Client ID : 4-OS
Sample Location : HILLBURN
Sample Matrix : WATER
Analytical Method : 30,5220D
Lab File ID : WG804347.csv
Sample Amount :

Lab Number : L1516505
Project Number: 20010
Date Collected : 07/16/15 09:40
Date Received : 07/16/15
Date Analyzed : 07/20/15 20:19
Dilution Factor : 1
Analyst : TL
Instrument ID : GENSYS10VI
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	9.7	20	3.5	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : WG804347-1
Client ID : WG804347-1BLANK
Sample Location :
Sample Matrix : WATER
Analytical Method : 30,5220D
Lab File ID : WG804347.csv
Sample Amount :

Lab Number : L1516505
Project Number: 20010
Date Collected : NA
Date Received : NA
Date Analyzed : 07/20/15 20:10
Dilution Factor : 1
Analyst : TL
Instrument ID : GENSYS10VI
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	ND	20	3.5	U

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804347-4
 Client ID : 8-RDUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 30,5220D
 Lab File ID : WG804347.csv
 Sample Amount :

Lab Number : L1516505
 Project Number: 20010
 Date Collected : 07/15/15 11:20
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 20:20
 Dilution Factor : 1
 Analyst : TLH
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	14.	20	3.5	J

Alkalinity Analysis

Results

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516505-01
 Client ID : 1-OS
 Sample Location : HILLBURN
 Sample Matrix : WATER
 Analytical Method : 30,2320B
 Lab File ID : WG803721.csv
 Sample Amount :

Lab Number : L1516505
 Project Number: 20010
 Date Collected : 07/16/15 11:05
 Date Received : 07/16/15
 Date Analyzed : 07/17/15 08:53
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	228.	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516505-02
Client ID : 5-OS
Sample Location : HILLBURN
Sample Matrix : WATER
Analytical Method : 30,2320B
Lab File ID : WG803721.csv
Sample Amount :

Lab Number : L1516505
Project Number: 20010
Date Collected : 07/16/15 10:25
Date Received : 07/16/15
Date Analyzed : 07/17/15 08:53
Dilution Factor : 1
Analyst : SG
Instrument ID :
%Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	29.1	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516505-04
Client ID : 4-OS
Sample Location : HILLBURN
Sample Matrix : WATER
Analytical Method : 30,2320B
Lab File ID : WG803721.csv
Sample Amount :

Lab Number : L1516505
Project Number: 20010
Date Collected : 07/16/15 09:40
Date Received : 07/16/15
Date Analyzed : 07/17/15 08:53
Dilution Factor : 1
Analyst : SG
Instrument ID :
%Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	105.	2.00	NA	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG803721-1
 Client ID : WG803721-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 30,2320B
 Lab File ID : WG803721.csv
 Sample Amount :

Lab Number : L1516505
 Project Number: 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/17/15 08:53
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : N/A

CAS NO.	Parameter	Results	mg CaCO3/L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	ND	2.00	NA	U

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG803721-2
 Client ID : MW-204DUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 30,2320B
 Lab File ID : WG803721.csv
 Sample Amount :

Lab Number : L1516505
 Project Number: 20010
 Date Collected : 07/16/15 14:20
 Date Received : 07/16/15
 Date Analyzed : 07/17/15 08:53
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	338.	2.00	NA	





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Alpha Analytical

Laboratory Code: 11148

SDG Number: L1516343

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Project Name: RAMAPO LANDFILL
Project Number: 20010

Lab Number: L1516343
Report Date: 07/22/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1516343-01	10-R	WATER	HILLBURN, NY	07/15/15 09:40	07/15/15
L1516343-02	DUPLICATE	WATER	HILLBURN, NY	07/15/15 00:00	07/15/15
L1516343-03	10-OS	WATER	HILLBURN, NY	07/15/15 09:30	07/15/15
L1516343-04	8-OS	WATER	HILLBURN, NY	07/15/15 10:50	07/15/15
L1516343-05	TRIP BLANK	WATER	HILLBURN, NY	07/15/15 00:00	07/15/15
L1516343-06	8-R	WATER	HILLBURN, NY	07/15/15 11:20	07/15/15
L1516343-07	8-I	WATER	HILLBURN, NY	07/15/15 11:50	07/15/15
L1516343-08	7-OS	WATER	HILLBURN, NY	07/15/15 12:45	07/15/15
L1516343-09	3-OS/I	WATER	HILLBURN, NY	07/15/15 14:10	07/15/15
L1516343-10	2-OS	WATER	HILLBURN, NY	07/15/15 15:00	07/15/15

Project Name: RAMAPO LANDFILL
Project Number: 20010

Lab Number: L1516343
Report Date: 07/22/15

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the

Project Name: RAMAPO LANDFILL
Project Number: 20010

Lab Number: L1516343
Report Date: 07/22/15

Case Narrative (continued)

MDL column.

Metals

The WG803195-3/-4 MS/MSD recoveries for calcium (10%), sodium (74%/67%) and hardness (69%), performed on L1516343-06, do not apply because the sample concentrations are greater than four times the spike amounts added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: 

Report Date: 07/22/15

Title: Technical Director/Representative

List of Organic Method Qualifiers

Table 1

Qualifier (Q)	Description
B	Entered if the analyte is found in the associated blank as well as the sample.
C	Applied to pesticide results when the identification has been confirmed by GC/MS.
D	Included when the all identified compounds in the analysis are at the secondary dilution factor.
E	Identified compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
J	Indicates an estimated value, may indicate one of the following, depending on the situation: (1) The reported value is estimated and below the MDL. (2) Used when estimating a concentration for TIC where a 1:1 response is assumed or when the result indicates the presence of a compound that meets the identification criteria, but the results is less than the quantitation limit, but greater than zero. (3) QC associated with this analyte is within warning limits.
N	Included for TIC that indicate presumptive evidence of a compound.
U	Entered if the analyte was analyzed for, but not detected.
P	Used for a pesticide/Aroclor target analyte when the concentration difference between 2 GC columns is greater than 25%; the lower value is flagged with a "P".
EMPC	"Estimated Maximum Possible Concentration" – The amount of analyte cannot be accurately quantified, so a maximum concentration has been estimated for the compound.
"XYZ"	"Wildcard" or Laboratory defined qualifier.

Note: Form I allows only one character in each qualifier column. If multiple qualifiers are applicable, please assess qualifier priority in the following order: U, E, J, B, D, C, P, N. Reporting done in the EDD may include multiple qualifiers when applicable, separated by a single space.

(Information obtained from NYSDEC ASP Exhibit B, 7/2005, page 64)

List of Inorganic Method Qualifiers

Table 2

Qualifier	Column (1)	Description
Concentration qualifiers		
B	C	Entered if the reported value was less than the CRDL, but greater than the IDL.
U	C	Entered if the analyte was analyzed for, but not detected.
J	C	Entered if the reported value is estimated and below the MDL.
*	C	Duplicate precision exceeds RPD limit.
M	C	Replicate precision exceeds RPD limit.
"XYZ"	C	"Wildcard" or Laboratory defined qualifier.
Qualifier specific entries		
E	Q	Entered if the reported value is estimated because of the presence of interferences.
Method qualifiers		
A	M	Flame atomic absorption
AS	M	Semi-automated spectrophotometric
AV	M	Automated cold vapor atomic absorption
C	M	Manual spectrophotometric
F	M	Furnace atomic absorption
MS	M	Mass spectrometry (ICP-MS)
NR	M	Analyte is not required to be analyzed
P	M	Inductively coupled plasma (ICP)
" "	M	No data have been entered

(1) The term "Column" is used to indicate under which column heading in the reporting forms that the qualifier will be found under.

Note: Form I allows only one character in each qualifier column. If multiple qualifiers are applicable to column C, please assess qualifier priority in the following order: U, J, B. Reporting done in the EDD may include multiple qualifiers when applicable, separated by a single space.

(Information obtained from NYSDEC ASP Exhibit B, 7/2005, page 65)

Volatile Organics Instruments

Volatile Organics: Jack

Instrument: Agilent 5975MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon
Autosampler: EST Centurion
Purge time: 11 min

Column Type: RTX-VMS
Column Length: 20 Meters
df: 1.00um
ID: 0.18mm
Desorb: 2 min

Volatile Organics: Quimby

Instrument: Agilent 5973MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon
Autosampler: EST Centurion
Purge time: 11 min

Column Type: RTX-VMS
Column Length: 20 Meters
df: 1.00um
ID: 0.18mm
Desorb: 2 min

Volatile Organics: Curly

Instrument: Agilent 5972 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Tekmar 3000
Autosampler: Archon
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 um
ID: 0.18 mm
Desorb: 2 min

Volatile Organics: Elaine

Instrument: Agilent 5973 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Teledyne Velocity
Autosampler: Teledyne Solatek
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 um
ID: 0.18 mm
Desorb: 2 min



Volatile Organics: Gonzo

Instrument: Agilent 5973 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Teledyne Velocity
Autosampler: Teledyne Solatek
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 μ m
ID: 0.18 mm
Desorb: 2 min

Volatile Organics: VOA101

Instrument: Agilent 5975C inert XL MSD
Trap: EST K Trap (VOACARB 3000)
Concentrator: Encon Evolution
Autosampler: EST Centurion
Purge time: 11 min

Column Type: Restek RTX-VMS
Column Length: 30 Meters
df: 1.40 μ m
ID: 0.25 mm
Desorb: 1 min

Volatile Organics: Charlie/Voa100/Voa104

Instrument: Agilent 5975C MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Encon Evolution
Autosampler: EST Centurion
Purge time: 11 min

Column Type: Agilent DB-624
Column Length: 25 Meters
df: 1.12 μ m
ID: 0.20 mm
Desorb: 2 min

Volatile Organics: M

Instrument: Agilent 6890

Concentrator: Tekmar 2016
Autosampler: Tekmar 3100

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics: L/N

Instrument: Agilent 6890

Concentrator: Encon Evolution
Autosampler: EST Centurion

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics: O/P

Instrument: Agilent 7890A

Concentrator: Encon Evolution
Autosampler: EST Centurion

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics in Air Instruments

Volatile Organics in Air:

Instrument: Agilent 6890 GC / 5975 MSD	Column Type: Restek RTX-1
	Column Length: 60 Meters
Concentrator: Entech 7100A	df: 1.00 um
Autosampler: Entech 7016CA	ID: 0.52 mm
Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material	
Trap 2: Tenax: manufacturer-Entech: 20 cm packing material	

Semivolatile Organics Instruments

Semivolatile Organics (Acid/Base/Neutral Extractables): Buffy

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RTX-5MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Semivolatile Organics (Acid/Base/Neutral Extractables): Juliet/GCMS5/GCMS7

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RXI-5SIL MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM: Dakota/Mork

Instrument: Agilent 5973 MSD	Injection volume: 1 ul
Column Type: Restek RTX-5MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM: Mindy

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RXI-5SIL MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Pesticides/PCB : Pest 11/Pest2/Pest7/Pest12

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column Type: Restek RTX-CLP (Channel A)	df: 0.32 um
Column: Restek RTX-CLPPesticide II (Channel B)	df: 0.25 um
Column Length: 30 Meters (Both)	ID: 0.32 mm (Both)

Pesticides/PCB: Pest 10/ Pest9

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column Type: Restek STX-CLP (Channel A)	df: 0.32 um
Column: Restek STX-CLPPesticide II (Channel B)	df: 0.25 um
Column Length: 30 Meters (Both)	ID: 0.32 mm (Both)

Herbicides

Instrument: Agilent 6890 w/Dual Micro ECDs
Column Type: Restek RTX-1701 (Channel A)
Column Type: Restek RTX-5 (Channel B)
Column Length: 30 Meters (Both)

Injection Volume: 1uL
df: 0.25 um
df: 0.25 um
ID: 0.32 mm (Both)

Petro9

Instrument: Agilent 6890 w/FID
Column: Restek RTX-5
Column Length: 30 Meters

Injection Volume: 1uL
df: 0.25 um
ID: 0.32 mm

EPH Petro10/ Petro11

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5-MS
Column Length: 30 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.32 mm

Explosives

Instrument: Dionex ICS-3000, AS50 Autosampler and PDA-100 detectors.
Injection Volume: 100uL
Column: Phenomenex Synergi 4u Hydro-RP and Luna 5u Phenyl-Hexyl.

GC/MS Forensic Semivolatile Organic Instruments

Semivolatile Organics (ALK-PAH extractables): PAH1/PAH2/PAH3/PAH4

Instrument: Agilent 5973C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

Semivolatile Organics (ALK-PAH extractables): PAH8/PAH9/PAH10/PAH11/PAH12/PAH13/PAH14

Instrument: Agilent 5975C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

Semivolatile Organics (ALK-PAH extractables): PAH17/PAH18/PAH19

Instrument: Agilent 5975C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

GC/FID Forensic Semivolatile Organic Instruments

Semivolatile Organics (SHC extractables):PAH1/PAH2/PAH3/PAH4/PAH8

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm

Semivolatile Organics (SHC extractables): FID6 (dual column)/ FID9 (dual column)/ FID17 (dual column)

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm

Semivolatile Organics (SHC extractables):FID7 (dual column)

Instrument: Agilent 7890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm



Sample Delivery Group Form

Laboratory Job number: L1516343

Project Manager: Candace Fox

Review Date: 07/21/2015

Project Number: 20010

Project Name: RAMAPO LANDFILL

Received: 07/15/2015 16:40

Client Account: Sterling Environmental Eng

Received by: SH/WM

Samples Delivered by: COURIER

Call Tracker #

Bill Of Laden N/A

Trackingnum

Coc Present Present

Container Status Intact

Sample IDs

All Containers Accounted For? Yes

Were Extra Samples Received? No

Do Sample Labels and COC agree? Yes

Are Samples in Appropriate Containers? Yes

Are Samples Received within Holding time? Yes

pH of Samples upon Receipt <2

Are samples Properly Preserved? Yes

Initial pH preserved in house with

Final pH

Other Issues

Chlorine Check N/A

Are VOA/VPV Vials Present? Yes

Aqueous: Do Vials Contain Head Space? No

Soils: Is MeOH Covering the Soil? N/A

Reagent H2O Preserved vials Frozen on N/A

Frozen by Client N/A

Cooler

Seal

Ice Present

Blue Ice Present

Temp. (Celsius)

Frozen upon Receipt

Delivered Direct from Site

A

Absent

Yes

No

4.8 - IR Gun

No

No

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Jul 22 2015, 05:40 pm

Login Number: L1516343

Account: STERLINGENV Sterling Environmental EngProject: 20010

Received: 15JUL15 Due Date: 22JUL15
Mat PR Collected Container

Sample # Client ID

L1516343-01 10-R 1 S0 15JUL15 09:40 1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.12,3-Vial-B
8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting
list built) ASP-A Package Due Date: 07/22/15
624, ALK-T-2320, ASP-A, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-
6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-
6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351

L1516343-02 DUPLICATE 1 S0 15JUL15 00:00 1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.12,3-Vial-B
8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting
list built) Package Due Date: 07/22/15
624, ALK-T-2320, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T,
CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-
6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351

L1516343-03 10-OS 1 S0 15JUL15 09:30 1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.12,3-Vial-B
8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting
list built) Package Due Date: 07/22/15
624, ALK-T-2320, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T,
CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-
6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351

L1516343-04 8-OS 1 S0 15JUL15 10:50 1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.12,3-Vial-B
8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting
list built) Package Due Date: 07/22/15
624, ALK-T-2320, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T,
CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-
6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351

ALPHA ANALYTICAL LABORATORIES, INC.

LOGIN CHAIN OF CUSTODY REPORT

Jul 22 2015, 05:40 pm

Login Number: L1516343

Account: STERLINGENV Sterling Environmental EngProject: 20010

Received: 15JUL15 Due Date: 22JUL15

Sample # Client ID Mat PR Collected Container

L1516343-05 TRIP BLANK 1 S0 15JUL15 00:00 2-Vial-B,1-Vial-H

8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting list built) Package Due Date: 07/22/15

624

L1516343-06 8-R 1 S0 15JUL15 11:20 3-Plastic-C.25,3-Plastic-D.25,3-Plastic-NH.12,9-Vial-B

L1516343-06 MS L1516343-06 MSD 8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting list built) Package Due Date: 07/22/15

624, ALK-T-2320, COD-5220, HARDT-6020, MS/MSD, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351

L1516343-07 8-I 1 S0 15JUL15 11:50 1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.12,3-Vial-B

8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting list built) Package Due Date: 07/22/15

624, ALK-T-2320, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351

L1516343-08 7-OS 1 S0 15JUL15 12:45 1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.12,3-Vial-B

8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting list built) Package Due Date: 07/22/15

624, ALK-T-2320, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351

L1516343-09 3-OS/I 1 S0 15JUL15 14:10 1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.12,3-Vial-B

8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting list built) Package Due Date: 07/22/15

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Jul 22 2015, 05:40 pm

Login Number: L1516343

Account: STERLINGENV Sterling Environmental EngProject: 20010

Sample #	Client ID	Received: 15JUL15 Mat PR Collected	Due Date: 22JUL15 Container

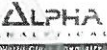
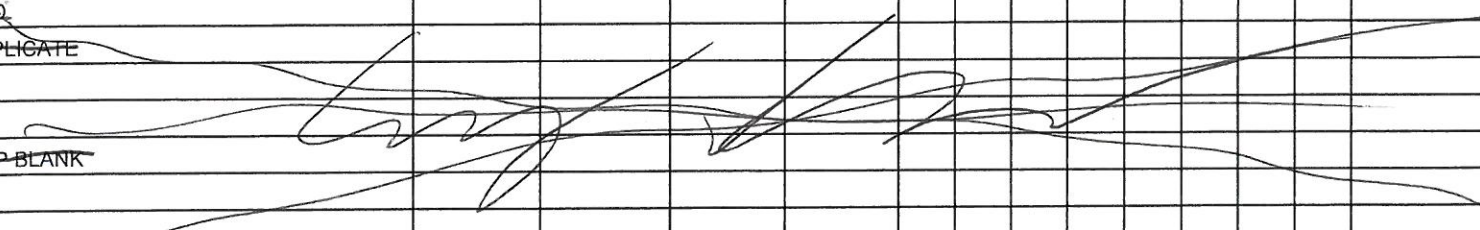
624, ALK-T-2320, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351

L1516343-10 2-OS 1 S0 15JUL15 15:00 1-Plastic-C.25, 1-Plastic-D.25, 1-Plastic-NH.12, 3-Vial-B

8260: 1,1-Dichloroethane, vinyl chloride, benzene, and chlorobenzene only. (sample level reporting list built) Package Due Date: 07/22/15

624, ALK-T-2320, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351

 ALPHA ANALYTICAL Westborough, MA 01581 8 Walkup Dr. TEL: 508-898-9220 FAX: 508-898-9193	NEW YORK CHAIN OF CUSTODY Mansfield, MA 02048 320 Forbes Blvd TEL: 508-822-9300 FAX: 508-822-3288	Service Centers Mahwah, NJ 07430: 35 Whitney Rd, Suite 5 Albany, NY 12205: 14 Walker Way Tonawanda, NY 14150: 275 Cooper Ave, Suite 105	Page 1 of 12		Date Rec'd in Lab 7/15/15		ALPHA Job # L1516343													
			Project Information			Deliverables			Billing Information											
			Project Name: Ramapo Landfill Project Location: Hibernia, NY Project # 2001020010 (Use Project name as Project #) ☐			☒ ASP-A ☐ ASP-B ☐ EQUIS (1 File) ☒ EQUIS (4 File) ☐ Other			☒ Same as Client Info PO #											
Client Information			Regulatory Requirement			Disposal Site Information														
Client: Sterling Environmental Eng. P.C. Address: 24 Wade Road Latham, NY 12110 Phone: 518-456-4900 Fax: Email: cody.sargood@sterlingenvironme			Project Manager: Candance Fox ALPHAQuote #: Turn-Around Time Standard ☒ Due Date: Rush (only if pre approved) ☐ # of Days:			Please identify below location of applicable disposal facilities. Disposal Facility: ☐ NJ ☒ NY ☐ Other: NA														
These samples have been previously analyzed by Alpha ☐ Other project specific requirements/comments: → cody.sargood@sterlingenvironmental.com Please specify Metals or TAL.			ANALYSIS			Sample Filtration														
			TKN/COD			Alk			TAL Metals / Hardness			VOC(Site Specific) 1,1-Dichloroethane, Vinyl chloride, benzene, Chlorobenzene			☐ Done ☐ Lab to do Preservation ☐ Lab to do (Please Specify below)					
			Sample Matrix			Sampler's Initials			Sample Specific Comments			Total Bottles								
ALPHA Lab ID (Lab Use Only)			Sample ID			Collection Date			Time			Sample Matrix			Sampler's Initials					
16343 - 01			10-R			7/15/15			940			W			CS/AC			6		
-06			MS						1120									6		
-06			MSD						1120									6		
-02			DUPLICATE															6		
-03			10-OS						930									6		
-04			8-OS						1050									6		
-05			TRIP BLANK															2		
-06			8-R						1120									6		
-07			8-I						1150									6		
-08			7-OS						1245									6		
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other			Container Code: P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle			Westboro: Certification No: MA935 Mansfield: Certification No: MA015			Container Type			Preservative						Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S <u>TERMS & CONDITIONS</u> .		
									P			P			P					
									D			A			C			B		
Relinquished By:			Date/Time			Received By:			Date/Time											
[Signature]			7/15/15 16:30			[Signature]			7/15/15 16:40											
[Signature]			7/15/15 18:30			[Signature]			7/15/15 18:30											
[Signature]			7/15/15 23:00			[Signature]			7/15/15 23:00											

 ALPHA ANALYTICAL World Class Analytical	NEW YORK CHAIN OF CUSTODY	Service Centers Mahwah, NJ 07430: 35 Whitney Rd, Suite 5 Albany, NY 12205: 14 Walker Way Tonawanda, NY 14150: 275 Cooper Ave, Suite 105	Page <u>12</u> of <u>12</u>		Date Rec'd in Lab <u>7/15/15</u>		ALPHA Job # <u>C/516343</u>																	
			Westborough, MA 01581 8 Walkup Dr. TEL: 508-898-9220 FAX: 508-898-9193		Mansfield, MA 02048 320 Forbes Blvd TEL: 508-822-9300 FAX: 508-822-3288																			
Project Information			Deliverables			Billing Information																		
Project Name: <u>Ramapo Landfill</u>			☒ ASP-A ☐ ASP-B ☐ EQUIS (1 File) ☒ EQUIS (4 File) ☐ Other			☒ Same as Client Info PO #																		
Project Location: <u>Hillburn, NY</u>			Regulatory Requirement ☒ NY TOGS ☐ NY Part 375 ☐ AWQ Standards ☐ NY CP-51 ☐ NY Restricted Use ☐ Other ☐ NY Unrestricted Use ☐ NYC Sewer Discharge			Disposal Site Information Please identify below location of applicable disposal facilities. Disposal Facility: ☐ NJ ☒ NY ☐ Other: NA																		
Project # <u>20010</u>																								
Client Information			Turn-Around Time			Sample Filtration																		
Client: <u>Sterling Environmental Eng. P.C.</u>			(Use Project name as Project #) ☐ Project Manager: <u>Candance Fox</u> ALPHAQuote #:																					
Address: <u>24 Wade Road</u>			Due Date:			☐ Done ☐ Lab to do Preservation ☐ Lab to do (Please Specify below)																		
Latham, NY 12110			# of Days:																					
Phone: <u>518-456-4900</u>			Standard ☒ Rush (only if pre approved) ☐			Sample Specific Comments																		
Fax:																								
Email: <u>cody.sargood@sterlingenvironmental.com</u>						ANALYSIS <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>TKN/COD</th> <th>Alk</th> <th>TAL Metals / Hardness</th> <th>VOC(Site Specific)</th> <th>1,1-Dichloroethane</th> <th>Vinyl chloride, benzene</th> <th>Chlorobenzene</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>			TKN/COD	Alk	TAL Metals / Hardness	VOC(Site Specific)	1,1-Dichloroethane	Vinyl chloride, benzene	Chlorobenzene									
TKN/COD	Alk	TAL Metals / Hardness	VOC(Site Specific)	1,1-Dichloroethane	Vinyl chloride, benzene				Chlorobenzene															
These samples have been previously analyzed by Alpha ☐						Other project specific requirements/comments: <u>Cody.sargood@sterlingenvironmental.com</u>																		
Please specify Metals or TAL.																								
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th rowspan="2">ALPHA Lab ID (Lab Use Only)</th> <th rowspan="2">Sample ID</th> <th colspan="2">Collection</th> <th rowspan="2">Sample Matrix</th> <th rowspan="2">Sampler's Initials</th> <th rowspan="2">TKN/COD</th> <th rowspan="2">Alk</th> <th rowspan="2">TAL Metals / Hardness</th> <th rowspan="2">VOC(Site Specific)</th> <th rowspan="2">1,1-Dichloroethane</th> <th rowspan="2">Vinyl chloride, benzene</th> <th rowspan="2">Chlorobenzene</th> <th rowspan="2">Total Bottles</th> </tr> <tr> <th>Date</th> <th>Time</th> </tr> </table>			ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	TKN/COD	Alk	TAL Metals / Hardness	VOC(Site Specific)	1,1-Dichloroethane	Vinyl chloride, benzene	Chlorobenzene	Total Bottles	Date	Time						
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection			Sample Matrix	Sampler's Initials											TKN/COD	Alk	TAL Metals / Hardness	VOC(Site Specific)	1,1-Dichloroethane	Vinyl chloride, benzene	Chlorobenzene	Total Bottles
		Date	Time																					
<u>16343-09</u>	<u>10-R 3-OS/I</u>	<u>7/15/15</u>	<u>1410</u>	<u>W</u>	<u>CS/AC</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>				<u>6</u>											
<u>-10</u>	<u>MS 2-OS</u>	<u>↓</u>	<u>1500</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>	<u>↓</u>				<u>6</u>											
	<u>MSD</u>												<u>6</u>											
	<u>DUPLICATE</u>												<u>6</u>											
	<u>TRIP BLANK</u>												<u>2</u>											
																								
Preservative Code:		Container Code		Westboro: Certification No: MA935		Mansfield: Certification No: MA015		Container Type		Preservative		Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S <u>TERMS & CONDITIONS</u> .												
A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other		P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle						P P P V D A C B																
Relinquished By:		Date/Time		Received By:		Date/Time																		
<u>[Signature]</u>		<u>7/15/15 1630</u>		<u>[Signature]</u>		<u>7/15/15 1640</u>																		
<u>[Signature]</u>		<u>7/15/15 1830</u>		<u>[Signature]</u>		<u>7/15/15 1830</u>																		
<u>[Signature]</u>		<u>7-15-15 2300</u>		<u>[Signature]</u>		<u>7/15/15 2300</u>																		

Organics

GC/MS 624

Analysis

Volatiles Sample Data

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-01
 Client ID : 10-R
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0719A13
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 09:40
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 00:01
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-02
 Client ID : DUPLICATE
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0719A14
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 00:00
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 00:36
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	0.57	3.5	0.32	J
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-03
 Client ID : 10-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0719A15
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 09:30
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 01:10
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-04
 Client ID : 8-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0719A16
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 10:50
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 01:44
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-05
 Client ID : TRIP BLANK
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0719A17
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 00:00
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 02:19
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-06
 Client ID : 8-R
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0719A18
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 11:20
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 02:53
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-07
 Client ID : 8-I
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0719A19
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 11:50
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 03:28
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	0.76	3.5	0.32	J
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-08
 Client ID : 7-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0719A20
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 12:45
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 04:02
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-09
 Client ID : 3-OS/I
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0720B08
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 14:10
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 15:36
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-10
 Client ID : 2-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0720B09
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 15:00
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 16:11
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804157-2
 Client ID : WG804157-2BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0719A04
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/19/15 18:49
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	5.0	0.65	U
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
67-66-3	Chloroform	ND	1.5	0.29	U
56-23-5	Carbon tetrachloride	ND	1.0	0.33	U
78-87-5	1,2-Dichloropropane	ND	3.5	0.28	U
124-48-1	Dibromochloromethane	ND	1.0	0.33	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
110-75-8	2-Chloroethylvinyl ether	ND	10	0.62	U
127-18-4	Tetrachloroethene	ND	1.5	0.38	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
75-69-4	Trichlorofluoromethane	ND	5.0	0.33	U
107-06-2	1,2-Dichloroethane	ND	1.5	0.36	U
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.30	U
75-27-4	Bromodichloromethane	ND	1.0	0.30	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.5	0.30	U
10061-01-5	cis-1,3-Dichloropropene	ND	1.5	0.32	U
75-25-2	Bromoform	ND	1.0	0.32	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.35	U
71-43-2	Benzene	ND	1.0	0.31	U
108-88-3	Toluene	ND	1.0	0.35	U
100-41-4	Ethylbenzene	ND	1.0	0.33	U
74-87-3	Chloromethane	ND	5.0	0.89	U
74-83-9	Bromomethane	ND	5.0	1.3	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U
75-00-3	Chloroethane	ND	2.0	0.31	U
75-35-4	1,1-Dichloroethene	ND	1.0	0.28	U
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.34	U



Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804157-2
 Client ID : WG804157-2BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0719A04
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/19/15 18:49
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.33	U
79-01-6	Trichloroethene	ND	1.0	0.33	U
95-50-1	1,2-Dichlorobenzene	ND	5.0	0.75	U
541-73-1	1,3-Dichlorobenzene	ND	5.0	0.93	U
106-46-7	1,4-Dichlorobenzene	ND	5.0	0.85	U
179601-23-1	p/m-Xylene	ND	2.0	0.66	U
95-47-6	o-Xylene	ND	1.0	0.30	U
1330-20-7	Xylene (Total)	ND	1.0	0.30	U
100-42-5	Styrene	ND	1.0	0.30	U
67-64-1	Acetone	ND	10	1.8	U
75-15-0	Carbon disulfide	ND	5.0	0.90	U
78-93-3	2-Butanone	ND	10	2.2	U
108-05-4	Vinyl acetate	ND	10	2.9	U
108-10-1	4-Methyl-2-pentanone	ND	10	2.4	U
591-78-6	2-Hexanone	ND	10	2.5	U
107-02-8	Acrolein	ND	8.0	1.9	U
107-13-1	Acrylonitrile	ND	10	1.9	U
1634-04-4	Methyl tert butyl ether	ND	10	0.58	U
74-95-3	Dibromomethane	ND	1.0	1.0	U
123-91-1	1,4-Dioxane	ND	2000	490	U
75-65-0	tert-Butyl Alcohol	ND	100	6.0	U
994-05-8	Tertiary-Amyl Methyl Ether	ND	20	0.26	U



Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804157-3
 Client ID : 0101 GRABDUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0719A07
 Sample Amount : 0.5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/16/15 09:45
 Date Received : 07/17/15
 Date Analyzed : 07/19/15 20:33
 Dilution Factor : 10
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	50	6.5	U
75-34-3	1,1-Dichloroethane	ND	15	3.1	U
67-66-3	Chloroform	ND	15	2.9	U
56-23-5	Carbon tetrachloride	ND	10	3.3	U
78-87-5	1,2-Dichloropropane	ND	35	2.8	U
124-48-1	Dibromochloromethane	ND	10	3.3	U
79-00-5	1,1,2-Trichloroethane	ND	15	3.4	U
110-75-8	2-Chloroethylvinyl ether	ND	100	6.2	U
127-18-4	Tetrachloroethene	ND	15	3.8	U
108-90-7	Chlorobenzene	ND	35	3.2	U
75-69-4	Trichlorofluoromethane	ND	50	3.3	U
107-06-2	1,2-Dichloroethane	ND	15	3.6	U
71-55-6	1,1,1-Trichloroethane	ND	20	3.0	U
75-27-4	Bromodichloromethane	ND	10	3.0	U
10061-02-6	trans-1,3-Dichloropropene	ND	15	3.0	U
10061-01-5	cis-1,3-Dichloropropene	ND	15	3.2	U
75-25-2	Bromoform	ND	10	3.2	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	3.5	U
71-43-2	Benzene	ND	10	3.1	U
108-88-3	Toluene	ND	10	3.5	U
100-41-4	Ethylbenzene	ND	10	3.3	U
74-87-3	Chloromethane	ND	50	8.9	U
74-83-9	Bromomethane	ND	50	13.	U
75-01-4	Vinyl chloride	ND	10	3.0	U
75-00-3	Chloroethane	ND	20	3.1	U
75-35-4	1,1-Dichloroethene	ND	10	2.8	U
156-60-5	trans-1,2-Dichloroethene	ND	15	3.4	U



Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804157-3
 Client ID : 0101 GRABDUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0719A07
 Sample Amount : 0.5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/16/15 09:45
 Date Received : 07/17/15
 Date Analyzed : 07/19/15 20:33
 Dilution Factor : 10
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-59-2	cis-1,2-Dichloroethene	ND	10	3.3	U
79-01-6	Trichloroethene	ND	10	3.3	U
95-50-1	1,2-Dichlorobenzene	ND	50	7.5	U
541-73-1	1,3-Dichlorobenzene	ND	50	9.3	U
106-46-7	1,4-Dichlorobenzene	ND	50	8.5	U
179601-23-1	p/m-Xylene	ND	20	6.6	U
95-47-6	o-Xylene	ND	10	3.0	U
1330-20-7	Xylene (Total)	ND	10	3.0	U
100-42-5	Styrene	ND	10	3.0	U
67-64-1	Acetone	ND	100	18.	U
75-15-0	Carbon disulfide	ND	50	9.0	U
78-93-3	2-Butanone	ND	100	22.	U
108-05-4	Vinyl acetate	ND	100	29.	U
108-10-1	4-Methyl-2-pentanone	ND	100	24.	U
591-78-6	2-Hexanone	ND	100	25.	U
107-02-8	Acrolein	ND	80	19.	U
107-13-1	Acrylonitrile	ND	100	19.	U
74-95-3	Dibromomethane	ND	10	10.	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804157-6
 Client ID : WG804157-6BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0720B04
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/20/15 13:17
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	5.0	0.65	U
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
67-66-3	Chloroform	ND	1.5	0.29	U
56-23-5	Carbon tetrachloride	ND	1.0	0.33	U
78-87-5	1,2-Dichloropropane	ND	3.5	0.28	U
124-48-1	Dibromochloromethane	ND	1.0	0.33	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
110-75-8	2-Chloroethylvinyl ether	ND	10	0.62	U
127-18-4	Tetrachloroethene	ND	1.5	0.38	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
75-69-4	Trichlorofluoromethane	ND	5.0	0.33	U
107-06-2	1,2-Dichloroethane	ND	1.5	0.36	U
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.30	U
75-27-4	Bromodichloromethane	ND	1.0	0.30	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.5	0.30	U
10061-01-5	cis-1,3-Dichloropropene	ND	1.5	0.32	U
75-25-2	Bromoform	ND	1.0	0.32	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.35	U
71-43-2	Benzene	ND	1.0	0.31	U
108-88-3	Toluene	ND	1.0	0.35	U
100-41-4	Ethylbenzene	ND	1.0	0.33	U
74-87-3	Chloromethane	ND	5.0	0.89	U
74-83-9	Bromomethane	2.3	5.0	1.3	J
75-01-4	Vinyl chloride	ND	1.0	0.30	U
75-00-3	Chloroethane	ND	2.0	0.31	U
75-35-4	1,1-Dichloroethene	ND	1.0	0.28	U
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.34	U



Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804157-6
 Client ID : WG804157-6BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0720B04
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/20/15 13:17
 Dilution Factor : 1
 Analyst : PK
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.33	U
79-01-6	Trichloroethene	ND	1.0	0.33	U
95-50-1	1,2-Dichlorobenzene	ND	5.0	0.75	U
541-73-1	1,3-Dichlorobenzene	ND	5.0	0.93	U
106-46-7	1,4-Dichlorobenzene	ND	5.0	0.85	U
179601-23-1	p/m-Xylene	ND	2.0	0.66	U
95-47-6	o-Xylene	ND	1.0	0.30	U
1330-20-7	Xylene (Total)	ND	1.0	0.30	U
100-42-5	Styrene	ND	1.0	0.30	U
67-64-1	Acetone	2.3	10	1.8	J
75-15-0	Carbon disulfide	ND	5.0	0.90	U
78-93-3	2-Butanone	ND	10	2.2	U
108-05-4	Vinyl acetate	ND	10	2.9	U
108-10-1	4-Methyl-2-pentanone	ND	10	2.4	U
591-78-6	2-Hexanone	ND	10	2.5	U
107-02-8	Acrolein	ND	8.0	1.9	U
107-13-1	Acrylonitrile	ND	10	1.9	U
74-95-3	Dibromomethane	ND	1.0	1.0	U

Metals

Inorganic Data (ICPMS Analysis)

Form 1 METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-01
 Client ID : 10-R
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,6020A
 Lab File ID : wg803816.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 09:40
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 16:25
 Dilution Factor : 1
 Analyst : BM
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	39.36	0.5400	0.5400	
7429-90-5	Aluminum, Total	0.090	0.010	0.002	
7440-36-0	Antimony, Total	0.0009	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0002	0.0005	0.0001	J
7440-39-3	Barium, Total	0.0042	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	ND	0.0002	0.0001	U
7440-70-2	Calcium, Total	12.0	0.100	0.032	
7440-47-3	Chromium, Total	0.00790	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.0006	0.0005	0.0001	
7440-50-8	Copper, Total	0.0012	0.0010	0.0003	
7439-89-6	Iron, Total	0.085	0.050	0.012	
7439-92-1	Lead, Total	ND	0.0010	0.0001	U
7439-95-4	Magnesium, Total	2.27	0.070	0.022	
7439-96-5	Manganese, Total	0.0158	0.0010	0.0003	
7440-02-0	Nickel, Total	0.0148	0.0020	0.0001	
7440-09-7	Potassium, Total	0.959	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-23-5	Sodium, Total	6.95	0.100	0.016	
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	ND	0.0050	0.0006	U
7440-66-6	Zinc, Total	0.0037	0.0100	0.0026	J



Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-02
Client ID : DUPLICATE
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 1,6020A
Lab File ID : wg803816.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516343
Project Number : 20010
Date Collected : 07/15/15 00:00
Date Received : 07/15/15
Date Analyzed : 07/17/15 16:28
Dilution Factor : 1
Analyst : BM
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.019	0.010	0.002	
7440-36-0	Antimony, Total	0.0003	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0074	0.0005	0.0001	
7440-39-3	Barium, Total	0.0802	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	ND	0.0002	0.0001	U
7440-47-3	Chromium, Total	0.0042	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.0050	0.0005	0.0001	
7440-50-8	Copper, Total	0.0003	0.0010	0.0003	J
7439-89-6	Iron, Total	11.5	0.050	0.012	
7439-92-1	Lead, Total	ND	0.0010	0.0001	U
7440-02-0	Nickel, Total	0.0153	0.0020	0.0001	
7440-09-7	Potassium, Total	25.9	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	ND	0.0050	0.0006	U
7440-66-6	Zinc, Total	ND	0.0100	0.0026	U

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-02
 Client ID : DUPLICATE
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,6020A
 Lab File ID : wg803816.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 00:00
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 16:31
 Dilution Factor : 20
 Analyst : BM
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	351.5	10.80	10.80	
7440-70-2	Calcium, Total	91.9	2.00	0.640	
7439-95-4	Magnesium, Total	29.6	1.40	0.446	
7439-96-5	Manganese, Total	2.603	0.0200	0.0060	
7440-23-5	Sodium, Total	132	2.00	0.322	

Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-03
Client ID : 10-OS
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 1,6020A
Lab File ID : wg803816.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516343
Project Number : 20010
Date Collected : 07/15/15 09:30
Date Received : 07/15/15
Date Analyzed : 07/17/15 16:40
Dilution Factor : 1
Analyst : BM
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	10.13	0.5400	0.5400	
7440-36-0	Antimony, Total	0.0001	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0002	0.0005	0.0001	J
7440-39-3	Barium, Total	0.0083	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	0.0001	0.0002	0.0001	J
7440-70-2	Calcium, Total	3.12	0.100	0.032	
7440-47-3	Chromium, Total	0.0024	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.00045	0.00050	0.00006	J
7440-50-8	Copper, Total	0.0120	0.0010	0.0003	
7439-89-6	Iron, Total	0.273	0.050	0.012	
7439-92-1	Lead, Total	0.0002	0.0010	0.0001	J
7439-95-4	Magnesium, Total	0.568	0.070	0.022	
7439-96-5	Manganese, Total	0.0329	0.0010	0.0003	
7440-02-0	Nickel, Total	0.0036	0.0020	0.0001	
7440-09-7	Potassium, Total	0.346	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-23-5	Sodium, Total	2.15	0.100	0.016	
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	ND	0.0050	0.0006	U
7440-66-6	Zinc, Total	0.0124	0.0100	0.0026	



Form 1

METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-03
Client ID : 10-OS
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 1,6020A
Lab File ID : wg803816.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516343
Project Number : 20010
Date Collected : 07/15/15 09:30
Date Received : 07/15/15
Date Analyzed : 07/17/15 16:44
Dilution Factor : 20
Analyst : BM
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.608	0.200	0.034	



Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-04
Client ID : 8-OS
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 1,6020A
Lab File ID : wg803816.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516343
Project Number : 20010
Date Collected : 07/15/15 10:50
Date Received : 07/15/15
Date Analyzed : 07/17/15 16:51
Dilution Factor : 1
Analyst : BM
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	69.63	0.5400	0.5400	
7429-90-5	Aluminum, Total	0.0099	0.0100	0.0017	J
7440-36-0	Antimony, Total	0.0001	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0004	0.0005	0.0001	J
7440-39-3	Barium, Total	0.0091	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	ND	0.0002	0.0001	U
7440-70-2	Calcium, Total	20.5	0.100	0.032	
7440-47-3	Chromium, Total	0.2304	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.0009	0.0005	0.0001	
7440-50-8	Copper, Total	0.0028	0.0010	0.0003	
7439-89-6	Iron, Total	1.28	0.050	0.012	
7439-92-1	Lead, Total	ND	0.0010	0.0001	U
7439-95-4	Magnesium, Total	4.48	0.070	0.022	
7439-96-5	Manganese, Total	0.1784	0.0010	0.0003	
7440-02-0	Nickel, Total	0.0129	0.0020	0.0001	
7440-09-7	Potassium, Total	1.56	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-23-5	Sodium, Total	31.0	0.100	0.016	
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	0.0011	0.0050	0.0006	J
7440-66-6	Zinc, Total	0.0038	0.0100	0.0026	J



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-07
 Client ID : 8-I
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,6020A
 Lab File ID : wg803816.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 11:50
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 17:26
 Dilution Factor : 20
 Analyst : BM
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	341.4	10.80	10.80	
7440-70-2	Calcium, Total	90.3	2.00	0.640	
7439-95-4	Magnesium, Total	28.1	1.40	0.446	
7439-96-5	Manganese, Total	2.560	0.0200	0.0060	
7440-23-5	Sodium, Total	122	2.00	0.322	

Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-07
Client ID : 8-I
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 1,6020A
Lab File ID : wg803816.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516343
Project Number : 20010
Date Collected : 07/15/15 11:50
Date Received : 07/15/15
Date Analyzed : 07/17/15 17:00
Dilution Factor : 1
Analyst : BM
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.018	0.010	0.002	
7440-36-0	Antimony, Total	ND	0.0020	0.0001	U
7440-38-2	Arsenic, Total	0.0068	0.0005	0.0001	
7440-39-3	Barium, Total	0.0803	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	ND	0.0002	0.0001	U
7440-47-3	Chromium, Total	0.0028	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.0044	0.0005	0.0001	
7440-50-8	Copper, Total	ND	0.0010	0.0003	U
7439-89-6	Iron, Total	11.6	0.050	0.012	
7439-92-1	Lead, Total	ND	0.0010	0.0001	U
7440-02-0	Nickel, Total	0.0138	0.0020	0.0001	
7440-09-7	Potassium, Total	26.6	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	ND	0.0050	0.0006	U
7440-66-6	Zinc, Total	ND	0.0100	0.0026	U

Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-08
Client ID : 7-OS
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 1,6020A
Lab File ID : wg803816.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516343
Project Number : 20010
Date Collected : 07/15/15 12:45
Date Received : 07/15/15
Date Analyzed : 07/17/15 17:29
Dilution Factor : 1
Analyst : BM
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	139.6	0.5400	0.5400	
7440-36-0	Antimony, Total	0.0001	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0010	0.0005	0.0001	
7440-39-3	Barium, Total	0.0463	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	0.0001	0.0002	0.0001	J
7440-70-2	Calcium, Total	41.6	0.100	0.032	
7440-47-3	Chromium, Total	0.2542	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.0045	0.0005	0.0001	
7440-50-8	Copper, Total	0.020	0.0010	0.0003	
7439-89-6	Iron, Total	5.57	0.050	0.012	
7439-92-1	Lead, Total	0.0013	0.0010	0.0001	
7439-95-4	Magnesium, Total	8.68	0.070	0.022	
7439-96-5	Manganese, Total	0.1730	0.0010	0.0003	
7440-02-0	Nickel, Total	0.0076	0.0020	0.0001	
7440-09-7	Potassium, Total	3.89	0.100	0.019	
7782-49-2	Selenium, Total	0.002	0.005	0.001	J
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-23-5	Sodium, Total	15.8	0.100	0.016	
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	0.0034	0.0050	0.0006	J
7440-66-6	Zinc, Total	0.0135	0.0100	0.0026	



Form 1 METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-08
 Client ID : 7-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,6020A
 Lab File ID : wg803816.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 12:45
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 17:32
 Dilution Factor : 20
 Analyst : BM
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.723	0.200	0.034	



Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-09
Client ID : 3-OS/I
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 1,6020A
Lab File ID : wg803816.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516343
Project Number : 20010
Date Collected : 07/15/15 14:10
Date Received : 07/15/15
Date Analyzed : 07/17/15 17:35
Dilution Factor : 1
Analyst : BM
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.036	0.010	0.002	
7440-36-0	Antimony, Total	0.0001	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0003	0.0005	0.0001	J
7440-39-3	Barium, Total	0.0128	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	ND	0.0002	0.0001	U
7440-47-3	Chromium, Total	0.2288	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.0023	0.0005	0.0001	
7440-50-8	Copper, Total	0.0047	0.0010	0.0003	
7439-89-6	Iron, Total	2.72	0.050	0.012	
7439-92-1	Lead, Total	ND	0.0010	0.0001	U
7439-96-5	Manganese, Total	0.2713	0.0010	0.0003	
7440-02-0	Nickel, Total	0.0825	0.0020	0.0001	
7440-09-7	Potassium, Total	2.98	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-23-5	Sodium, Total	20.5	0.100	0.016	
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	0.0006	0.0050	0.0006	J
7440-66-6	Zinc, Total	0.0058	0.0100	0.0026	J

Form 1 METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-09
 Client ID : 3-OS/I
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,6020A
 Lab File ID : wg803816.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 14:10
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 17:38
 Dilution Factor : 20
 Analyst : BM
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	286.8	10.80	10.80	
7440-70-2	Calcium, Total	93.8	2.00	0.640	
7439-95-4	Magnesium, Total	12.7	1.40	0.446	



Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-10
Client ID : 2-OS
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 1,6020A
Lab File ID : wg803816.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516343
Project Number : 20010
Date Collected : 07/15/15 15:00
Date Received : 07/15/15
Date Analyzed : 07/17/15 17:41
Dilution Factor : 1
Analyst : BM
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.176	0.010	0.002	
7440-36-0	Antimony, Total	0.0001	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0007	0.0005	0.0001	
7440-39-3	Barium, Total	0.0229	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	0.0001	0.0002	0.0001	J
7440-47-3	Chromium, Total	0.0622	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.0031	0.0005	0.0001	
7440-50-8	Copper, Total	0.0052	0.0010	0.0003	
7439-89-6	Iron, Total	2.31	0.050	0.012	
7439-92-1	Lead, Total	0.0011	0.0010	0.0001	
7439-96-5	Manganese, Total	0.3633	0.0010	0.0003	
7440-02-0	Nickel, Total	0.1516	0.0020	0.0001	
7440-09-7	Potassium, Total	1.91	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-23-5	Sodium, Total	15.1	0.100	0.016	
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	0.0009	0.0050	0.0006	J
7440-66-6	Zinc, Total	0.0126	0.0100	0.0026	

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-10
 Client ID : 2-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,6020A
 Lab File ID : wg803816.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 15:00
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 17:44
 Dilution Factor : 20
 Analyst : BM
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	344.7	10.80	10.80	
7440-70-2	Calcium, Total	107	2.00	0.640	
7439-95-4	Magnesium, Total	18.8	1.40	0.446	



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-06
 Client ID : 8-R
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,6020A
 Lab File ID : wg803951.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 11:20
 Date Received : 07/15/15
 Date Analyzed : 07/18/15 11:32
 Dilution Factor : 20
 Analyst : KL
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	597.6	10.80	10.80	
7440-70-2	Calcium, Total	171	2.00	0.640	
7439-95-4	Magnesium, Total	41.5	1.40	0.446	
7439-96-5	Manganese, Total	2.162	0.0200	0.0060	



Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-06
Client ID : 8-R
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 1,6020A
Lab File ID : wg803951.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516343
Project Number : 20010
Date Collected : 07/15/15 11:20
Date Received : 07/15/15
Date Analyzed : 07/18/15 11:35
Dilution Factor : 1
Analyst : KL
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.002	0.010	0.002	J
7440-36-0	Antimony, Total	0.0001	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0006	0.0005	0.0001	
7440-39-3	Barium, Total	0.0132	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	ND	0.0002	0.0001	U
7440-47-3	Chromium, Total	0.0024	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.0110	0.0005	0.0001	
7440-50-8	Copper, Total	0.0008	0.0010	0.0003	J
7439-89-6	Iron, Total	0.311	0.050	0.012	
7439-92-1	Lead, Total	0.0001	0.0010	0.0001	J
7440-02-0	Nickel, Total	0.0144	0.0020	0.0001	
7440-09-7	Potassium, Total	3.69	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-23-5	Sodium, Total	42.8	0.100	0.016	
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	ND	0.0050	0.0006	U
7440-66-6	Zinc, Total	0.0032	0.0100	0.0026	J

Inorganic Data (Mercury Analysis)

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-01
 Client ID : 10-R
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,7470A
 Lab File ID : Hg4071715B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 09:40
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 20:38
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-02
 Client ID : DUPLICATE
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,7470A
 Lab File ID : Hg4071715B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 00:00
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 20:43
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-03
 Client ID : 10-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,7470A
 Lab File ID : Hg4071715B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 09:30
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 20:45
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-04
 Client ID : 8-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,7470A
 Lab File ID : Hg4071715B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 10:50
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 20:47
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-06
 Client ID : 8-R
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,7470A
 Lab File ID : Hg4071715B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 11:20
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 20:32
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-07
 Client ID : 8-I
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,7470A
 Lab File ID : Hg4071715B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 11:50
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 20:48
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-08
 Client ID : 7-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,7470A
 Lab File ID : Hg4071715B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 12:45
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 20:50
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Form 1 METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-09
 Client ID : 3-OS/I
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,7470A
 Lab File ID : Hg4071715B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 14:10
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 20:52
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-10
 Client ID : 2-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 1,7470A
 Lab File ID : Hg4071715B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516343
 Project Number : 20010
 Date Collected : 07/15/15 15:00
 Date Received : 07/15/15
 Date Analyzed : 07/17/15 20:54
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/17/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Wet Chemistry

Total Kjeldahl Nitrogen Analysis

Results

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-01
 Client ID : 10-R
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150716-m
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 09:40
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 23:16
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.152	0.300	0.093	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-02
 Client ID : DUPLICATE
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150716-m
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 00:00
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 23:17
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	19.0	0.300	0.093	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-03
 Client ID : 10-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150716-m
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 09:30
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 23:17
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.322	0.300	0.093	



Form 1
WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-04
Client ID : 8-OS
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 4,351.3/.1 (M)
Lab File ID : TKN150716-m
Sample Amount :

Lab Number : L1516343
Project Number: 20010
Date Collected : 07/15/15 10:50
Date Received : 07/15/15
Date Analyzed : 07/16/15 23:18
Dilution Factor : 1
Analyst : AT
Instrument ID : LACHAT
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.372	0.300	0.093	

Form 1
WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-06
Client ID : 8-R
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 4,351.3/.1 (M)
Lab File ID : TKN150716-m
Sample Amount :

Lab Number : L1516343
Project Number: 20010
Date Collected : 07/15/15 11:20
Date Received : 07/15/15
Date Analyzed : 07/16/15 23:19
Dilution Factor : 1
Analyst : AT
Instrument ID : LACHAT
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	1.06	0.300	0.093	



Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-07
 Client ID : 8-I
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150716-m
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 11:50
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 23:22
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	18.1	0.300	0.093	

Form 1
WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-08
Client ID : 7-OS
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 4,351.3/.1 (M)
Lab File ID : TKN150716-m
Sample Amount :

Lab Number : L1516343
Project Number: 20010
Date Collected : 07/15/15 12:45
Date Received : 07/15/15
Date Analyzed : 07/16/15 23:23
Dilution Factor : 1
Analyst : AT
Instrument ID : LACHAT
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.328	0.300	0.093	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-09
 Client ID : 3-OS/I
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150716-m
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 14:10
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 23:26
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.245	0.300	0.093	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-10
 Client ID : 2-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150716-m
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 15:00
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 23:27
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.323	0.300	0.093	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG803239-1
 Client ID : WG803239-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150716-m
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/16/15 23:05
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.145	0.300	0.031	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG803239-3
 Client ID : 8-RDUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150716-m
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 11:20
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 23:21
 Dilution Factor : 1
 Analyst : atran
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	1.10	0.300	0.093	

Chemical Oxygen Demand Analysis

Results

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-01
 Client ID : 10-R
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,5220D
 Lab File ID : WG804347.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 09:40
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 20:15
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	ND	20	3.5	U

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-02
 Client ID : DUPLICATE
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,5220D
 Lab File ID : WG804347.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 00:00
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 20:15
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	46.	20	3.5	

Form 1
WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-03
Client ID : 10-OS
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 30,5220D
Lab File ID : WG804347.csv
Sample Amount :

Lab Number : L1516343
Project Number: 20010
Date Collected : 07/15/15 09:30
Date Received : 07/15/15
Date Analyzed : 07/20/15 20:15
Dilution Factor : 1
Analyst : TL
Instrument ID : GENSYS10VI
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	76.	20	3.5	

Form 1
WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-04
Client ID : 8-OS
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 30,5220D
Lab File ID : WG804347.csv
Sample Amount :

Lab Number : L1516343
Project Number: 20010
Date Collected : 07/15/15 10:50
Date Received : 07/15/15
Date Analyzed : 07/20/15 20:15
Dilution Factor : 1
Analyst : TL
Instrument ID : GENSYS10VI
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	5.2	20	3.5	J



Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-06
 Client ID : 8-R
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,5220D
 Lab File ID : WG804347.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 11:20
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 20:16
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	16.	20	3.5	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-07
 Client ID : 8-I
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,5220D
 Lab File ID : WG804347.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 11:50
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 20:16
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	44.	20	3.5	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-08
 Client ID : 7-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,5220D
 Lab File ID : WG804347.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 12:45
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 20:16
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	19.	20	3.5	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-09
 Client ID : 3-OS/I
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,5220D
 Lab File ID : WG804347.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 14:10
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 20:16
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	7.4	20	3.5	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-10
 Client ID : 2-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,5220D
 Lab File ID : WG804347.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 15:00
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 20:17
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	14.	20	3.5	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804347-1
 Client ID : WG804347-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 30,5220D
 Lab File ID : WG804347.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/20/15 20:10
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	ND	20	3.5	U

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804347-4
 Client ID : 8-RDUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 30,5220D
 Lab File ID : WG804347.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 11:20
 Date Received : 07/15/15
 Date Analyzed : 07/20/15 20:20
 Dilution Factor : 1
 Analyst : TLH
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	14.	20	3.5	J

Alkalinity Analysis

Results

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-01
 Client ID : 10-R
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,2320B
 Lab File ID : WG803314.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 09:40
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 09:46
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	29.9	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-02
 Client ID : DUPLICATE
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,2320B
 Lab File ID : WG803314.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 00:00
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 09:46
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	382.	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-03
 Client ID : 10-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,2320B
 Lab File ID : WG803314.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 09:30
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 09:46
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	3.90	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-04
 Client ID : 8-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,2320B
 Lab File ID : WG803314.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 10:50
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 09:46
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	66.2	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-06
 Client ID : 8-R
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,2320B
 Lab File ID : WG803314.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 11:20
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 09:46
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	523.	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-07
 Client ID : 8-I
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,2320B
 Lab File ID : WG803314.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 11:50
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 09:46
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	386.	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-08
 Client ID : 7-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,2320B
 Lab File ID : WG803314.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 12:45
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 09:46
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	106.	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516343-09
 Client ID : 3-OS/I
 Sample Location : HILLBURN, NY
 Sample Matrix : WATER
 Analytical Method : 30,2320B
 Lab File ID : WG803314.csv
 Sample Amount :

Lab Number : L1516343
 Project Number: 20010
 Date Collected : 07/15/15 14:10
 Date Received : 07/15/15
 Date Analyzed : 07/16/15 09:46
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	275.	2.00	NA	



Form 1
WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516343-10
Client ID : 2-OS
Sample Location : HILLBURN, NY
Sample Matrix : WATER
Analytical Method : 30,2320B
Lab File ID : WG803314.csv
Sample Amount :

Lab Number : L1516343
Project Number: 20010
Date Collected : 07/15/15 15:00
Date Received : 07/15/15
Date Analyzed : 07/16/15 09:46
Dilution Factor : 1
Analyst : SG
Instrument ID :
%Solids : N/A

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	317.	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : WG803314-1
Client ID : WG803314-1BLANK
Sample Location :
Sample Matrix : DW
Analytical Method : 30,2320B
Lab File ID : WG803314.csv
Sample Amount :

Lab Number : L1516343
Project Number: 20010
Date Collected : NA
Date Received : NA
Date Analyzed : 07/16/15 09:46
Dilution Factor : 1
Analyst : SG
Instrument ID :
%Solids : NA

CAS NO.	Parameter	Results	mg CaCO3/L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	ND	2.00	NA	U



Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : WG803314-2
Client ID : 8-RDUP
Sample Location :
Sample Matrix : DW
Analytical Method : 30,2320B
Lab File ID : WG803314.csv
Sample Amount :

Lab Number : L1516343
Project Number: 20010
Date Collected : 07/15/15 11:20
Date Received : 07/15/15
Date Analyzed : 07/16/15 09:46
Dilution Factor : 1
Analyst : SG
Instrument ID :
%Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	527.	2.00	NA	





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Alpha Analytical

Laboratory Code: 11148

SDG Number: L1516186

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Project Name: RAMAPO LANDFILL
Project Number: 20010

Lab Number: L1516186
Report Date: 07/22/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1516186-01	9-OS	DRINKING WATER	HILLBURN, NY	07/14/15 12:05	07/14/15
L1516186-02	9-I	DRINKING WATER	HILLBURN, NY	07/14/15 12:55	07/14/15
L1516186-03	9-R	DRINKING WATER	HILLBURN, NY	07/14/15 12:10	07/14/15
L1516186-04	10-I	DRINKING WATER	HILLBURN, NY	07/14/15 14:55	07/14/15

Project Name: RAMAPO LANDFILL
Project Number: 20010

Lab Number: L1516186
Report Date: 07/22/15

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the

Project Name: RAMAPO LANDFILL
Project Number: 20010

Lab Number: L1516186
Report Date: 07/22/15

Case Narrative (continued)

MDL column.

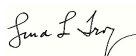
Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Volatile Organics

WG804167-1The WG804167-1 LCS recoveries for 1,1,1-trichloroethane (111%), associated with L1516186-01 through -04, are outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: 

Report Date: 07/22/15

Title: Technical Director/Representative

List of Organic Method Qualifiers

Table 1

Qualifier (Q)	Description
B	Entered if the analyte is found in the associated blank as well as the sample.
C	Applied to pesticide results when the identification has been confirmed by GC/MS.
D	Included when the all identified compounds in the analysis are at the secondary dilution factor.
E	Identified compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
J	Indicates an estimated value, may indicate one of the following, depending on the situation: (1) The reported value is estimated and below the MDL. (2) Used when estimating a concentration for TIC where a 1:1 response is assumed or when the result indicates the presence of a compound that meets the identification criteria, but the results is less than the quantitation limit, but greater than zero. (3) QC associated with this analyte is within warning limits.
N	Included for TIC that indicate presumptive evidence of a compound.
U	Entered if the analyte was analyzed for, but not detected.
P	Used for a pesticide/Aroclor target analyte when the concentration difference between 2 GC columns is greater than 25%; the lower value is flagged with a "P".
EMPC	"Estimated Maximum Possible Concentration" – The amount of analyte cannot be accurately quantified, so a maximum concentration has been estimated for the compound.
"XYZ"	"Wildcard" or Laboratory defined qualifier.

Note: Form I allows only one character in each qualifier column. If multiple qualifiers are applicable, please assess qualifier priority in the following order: U, E, J, B, D, C, P, N. Reporting done in the EDD may include multiple qualifiers when applicable, separated by a single space.

(Information obtained from NYSDEC ASP Exhibit B, 7/2005, page 64)

List of Inorganic Method Qualifiers

Table 2

Qualifier	Column (1)	Description
Concentration qualifiers		
B	C	Entered if the reported value was less than the CRDL, but greater than the IDL.
U	C	Entered if the analyte was analyzed for, but not detected.
J	C	Entered if the reported value is estimated and below the MDL.
*	C	Duplicate precision exceeds RPD limit.
M	C	Replicate precision exceeds RPD limit.
"XYZ"	C	"Wildcard" or Laboratory defined qualifier.
Qualifier specific entries		
E	Q	Entered if the reported value is estimated because of the presence of interferences.
Method qualifiers		
A	M	Flame atomic absorption
AS	M	Semi-automated spectrophotometric
AV	M	Automated cold vapor atomic absorption
C	M	Manual spectrophotometric
F	M	Furnace atomic absorption
MS	M	Mass spectrometry (ICP-MS)
NR	M	Analyte is not required to be analyzed
P	M	Inductively coupled plasma (ICP)
" "	M	No data have been entered

(1) The term "Column" is used to indicate under which column heading in the reporting forms that the qualifier will be found under.

Note: Form I allows only one character in each qualifier column. If multiple qualifiers are applicable to column C, please assess qualifier priority in the following order: U, J, B. Reporting done in the EDD may include multiple qualifiers when applicable, separated by a single space.

(Information obtained from NYSDEC ASP Exhibit B, 7/2005, page 65)

Volatile Organics Instruments

Volatile Organics: Jack

Instrument: Agilent 5975MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon
Autosampler: EST Centurion
Purge time: 11 min

Column Type: RTX-VMS
Column Length: 20 Meters
df: 1.00um
ID: 0.18mm
Desorb: 2 min

Volatile Organics: Quimby

Instrument: Agilent 5973MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon
Autosampler: EST Centurion
Purge time: 11 min

Column Type: RTX-VMS
Column Length: 20 Meters
df: 1.00um
ID: 0.18mm
Desorb: 2 min

Volatile Organics: Curly

Instrument: Agilent 5972 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Tekmar 3000
Autosampler: Archon
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 um
ID: 0.18 mm
Desorb: 2 min

Volatile Organics: Elaine

Instrument: Agilent 5973 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Teledyne Velocity
Autosampler: Teledyne Solatek
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 um
ID: 0.18 mm
Desorb: 2 min



Volatile Organics: Gonzo

Instrument: Agilent 5973 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Teledyne Velocity
Autosampler: Teledyne Solatek
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 μ m
ID: 0.18 mm
Desorb: 2 min

Volatile Organics: VOA101

Instrument: Agilent 5975C inert XL MSD
Trap: EST K Trap (VOACARB 3000)
Concentrator: Encon Evolution
Autosampler: EST Centurion
Purge time: 11 min

Column Type: Restek RTX-VMS
Column Length: 30 Meters
df: 1.40 μ m
ID: 0.25 mm
Desorb: 1 min

Volatile Organics: Charlie/Voa100/Voa104

Instrument: Agilent 5975C MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Encon Evolution
Autosampler: EST Centurion
Purge time: 11 min

Column Type: Agilent DB-624
Column Length: 25 Meters
df: 1.12 μ m
ID: 0.20 mm
Desorb: 2 min

Volatile Organics: M

Instrument: Agilent 6890

Concentrator: Tekmar 2016
Autosampler: Tekmar 3100

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics: L/N

Instrument: Agilent 6890

Concentrator: Encon Evolution
Autosampler: EST Centurion

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics: O/P

Instrument: Agilent 7890A

Concentrator: Encon Evolution
Autosampler: EST Centurion

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics in Air Instruments

Volatile Organics in Air:

Instrument: Agilent 6890 GC / 5975 MSD	Column Type: Restek RTX-1
	Column Length: 60 Meters
Concentrator: Entech 7100A	df: 1.00 um
Autosampler: Entech 7016CA	ID: 0.52 mm
Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material	
Trap 2: Tenax: manufacturer-Entech: 20 cm packing material	

Semivolatile Organics Instruments

Semivolatile Organics (Acid/Base/Neutral Extractables): Buffy

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RTX-5MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Semivolatile Organics (Acid/Base/Neutral Extractables): Juliet/GCMS5/GCMS7

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RXI-5SIL MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM: Dakota/Mork

Instrument: Agilent 5973 MSD	Injection volume: 1 ul
Column Type: Restek RTX-5MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM: Mindy

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RXI-5SIL MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Pesticides/PCB : Pest 11/Pest2/Pest7/Pest12

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column Type: Restek RTX-CLP (Channel A)	df: 0.32 um
Column: Restek RTX-CLPPesticide II (Channel B)	df: 0.25 um
Column Length: 30 Meters (Both)	ID: 0.32 mm (Both)

Pesticides/PCB: Pest 10/ Pest9

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column Type: Restek STX-CLP (Channel A)	df: 0.32 um
Column: Restek STX-CLPPesticide II (Channel B)	df: 0.25 um
Column Length: 30 Meters (Both)	ID: 0.32 mm (Both)

Herbicides

Instrument: Agilent 6890 w/Dual Micro ECDs
Column Type: Restek RTX-1701 (Channel A)
Column Type: Restek RTX-5 (Channel B)
Column Length: 30 Meters (Both)

Injection Volume: 1uL
df: 0.25 um
df: 0.25 um
ID: 0.32 mm (Both)

Petro9

Instrument: Agilent 6890 w/FID
Column: Restek RTX-5
Column Length: 30 Meters

Injection Volume: 1uL
df: 0.25 um
ID: 0.32 mm

EPH Petro10/ Petro11

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5-MS
Column Length: 30 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.32 mm

Explosives

Instrument: Dionex ICS-3000, AS50 Autosampler and PDA-100 detectors.
Injection Volume: 100uL
Column: Phenomenex Synergi 4u Hydro-RP and Luna 5u Phenyl-Hexyl.

GC/MS Forensic Semivolatile Organic Instruments

Semivolatile Organics (ALK-PAH extractables): PAH1/PAH2/PAH3/PAH4

Instrument: Agilent 5973C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

Semivolatile Organics (ALK-PAH extractables): PAH8/PAH9/PAH10/PAH11/PAH12/PAH13/PAH14

Instrument: Agilent 5975C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

Semivolatile Organics (ALK-PAH extractables): PAH17/PAH18/PAH19

Instrument: Agilent 5975C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

GC/FID Forensic Semivolatile Organic Instruments

Semivolatile Organics (SHC extractables):PAH1/PAH2/PAH3/PAH4/PAH8

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm

Semivolatile Organics (SHC extractables): FID6 (dual column)/ FID9 (dual column)/ FID17 (dual column)

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm

Semivolatile Organics (SHC extractables):FID7 (dual column)

Instrument: Agilent 7890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm



Sample Delivery Group Form

Laboratory Job number: L1516186

Project Manager: Candace Fox

Review Date: 07/21/2015

Project Number: 20010

Project Name: RAMAPO LANDFILL

Received: 07/14/2015 17:04

Client Account: Sterling Environmental Eng

Received by: JK/GP

Samples Delivered by: COURIER

Call Tracker #

Bill Of Laden N/A

Trackingnum

Coc Present Present

Container Status Intact

Sample IDs

All Containers Accounted For? Yes

Were Extra Samples Received? No

Do Sample Labels and COC agree? Yes

Are Samples in Appropriate Containers? Yes

Are Samples Received within Holding time? Yes

pH of Samples upon Receipt <2

Are samples Properly Preserved? Yes

Initial pH preserved in house with

Final pH

Other Issues

Chlorine Check N/A

Are VOA/VPV Vials Present? Yes

Aqueous: Do Vials Contain Head Space? No

Soils: Is MeOH Covering the Soil? N/A

Reagent H2O Preserved vials Frozen on N/A

Frozen by Client N/A

Cooler	Seal	Ice Present	Blue Ice Present	Temp. (Celsius)	Frozen upon Receipt	Delivered Direct from Site
A	Absent	Yes	No	3.8 - IR Gun	No	No

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Jul 22 2015, 04:51 pm

Login Number: L1516186

Account: STERLINGENV Sterling Environmental EngProject: 20010

Received: 14JUL15 Due Date: 22JUL15
Mat PR Collected Container

Sample #	Client ID		
L1516186-01 9-OS		1 S0 14JUL15 12:05	1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.25,3-Vial-B
Job Split with L1516184 624: Report List Built (only 1,1-DCE, vinyl chloride, benzene and chlorobenzene) ASP-A Package Due Date: 07/21/15			
624, ALK-T-2320, ASP-A, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351			
L1516186-02 9-I		1 S0 14JUL15 12:55	1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.25,3-Vial-B
Job Split with L1516184 624: Report List Built (only 1,1-DCE, vinyl chloride, benzene and chlorobenzene) Package Due Date: 07/21/15			
624, ALK-T-2320, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351			
L1516186-03 9-R		1 S0 14JUL15 12:10	1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.25,3-Vial-B
Job Split with L1516184 624: Report List Built (only 1,1-DCE, vinyl chloride, benzene and chlorobenzene) Package Due Date: 07/21/15			
624, ALK-T-2320, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351			
L1516186-04 10-I		1 S0 14JUL15 14:55	1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.25,3-Vial-B
Job Split with L1516184 624: Report List Built (only 1,1-DCE, vinyl chloride, benzene and chlorobenzene) Package Due Date: 07/21/15			
624, ALK-T-2320, COD-5220, HARDT-6020, TAL-6020T, AG-6020T, AL-6020T, AS-6020T, BA-6020T, BE-6020T, CA-6020T, CD-6020T, CO-6020T, CR-6020T, CU-6020T, FE-6020T, HG-T, K-6020T, MG-6020T, MN-6020T, NA-6020T, NI-6020T, PB-6020T, PREPT, SB-6020T, SE-6020T, TL-6020T, V-6020T, ZN-6020T, TKN-351			

	NEW YORK CHAIN OF CUSTODY	Service Centers Mahwah, NJ 07430: 35 Whitney Rd, Suite 5 Albany, NY 12205: 14 Walker Way Tonawanda, NY 14150: 275 Cooper Ave, Suite 105				Page 1 of 1		Date Rec'd in Lab 7/15/15		ALPHA Job # L1516186		
		Project Information				Deliverables				Billing Information		
		Project Name: Ramapo Landfill Project Location: Hillburn, NY Project # 20010 (Use Project name as Project #) ☐				☒ ASP-A ☐ ASP-B ☐ EQulS (1 File) ☒ EQulS (4 File) ☐ Other				☒ Same as Client Info PO #		
Client Information				Regulatory Requirement				Disposal Site Information				
Client: Sterling Environmental Eng. P.C. Address: 24 Wade Road Latham, NY 12110 Phone: 518-456-4900 Fax: Email: cody.sargood@sterlingenvironme				Project Manager: Candance Fox ALPHAQuote #: Turn-Around Time Standard ☒ Due Date: Rush (only if pre approved) ☐ # of Days:				Please identify below location of applicable disposal facilities. Disposal Facility: ☐ NJ ☒ NY ☐ Other: NA				
These samples have been previously analyzed by Alpha ☐ Other project specific requirements/comments: Cody.Sargood@sterlingenvironmental.com Please specify Metals or TAL.				ANALYSIS				Sample Filtration				
				TKN/COD Alk TAL Metals / Hardness VOC(Site Specific) 1,1-Dichloroethane Vinyl chloride, benzene, chlorobenzene				☐ Done ☐ Lab to do Preservation ☐ Lab to do (Please Specify below)				
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials					Sample Specific Comments	Total Bottles	
	SVWC-93	7/14/15	835	DW	CS/AC	X	X	X	X		X Separate reports of drinking water and monitoring wells	6
	SVWC-94		905									6
	SVWC-95		955									6
	SVWC-96		930									6
	PW-1		1100	↓								6
16186-01	9-OS		1205	WATER							DW = drinking	6
02	9-I		1255	↓							W = groundwater	6
03	9-R		1210									6
	PW-2		1030	DWater								6
04	10-I		1455	Water								6
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O ₃ K/E = Zn Ac/NaOH O = Other		Container Code: P = Plastic A = Amber Glass V = Vial G = Glass B = Bacteria Cup C = Cube O = Other E = Encore D = BOD Bottle		Westboro: Certification No: MA935 Mansfield: Certification No: MA015		Container Type Preservative		P P P V D A C B		Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S <u>TERMS & CONDITIONS</u> .		
		Relinquished By: [Signature]		Date/Time: 7/14/15 1704		Received By: [Signature]		Date/Time: 7/14/15 1704				
		[Signature]		7/14/15 1820		[Signature]		7/14/15 1820				
		[Signature]		7/15/15 0100		[Signature]		7/15/15 0100				

Organics

GC/MS 624

Analysis

Volatiles Sample Data

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-01
 Client ID : 9-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 5,624
 Lab File ID : 0717N13
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : 07/14/15 12:05
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 22:17
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-02
 Client ID : 9-I
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 5,624
 Lab File ID : 0717N14
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : 07/14/15 12:55
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 22:52
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-03
 Client ID : 9-R
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 5,624
 Lab File ID : 0717N15
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : 07/14/15 12:10
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 23:26
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-04
 Client ID : 10-I
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 5,624
 Lab File ID : 0717N16
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : 07/14/15 14:55
 Date Received : 07/14/15
 Date Analyzed : 07/18/15 00:01
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804167-2
 Client ID : WG804167-2BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0717N04
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/17/15 17:07
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	5.0	0.65	U
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
67-66-3	Chloroform	ND	1.5	0.29	U
56-23-5	Carbon tetrachloride	ND	1.0	0.33	U
78-87-5	1,2-Dichloropropane	ND	3.5	0.28	U
124-48-1	Dibromochloromethane	ND	1.0	0.33	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
110-75-8	2-Chloroethylvinyl ether	ND	10	0.62	U
127-18-4	Tetrachloroethene	ND	1.5	0.38	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
75-69-4	Trichlorofluoromethane	ND	5.0	0.33	U
107-06-2	1,2-Dichloroethane	ND	1.5	0.36	U
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.30	U
75-27-4	Bromodichloromethane	ND	1.0	0.30	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.5	0.30	U
10061-01-5	cis-1,3-Dichloropropene	ND	1.5	0.32	U
75-25-2	Bromoform	ND	1.0	0.32	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.35	U
71-43-2	Benzene	ND	1.0	0.31	U
108-88-3	Toluene	ND	1.0	0.35	U
100-41-4	Ethylbenzene	ND	1.0	0.33	U
74-87-3	Chloromethane	ND	5.0	0.89	U
74-83-9	Bromomethane	1.7	5.0	1.3	J
75-01-4	Vinyl chloride	ND	1.0	0.30	U
75-00-3	Chloroethane	ND	2.0	0.31	U
75-35-4	1,1-Dichloroethene	ND	1.0	0.28	U
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.34	U



Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804167-2
 Client ID : WG804167-2BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0717N04
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/17/15 17:07
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.33	U
79-01-6	Trichloroethene	ND	1.0	0.33	U
95-50-1	1,2-Dichlorobenzene	ND	5.0	0.75	U
541-73-1	1,3-Dichlorobenzene	ND	5.0	0.93	U
106-46-7	1,4-Dichlorobenzene	ND	5.0	0.85	U
179601-23-1	p/m-Xylene	ND	2.0	0.66	U
95-47-6	o-Xylene	ND	1.0	0.30	U
1330-20-7	Xylene (Total)	ND	1.0	0.30	U
100-42-5	Styrene	ND	1.0	0.30	U
67-64-1	Acetone	ND	10	1.8	U
75-15-0	Carbon disulfide	ND	5.0	0.90	U
78-93-3	2-Butanone	ND	10	2.2	U
108-05-4	Vinyl acetate	ND	10	2.9	U
108-10-1	4-Methyl-2-pentanone	ND	10	2.4	U
591-78-6	2-Hexanone	ND	10	2.5	U
107-02-8	Acrolein	ND	8.0	1.9	U
107-13-1	Acrylonitrile	ND	10	1.9	U
74-95-3	Dibromomethane	ND	1.0	1.0	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804167-3
 Client ID : SVWC-94DUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0717N07
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : 07/14/15 09:05
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 18:50
 Dilution Factor : 1
 Analyst : mm
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	5.0	0.65	U
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
67-66-3	Chloroform	ND	1.5	0.29	U
56-23-5	Carbon tetrachloride	ND	1.0	0.33	U
78-87-5	1,2-Dichloropropane	ND	3.5	0.28	U
124-48-1	Dibromochloromethane	ND	1.0	0.33	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
110-75-8	2-Chloroethylvinyl ether	ND	10	0.62	U
127-18-4	Tetrachloroethene	ND	1.5	0.38	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
75-69-4	Trichlorofluoromethane	ND	5.0	0.33	U
107-06-2	1,2-Dichloroethane	ND	1.5	0.36	U
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.30	U
75-27-4	Bromodichloromethane	ND	1.0	0.30	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.5	0.30	U
10061-01-5	cis-1,3-Dichloropropene	ND	1.5	0.32	U
75-25-2	Bromoform	ND	1.0	0.32	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.35	U
71-43-2	Benzene	ND	1.0	0.31	U
108-88-3	Toluene	ND	1.0	0.35	U
100-41-4	Ethylbenzene	ND	1.0	0.33	U
74-87-3	Chloromethane	ND	5.0	0.89	U
74-83-9	Bromomethane	1.4	5.0	1.3	J
75-01-4	Vinyl chloride	ND	1.0	0.30	U
75-00-3	Chloroethane	ND	2.0	0.31	U
75-35-4	1,1-Dichloroethene	ND	1.0	0.28	U
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.34	U



Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804167-3
 Client ID : SVWC-94DUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0717N07
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : 07/14/15 09:05
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 18:50
 Dilution Factor : 1
 Analyst : mm
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.33	U
79-01-6	Trichloroethene	ND	1.0	0.33	U
95-50-1	1,2-Dichlorobenzene	ND	5.0	0.75	U
541-73-1	1,3-Dichlorobenzene	ND	5.0	0.93	U
106-46-7	1,4-Dichlorobenzene	ND	5.0	0.85	U
179601-23-1	p/m-Xylene	ND	2.0	0.66	U
95-47-6	o-Xylene	ND	1.0	0.30	U
1330-20-7	Xylene (Total)	ND	1.0	0.30	U
100-42-5	Styrene	ND	1.0	0.30	U
67-64-1	Acetone	ND	10	1.8	U
75-15-0	Carbon disulfide	ND	5.0	0.90	U
78-93-3	2-Butanone	ND	10	2.2	U
108-05-4	Vinyl acetate	ND	10	2.9	U
108-10-1	4-Methyl-2-pentanone	ND	10	2.4	U
591-78-6	2-Hexanone	ND	10	2.5	U
107-02-8	Acrolein	ND	8.0	1.9	U
107-13-1	Acrylonitrile	ND	10	1.9	U
74-95-3	Dibromomethane	ND	1.0	1.0	U

Metals

Inorganic Data (ICPMS Analysis)

Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516186-01
Client ID : 9-OS
Sample Location : HILLBURN, NY
Sample Matrix : Drinking Water
Analytical Method : 1,6020A
Lab File ID : wg803384.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516186
Project Number : 20010
Date Collected : 07/14/15 12:05
Date Received : 07/14/15
Date Analyzed : 07/16/15 18:05
Dilution Factor : 1
Analyst : BM
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	46.00	0.5400	0.5400	
7440-36-0	Antimony, Total	0.0001	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0010	0.0005	0.0001	
7440-39-3	Barium, Total	0.020	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	0.0004	0.0002	0.0001	
7440-70-2	Calcium, Total	12.9	0.100	0.032	
7440-47-3	Chromium, Total	0.0567	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.0006	0.0005	0.0001	
7440-50-8	Copper, Total	0.0040	0.0010	0.0003	
7439-89-6	Iron, Total	1.76	0.050	0.012	
7439-92-1	Lead, Total	0.0016	0.0010	0.0001	
7439-95-4	Magnesium, Total	3.35	0.070	0.022	
7439-96-5	Manganese, Total	0.0470	0.0050	0.0003	
7440-02-0	Nickel, Total	0.0034	0.0020	0.0001	
7440-09-7	Potassium, Total	1.27	0.100	0.019	
7782-49-2	Selenium, Total	0.002	0.005	0.001	J
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-23-5	Sodium, Total	9.77	0.200	0.016	
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	0.0024	0.0050	0.0006	J
7440-66-6	Zinc, Total	0.0471	0.0100	0.0026	



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-01
 Client ID : 9-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 1,6020A
 Lab File ID : wg803384.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : 07/14/15 12:05
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 18:08
 Dilution Factor : 20
 Analyst : BM
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.750	0.200	0.034	



Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516186-02
Client ID : 9-I
Sample Location : HILLBURN, NY
Sample Matrix : Drinking Water
Analytical Method : 1,6020A
Lab File ID : wg803384.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516186
Project Number : 20010
Date Collected : 07/14/15 12:55
Date Received : 07/14/15
Date Analyzed : 07/16/15 18:11
Dilution Factor : 1
Analyst : BM
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	33.64	0.5400	0.5400	
7429-90-5	Aluminum, Total	0.008	0.010	0.002	J
7440-36-0	Antimony, Total	ND	0.0020	0.0001	U
7440-38-2	Arsenic, Total	ND	0.0005	0.0001	U
7440-39-3	Barium, Total	0.0066	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	ND	0.0002	0.0001	U
7440-70-2	Calcium, Total	9.37	0.100	0.032	
7440-47-3	Chromium, Total	0.0025	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.0001	0.0005	0.0001	J
7440-50-8	Copper, Total	ND	0.0010	0.0003	U
7439-89-6	Iron, Total	0.023	0.050	0.012	J
7439-92-1	Lead, Total	ND	0.0010	0.0001	U
7439-95-4	Magnesium, Total	2.49	0.070	0.022	
7439-96-5	Manganese, Total	0.0318	0.0050	0.0003	
7440-02-0	Nickel, Total	0.0036	0.0020	0.0001	
7440-09-7	Potassium, Total	0.676	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-23-5	Sodium, Total	9.96	0.200	0.016	
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	ND	0.0050	0.0006	U
7440-66-6	Zinc, Total	ND	0.0100	0.0026	U

Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516186-03
Client ID : 9-R
Sample Location : HILLBURN, NY
Sample Matrix : Drinking Water
Analytical Method : 1,6020A
Lab File ID : wg803384.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516186
Project Number : 20010
Date Collected : 07/14/15 12:10
Date Received : 07/14/15
Date Analyzed : 07/16/15 18:17
Dilution Factor : 1
Analyst : BM
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7429-90-5	Aluminum, Total	0.008	0.010	0.002	J
7440-36-0	Antimony, Total	0.0001	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0038	0.0005	0.0001	
7440-39-3	Barium, Total	0.0293	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	0.0001	0.0002	0.0001	J
7440-47-3	Chromium, Total	0.0024	0.0020	0.0003	
7440-48-4	Cobalt, Total	0.0032	0.0005	0.0001	
7440-50-8	Copper, Total	0.0003	0.0010	0.0003	J
7439-89-6	Iron, Total	9.27	0.050	0.012	
7439-92-1	Lead, Total	0.0002	0.0010	0.0001	J
7440-02-0	Nickel, Total	0.0039	0.0020	0.0001	
7440-09-7	Potassium, Total	10.1	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	ND	0.0050	0.0006	U
7440-66-6	Zinc, Total	0.0027	0.0100	0.0026	J

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-03
 Client ID : 9-R
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 1,6020A
 Lab File ID : wg803384.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : 07/14/15 12:10
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 18:21
 Dilution Factor : 20
 Analyst : BM
 Instrument ID : ICPMSQ
 %Solids : N/A
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	167.5	10.80	10.80	
7440-70-2	Calcium, Total	45.2	2.00	0.640	
7439-95-4	Magnesium, Total	13.2	1.40	0.446	
7439-96-5	Manganese, Total	4.458	0.1000	0.0060	
7440-23-5	Sodium, Total	47.2	4.00	0.322	

Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516186-04
Client ID : 10-I
Sample Location : HILLBURN, NY
Sample Matrix : Drinking Water
Analytical Method : 1,6020A
Lab File ID : wg803384.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516186
Project Number : 20010
Date Collected : 07/14/15 14:55
Date Received : 07/14/15
Date Analyzed : 07/16/15 18:30
Dilution Factor : 1
Analyst : BM
Instrument ID : ICPMSQ
%Solids : N/A
Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	35.97	0.5400	0.5400	
7429-90-5	Aluminum, Total	0.240	0.010	0.002	
7440-36-0	Antimony, Total	0.0001	0.0020	0.0001	J
7440-38-2	Arsenic, Total	0.0002	0.0005	0.0001	J
7440-39-3	Barium, Total	0.0031	0.0005	0.0001	
7440-41-7	Beryllium, Total	ND	0.0005	0.0002	U
7440-43-9	Cadmium, Total	ND	0.0002	0.0001	U
7440-70-2	Calcium, Total	9.68	0.100	0.032	
7440-47-3	Chromium, Total	0.0015	0.0020	0.0003	J
7440-48-4	Cobalt, Total	0.0003	0.0005	0.0001	J
7440-50-8	Copper, Total	0.0015	0.0010	0.0003	
7439-89-6	Iron, Total	0.331	0.050	0.012	
7439-92-1	Lead, Total	0.0007	0.0010	0.0001	J
7439-95-4	Magnesium, Total	2.86	0.070	0.022	
7439-96-5	Manganese, Total	0.0083	0.0050	0.0003	
7440-02-0	Nickel, Total	0.0022	0.0020	0.0001	
7440-09-7	Potassium, Total	1.15	0.100	0.019	
7782-49-2	Selenium, Total	ND	0.005	0.001	U
7440-22-4	Silver, Total	ND	0.0004	0.0001	U
7440-23-5	Sodium, Total	4.21	0.200	0.016	
7440-28-0	Thallium, Total	ND	0.0005	0.0001	U
7440-62-2	Vanadium, Total	0.0008	0.0050	0.0006	J
7440-66-6	Zinc, Total	0.0099	0.0100	0.0026	J



Inorganic Data (Mercury Analysis)

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-01
 Client ID : 9-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 1,7470A
 Lab File ID : Hg4071615B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : 07/14/15 12:05
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 21:29
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-02
 Client ID : 9-I
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 1,7470A
 Lab File ID : Hg4071615B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : 07/14/15 12:55
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 21:40
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-03
 Client ID : 9-R
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 1,7470A
 Lab File ID : Hg4071615B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : 07/14/15 12:10
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 21:42
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-04
 Client ID : 10-I
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 1,7470A
 Lab File ID : Hg4071615B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 7470A

Lab Number : L1516186
 Project Number : 20010
 Date Collected : 07/14/15 14:55
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 21:44
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.00020	0.00006	U



Wet Chemistry

Total Kjeldahl Nitrogen Analysis

Results

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-01
 Client ID : 9-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516186
 Project Number: 20010
 Date Collected : 07/14/15 12:05
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 21:55
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.364	0.300	0.093	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-02
 Client ID : 9-I
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516186
 Project Number: 20010
 Date Collected : 07/14/15 12:55
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 21:56
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.194	0.300	0.093	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516186-03
Client ID : 9-R
Sample Location : HILLBURN, NY
Sample Matrix : Drinking Water
Analytical Method : 4,351.3/.1 (M)
Lab File ID : TKN150715-I
Sample Amount :

Lab Number : L1516186
Project Number: 20010
Date Collected : 07/14/15 12:10
Date Received : 07/14/15
Date Analyzed : 07/15/15 21:56
Dilution Factor : 1
Analyst : AT
Instrument ID : LACHAT
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	3.95	0.300	0.093	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-04
 Client ID : 10-I
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516186
 Project Number: 20010
 Date Collected : 07/14/15 14:55
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 21:57
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.292	0.300	0.093	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG802816-1
 Client ID : WG802816-1BLANK
 Sample Location :
 Sample Matrix : DW
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516186
 Project Number: 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/15/15 21:43
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.130	0.300	0.031	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG802816-3
 Client ID : SVWC-93DUP
 Sample Location :
 Sample Matrix : DW
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516186
 Project Number: 20010
 Date Collected : 07/14/15 08:35
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 22:00
 Dilution Factor : 1
 Analyst : atran
 Instrument ID : LACHAT
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.161	0.300	0.093	J

Chemical Oxygen Demand Analysis

Results

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-01
 Client ID : 9-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 30,5220D
 Lab File ID : WG803058.csv
 Sample Amount :

Lab Number : L1516186
 Project Number: 20010
 Date Collected : 07/14/15 12:05
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 20:31
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	16.	20	3.5	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-02
 Client ID : 9-I
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 30,5220D
 Lab File ID : WG803058.csv
 Sample Amount :

Lab Number : L1516186
 Project Number: 20010
 Date Collected : 07/14/15 12:55
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 20:31
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	ND	20	3.5	U

Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516186-03
Client ID : 9-R
Sample Location : HILLBURN, NY
Sample Matrix : Drinking Water
Analytical Method : 30,5220D
Lab File ID : WG803058.csv
Sample Amount :

Lab Number : L1516186
Project Number: 20010
Date Collected : 07/14/15 12:10
Date Received : 07/14/15
Date Analyzed : 07/15/15 20:31
Dilution Factor : 1
Analyst : TL
Instrument ID : GENSYS10VI
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	16.	20	3.5	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516186-04
Client ID : 10-I
Sample Location : HILLBURN, NY
Sample Matrix : Drinking Water
Analytical Method : 30,5220D
Lab File ID : WG803058.csv
Sample Amount :

Lab Number : L1516186
Project Number: 20010
Date Collected : 07/14/15 14:55
Date Received : 07/14/15
Date Analyzed : 07/15/15 20:31
Dilution Factor : 1
Analyst : TL
Instrument ID : GENSYS10VI
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	16.	20	3.5	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : WG803058-1
Client ID : WG803058-1BLANK
Sample Location :
Sample Matrix : WATER
Analytical Method : 30,5220D
Lab File ID : WG803058.csv
Sample Amount :

Lab Number : L1516186
Project Number: 20010
Date Collected : NA
Date Received : NA
Date Analyzed : 07/15/15 20:29
Dilution Factor : 1
Analyst : TL
Instrument ID : GENSYS10VI
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	ND	20	3.5	U

Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : WG803058-4
Client ID : 9-OSDUP
Sample Location :
Sample Matrix : WATER
Analytical Method : 30,5220D
Lab File ID : WG803058.csv
Sample Amount :

Lab Number : L1516186
Project Number: 20010
Date Collected : 07/14/15 12:05
Date Received : 07/14/15
Date Analyzed : 07/15/15 20:32
Dilution Factor : 1
Analyst : TLH
Instrument ID : GENSYS10VI
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	16.	20	3.5	J



Alkalinity Analysis

Results

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-01
 Client ID : 9-OS
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516186
 Project Number: 20010
 Date Collected : 07/14/15 12:05
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	13.0	2.00	NA	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-02
 Client ID : 9-I
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516186
 Project Number: 20010
 Date Collected : 07/14/15 12:55
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	15.1	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516186-03
Client ID : 9-R
Sample Location : HILLBURN, NY
Sample Matrix : Drinking Water
Analytical Method : 30,2320B
Lab File ID : WG802862.csv
Sample Amount :

Lab Number : L1516186
Project Number: 20010
Date Collected : 07/14/15 12:10
Date Received : 07/14/15
Date Analyzed : 07/15/15 08:54
Dilution Factor : 1
Analyst : SG
Instrument ID :
%Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	157.	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516186-04
 Client ID : 10-I
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516186
 Project Number: 20010
 Date Collected : 07/14/15 14:55
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	22.8	2.00	NA	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG802862-1
 Client ID : WG802862-1BLANK
 Sample Location :
 Sample Matrix : DW
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516186
 Project Number: 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO3/L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	ND	2.00	NA	U

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG802862-2
 Client ID : BEDROCK-1DUP
 Sample Location :
 Sample Matrix : DW
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516186
 Project Number: 20010
 Date Collected : 07/13/15 12:45
 Date Received : 07/13/15
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	49.5	2.00	NA	



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Alpha Analytical

Laboratory Code: 11148

SDG Number: L1516184

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Project Name: RAMAPO LANDFILL
Project Number: 20010

Lab Number: L1516184
Report Date: 07/22/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1516184-01	SVWC-93	DRINKING WATER	HILLBURN, NY	07/14/15 08:35	07/14/15
L1516184-02	SVWC-94	DRINKING WATER	HILLBURN, NY	07/14/15 09:05	07/14/15
L1516184-03	SVWC-95	DRINKING WATER	HILLBURN, NY	07/14/15 09:55	07/14/15
L1516184-04	SVWC-96	DRINKING WATER	HILLBURN, NY	07/14/15 09:30	07/14/15
L1516184-05	PW-1	DRINKING WATER	HILLBURN, NY	07/14/15 11:00	07/14/15
L1516184-06	PW-2	DRINKING WATER	HILLBURN, NY	07/14/15 10:30	07/14/15

Project Name: RAMAPO LANDFILL
Project Number: 20010

Lab Number: L1516184
Report Date: 07/22/15

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the

Project Name: RAMAPO LANDFILL
Project Number: 20010

Lab Number: L1516184
Report Date: 07/22/15

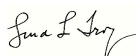
Case Narrative (continued)

MDL column.

Metals

The WG802783-2 LCS recovery, associated with L1516184-01 through -06, is above the acceptance criteria for cadmium (117%); however, the associated samples are non-detect for this target compound. The results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: 

Report Date: 07/22/15

Title: Technical Director/Representative

List of Organic Method Qualifiers

Table 1

Qualifier (Q)	Description
B	Entered if the analyte is found in the associated blank as well as the sample.
C	Applied to pesticide results when the identification has been confirmed by GC/MS.
D	Included when the all identified compounds in the analysis are at the secondary dilution factor.
E	Identified compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
J	Indicates an estimated value, may indicate one of the following, depending on the situation: (1) The reported value is estimated and below the MDL. (2) Used when estimating a concentration for TIC where a 1:1 response is assumed or when the result indicates the presence of a compound that meets the identification criteria, but the results is less than the quantitation limit, but greater than zero. (3) QC associated with this analyte is within warning limits.
N	Included for TIC that indicate presumptive evidence of a compound.
U	Entered if the analyte was analyzed for, but not detected.
P	Used for a pesticide/Aroclor target analyte when the concentration difference between 2 GC columns is greater than 25%; the lower value is flagged with a "P".
EMPC	"Estimated Maximum Possible Concentration" – The amount of analyte cannot be accurately quantified, so a maximum concentration has been estimated for the compound.
"XYZ"	"Wildcard" or Laboratory defined qualifier.

Note: Form I allows only one character in each qualifier column. If multiple qualifiers are applicable, please assess qualifier priority in the following order: U, E, J, B, D, C, P, N. Reporting done in the EDD may include multiple qualifiers when applicable, separated by a single space.

(Information obtained from NYSDEC ASP Exhibit B, 7/2005, page 64)

List of Inorganic Method Qualifiers

Table 2

Qualifier	Column (1)	Description
Concentration qualifiers		
B	C	Entered if the reported value was less than the CRDL, but greater than the IDL.
U	C	Entered if the analyte was analyzed for, but not detected.
J	C	Entered if the reported value is estimated and below the MDL.
*	C	Duplicate precision exceeds RPD limit.
M	C	Replicate precision exceeds RPD limit.
"XYZ"	C	"Wildcard" or Laboratory defined qualifier.
Qualifier specific entries		
E	Q	Entered if the reported value is estimated because of the presence of interferences.
Method qualifiers		
A	M	Flame atomic absorption
AS	M	Semi-automated spectrophotometric
AV	M	Automated cold vapor atomic absorption
C	M	Manual spectrophotometric
F	M	Furnace atomic absorption
MS	M	Mass spectrometry (ICP-MS)
NR	M	Analyte is not required to be analyzed
P	M	Inductively coupled plasma (ICP)
" "	M	No data have been entered

(1) The term "Column" is used to indicate under which column heading in the reporting forms that the qualifier will be found under.

Note: Form I allows only one character in each qualifier column. If multiple qualifiers are applicable to column C, please assess qualifier priority in the following order: U, J, B. Reporting done in the EDD may include multiple qualifiers when applicable, separated by a single space.

(Information obtained from NYSDEC ASP Exhibit B, 7/2005, page 65)

Volatile Organics Instruments

Volatile Organics: Jack

Instrument: Agilent 5975MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon
Autosampler: EST Centurion
Purge time: 11 min

Column Type: RTX-VMS
Column Length: 20 Meters
df: 1.00um
ID: 0.18mm
Desorb: 2 min

Volatile Organics: Quimby

Instrument: Agilent 5973MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: EST Encon
Autosampler: EST Centurion
Purge time: 11 min

Column Type: RTX-VMS
Column Length: 20 Meters
df: 1.00um
ID: 0.18mm
Desorb: 2 min

Volatile Organics: Curly

Instrument: Agilent 5972 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Tekmar 3000
Autosampler: Archon
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 um
ID: 0.18 mm
Desorb: 2 min

Volatile Organics: Elaine

Instrument: Agilent 5973 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Teledyne Velocity
Autosampler: Teledyne Solatek
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 um
ID: 0.18 mm
Desorb: 2 min



Volatile Organics: Gonzo

Instrument: Agilent 5973 MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Teledyne Velocity
Autosampler: Teledyne Solatek
Purge time: 11 min

Column Type: Restek RTX-502.2
Column Length: 40 Meters
df: 1.00 μ m
ID: 0.18 mm
Desorb: 2 min

Volatile Organics: VOA101

Instrument: Agilent 5975C inert XL MSD
Trap: EST K Trap (VOACARB 3000)
Concentrator: Encon Evolution
Autosampler: EST Centurion
Purge time: 11 min

Column Type: Restek RTX-VMS
Column Length: 30 Meters
df: 1.40 μ m
ID: 0.25 mm
Desorb: 1 min

Volatile Organics: Charlie/Voa100/Voa104

Instrument: Agilent 5975C MSD
Trap: Supelco K Trap (VOACARB 3000)
Concentrator: Encon Evolution
Autosampler: EST Centurion
Purge time: 11 min

Column Type: Agilent DB-624
Column Length: 25 Meters
df: 1.12 μ m
ID: 0.20 mm
Desorb: 2 min

Volatile Organics: M

Instrument: Agilent 6890

Concentrator: Tekmar 2016
Autosampler: Tekmar 3100

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics: L/N

Instrument: Agilent 6890

Concentrator: Encon Evolution
Autosampler: EST Centurion

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics: O/P

Instrument: Agilent 7890A

Concentrator: Encon Evolution
Autosampler: EST Centurion

Column Type: Restek RTX 502.2
Column Length: 105 Meters
df: 3.00 μ m
ID: 0.53 mm

Volatile Organics in Air Instruments

Volatile Organics in Air:

Instrument: Agilent 6890 GC / 5975 MSD	Column Type: Restek RTX-1
	Column Length: 60 Meters
Concentrator: Entech 7100A	df: 1.00 um
Autosampler: Entech 7016CA	ID: 0.52 mm
Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material	
Trap 2: Tenax: manufacturer-Entech: 20 cm packing material	

Semivolatile Organics Instruments

Semivolatile Organics (Acid/Base/Neutral Extractables): Buffy

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RTX-5MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Semivolatile Organics (Acid/Base/Neutral Extractables): Juliet/GCMS5/GCMS7

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RXI-5SIL MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM: Dakota/Mork

Instrument: Agilent 5973 MSD	Injection volume: 1 ul
Column Type: Restek RTX-5MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM: Mindy

Instrument: Agilent 5973N MSD	Injection volume: 1 ul
Column Type: Restek RXI-5SIL MS	df: 0.25 um
Column Length: 30 Meters	ID: 0.32 mm

Pesticides/PCB : Pest 11/Pest2/Pest7/Pest12

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column Type: Restek RTX-CLP (Channel A)	df: 0.32 um
Column: Restek RTX-CLPPesticide II (Channel B)	df: 0.25 um
Column Length: 30 Meters (Both)	ID: 0.32 mm (Both)

Pesticides/PCB: Pest 10/ Pest9

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column Type: Restek STX-CLP (Channel A)	df: 0.32 um
Column: Restek STX-CLPPesticide II (Channel B)	df: 0.25 um
Column Length: 30 Meters (Both)	ID: 0.32 mm (Both)

Herbicides

Instrument: Agilent 6890 w/Dual Micro ECDs
Column Type: Restek RTX-1701 (Channel A)
Column Type: Restek RTX-5 (Channel B)
Column Length: 30 Meters (Both)

Injection Volume: 1uL
df: 0.25 um
df: 0.25 um
ID: 0.32 mm (Both)

Petro9

Instrument: Agilent 6890 w/FID
Column: Restek RTX-5
Column Length: 30 Meters

Injection Volume: 1uL
df: 0.25 um
ID: 0.32 mm

EPH Petro10/ Petro11

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5-MS
Column Length: 30 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.32 mm

Explosives

Instrument: Dionex ICS-3000, AS50 Autosampler and PDA-100 detectors.
Injection Volume: 100uL
Column: Phenomenex Synergi 4u Hydro-RP and Luna 5u Phenyl-Hexyl.

GC/MS Forensic Semivolatile Organic Instruments

Semivolatile Organics (ALK-PAH extractables): PAH1/PAH2/PAH3/PAH4

Instrument: Agilent 5973C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

Semivolatile Organics (ALK-PAH extractables): PAH8/PAH9/PAH10/PAH11/PAH12/PAH13/PAH14

Instrument: Agilent 5975C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

Semivolatile Organics (ALK-PAH extractables): PAH17/PAH18/PAH19

Instrument: Agilent 5975C MSD
Column Type: Phenomenex ZB-5
Column Length: 60 Meters

Injection volume: 1 ul
df: 0.25 um
ID: 0.25 mm

GC/FID Forensic Semivolatile Organic Instruments

Semivolatile Organics (SHC extractables):PAH1/PAH2/PAH3/PAH4/PAH8

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm

Semivolatile Organics (SHC extractables): FID6 (dual column)/ FID9 (dual column)/ FID17 (dual column)

Instrument: Agilent 6890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm

Semivolatile Organics (SHC extractables):FID7 (dual column)

Instrument: Agilent 7890N w/FID
Column: Restek RTX-5
Column Length: 60 Meters

Injection Volume: 1uL
df: 0.25um
ID: 0.25 mm



Sample Delivery Group Form

Laboratory Job number: L1516184

Project Manager: Candace Fox

Review Date: 07/21/2015

Project Number: 20010

Project Name: RAMAPO LANDFILL

Received: 07/14/2015 17:04

Client Account: Sterling Environmental Eng

Received by: JK/GP

Samples Delivered by: COURIER

Call Tracker #

Bill Of Laden N/A

Trackingnum

Coc Present Present

Container Status Intact

Sample IDs

All Containers Accounted For? Yes

Were Extra Samples Received? No

Do Sample Labels and COC agree? Yes

Are Samples in Appropriate Containers? Yes

Are Samples Received within Holding time? Yes

pH of Samples upon Receipt <2

Are samples Properly Preserved? Yes

Initial pH preserved in house with

Final pH

Other Issues

Chlorine Check N/A

Are VOA/VPV Vials Present? Yes

Aqueous: Do Vials Contain Head Space? No

Soils: Is MeOH Covering the Soil? N/A

Reagent H2O Preserved vials Frozen on N/A

Frozen by Client N/A

Cooler	Seal	Ice Present	Blue Ice Present	Temp. (Celsius)	Frozen upon Receipt	Delivered Direct from Site
A	Absent	Yes	No	3.8 - IR Gun	No	No

ALPHA ANALYTICAL LABORATORIES, INC.
CHAIN OF CUSTODY REPORT
Jul 22 2015, 04:48 pm

Login Number: L1516184

Account: STERLINGENV Sterling Environmental EngProject: 20010

Received: 14JUL15 Due Date: 22JUL15
Mat PR Collected Container

Sample #	Client ID		
L1516184-01	SVWC-93	1 S0 14JUL15 08:35	1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.25,3-Vial-I/B
524.2 Report 1.1 Dichloroethane, Benzene, Chlorobenzene and vinyl chloride (Report List Built) Job split with 1516186 ASP-A Package		Due Date: 07/21/15	
624, ALK-T-2320, ASP-A, COD-410, HARDU, TAL-600, AG-2008T, AL-UI, AS-2008T, BA-2008T, BE-2008T, CA-UI, CD-2008T, CO-UI, CR-2008T, CU-2008T, FE-UI, HG-U, K-UI, MG-UI, MN-UI, NA-UI, NI-2008T, PB-2008T, PREPU, SB-2008T, SE-2008T, TL-2008T, V-2008T, ZN-2008T, TKN-351			
L1516184-02	SVWC-94	1 S0 14JUL15 09:05	1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.25,3-Vial-I/B
524.2 Report 1.1 Dichloroethane, Benzene, Chlorobenzene and vinyl chloride (Report List Built) Job split with 1516186 Package		Due Date: 07/21/15	
624, ALK-T-2320, COD-410, HARDU, TAL-600, AG-2008T, AL-UI, AS-2008T, BA-2008T, BE-2008T, CA-UI, CD-2008T, CO-UI, CR-2008T, CU-2008T, FE-UI, HG-U, K-UI, MG-UI, MN-UI, NA-UI, NI-2008T, PB-2008T, PREPU, SB-2008T, SE-2008T, TL-2008T, V-2008T, ZN-2008T, TKN-351			
L1516184-03	SVWC-95	1 S0 14JUL15 09:55	1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.25,3-Vial-I/B
524.2 Report 1.1 Dichloroethane, Benzene, Chlorobenzene and vinyl chloride (Report List Built) Job split with 1516186 Package		Due Date: 07/21/15	
624, ALK-T-2320, COD-410, HARDU, TAL-600, AG-2008T, AL-UI, AS-2008T, BA-2008T, BE-2008T, CA-UI, CD-2008T, CO-UI, CR-2008T, CU-2008T, FE-UI, HG-U, K-UI, MG-UI, MN-UI, NA-UI, NI-2008T, PB-2008T, PREPU, SB-2008T, SE-2008T, TL-2008T, V-2008T, ZN-2008T, TKN-351			
L1516184-04	SVWC-96	1 S0 14JUL15 09:30	1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.25,3-Vial-I/B
524.2 Report 1.1 Dichloroethane, Benzene, Chlorobenzene and vinyl chloride (Report List Built) Job split with 1516186 Package		Due Date: 07/21/15	
624, ALK-T-2320, COD-410, HARDU, TAL-600, AG-2008T, AL-UI, AS-2008T, BA-2008T, BE-2008T, CA-UI, CD-2008T, CO-UI, CR-2008T, CU-2008T, FE-UI, HG-U, K-UI, MG-UI, MN-UI, NA-UI, NI-2008T, PB-2008T, PREPU, SB-2008T, SE-2008T, TL-2008T, V-2008T, ZN-2008T, TKN-351			

ALPHA ANALYTICAL LABORATORIES, INC.

LOGIN CHAIN OF CUSTODY REPORT

Jul 22 2015, 04:48 pm

Login Number: L1516184

Account: STERLINGENV Sterling Environmental EngProject: 20010

Sample #	Client ID	Received: 14JUL15 Mat PR Collected	Due Date: 22JUL15 Container

L1516184-05 PW-1	1 S0 14JUL15 11:00	1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.25,3-Vial-I/B

524.2 Report 1.1 Dichloroethane, Benzene, Chlorobenzene and vinyl chloride (Report List Built) Job
split with 1516186 Package Due Date: 07/21/15624, ALK-T-2320, COD-410, HARDU, TAL-600, AG-2008T, AL-UI, AS-2008T, BA-2008T, BE-2008T, CA-UI, CD-2008T, CO-UI,
CR-2008T, CU-2008T, FE-UI, HG-U, K-UI, MG-UI, MN-UI, NA-UI, NI-2008T, PB-2008T, PREPU, SB-2008T, SE-2008T, TL-
2008T, V-2008T, ZN-2008T, TKN-351

L1516184-06 PW-2	1 S0 14JUL15 10:30	1-Plastic-C.25,1-Plastic-D.25,1-Plastic-NH.25,3-Vial-I/B

524.2 Report 1.1 Dichloroethane, Benzene, Chlorobenzene and vinyl chloride (Report List Built) Job
split with 1516186 Package Due Date: 07/21/15624, ALK-T-2320, COD-410, HARDU, TAL-600, AG-2008T, AL-UI, AS-2008T, BA-2008T, BE-2008T, CA-UI, CD-2008T, CO-UI,
CR-2008T, CU-2008T, FE-UI, HG-U, K-UI, MG-UI, MN-UI, NA-UI, NI-2008T, PB-2008T, PREPU, SB-2008T, SE-2008T, TL-
2008T, V-2008T, ZN-2008T, TKN-351

Organics

GC/MS 624

Analysis

Volatiles Sample Data

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-01
 Client ID : SVWC-93
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 5,624
 Lab File ID : 0717N05
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 08:35
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 17:42
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-02
 Client ID : SVWC-94
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 5,624
 Lab File ID : 0717N06
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:05
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 18:16
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-03
 Client ID : SVWC-95
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 5,624
 Lab File ID : 0717N08
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:55
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 19:25
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-04
 Client ID : SVWC-96
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 5,624
 Lab File ID : 0717N10
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:30
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 20:34
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-05
 Client ID : PW-1
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 5,624
 Lab File ID : 0717N11
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 11:00
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 21:09
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-06
 Client ID : PW-2
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 5,624
 Lab File ID : 0717N12
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 10:30
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 21:43
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
71-43-2	Benzene	ND	1.0	0.31	U
75-01-4	Vinyl chloride	ND	1.0	0.30	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804167-2
 Client ID : WG804167-2BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0717N04
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/17/15 17:07
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	5.0	0.65	U
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
67-66-3	Chloroform	ND	1.5	0.29	U
56-23-5	Carbon tetrachloride	ND	1.0	0.33	U
78-87-5	1,2-Dichloropropane	ND	3.5	0.28	U
124-48-1	Dibromochloromethane	ND	1.0	0.33	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
110-75-8	2-Chloroethylvinyl ether	ND	10	0.62	U
127-18-4	Tetrachloroethene	ND	1.5	0.38	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
75-69-4	Trichlorofluoromethane	ND	5.0	0.33	U
107-06-2	1,2-Dichloroethane	ND	1.5	0.36	U
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.30	U
75-27-4	Bromodichloromethane	ND	1.0	0.30	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.5	0.30	U
10061-01-5	cis-1,3-Dichloropropene	ND	1.5	0.32	U
75-25-2	Bromoform	ND	1.0	0.32	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.35	U
71-43-2	Benzene	ND	1.0	0.31	U
108-88-3	Toluene	ND	1.0	0.35	U
100-41-4	Ethylbenzene	ND	1.0	0.33	U
74-87-3	Chloromethane	ND	5.0	0.89	U
74-83-9	Bromomethane	1.7	5.0	1.3	J
75-01-4	Vinyl chloride	ND	1.0	0.30	U
75-00-3	Chloroethane	ND	2.0	0.31	U
75-35-4	1,1-Dichloroethene	ND	1.0	0.28	U
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.34	U



Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804167-2
 Client ID : WG804167-2BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0717N04
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/17/15 17:07
 Dilution Factor : 1
 Analyst : MM
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.33	U
79-01-6	Trichloroethene	ND	1.0	0.33	U
95-50-1	1,2-Dichlorobenzene	ND	5.0	0.75	U
541-73-1	1,3-Dichlorobenzene	ND	5.0	0.93	U
106-46-7	1,4-Dichlorobenzene	ND	5.0	0.85	U
179601-23-1	p/m-Xylene	ND	2.0	0.66	U
95-47-6	o-Xylene	ND	1.0	0.30	U
1330-20-7	Xylene (Total)	ND	1.0	0.30	U
100-42-5	Styrene	ND	1.0	0.30	U
67-64-1	Acetone	ND	10	1.8	U
75-15-0	Carbon disulfide	ND	5.0	0.90	U
78-93-3	2-Butanone	ND	10	2.2	U
108-05-4	Vinyl acetate	ND	10	2.9	U
108-10-1	4-Methyl-2-pentanone	ND	10	2.4	U
591-78-6	2-Hexanone	ND	10	2.5	U
107-02-8	Acrolein	ND	8.0	1.9	U
107-13-1	Acrylonitrile	ND	10	1.9	U
74-95-3	Dibromomethane	ND	1.0	1.0	U

Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804167-3
 Client ID : SVWC-94DUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0717N07
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:05
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 18:50
 Dilution Factor : 1
 Analyst : mm
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
75-09-2	Methylene chloride	ND	5.0	0.65	U
75-34-3	1,1-Dichloroethane	ND	1.5	0.31	U
67-66-3	Chloroform	ND	1.5	0.29	U
56-23-5	Carbon tetrachloride	ND	1.0	0.33	U
78-87-5	1,2-Dichloropropane	ND	3.5	0.28	U
124-48-1	Dibromochloromethane	ND	1.0	0.33	U
79-00-5	1,1,2-Trichloroethane	ND	1.5	0.34	U
110-75-8	2-Chloroethylvinyl ether	ND	10	0.62	U
127-18-4	Tetrachloroethene	ND	1.5	0.38	U
108-90-7	Chlorobenzene	ND	3.5	0.32	U
75-69-4	Trichlorofluoromethane	ND	5.0	0.33	U
107-06-2	1,2-Dichloroethane	ND	1.5	0.36	U
71-55-6	1,1,1-Trichloroethane	ND	2.0	0.30	U
75-27-4	Bromodichloromethane	ND	1.0	0.30	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.5	0.30	U
10061-01-5	cis-1,3-Dichloropropene	ND	1.5	0.32	U
75-25-2	Bromoform	ND	1.0	0.32	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.35	U
71-43-2	Benzene	ND	1.0	0.31	U
108-88-3	Toluene	ND	1.0	0.35	U
100-41-4	Ethylbenzene	ND	1.0	0.33	U
74-87-3	Chloromethane	ND	5.0	0.89	U
74-83-9	Bromomethane	1.4	5.0	1.3	J
75-01-4	Vinyl chloride	ND	1.0	0.30	U
75-00-3	Chloroethane	ND	2.0	0.31	U
75-35-4	1,1-Dichloroethene	ND	1.0	0.28	U
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.34	U



Form 1

Volatile Organics

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG804167-3
 Client ID : SVWC-94DUP
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 5,624
 Lab File ID : 0717N07
 Sample Amount : 5 ml
 Level : LOW
 Extract Volume (MeOH) : N/A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:05
 Date Received : 07/14/15
 Date Analyzed : 07/17/15 18:50
 Dilution Factor : 1
 Analyst : mm
 Instrument ID : FLANDERS.I
 GC Column : RTX-502.2
 %Solids : N/A
 Injection Volume : N/A

CAS NO.	Parameter	ug/L			Qualifier
		Results	RL	MDL	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.33	U
79-01-6	Trichloroethene	ND	1.0	0.33	U
95-50-1	1,2-Dichlorobenzene	ND	5.0	0.75	U
541-73-1	1,3-Dichlorobenzene	ND	5.0	0.93	U
106-46-7	1,4-Dichlorobenzene	ND	5.0	0.85	U
179601-23-1	p/m-Xylene	ND	2.0	0.66	U
95-47-6	o-Xylene	ND	1.0	0.30	U
1330-20-7	Xylene (Total)	ND	1.0	0.30	U
100-42-5	Styrene	ND	1.0	0.30	U
67-64-1	Acetone	ND	10	1.8	U
75-15-0	Carbon disulfide	ND	5.0	0.90	U
78-93-3	2-Butanone	ND	10	2.2	U
108-05-4	Vinyl acetate	ND	10	2.9	U
108-10-1	4-Methyl-2-pentanone	ND	10	2.4	U
591-78-6	2-Hexanone	ND	10	2.5	U
107-02-8	Acrolein	ND	8.0	1.9	U
107-13-1	Acrylonitrile	ND	10	1.9	U
74-95-3	Dibromomethane	ND	1.0	1.0	U

Metals

Inorganic Data (ICP Analysis)

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-01
 Client ID : SVWC-93
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 19,200.7
 Lab File ID : WG804506.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 08:35
 Date Received : 07/14/15
 Date Analyzed : 07/21/15 20:22
 Dilution Factor : 1
 Analyst : BC
 Instrument ID : TRACE5
 %Solids : NA
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	74	0.66	NA	
7429-90-5	Aluminum, Total	ND	0.10	0.02	U
7440-70-2	Calcium, Total	20	0.10	0.03	
7440-48-4	Cobalt, Total	ND	0.020	0.005	U
7439-89-6	Iron, Total	ND	0.05	0.02	U
7439-95-4	Magnesium, Total	5.5	0.10	0.01	
7439-96-5	Manganese, Total	ND	0.010	0.002	U
7440-09-7	Potassium, Total	1.7	2.5	0.40	J
7440-23-5	Sodium, Total	58	2.0	0.30	

Form 1 METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-02
 Client ID : SVWC-94
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 19,200.7
 Lab File ID : WG804506.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:05
 Date Received : 07/14/15
 Date Analyzed : 07/21/15 20:26
 Dilution Factor : 1
 Analyst : BC
 Instrument ID : TRACE5
 %Solids : NA
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	72	0.66	NA	
7429-90-5	Aluminum, Total	ND	0.10	0.02	U
7440-70-2	Calcium, Total	20	0.10	0.03	
7440-48-4	Cobalt, Total	ND	0.020	0.005	U
7439-89-6	Iron, Total	ND	0.05	0.02	U
7439-95-4	Magnesium, Total	5.4	0.10	0.01	
7439-96-5	Manganese, Total	ND	0.010	0.002	U
7440-09-7	Potassium, Total	1.7	2.5	0.40	J
7440-23-5	Sodium, Total	66	2.0	0.30	

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-03
 Client ID : SVWC-95
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 19,200.7
 Lab File ID : WG804506.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:55
 Date Received : 07/14/15
 Date Analyzed : 07/21/15 20:30
 Dilution Factor : 1
 Analyst : BC
 Instrument ID : TRACE5
 %Solids : NA
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	79	0.66	NA	
7429-90-5	Aluminum, Total	ND	0.10	0.02	U
7440-70-2	Calcium, Total	23	0.10	0.03	
7440-48-4	Cobalt, Total	ND	0.020	0.005	U
7439-89-6	Iron, Total	0.48	0.05	0.02	
7439-95-4	Magnesium, Total	5.2	0.10	0.01	
7439-96-5	Manganese, Total	1.81	0.010	0.002	
7440-09-7	Potassium, Total	2.0	2.5	0.40	J
7440-23-5	Sodium, Total	61	2.0	0.30	

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-04
 Client ID : SVWC-96
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 19,200.7
 Lab File ID : WG804506.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:30
 Date Received : 07/14/15
 Date Analyzed : 07/21/15 20:49
 Dilution Factor : 1
 Analyst : BC
 Instrument ID : TRACE5
 %Solids : N/A
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	92	0.66	NA	
7429-90-5	Aluminum, Total	ND	0.10	0.02	U
7440-70-2	Calcium, Total	25	0.10	0.03	
7440-48-4	Cobalt, Total	ND	0.020	0.005	U
7439-89-6	Iron, Total	ND	0.05	0.02	U
7439-95-4	Magnesium, Total	6.9	0.10	0.01	
7439-96-5	Manganese, Total	ND	0.010	0.002	U
7440-09-7	Potassium, Total	1.6	2.5	0.40	J
7440-23-5	Sodium, Total	64	2.0	0.30	

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-05
 Client ID : PW-1
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 19,200.7
 Lab File ID : WG804506.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 11:00
 Date Received : 07/14/15
 Date Analyzed : 07/21/15 20:53
 Dilution Factor : 1
 Analyst : BC
 Instrument ID : TRACE5
 %Solids : N/A
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	63	0.66	NA	
7429-90-5	Aluminum, Total	ND	0.10	0.02	U
7440-70-2	Calcium, Total	17	0.10	0.03	
7440-48-4	Cobalt, Total	ND	0.020	0.005	U
7439-89-6	Iron, Total	0.03	0.05	0.02	J
7439-95-4	Magnesium, Total	4.6	0.10	0.01	
7439-96-5	Manganese, Total	ND	0.010	0.002	U
7440-09-7	Potassium, Total	1.7	2.5	0.40	J
7440-23-5	Sodium, Total	35	2.0	0.30	



Form 1 METALS

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516184-06
Client ID : PW-2
Sample Location : HILLBURN, NY
Sample Matrix : Drinking Water
Analytical Method : 19,200.7
Lab File ID : WG804506.pdf
Sample Amount : 50ml
Digestion Method : EPA 3005A

Lab Number : L1516184
Project Number : 20010
Date Collected : 07/14/15 10:30
Date Received : 07/14/15
Date Analyzed : 07/21/15 20:57
Dilution Factor : 1
Analyst : BC
Instrument ID : TRACE5
%Solids : N/A
Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
NONE	Hardness	86	0.66	NA	
7429-90-5	Aluminum, Total	ND	0.10	0.02	U
7440-70-2	Calcium, Total	29	0.10	0.03	
7440-48-4	Cobalt, Total	ND	0.020	0.005	U
7439-89-6	Iron, Total	0.09	0.05	0.02	
7439-95-4	Magnesium, Total	3.4	0.10	0.01	
7439-96-5	Manganese, Total	ND	0.010	0.002	U
7440-09-7	Potassium, Total	1.0	2.5	0.40	J
7440-23-5	Sodium, Total	7.9	2.0	0.30	



Inorganic Data (ICPMS Analysis)

Form 1 METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-01
 Client ID : SVWC-93
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 3,200.8
 Lab File ID : WG803217.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 08:35
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 18:52
 Dilution Factor : 1
 Analyst : KL
 Instrument ID : ICPMSX
 %Solids : NA
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-36-0	Antimony, Total	0.00014	0.00200	0.00010	J
7440-38-2	Arsenic, Total	ND	0.00100	0.00020	U
7440-39-3	Barium, Total	0.00854	0.00100	0.00010	
7440-41-7	Beryllium, Total	ND	0.00100	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00100	0.00005	U
7440-47-3	Chromium, Total	0.00021	0.00100	0.00020	J
7440-50-8	Copper, Total	0.00832	0.00100	0.00010	
7439-92-1	Lead, Total	ND	0.00100	0.00020	U
7440-02-0	Nickel, Total	0.00054	0.00100	0.00010	J
7782-49-2	Selenium, Total	ND	0.00500	0.00030	U
7440-22-4	Silver, Total	ND	0.00100	0.00010	U
7440-28-0	Thallium, Total	ND	0.00100	0.00003	U
7440-62-2	Vanadium, Total	0.00011	0.00500	0.00010	J
7440-66-6	Zinc, Total	0.00438	0.00500	0.00120	J



Form 1 METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-02
 Client ID : SVWC-94
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 3,200.8
 Lab File ID : WG803217.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:05
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 18:56
 Dilution Factor : 1
 Analyst : KL
 Instrument ID : ICPMSX
 %Solids : NA
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-36-0	Antimony, Total	0.00032	0.00200	0.00010	J
7440-38-2	Arsenic, Total	ND	0.00100	0.00020	U
7440-39-3	Barium, Total	0.0137	0.00100	0.00010	
7440-41-7	Beryllium, Total	ND	0.00100	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00100	0.00005	U
7440-47-3	Chromium, Total	0.00054	0.00100	0.00020	J
7440-50-8	Copper, Total	0.00752	0.00100	0.00010	
7439-92-1	Lead, Total	0.00078	0.00100	0.00020	J
7440-02-0	Nickel, Total	0.00090	0.00100	0.00010	J
7782-49-2	Selenium, Total	ND	0.00500	0.00030	U
7440-22-4	Silver, Total	ND	0.00100	0.00010	U
7440-28-0	Thallium, Total	ND	0.00100	0.00003	U
7440-62-2	Vanadium, Total	0.00030	0.00500	0.00010	J
7440-66-6	Zinc, Total	0.0134	0.00500	0.00120	



Form 1 METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-03
 Client ID : SVWC-95
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 3,200.8
 Lab File ID : WG803217.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:55
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 19:07
 Dilution Factor : 1
 Analyst : KL
 Instrument ID : ICPMSX
 %Solids : NA
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-36-0	Antimony, Total	0.00016	0.00200	0.00010	J
7440-38-2	Arsenic, Total	0.00022	0.00100	0.00020	J
7440-39-3	Barium, Total	0.00950	0.00100	0.00010	
7440-41-7	Beryllium, Total	ND	0.00100	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00100	0.00005	U
7440-47-3	Chromium, Total	ND	0.00100	0.00020	U
7440-50-8	Copper, Total	0.00250	0.00100	0.00010	
7439-92-1	Lead, Total	0.00026	0.00100	0.00020	J
7440-02-0	Nickel, Total	0.00499	0.00100	0.00010	
7782-49-2	Selenium, Total	ND	0.00500	0.00030	U
7440-22-4	Silver, Total	ND	0.00100	0.00010	U
7440-28-0	Thallium, Total	0.00006	0.00100	0.00003	J
7440-62-2	Vanadium, Total	0.00025	0.00500	0.00010	J
7440-66-6	Zinc, Total	0.0121	0.00500	0.00120	

Form 1 METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-04
 Client ID : SVWC-96
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 3,200.8
 Lab File ID : WG803217.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:30
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 19:11
 Dilution Factor : 1
 Analyst : KL
 Instrument ID : ICPMSX
 %Solids : N/A
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-36-0	Antimony, Total	0.00011	0.00200	0.00010	J
7440-38-2	Arsenic, Total	ND	0.00100	0.00020	U
7440-39-3	Barium, Total	0.0117	0.00100	0.00010	
7440-41-7	Beryllium, Total	ND	0.00100	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00100	0.00005	U
7440-47-3	Chromium, Total	0.00023	0.00100	0.00020	J
7440-50-8	Copper, Total	0.00766	0.00100	0.00010	
7439-92-1	Lead, Total	0.00049	0.00100	0.00020	J
7440-02-0	Nickel, Total	0.00158	0.00100	0.00010	
7782-49-2	Selenium, Total	ND	0.00500	0.00030	U
7440-22-4	Silver, Total	ND	0.00100	0.00010	U
7440-28-0	Thallium, Total	ND	0.00100	0.00003	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00010	U
7440-66-6	Zinc, Total	0.0146	0.00500	0.00120	

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-05
 Client ID : PW-1
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 3,200.8
 Lab File ID : WG803217.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 11:00
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 19:15
 Dilution Factor : 1
 Analyst : KL
 Instrument ID : ICPMSX
 %Solids : N/A
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-36-0	Antimony, Total	ND	0.00200	0.00010	U
7440-38-2	Arsenic, Total	ND	0.00100	0.00020	U
7440-39-3	Barium, Total	0.0156	0.00100	0.00010	
7440-41-7	Beryllium, Total	ND	0.00100	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00100	0.00005	U
7440-47-3	Chromium, Total	0.00027	0.00100	0.00020	J
7440-50-8	Copper, Total	0.111	0.00100	0.00010	
7439-92-1	Lead, Total	0.00783	0.00100	0.00020	
7440-02-0	Nickel, Total	0.00050	0.00100	0.00010	J
7782-49-2	Selenium, Total	ND	0.00500	0.00030	U
7440-22-4	Silver, Total	ND	0.00100	0.00010	U
7440-28-0	Thallium, Total	ND	0.00100	0.00003	U
7440-62-2	Vanadium, Total	0.00017	0.00500	0.00010	J
7440-66-6	Zinc, Total	0.0183	0.00500	0.00120	

Form 1 METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-06
 Client ID : PW-2
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 3,200.8
 Lab File ID : WG803217.pdf
 Sample Amount : 50ml
 Digestion Method : EPA 3005A

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 10:30
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 19:18
 Dilution Factor : 1
 Analyst : KL
 Instrument ID : ICPMSX
 %Solids : N/A
 Date Digested : 07/15/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7440-36-0	Antimony, Total	0.00014	0.00200	0.00010	J
7440-38-2	Arsenic, Total	ND	0.00100	0.00020	U
7440-39-3	Barium, Total	0.00176	0.00100	0.00010	
7440-41-7	Beryllium, Total	ND	0.00100	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00100	0.00005	U
7440-47-3	Chromium, Total	0.00024	0.00100	0.00020	J
7440-50-8	Copper, Total	0.0240	0.00100	0.00010	
7439-92-1	Lead, Total	0.00041	0.00100	0.00020	J
7440-02-0	Nickel, Total	0.00060	0.00100	0.00010	J
7782-49-2	Selenium, Total	ND	0.00500	0.00030	U
7440-22-4	Silver, Total	ND	0.00100	0.00010	U
7440-28-0	Thallium, Total	ND	0.00100	0.00003	U
7440-62-2	Vanadium, Total	0.00011	0.00500	0.00010	J
7440-66-6	Zinc, Total	0.0199	0.00500	0.00120	

Inorganic Data (Mercury Analysis)

Form 1 METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-01
 Client ID : SVWC-93
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 3,245.1
 Lab File ID : Hg4071615B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 245.1

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 08:35
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 19:07
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : NA
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.0002	0.0001	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-02
 Client ID : SVWC-94
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 3,245.1
 Lab File ID : Hg4071615B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 245.1

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:05
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 19:09
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : NA
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.0002	0.0001	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-03
 Client ID : SVWC-95
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 3,245.1
 Lab File ID : Hg4071615B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 245.1

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:55
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 19:11
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : NA
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.0002	0.0001	U



Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-04
 Client ID : SVWC-96
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 3,245.1
 Lab File ID : Hg4071615B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 245.1

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 09:30
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 19:13
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.0002	0.0001	U

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-05
 Client ID : PW-1
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 3,245.1
 Lab File ID : Hg4071615B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 245.1

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 11:00
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 19:15
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.0002	0.0001	U

Form 1

METALS

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-06
 Client ID : PW-2
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 3,245.1
 Lab File ID : Hg4071615B.pcl
 Sample Amount : 25ml
 Digestion Method : EPA 245.1

Lab Number : L1516184
 Project Number : 20010
 Date Collected : 07/14/15 10:30
 Date Received : 07/14/15
 Date Analyzed : 07/16/15 19:20
 Dilution Factor : 1
 Analyst : EA
 Instrument ID : FIMS4
 %Solids : N/A
 Date Digested : 07/16/15

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
7439-97-6	Mercury, Total	ND	0.0002	0.0001	U



Wet Chemistry

Total Kjeldahl Nitrogen Analysis

Results

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-01
 Client ID : SVWC-93
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 08:35
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 21:58
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.209	0.300	0.093	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-02
 Client ID : SVWC-94
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 09:05
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 22:01
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.684	0.300	0.093	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-03
 Client ID : SVWC-95
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 09:55
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 22:02
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.280	0.300	0.093	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-04
 Client ID : SVWC-96
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 09:30
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 22:02
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.224	0.300	0.093	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-05
 Client ID : PW-1
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 11:00
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 22:06
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.495	0.300	0.093	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-06
 Client ID : PW-2
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 10:30
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 22:07
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.115	0.300	0.093	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG802816-1
 Client ID : WG802816-1BLANK
 Sample Location :
 Sample Matrix : DW
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/15/15 21:43
 Dilution Factor : 1
 Analyst : AT
 Instrument ID : LACHAT
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.130	0.300	0.031	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG802816-3
 Client ID : SVWC-93DUP
 Sample Location :
 Sample Matrix : DW
 Analytical Method : 4,351.3/.1 (M)
 Lab File ID : TKN150715-I
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 08:35
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 22:00
 Dilution Factor : 1
 Analyst : atran
 Instrument ID : LACHAT
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
NONE	Nitrogen, Total Kjeldahl	0.161	0.300	0.093	J

Chemical Oxygen Demand Analysis

Results

Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516184-01
Client ID : SVWC-93
Sample Location : HILLBURN, NY
Sample Matrix : Drinking Water
Analytical Method : 44,410.4
Lab File ID : WG803059.csv
Sample Amount :

Lab Number : L1516184
Project Number: 20010
Date Collected : 07/14/15 08:35
Date Received : 07/14/15
Date Analyzed : 07/15/15 20:34
Dilution Factor : 1
Analyst : TL
Instrument ID : GENSYS10VI
%Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	23.	20	3.5	



Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516184-02
Client ID : SVWC-94
Sample Location : HILLBURN, NY
Sample Matrix : Drinking Water
Analytical Method : 44,410.4
Lab File ID : WG803059.csv
Sample Amount :

Lab Number : L1516184
Project Number: 20010
Date Collected : 07/14/15 09:05
Date Received : 07/14/15
Date Analyzed : 07/15/15 20:34
Dilution Factor : 1
Analyst : TL
Instrument ID : GENSYS10VI
%Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	23.	20	3.5	



Form 1

WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : L1516184-03
Client ID : SVWC-95
Sample Location : HILLBURN, NY
Sample Matrix : Drinking Water
Analytical Method : 44,410.4
Lab File ID : WG803059.csv
Sample Amount :

Lab Number : L1516184
Project Number: 20010
Date Collected : 07/14/15 09:55
Date Received : 07/14/15
Date Analyzed : 07/15/15 20:34
Dilution Factor : 1
Analyst : TL
Instrument ID : GENSYS10VI
%Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	14.	20	3.5	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-04
 Client ID : SVWC-96
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 44,410.4
 Lab File ID : WG803059.csv
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 09:30
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 20:35
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	21.	20	3.5	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-05
 Client ID : PW-1
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 44,410.4
 Lab File ID : WG803059.csv
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 11:00
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 20:35
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	7.4	20	3.5	J

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-06
 Client ID : PW-2
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 44,410.4
 Lab File ID : WG803059.csv
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 10:30
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 20:35
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : NA

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	ND	20	3.5	U

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG803059-1
 Client ID : WG803059-1BLANK
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 44,410.4
 Lab File ID : WG803059.csv
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/15/15 20:29
 Dilution Factor : 1
 Analyst : TL
 Instrument ID : GENSYS10VI
 %Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	ND	20	3.5	U

Form 1
WETCHEM

Client : Sterling Environmental Eng
Project Name : RAMAPO LANDFILL
Lab ID : WG803059-4
Client ID : A TEST, B TEST, C TESTDUP
Sample Location :
Sample Matrix : WATER
Analytical Method : 44,410.4
Lab File ID : WG803059.csv
Sample Amount :

Lab Number : L1516184
Project Number: 20010
Date Collected : 07/14/15 11:15
Date Received : 07/14/15
Date Analyzed : 07/15/15 20:35
Dilution Factor : 1
Analyst : TLH
Instrument ID : GENSYS10VI
%Solids : N/A

CAS NO.	Parameter	Results	mg/l		Qualifier
			RL	MDL	
COD	Chemical Oxygen Demand	160	20	3.5	

Alkalinity Analysis

Results

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-01
 Client ID : SVWC-93
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 08:35
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	51.3	2.00	NA	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-02
 Client ID : SVWC-94
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 09:05
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	53.7	2.00	NA	



Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-03
 Client ID : SVWC-95
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 09:55
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	58.2	2.00	NA	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-04
 Client ID : SVWC-96
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 09:30
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	52.4	2.00	NA	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-05
 Client ID : PW-1
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 11:00
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	18.2	2.00	NA	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : L1516184-06
 Client ID : PW-2
 Sample Location : HILLBURN, NY
 Sample Matrix : Drinking Water
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/14/15 10:30
 Date Received : 07/14/15
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	66.1	2.00	NA	

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG802862-1
 Client ID : WG802862-1BLANK
 Sample Location :
 Sample Matrix : DW
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : NA
 Date Received : NA
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO ₃ /L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	ND	2.00	NA	U

Form 1

WETCHEM

Client : Sterling Environmental Eng
 Project Name : RAMAPO LANDFILL
 Lab ID : WG802862-2
 Client ID : BEDROCK-1DUP
 Sample Location :
 Sample Matrix : DW
 Analytical Method : 30,2320B
 Lab File ID : WG802862.csv
 Sample Amount :

Lab Number : L1516184
 Project Number: 20010
 Date Collected : 07/13/15 12:45
 Date Received : 07/13/15
 Date Analyzed : 07/15/15 08:54
 Dilution Factor : 1
 Analyst : SG
 Instrument ID :
 %Solids : NA

CAS NO.	Parameter	Results	mg CaCO3/L		Qualifier
			RL	MDL	
471-34-1	Alkalinity, Total	49.5	2.00	NA	



APPENDIX C
HISTORICAL DATA TABLES

Town of Ramapo Landfill
TABLE C-1
Aluminum (ug/L)
ARAR Standard = None Listed
USEPA Secondary MCL = 50-200 ug/L
Part 5 MCL = Not Available

Well ID	Well 1-OS/I	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96																		
DATE																																														
Jun-99		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																		
Sep-99		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																		
May-00	10800	470	17800	770	382	268	6640	217	30800		NA	2900	2810	121	B	49.5	B	1270	62.2	B	1300	1440	212	NA	NA	NA	NA	NA																		
Sep-00		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																		
Dec-00		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																		
Jan-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																		
Mar-01	20200	4990	20300	65.7	B	2030	829	2680	31.7	B	15400		NA	483	2790	N	61.5	B,N	591	N	17600	N	483	N	2310	N	12700	N	368	N	NA	NA	NA	NA	< 10.4	< 10.4	<10.4	113	B	237	150	B				
Jul-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																		
Oct-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																		
Mar-02	13600	495	6050	3770		195	B	325		1410		164	B		NA	4150	6210	4440		< 14.9		1020	1470		21.7	B	487	1010		< 14.9		NA	NA	NA	NA	< 14.9	< 14.9	< 14.9	< 14.9	< 14.9	< 14.9					
Jul-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																		
Oct-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																		
Apr-03		NA	48.5	B	20300		1960		2740		1150		6950		255		NA	1350		1110		1240		NA	149	B	6820		54.2	B	968		2120		35.8	B		NA	NA	NA	< 15.8	< 15.8	< 15.8	< 15.8	< 15.8	
Mar-04		NA		NA	8880		NA	3570		NA	1370		NA	98800		NA		NA	25000		NA	47.7	B	7040		< 18.2		311	965	286		NA	NA	NA	NA	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2			
Jun-05	765			NA	1190		NA	< 10.4		NA	386		NA		NA	247		NA	1520		NA	735		184	B	< 10.4		291	173	B	26.5	B		NA	NA	NA	NA	< 10.4	< 10.4	< 10.4	< 10.4	< 10.4	< 10.4	< 10.4		
Sep-06	39000		NA	4500		NA	580		NA	2500		NA	230000		NA		NA	11000		NA	140	8700	1200	1000	12000	73		NA	NA	NA	NA	76	67	63	56		37		14							
Oct-07	47000		NA	12000		NA	520		NA	9800		NA	370		NA		NA	7900		NA	89	10000	66	4000	21000	140		NA	NA	NA	NA	NA	75	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50				
Mar-09	12000		NA	3200		NA	870		NA	3800		NA	65000		NA		NA	4000		NA	< 100	8300	< 100	3900	13000	< 100		NA	NA	NA	NA	< 100	< 100	< 100		NA	< 100	< 100	< 100	< 100	< 100	< 100				
May-10	14600		NA	3200		NA	629		NA	2350		NA	115000		NA		NA	15000		NA	< 200	5970	< 200	2430	18300	495		NA	NA	NA	NA	< 200	< 200	< 200		NA	< 105	< 200								
Sep-11	20100	280		NA	2400	120	J	970		250	1200		NA	42500		1100	19900	12800		NA	110	J	<200	<200	3500	21900	<200		NA	NA	NA	NA	<200	<200	<200	<200		NA		NA						
Nov-12	12900			NA	1600		NA	170	J		NA	4400		NA	42000		NA	8700		NA	< 200	230	< 200	520	< 200	< 200		NA	NA	NA	NA	< 200	< 200	< 200		< 200		< 200		NA		NA				
Mar-14	17500			NA	3100		NA	1700		NA	3000		NA	36300		NA		NA	17800		NA		ND	180	J		ND	1800		ND		ND	NA	NA		ND		ND		ND		ND				
Nov-14		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	<100	u	1580	2590		NA		NA		NA		NA		NA		NA		NA		NA		NA				
Jul-15	3220			NA	176		NA	36		NA	304		NA	6580		NA		NA	723		NA	9.9	J	18		2.0	J	750		8.0	J	8.0	J	608		240	90		<20		<20		<20		<20	

Notes:

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

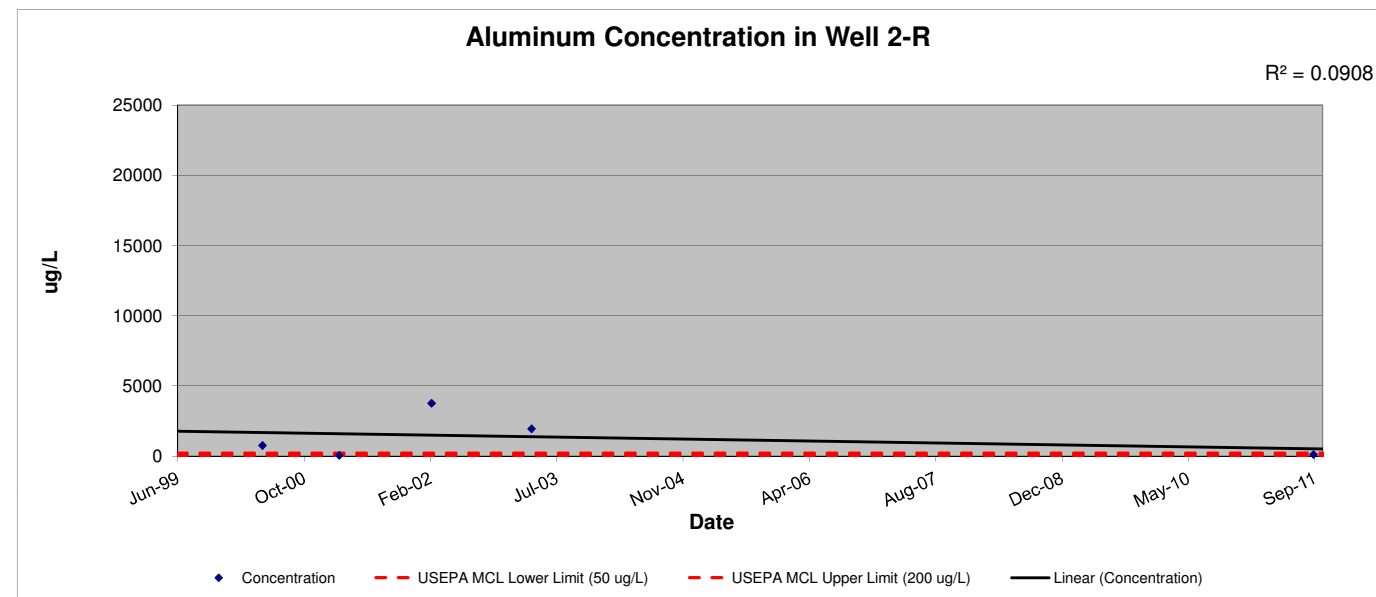
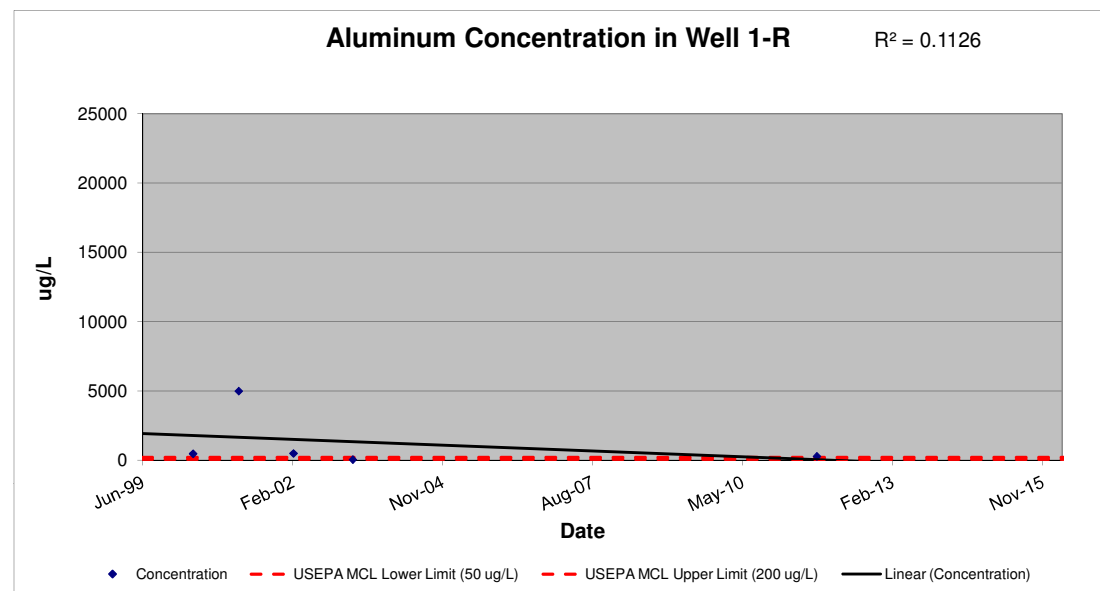
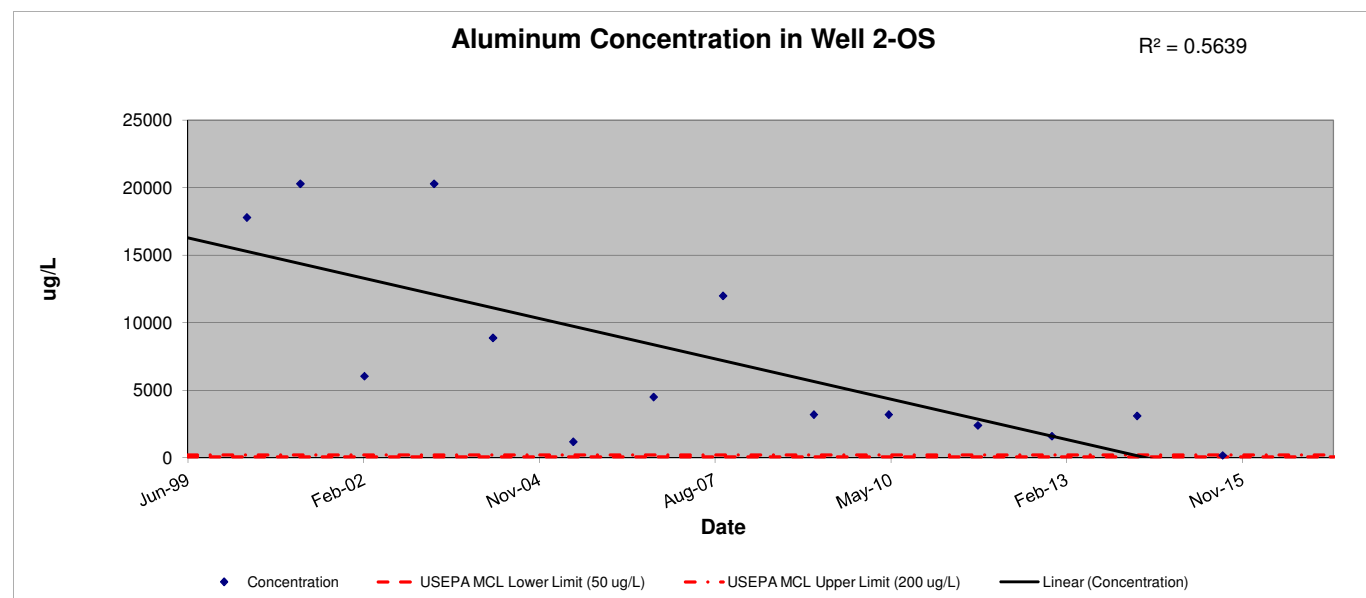
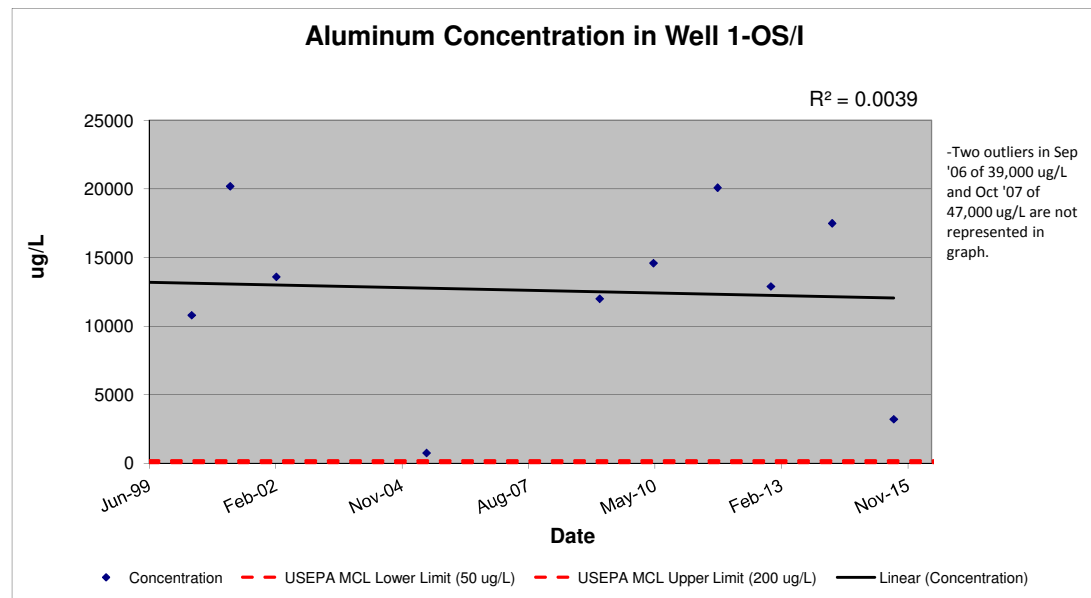
ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC TOGS 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

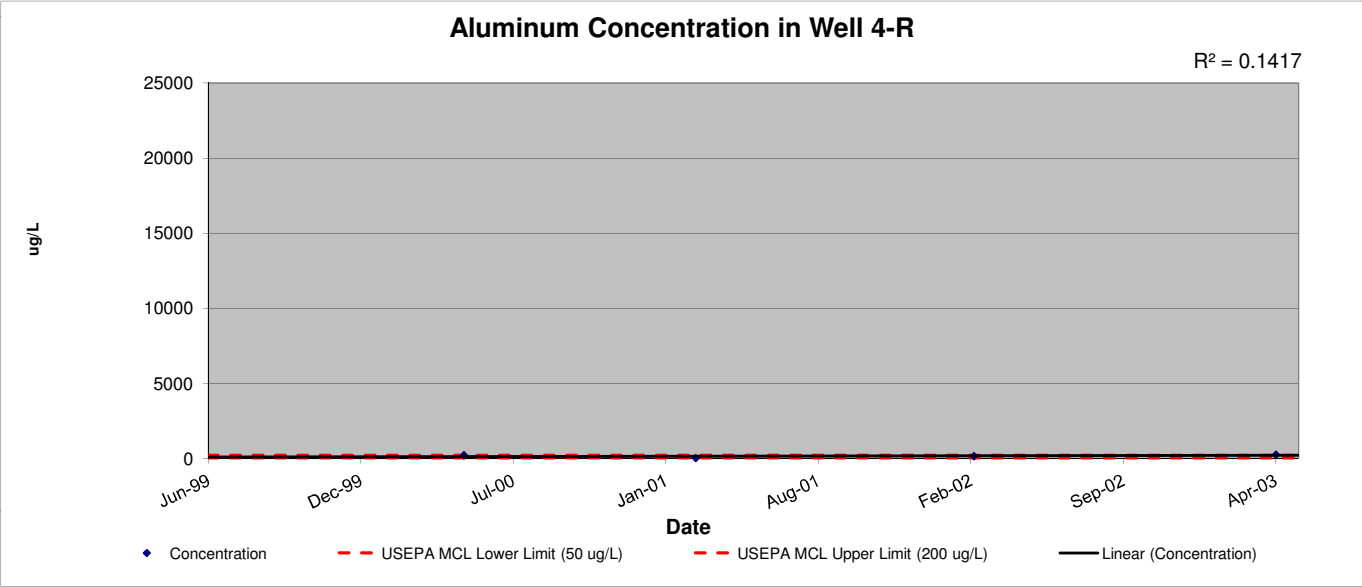
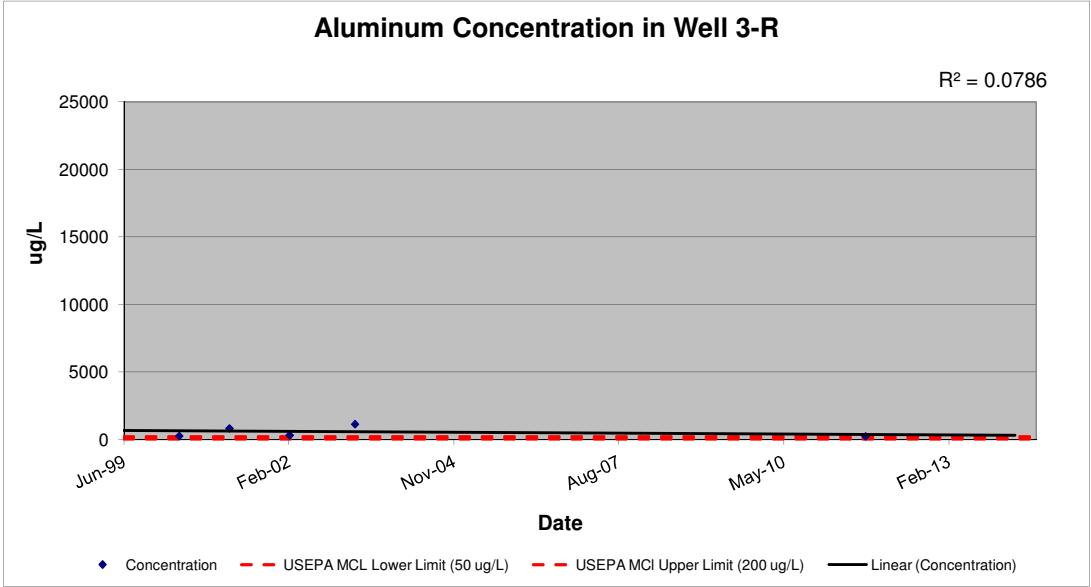
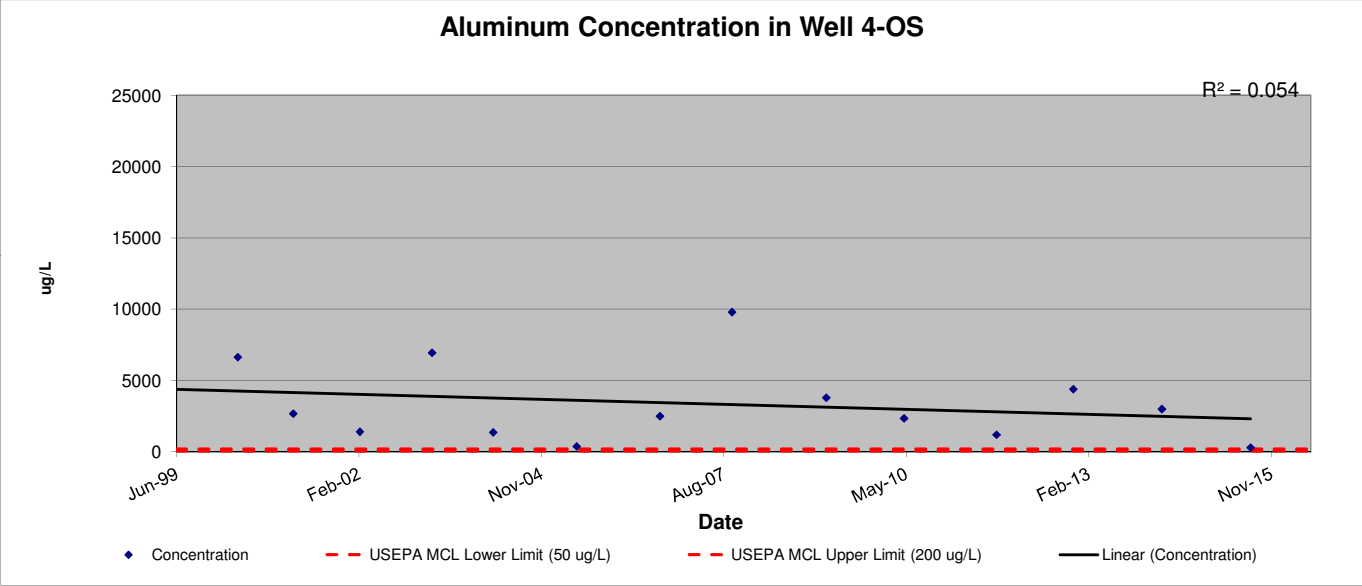
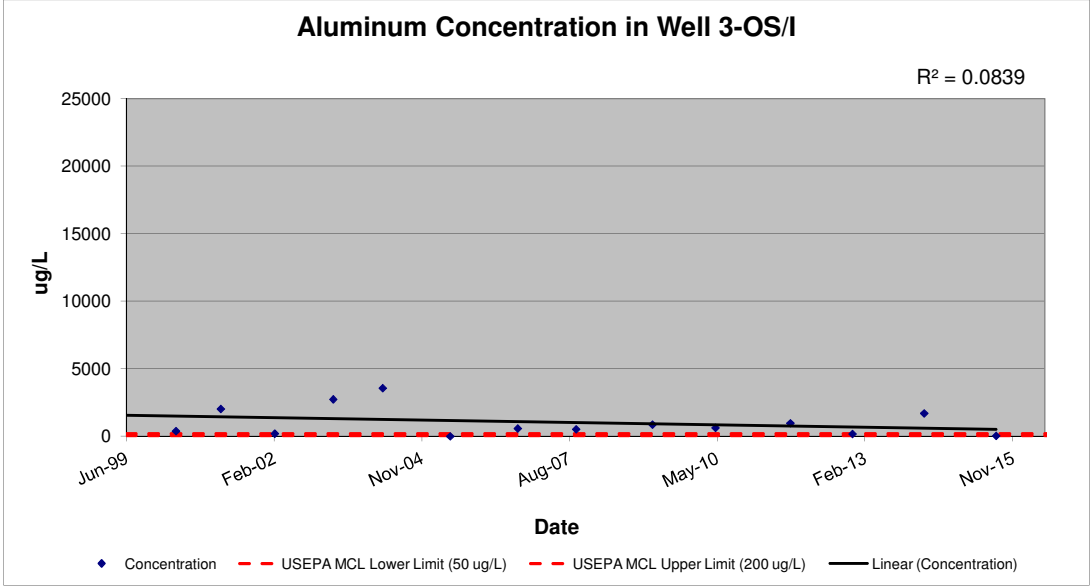
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

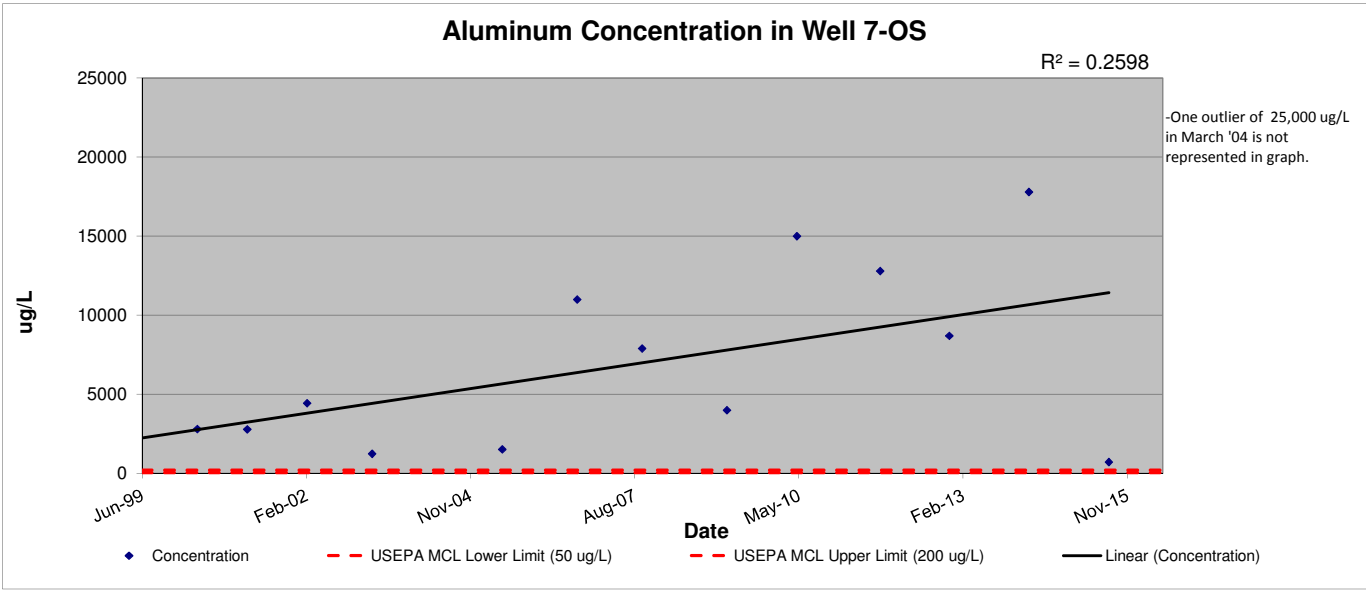
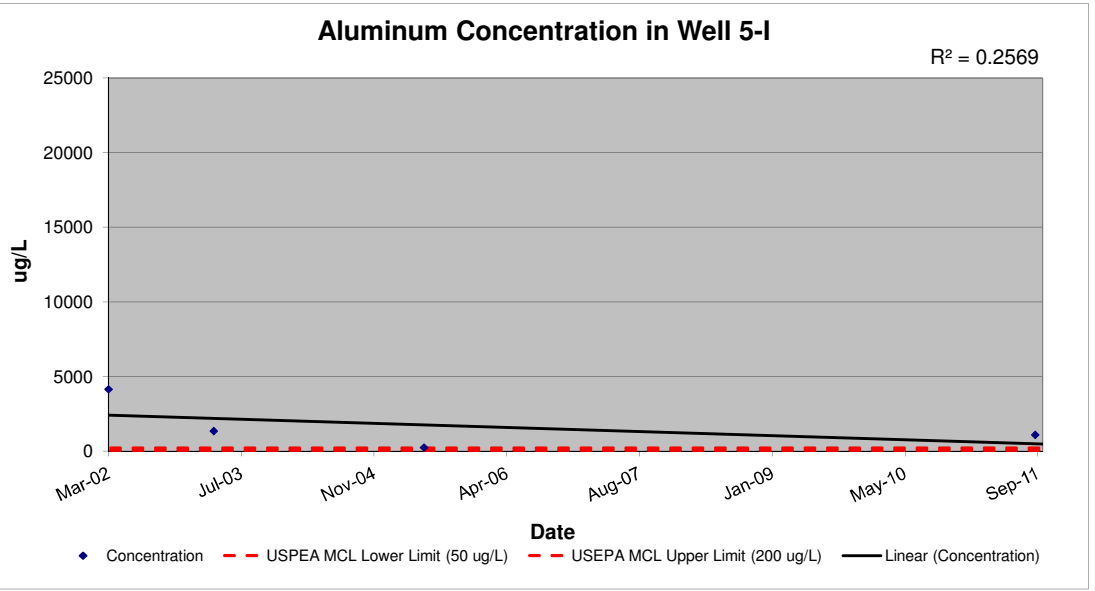
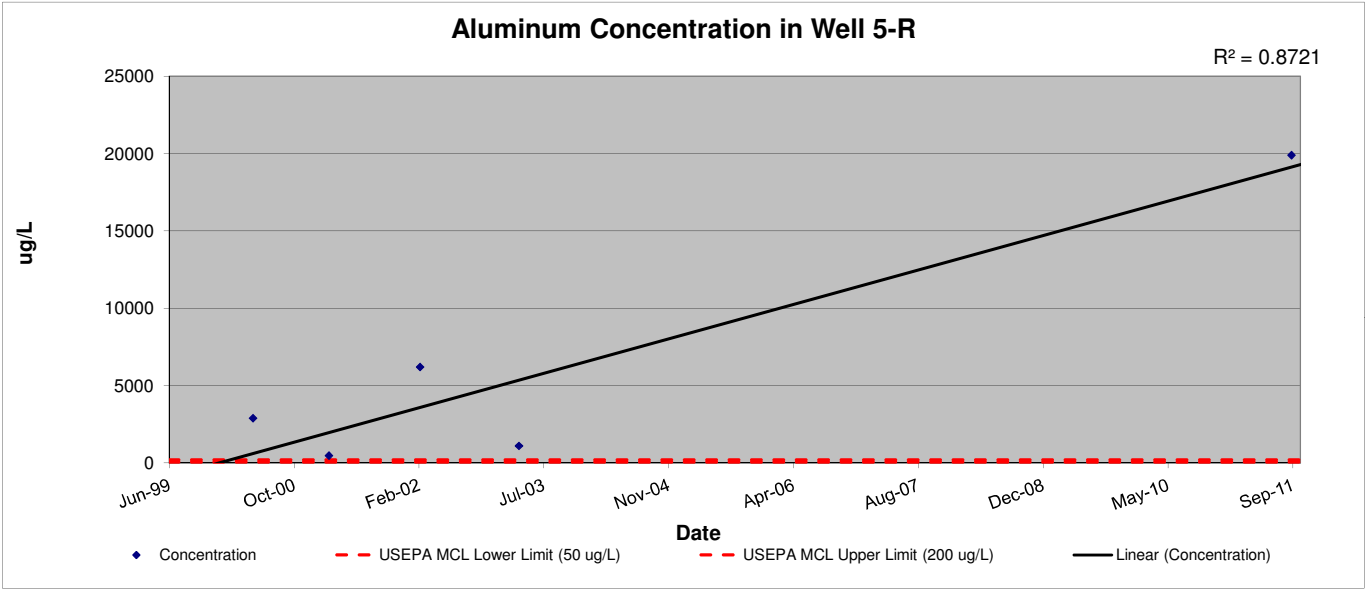
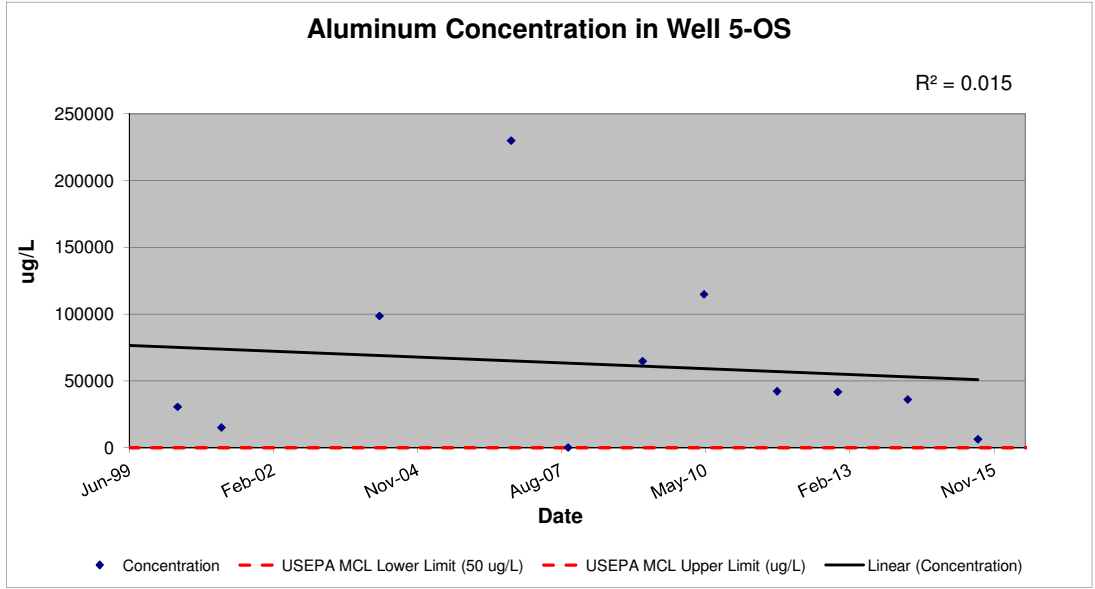
Laboratory Qualifier Definitions

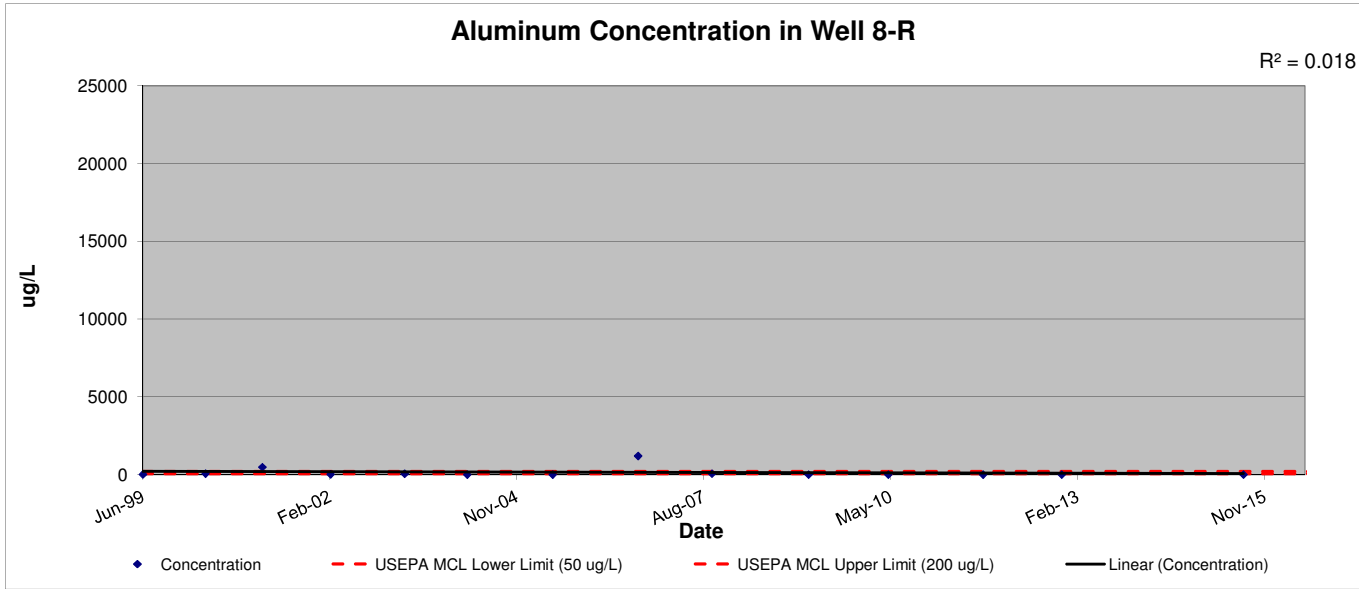
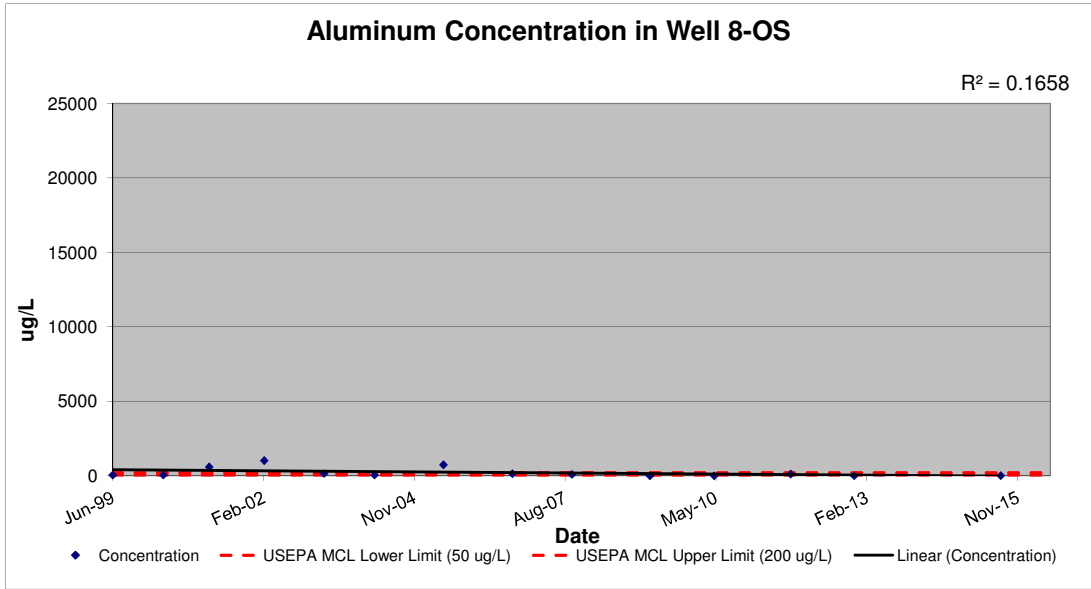
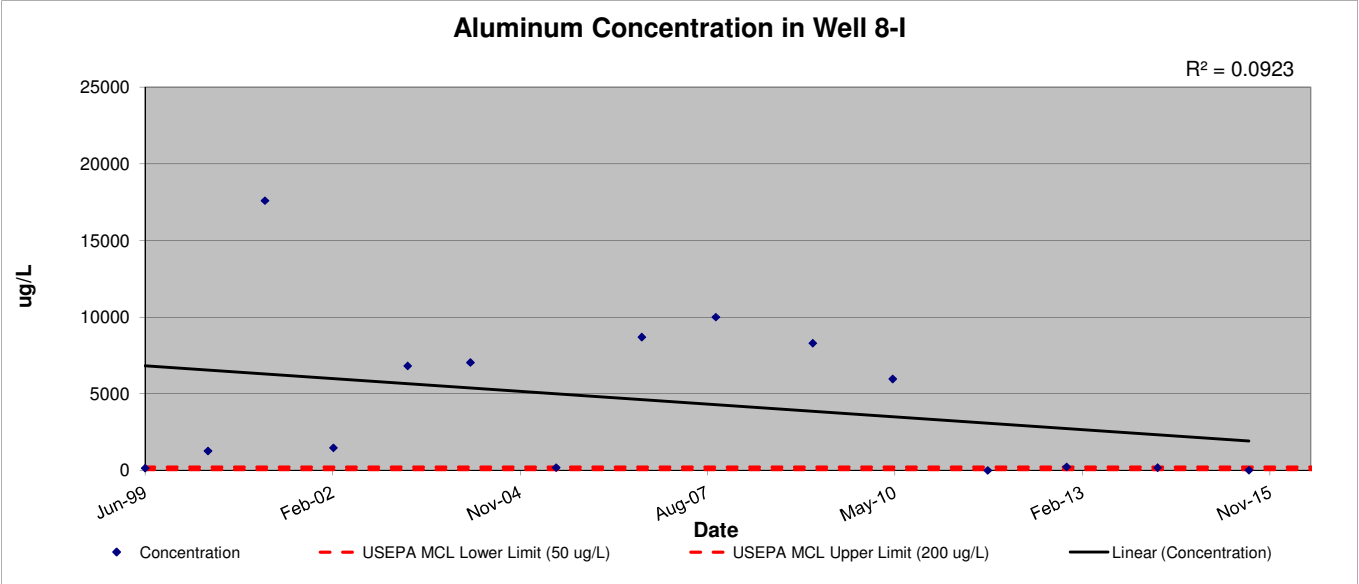
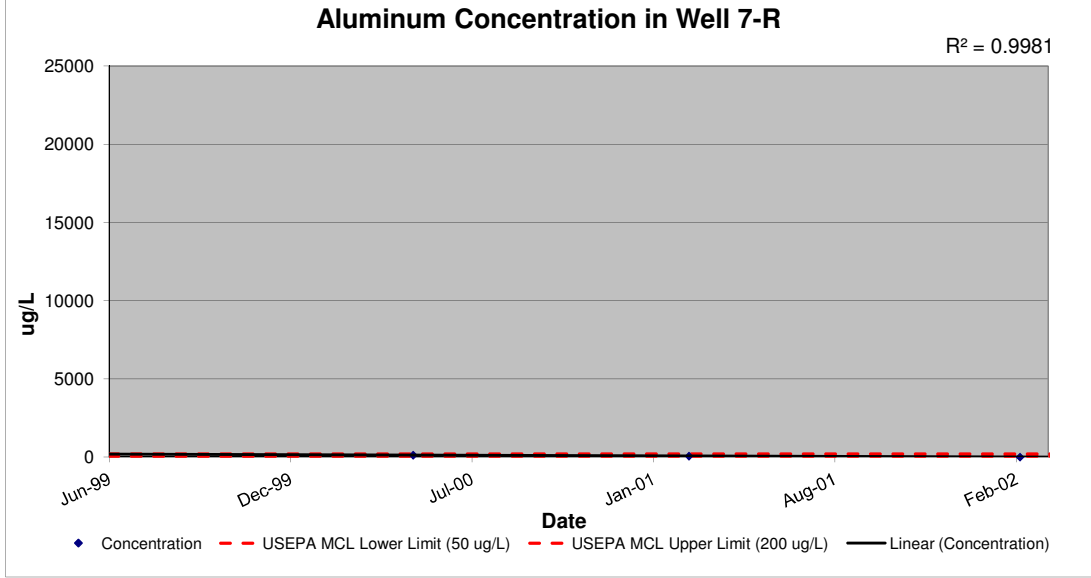
B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

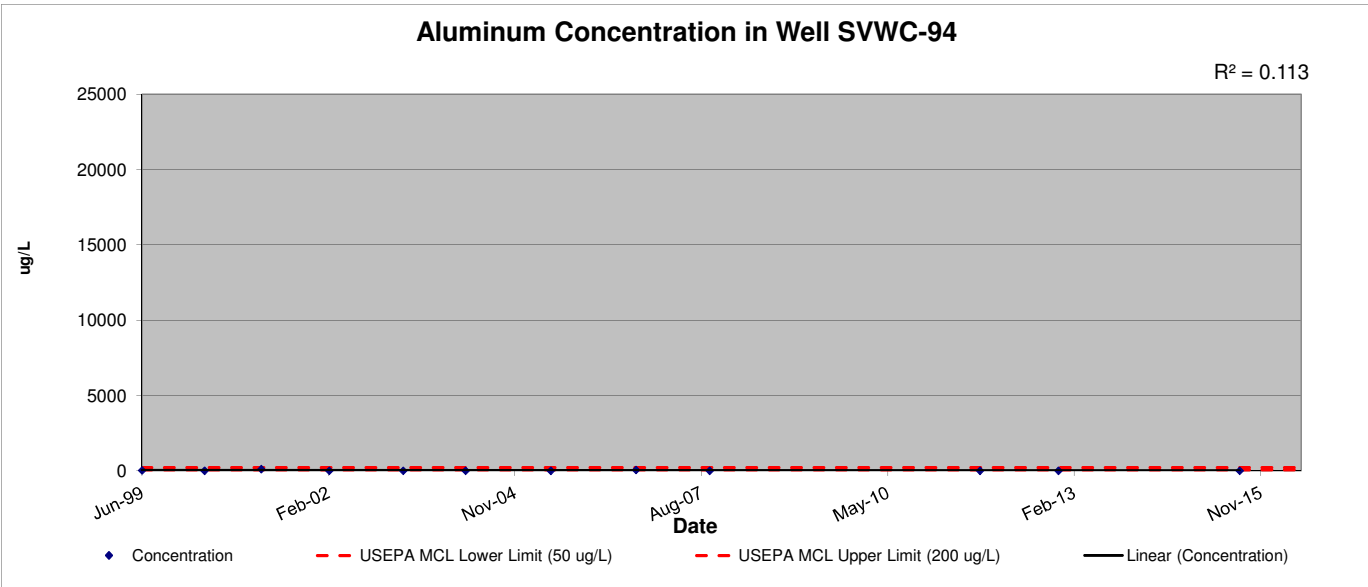
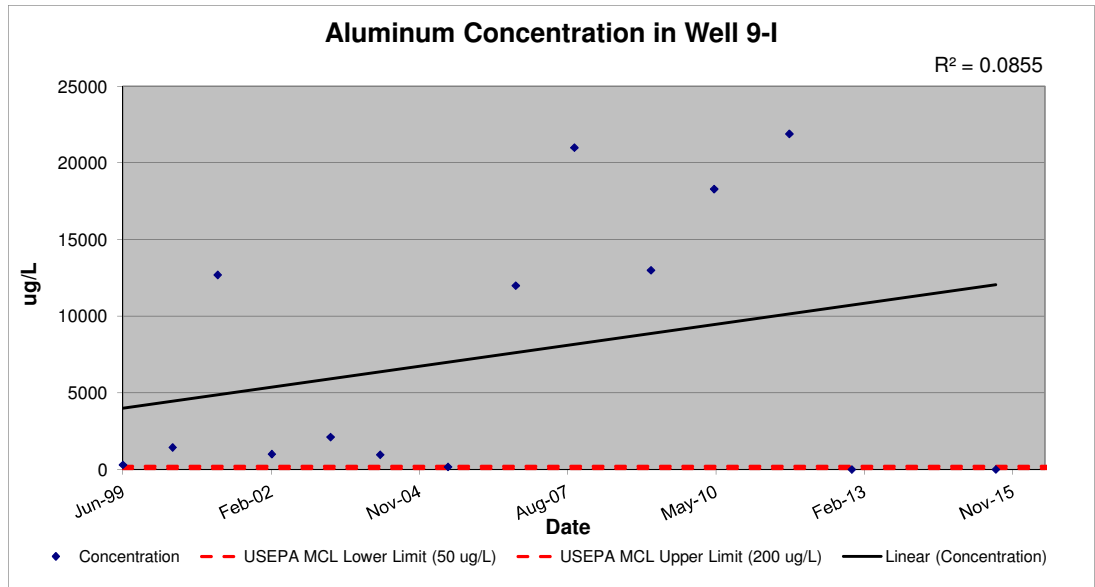
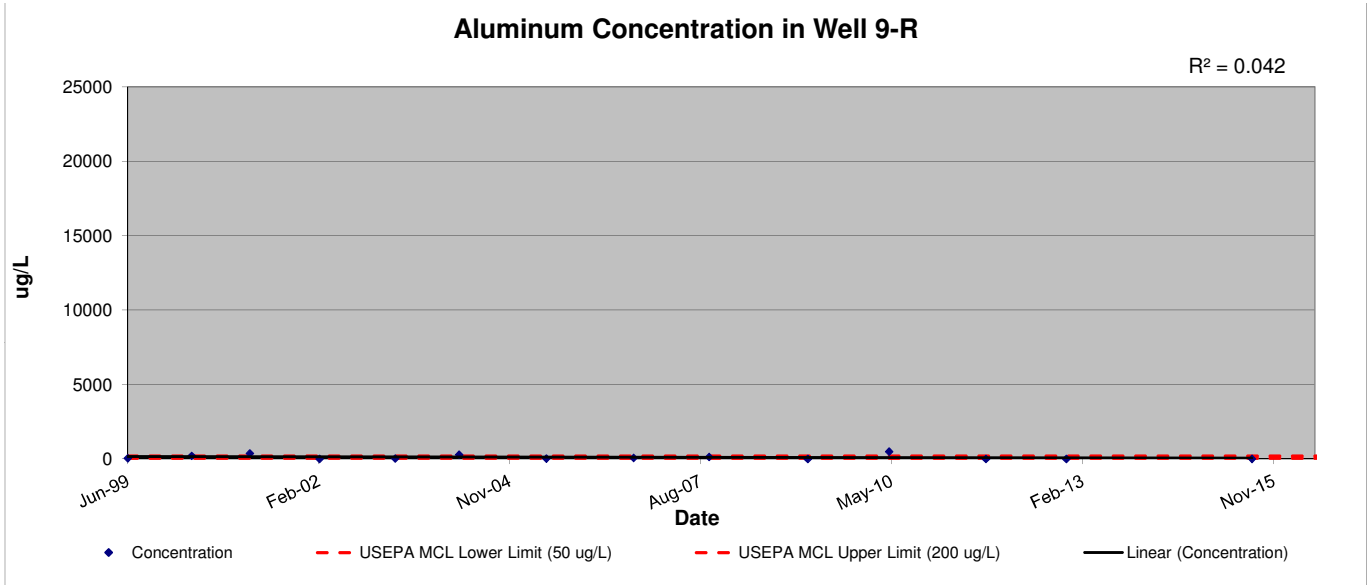
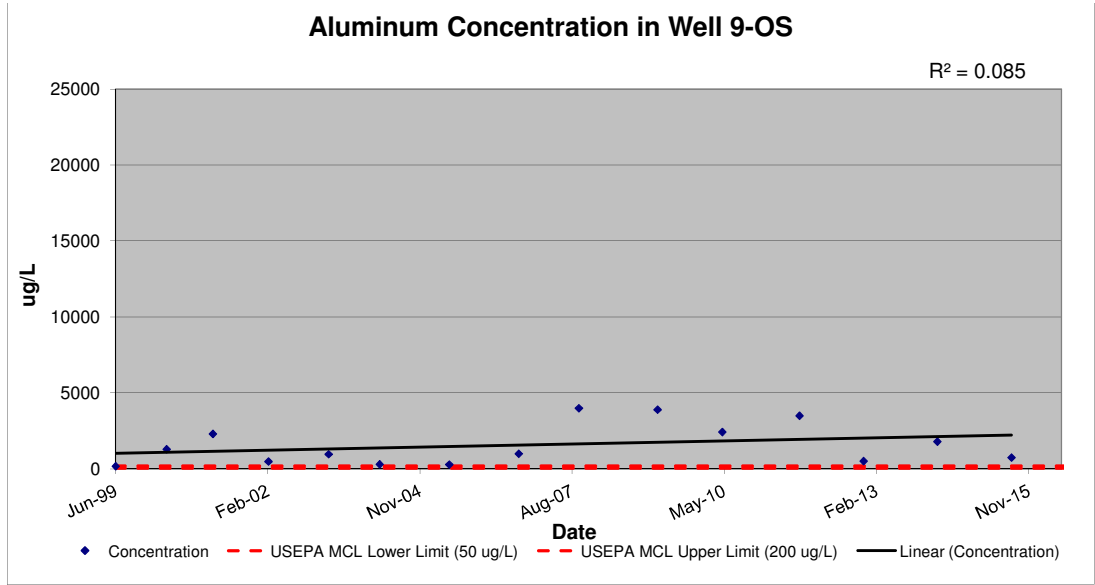
N = Spiked sample recovery not within control limits.











Town of Ramapo Landfill
TABLE C-2
Beryllium (ug/L)
ARAR Standard = 3 ug/L
USEPA MCL = 4 ug/L
PART 5 MCL = 4 ug/L

Well ID	Well 1-OS/I		Well 1-R		Well 2-OS		Well 2-R		Well 3-OS/I		Well 3-R		Well 4-OS		Well 4-R		Well 5-OS		Well 5-I		Well 5-R		Well 7-OS		Well 7-R		Well 8-OS		Well 8-I		Well 8-R		Well 9-OS		Well 9-I		Well 9-R		Well 10-OS		Well 10-I		Well 10-R		Well PW-1		Well PW-2		SVWC-93		SVWC-94		SVWC-95		SVWC-96																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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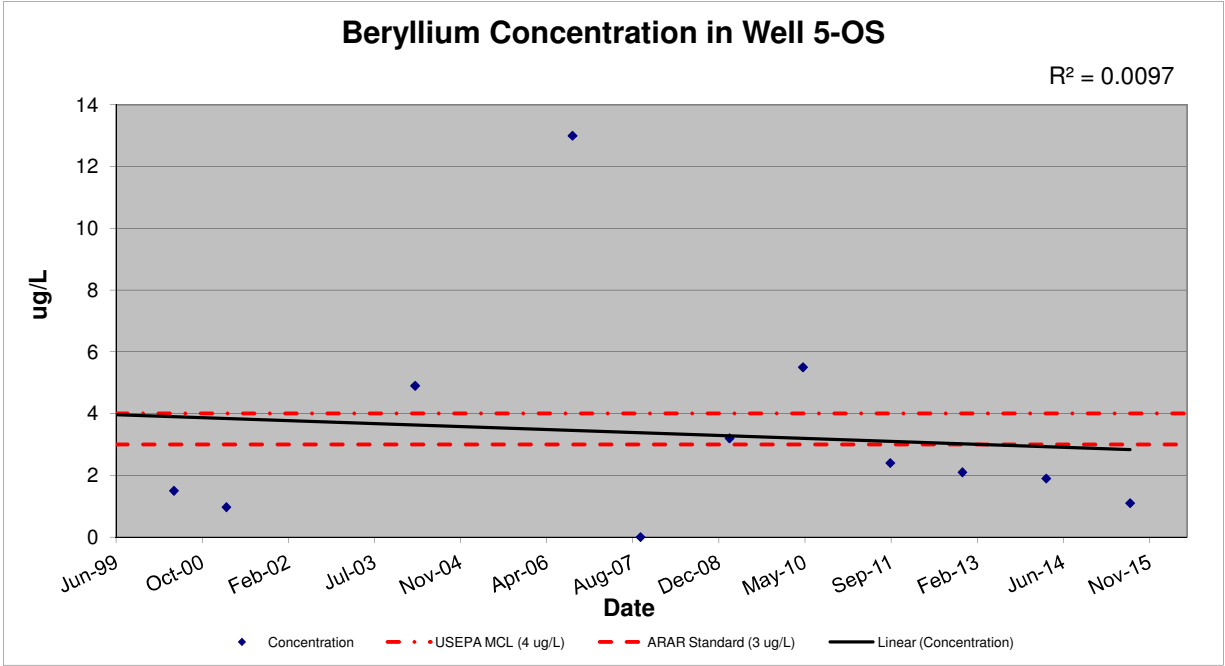
Notes:

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

- NA = Not Analyzed
ND = Not Detected
< = The compound was analyzed for but not detected at the laboratory detection limit listed.
ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC TOGS 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Laboratory Qualifier Definitions

- B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.



Town of Ramapo Landfill
TABLE C-3
Cadmium (ug/L)
ARAR Standard = 5 ug/L
USEPA MCL = 5 ug/L
Part 5 MCL = 5 ug/L

Well ID	Well 1-OS/I	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Jun-99		NA		NA		NA		NA		NA		NA		NA	ND	ND	ND	ND	1.3	3		NA	NA	NA	ND	ND	ND	ND	ND																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Sep-99		ND		ND		ND		ND		ND		ND		ND	ND	ND	ND	ND	3.8	24.2		NA	NA	NA	ND	ND	NA	NA	NA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
May-00	0.92	B	0.61	B	2.4	< 0.4		< 0.4	0.45	B	< 0.4	1.3	B		NA	1.4	B	< 0.4	< 0.4		< 0.4		9.4			NA	NA	NA	< 0.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Sep-00		NA		NA		NA		NA		NA		NA		NA		NA		NA	< 6.2	< 3.1	< 3.1		NA	NA	NA	NA	NA	< 3.1	< 3.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
Dec-00	< 3.1		< 3.1		< 3.1		< 3.1		< 3.1		< 3.1		< 3.1		3.4	B		NA	< 3.1		< 3.1		< 3.1		< 3.1		NA	NA	NA	< 3.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Jan-01		NA		NA		NA		NA		NA		NA		NA		NA		NA	0.81	B	< 0.3	0.88	B	NA	NA	NA	NA	< 3		NA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Mar-01	1.2	B	< 0.3		1.3	B	< 0.3		< 0.3		< 0.3		< 0.3	0.31	B		NA	0.42	B	< 0.3		< 0.3		0.4	B	1.2	B	0.35	B	0.42	B	0.9	B	1.7	B	NA	NA	NA	NA	< 0.3		< 0.3	< 0.3	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA	< 0

Notes:

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

ND = Not Detected

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC TOGS 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

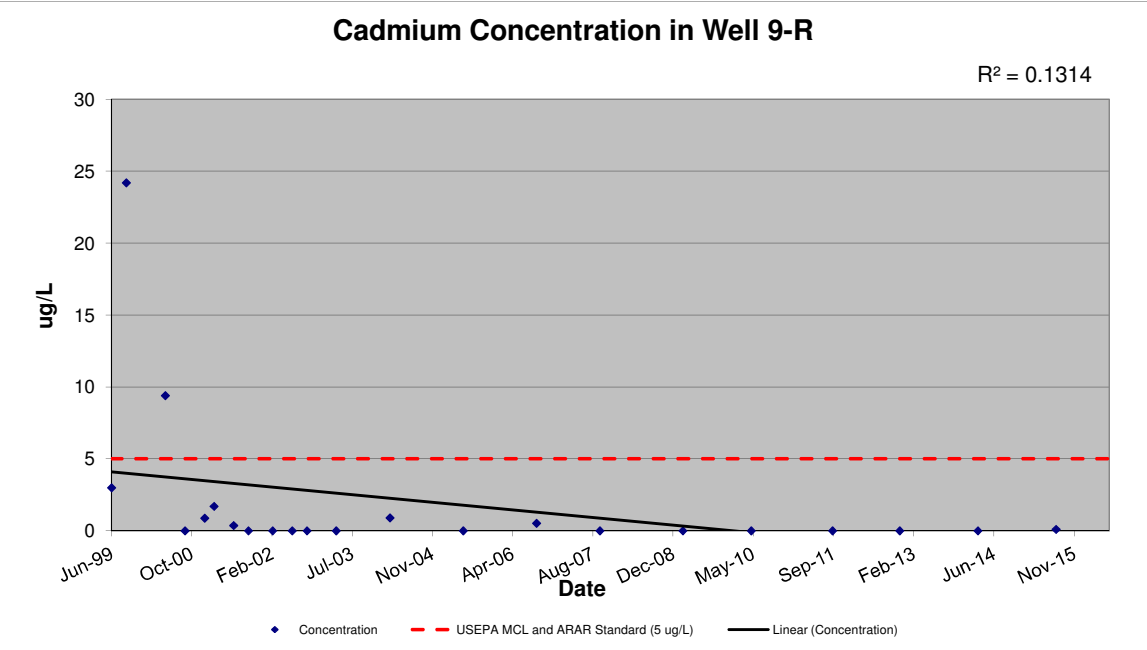
Laboratory Qualifier Definitions

B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

D02 = Dilution required due to sample matrix effects.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

N = Spiked sample recovery not within control limits.



Town of Ramapo Landfill
TABLE C-4
Copper (ug/L)
ARAR Standard = 200 ug/L
MCL Guidance = 1,000 ug/L *
Part 5 MCL = Not Available

Well ID	Well 1-OS/I	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96																																			
DATE																																																															
Jun-99		NA		NA		NA		NA		NA		NA		NA		12		37.2		12.7		9.5		10		12.8			NA		NA		NA		97.2		29.1		25.8		32.3		25.8		29.1																		
Sep-99	104		10.6		23.4		ND	7.8		23.8		79.8		17.3		NA	6		10.1	B	34.5		5.8		7.2		18.2		23.5			ND	8.7		19.1			NA		NA	NA	39.7		7.5			NA		NA														
May-00	68		6.8	B	56.9		6.3	B	13.5	B	5.2	B	19.1	B	< 2		53.9		NA	9.2	B	10.8	B	4.4	B	2.1	B	3.4	B	5.4	B	< 2		3.1	B	3.9	B		NA		NA	99.1		18.6	B	3.1	B	5.6	B	3.5	B	4	B										
Sep-00		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	18.1	B	18.5	B	22.9	B	< 2.1		3.4	B	5	B		NA		NA		NA	173		39.6		3.2	B	4.9	B	< 2.1		5.1	B													
Dec-00	49.3		5	B	45.1		15.4	B	10	B	8.2	B	15.8	B	3.5	B	142			NA	6.6	B	24.5	B	4.9	B	11.7	B	30.4		26.2			NA		NA		NA		NA		NA		NA		NA		19.4	B	10.3	B	7.1	B	7	B	17.8	B						
Jan-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	6.3	B	3.4	B	2.7	B							NA		NA		NA		NA		NA		NA		NA		NA		NA														
Mar-01	75		36.9		57.3		< 1.6		10.2	B	4.6	B	8.3	B	< 1.6		26.2			NA	3.2	B	8	B	< 1.6		5.3	B	53.8		29.9		4.3	B	29.5		3.1	B		NA		NA	NA	59.1		7.2	B	1.7	B	7	B	4.2	B	2.8	B								
Jul-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	3.3	B	20.3	B	9.5	B	2.4	B	3.4	B	4.3	B		NA		NA		NA		NA		NA		NA		NA		53.6		21.3	B	3.9	B	4.1	B	2.7	B	4	B				
Oct-01	22.2	B	15.4	B	39		1.9	B	8	B	2.4	B	5.2	B	3.4	B		NA	21.8	B	5.6	B	25.9		7.1	B	5.9	B	< 1.6		4.6	B	8.9	B	4	B	< 1.6			NA		NA	NA	64.9		80.6		NA		NA		NA		NA									
Mar-02	47.4		17.1	B	16.5	B	19.2	B	5	B	< 3		< 3		< 3			NA	5	B	23.9	B	7.8	B	< 3		< 3		< 3		< 3		< 3			NA		NA		NA	57.6		17.8	B	< 3		3.6	B	6.8	B	8.2	B											
Jul-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	< 6.9		15.8	B	8.1	B	< 6.9		< 6.9		< 6.9		< 6.9			NA		NA		NA		NA		NA		NA		NA		121		13	B	< 6.9		< 6.9		< 6.9		< 6.9			
Oct-02	86.3		20.4	B	83.4		< 6.9		31.6		8.8	B	45.4		< 6.9		NA	< 6.9		< 6.9		39.5		NA	12.9	B	14.1	B	22	B	< 6.9		< 6.9		< 6.9			NA		NA		NA		NA		NA		NA		NA		150		18.4	B	< 6.9		< 6.9		7.9	B	< 6.9	
Apr-03		NA	3.6	B	55.3		11.3	B	59.9		5.3	B	17.6	B	3.1	B		NA	4.2	B	5.6	B	4.4	B		NA	3	B	18.6	B	4.6	B	< 2.8		5.3	B	< 2.8			NA		NA		NA	58.7		13.9	B	6.4	B	4.4	B	4	B	3.6	B							
Mar-04		NA		NA	25.4			NA	13.7	B		NA	7.4	B		NA	183			NA		NA	51.6			NA	1.7	B	14.2	B	1.8	B	< 1.6		2.8	B	2.2	B		NA		NA		NA	59.5		17.4	B	10.6	B	9.8	B	5.6	B	5.4	B							
Jun-05	25.9			NA	15.9	B		NA	51.8			NA	4.2	B		NA		NA	2.9	B		NA	5.2	B		NA	32.1		< 1.2		3	B	< 1.2		< 1.2			NA		NA		NA	83.4		197		3.9	B	5.4	B	3	B	3.9	B									
Sep-06	130			NA	15			NA	69			NA	10			NA	500			NA		NA	28		NA	2	J	23		84		3.6	J	27		< 10			NA		NA		NA	69		50		7.6	J	7	J	6.1	J	6.8	J								
Oct-07	140			NA	35			NA	27			NA	23			NA	< 10			NA		NA	18			NA	< 10		29		2.9	J	14		44		< 10			NA		NA		NA	60		200		8	J	12		4.4	J	4.3	J							
Mar-09	33			NA	21			NA	44			NA	11			NA	110			NA		NA	10			NA	11		27		5	J	16		27		< 10			NA		NA		NA	100		61		3.9	J		NA	5.4	J	6.3	J							
May-10	57.6			NA	36			NA	21.1			NA	7.4	J		NA	202			NA		NA	30.9			NA	1.7	J	12.4		< 10	J	7.2	J	33	B	< 10			NA		NA		NA	117		53.4		19.3			NA	11.2		8.5	J							
Sep-11	160		15		34		1.8	J	200		34		4.2	J		NA	72		2.9	J	53		32			NA	9.2	J	< 10		< 10		6.7	J	48		< 10			NA		NA		NA	87		16		4.6	J	3.9	J		NA		NA							
Nov-12	48			NA	11			NA	55			NA	14			NA	85			NA		NA	27			NA		ND		ND		ND	ND		ND		ND		NA		NA		NA	250		26		3.1	J	5.4	J	4.1			NA								
Mar-14	90			NA	34			NA	28			NA	12			NA	66			NA		NA	39			NA	2.6	J	2.4	J	4	J	3.8	J		ND		ND		NA		NA		NA	160		63		7.9	J	8	J	11		8.1	J							
Nov-14		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	< 5			NA	< 5			331			NA		NA		NA		NA		NA										
Jul-15	95.26			NA	5.2			NA	4.7			NA	3.4			NA	37.6			NA		NA	20			NA	2.8		<0.3		0.8	J	4			<0.3		0.3	J	12		1.5		1.2		111		24		8.32		7.52		2.5		7.66							

Notes:

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

* USEPA National Secondary Drinking Water Regulation

NA = Not Analyzed

ND = Not Detected

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

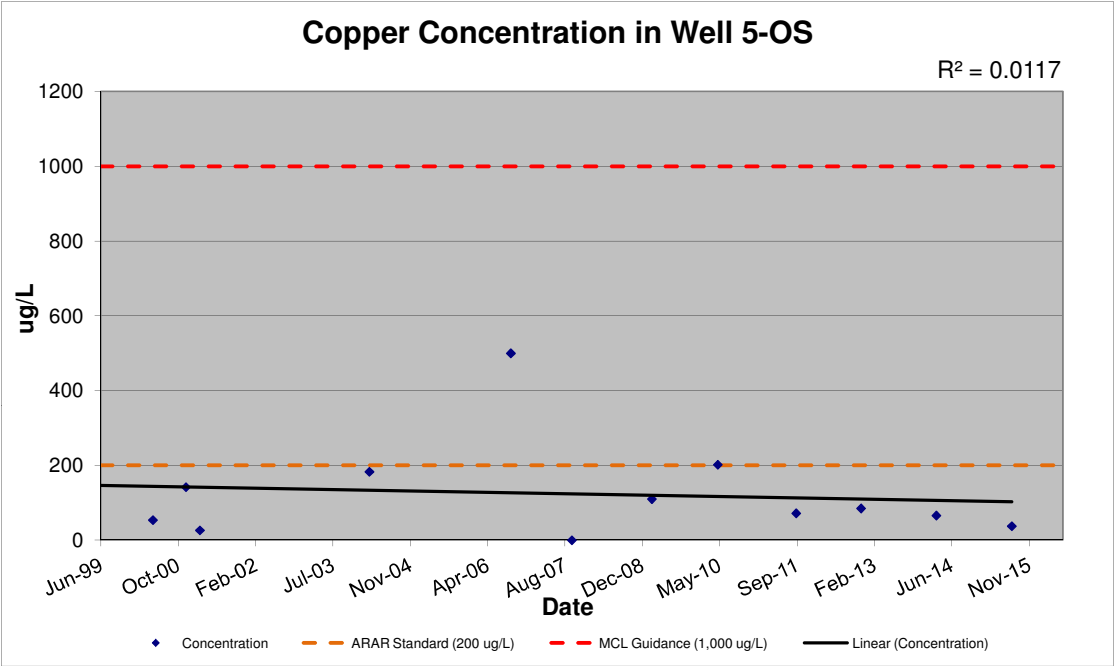
ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC TOGS 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Laboratory Qualifier Definitions

B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.



Town of Ramapo Landfill
TABLE C-5
Antimony (ug/L)
ARAR Standard = 3 ug/L
USEPA MCL = 6 ug/L
Part 5 MCL = 6 ug/L

Well ID	Well 1-OS		Well 1-R		Well 2-OS		Well 2-R		Well 3-OS/I		Well 3-R		Well 4-OS		Well 4-R		Well 5-OS		Well 5-I		Well 5-R		Well 7-OS		Well 7-R		Well 8-OS		Well 8-I		Well 8-R		Well 9-OS		Well 9-I		Well 10-OS		Well 10-I		Well-10R		Well PW-1		Well PW-2		SVWC-93		SVWC-94		SVWC-95		SVWC-96		
DATE																																																							
Jun-99		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		ND		ND		ND		ND		NA		NA		NA		ND		ND		ND		ND		ND		ND			
Sep-99		ND		ND		ND		ND		ND		ND		ND		ND		NA		ND		ND		ND		ND		ND		ND		ND		ND		ND		NA		NA		NA		ND		ND		NA		NA		NA			
May-00	29.1	B	< 3.4		< 3.4		< 3.4		4.8	B	< 3.4		< 3.4		< 3.4		< 3.4			< 3.4		< 3.4		< 3.4							< 3.4		< 3.4			NA		NA		NA	< 3.4		< 3.4		< 3.4		< 3.4		< 3.4		< 3.4		< 3.4		
Sep-00		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		< 11.0		< 5.5		< 5.5		< 5.5			NA		NA		NA	< 5.5		< 5.5		< 5.5		< 5.5		< 5.5		< 5.5		< 5.5	
Dec-00	< 5.5		< 5.5		< 5.5	N	< 5.5		8.2	B, N	< 5.5	N	< 5.5	N	< 5.5	N	< 5.5	N		NA	< 5.5	N	< 5.5	N	< 5.5	N	< 5.5	N	< 5.5	N	< 5.5	N	NA	NA			NA		NA		NA	< 5.5	N	< 5.5	N	< 5.5	N	< 5.5	N	< 5.5	N	< 5.5	N		
Jan-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	< 4.7		NA		NA		NA		NA		NA		
Mar-01	< 4.7	N	< 4.7		< 4.7		< 4.7		9.5	B, N	< 4.7		< 4.7		< 4.7		< 4.7			NA	< 4.7		< 4.7		< 4.7		NA		NA		< 4.7		< 4.7				NA		NA		NA	< 4.7		< 4.7		< 4.7		< 4.7		< 4.7		< 4.7			
Jul-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		< 4.7		< 4.7		< 4.7		< 4.7				NA		NA		NA	< 4.7		< 4.7		< 4.7		< 4.7		< 4.7		< 4.7		
Oct-01	< 4.7		< 4.7		< 4.7		< 4.7		9.4	B	< 4.7		< 4.7		< 4.7			NA	< 4.7		< 4.7		< 4.7		< 4.7		< 4.7		< 4.7		< 4.7		< 4.7				NA		NA		NA	< 4.7		< 4.7				NA		NA		NA			
Mar-02	12.7	B	10.5	B	14	B	13.8	B	15.1	B	11.9	B	< 7.4		9.7	B		NA	< 7.4		< 7.4		13.2	B	13	B	< 7.4		10.9	B	12	B	< 7.4				NA		NA		NA	< 7.4		9.3	B	8	B	11.4	B	< 7.4		< 7.4			
Jul-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		< 5.3		< 5.3		< 5.3		< 5.3				NA		NA		NA	< 5.3		< 5.3		8.1	B	< 5.3		< 5.3		< 5.3		
Oct-02	15	B,N	5.6	B, N	33	B, N	< 5.3	N	25.4	B, N	5.5	B, N	< 5.3	N	< 5.3	N		NA	< 5.3	N	< 5.3	N	< 5.3	N		NA	< 5.3	N	< 5.3	N	6.3	B, N	< 5.3	N	N			NA		NA		NA	< 5.3	N	< 5.3	N	17.2	B, N	5.5	B, N	< 5.3	N	< 5.3	N	
Apr-03		NA	< 5		< 5		< 5		77.6		< 5		< 5		< 5		NA	< 5		< 5		< 5		NA	< 5		< 5		< 5		< 5		< 5				NA		NA		NA	< 5		9.3	B	< 5		< 5		< 5		< 5			
Mar-04		NA		NA	< 7.1			NA	< 5.8			NA	< 7.1		NA		NA	< 5.8			NA	< 5.8		NA	< 5.8		< 5.8		< 5.8		< 5.8				NA		NA		NA	< 5.8		< 5.8		< 5.8		< 5.8		< 5.8		< 5.8					
Jun-05	<0.12			NA	< 0.12			NA	< 0.12			NA	< 0.12		NA		NA	< 0.12			NA	< 0.12		NA	< 0.12		NA	0.13	B	< 0.12	< 0.12	0.15	B			NA		NA		NA	< 0.12		< 0.12		0.14	B	< 0.12		< 0.12		< 0.12				
Sep-06	<3			NA	< 3			NA	< 3			NA	< 3		NA		NA	< 3			NA	< 3		NA	< 3		< 3		< 3		< 3		< 3				NA		NA		NA	< 3		< 3		< 3		< 3		< 3		< 3			
Oct-07	9.6			NA	2.4 J			NA	8.4			NA	1.8 J		NA		NA	< 3			NA	< 3		NA	< 3		< 3		< 3		< 3		2 J				NA		NA		NA	< 3		< 3		< 3		< 3		< 3		< 3			
Mar-09	<60			NA	< 60			NA	< 60			NA	< 60		NA		NA	< 60			NA	< 60		NA	< 60		< 60		< 60		< 60						NA		NA		NA	< 60		< 60		< 60		< 60		< 60					
May-10	3.8			NA	< 3			NA	< 3			NA	< 3			< 5	D14		NA		NA	< 3		NA	< 3		< 3		< 3		< 3		< 3				NA		NA		NA	< 3		< 3		< 3		< 3		< 3		< 3			
Sep-11	8.3		0.67	J	0.4	J	< 3		0.82	J	< 15		0.24	J		NA	< 3		< 3		0.41	J	0.2	J		NA	< 3		< 3		< 3		0.15	J			NA		NA		NA	< 3		< 3		< 3		< 3		NA		NA			
Nov-12	3.0			NA	0.3	J		NA	< 3			NA	< 3		NA		NA	< 3			NA	< 3		NA	< 3		< 3		< 3		< 3		0.24	J	< 3		NA		NA		NA	< 3		< 3		< 3		< 3		< 3					
Mar-14	< 3			NA	< 3			NA	< 3			NA	< 3		NA		NA	< 3			NA	< 3		NA	< 3		< 3		< 3		< 3						NA		NA		NA	< 3		< 3		< 3		< 3		< 3		< 3			
Nov-14		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	<2.3		<2.3		<2.3			NA		NA		NA		NA		NA			
Jul-15	4.01			NA	0.1	J		NA	0.1	J		NA	<0.1			NA		NA			NA	<0.1			NA		0.1	J	<0.1		0.1	J	0.1	J	<0.1		0.1	J	0.1	J	0.9	J	<0.1		0.14	J	0.14	J	0.32	J	0.16	J	0.11	J	

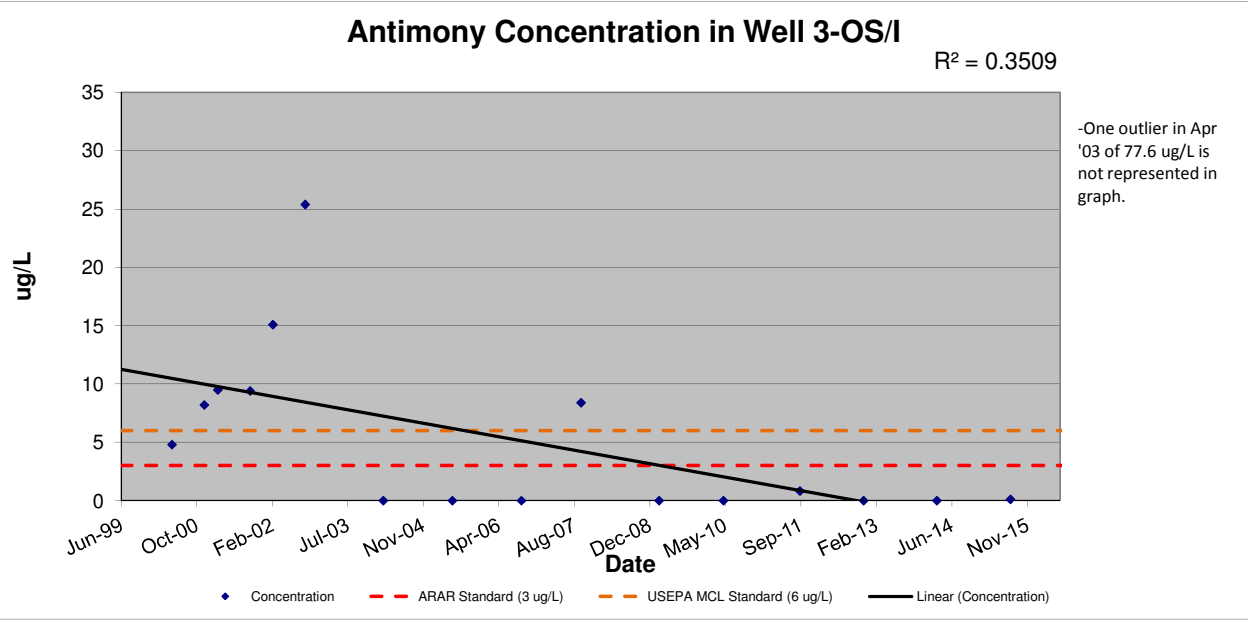
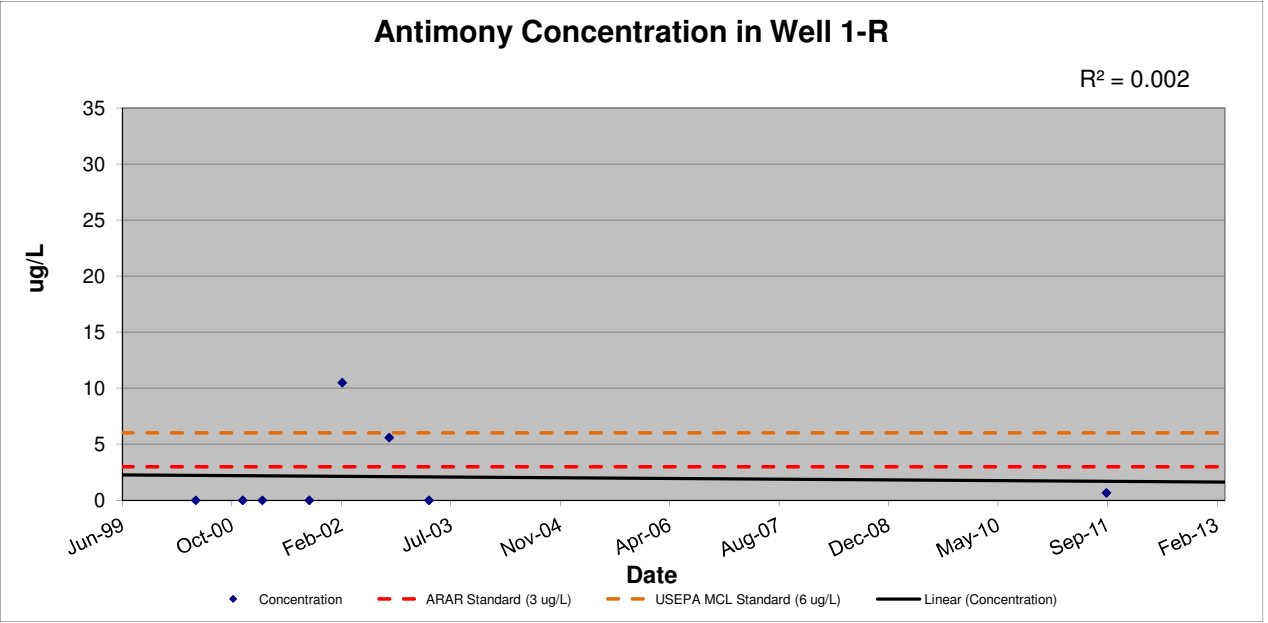
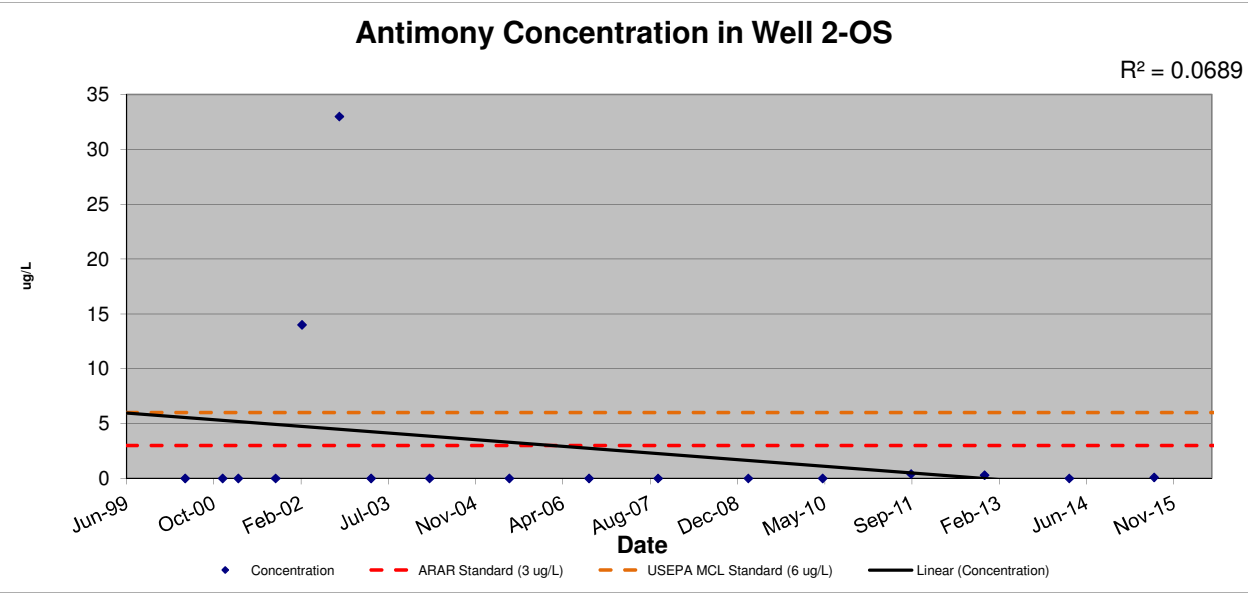
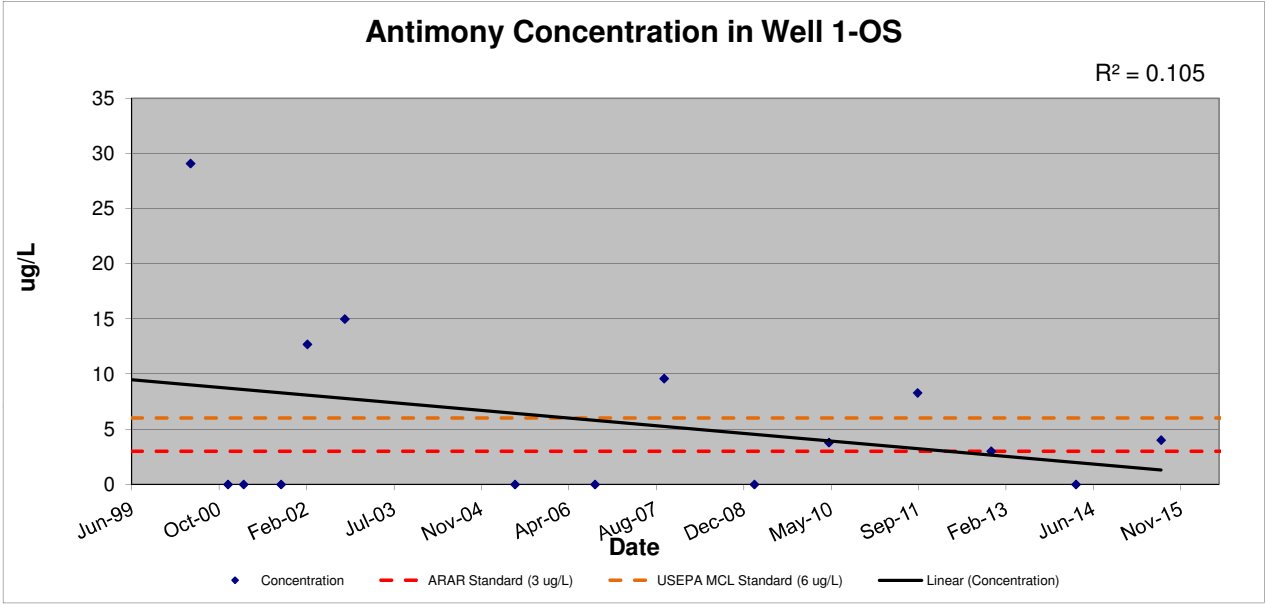
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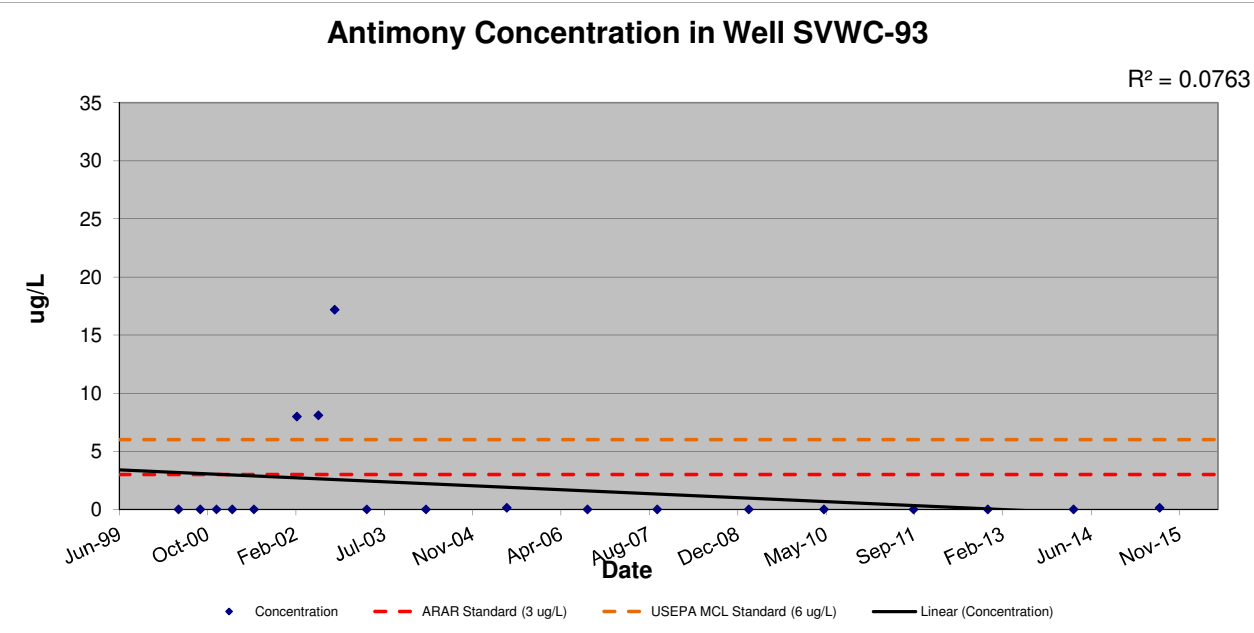
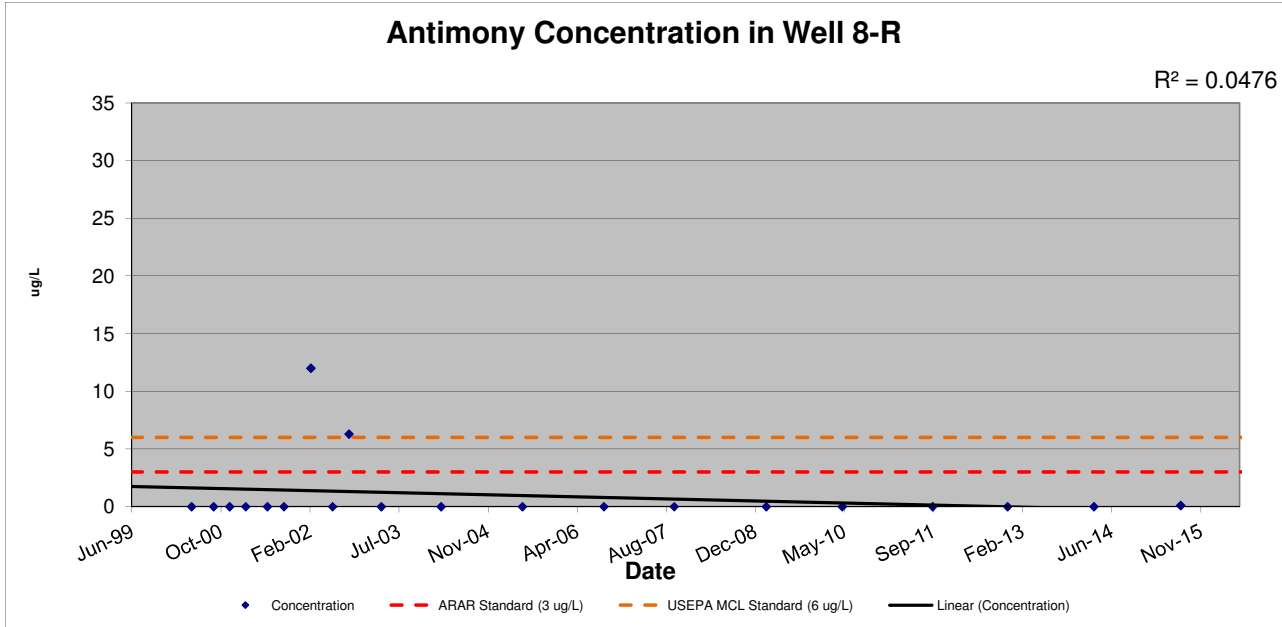
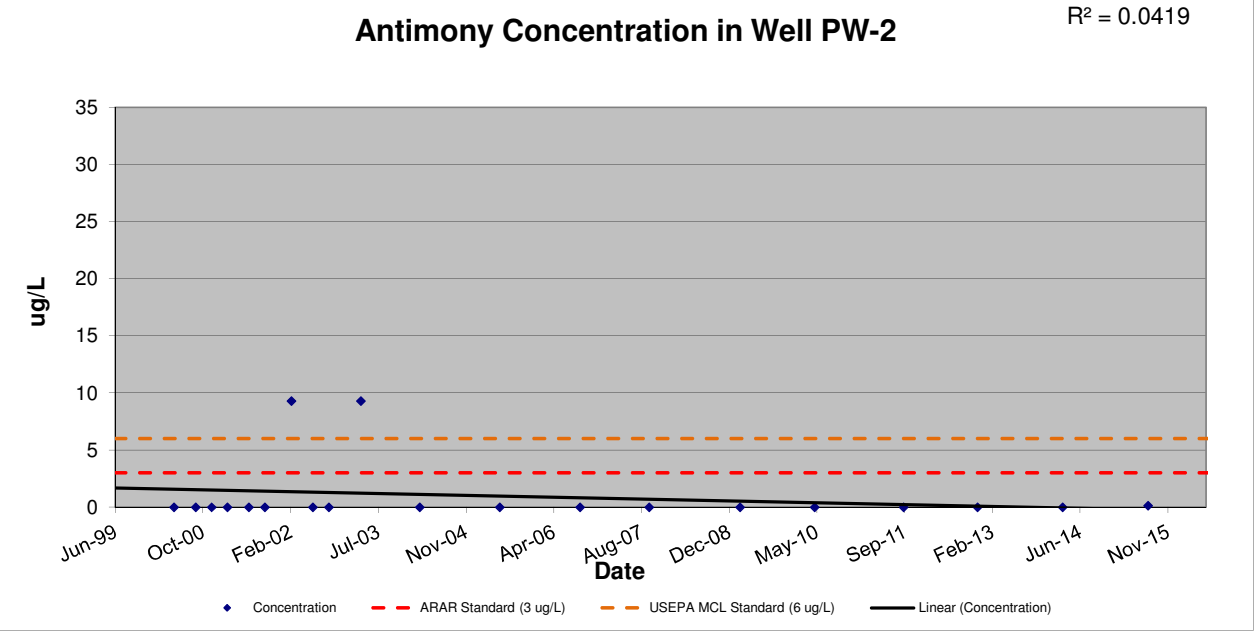
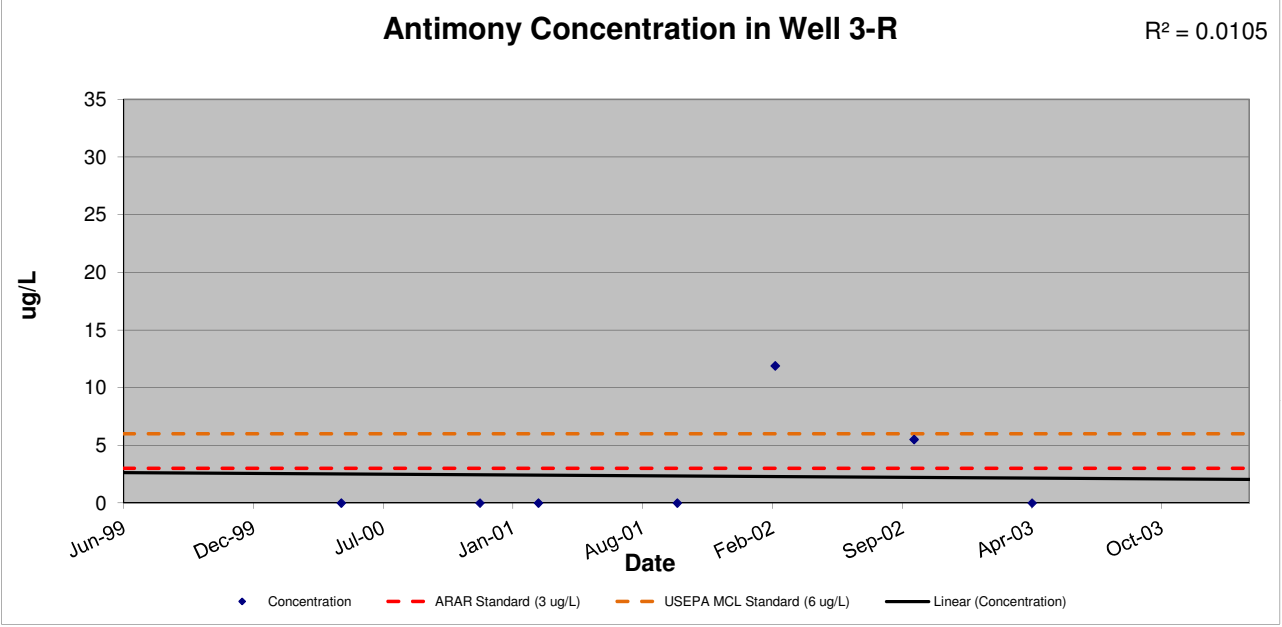
Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

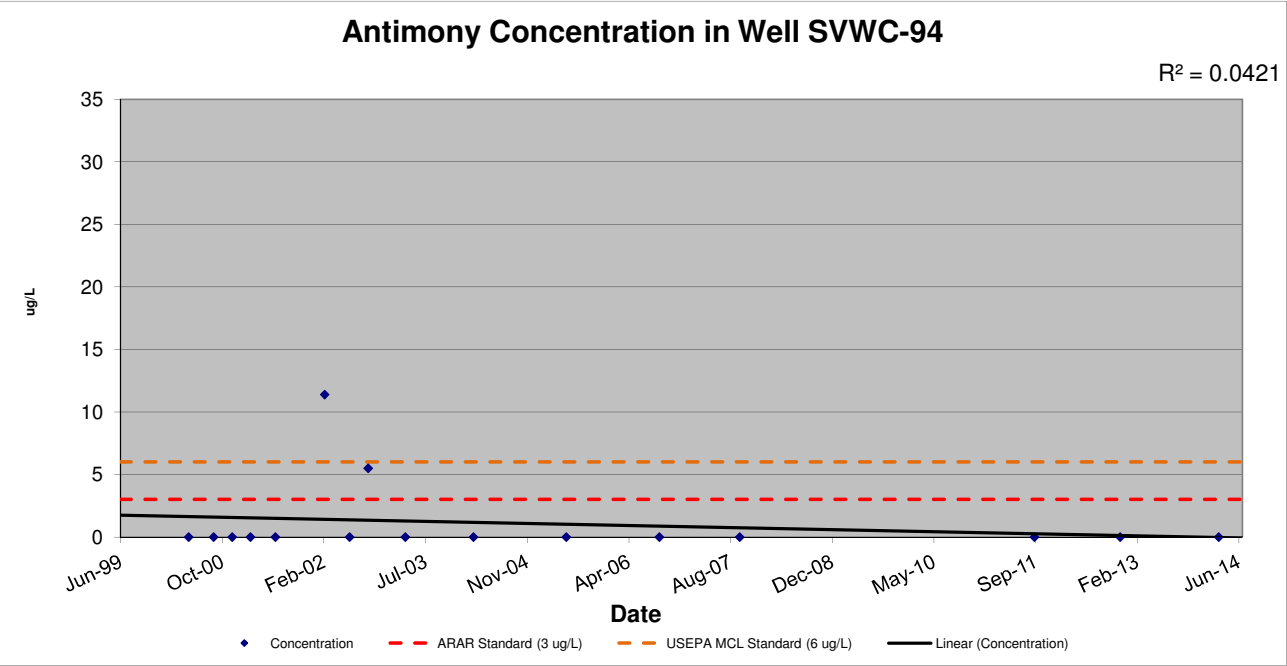
NA = Not Analyzed
ND = Not Detected
< = The compound was analyzed for but not detected at the laboratory detection limit listed.
ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC TOGS 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Laboratory Qualifier Definitions

B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
N = Spiked sample recovery not within control limits.







Town of Ramapo Landfill
TABLE C-6
Arsenic (ug/L)
ARAR Standard = 25 ug/L
USEPA MCL = 10 ug/L
Part 5 MCL = 10 ug/L

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96																											
DATE																																																							
Jun-99		NA		NA		NA		NA		NA		NA		NA	11.7			ND		ND		ND		ND		ND		ND																											
Sep-99	11.4			ND		ND		ND	7.9		8.5		ND		NA		ND		ND		NA		NA		ND		ND		ND																										
May-00	7.3	B	< 2.6		6.6	B	< 2.6		< 2.6		< 2.6		< 2.6		3.2	B		< 2.6		< 2.6		NA		NA		< 2.6		< 2.6		NA																									
Sep-00			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		< 2.6		< 2.6		NA																								
Dec-00	11.8		< 1.8		9.4	B	< 1.8		< 1.8		< 1.8		< 1.8		3.3	B		16.8		NA		< 1.8		NA		NA		NA		< 1.8		NA																							
Jan-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																							
Mar-01	13.5		3.7	B	10.5		< 2.2		< 2.2		< 2.2		< 2.2		2.6	B		< 2.2		< 2.2		5.8	B		6.3	B		NA		NA		NA																							
Jul-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																							
Oct-01	5.9	B	2.6	B	8.4	B	< 2.2		< 2.2		< 2.2		< 2.2		2.6	B		< 2.2		< 2.2		< 2.2		3.7	B		NA		NA		NA		NA																						
Mar-02	9.1	B	< 2.6		< 2.6		< 2.6		< 2.6		< 2.6		< 2.6		NA	< 2.6		< 2.6		< 2.6		< 2.6		< 2.6		NA		NA		NA		NA																							
Jul-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																							
Oct-02	91.3		4	B	13.3		< 2.6		< 2.6		< 2.6		< 2.6		7.5	B		< 2.6		< 2.6		< 2.6		5.5	B		NA		NA		NA		NA																						
Apr-03		NA	< 2.4		10.3		< 2.4		5.4	B		< 2.4		4	B	4.4	B		NA	< 2.4		< 2.4		3.7	B		NA		NA		NA		NA																						
Mar-04		NA		NA	7.4	B		NA	< 1.9			NA	< 2.7			NA	30.4			NA		NA	9.8	B		NA	< 1.9		< 1.9		< 1.9		NA																						
Jun-05	8.1	B		NA	4	B		NA	< 3.1		NA	< 3.1	N		NA		NA	3.7	B, N	8.6	B, N	< 3.1	N	< 3.1	N	< 3.1	N		NA		NA		NA																						
Sep-06	43			NA	2.8	J		NA	6.9		NA	2.8	J		NA	33		NA	< 5		26		3.1	J		< 5		4.5	J	5.9		NA		NA																					
Oct-07	31			NA	6.2			NA	< 5		NA	< 5			NA	< 5		NA	< 5		15		< 5		4.2	J	4.4	J	6.1		NA		NA																						
Mar-09	7.1	J		NA	< 10			NA	< 10		NA	< 10			NA	9.8	J		NA	< 10		NA	< 10		12		< 10		< 10		5.7	J	NA		NA																				
May-10	11.2			NA	< 10			NA	< 10		NA	< 10			NA	15.5		NA	< 10		10.1		< 10		< 10		8.4	J	NA		NA		NA																						
Sep-11	40		< 10		< 10		< 10		53		7.3	J	< 10		NA	9.5	J	< 10		< 10		NA	< 10		6.1	J	< 10		< 10		7.6	J	7.9	J	NA		NA																		
Nov-12	18			NA	< 10			NA	15		NA	9.8	J		NA	9.3	J		NA	8.8	J	NA	< 10		12		< 10		< 10		< 10		NA		NA																				
Mar-14	14				< 10			NA	< 10		NA	< 10			NA	6.7	J		NA	9.3	J	NA	< 10		11		< 10		< 10		< 10		NA		NA																				
Nov-14		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	< 10			< 10		NA		< 10		NA		NA																					
Jul-15	7.32			NA	0.7			NA	0.3	J		NA	0.7			NA	3.1			NA		NA	1			NA	0.4	J	6.8		0.6		1		<0.1		3.8		0.2	J	0.2	J	0.2	J	<0.2		<0.2		<0.2		0.22	J	<0.2		

Notes:

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

ND = Not Detected

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC TOGS 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

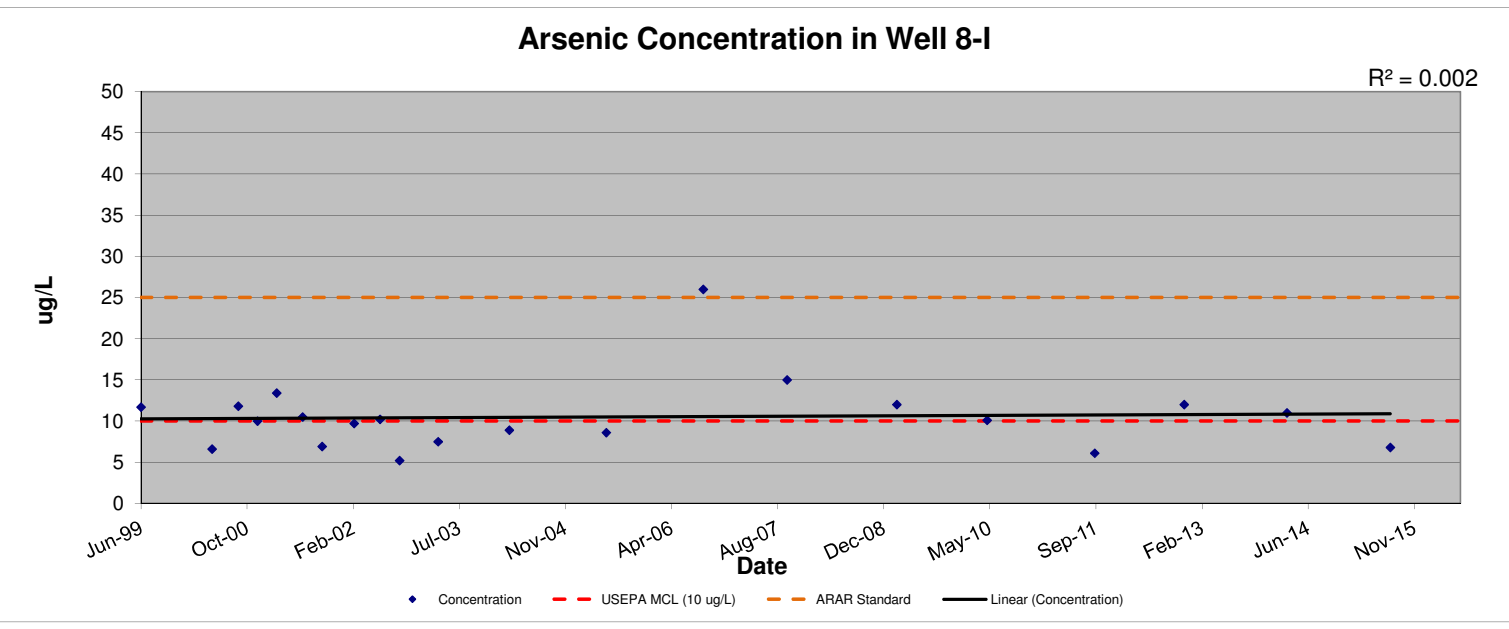
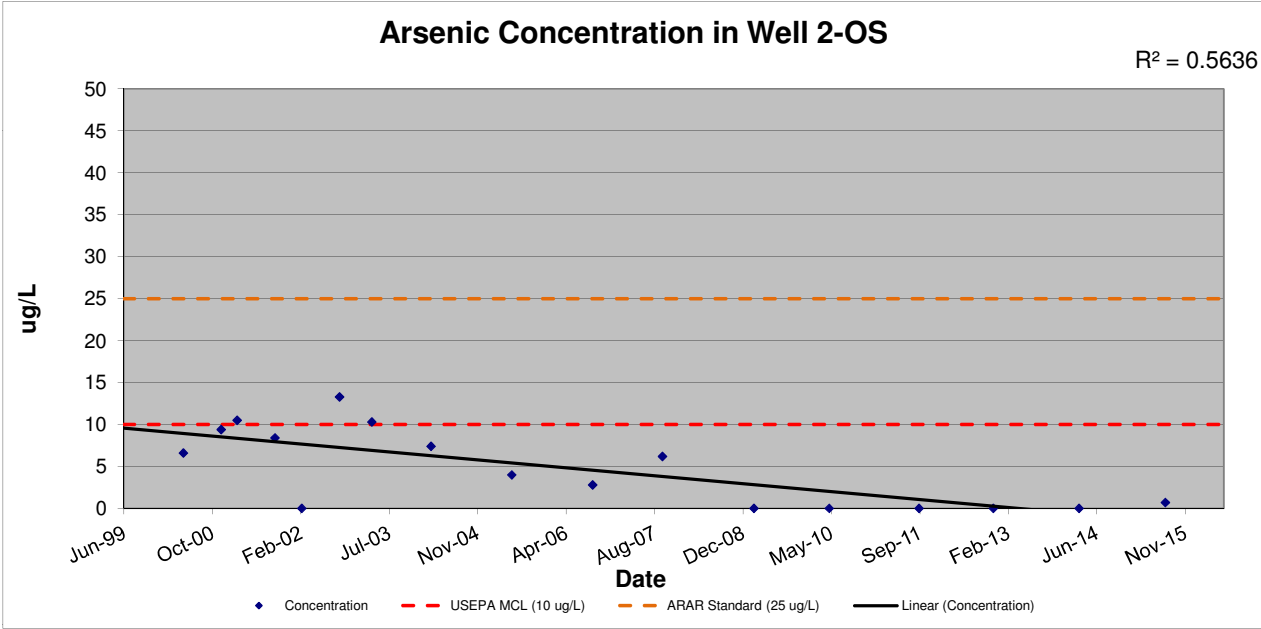
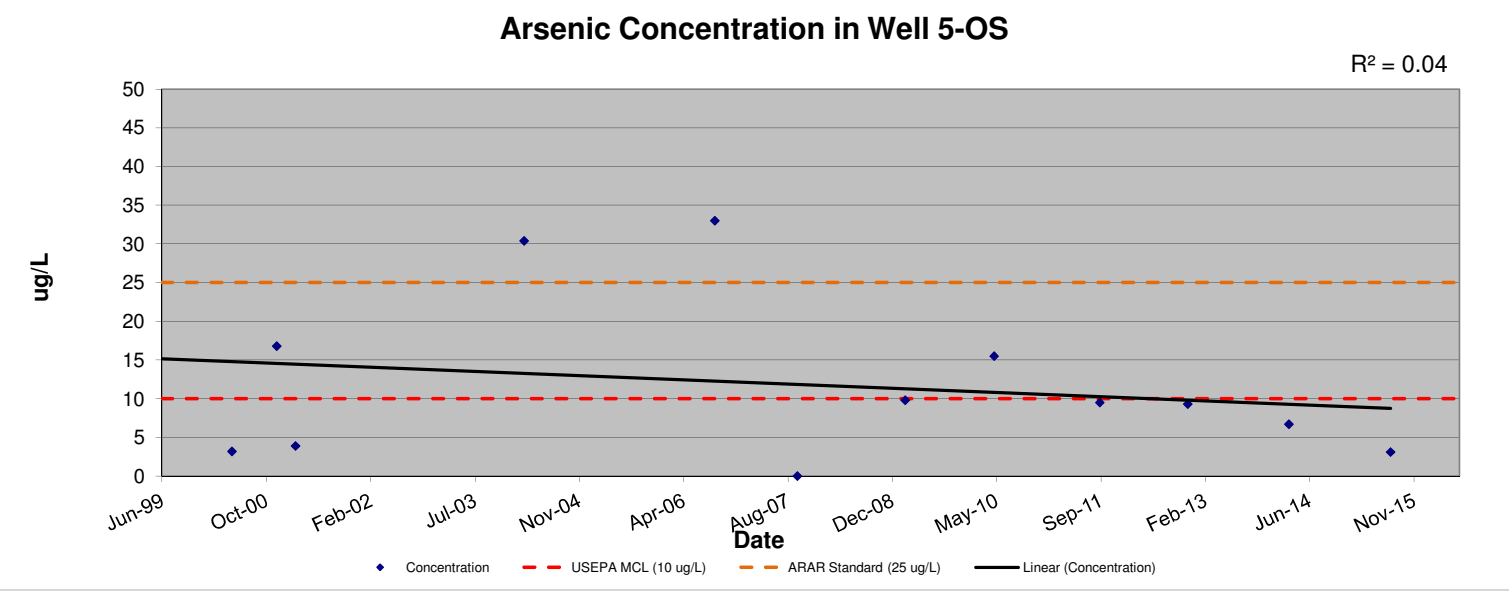
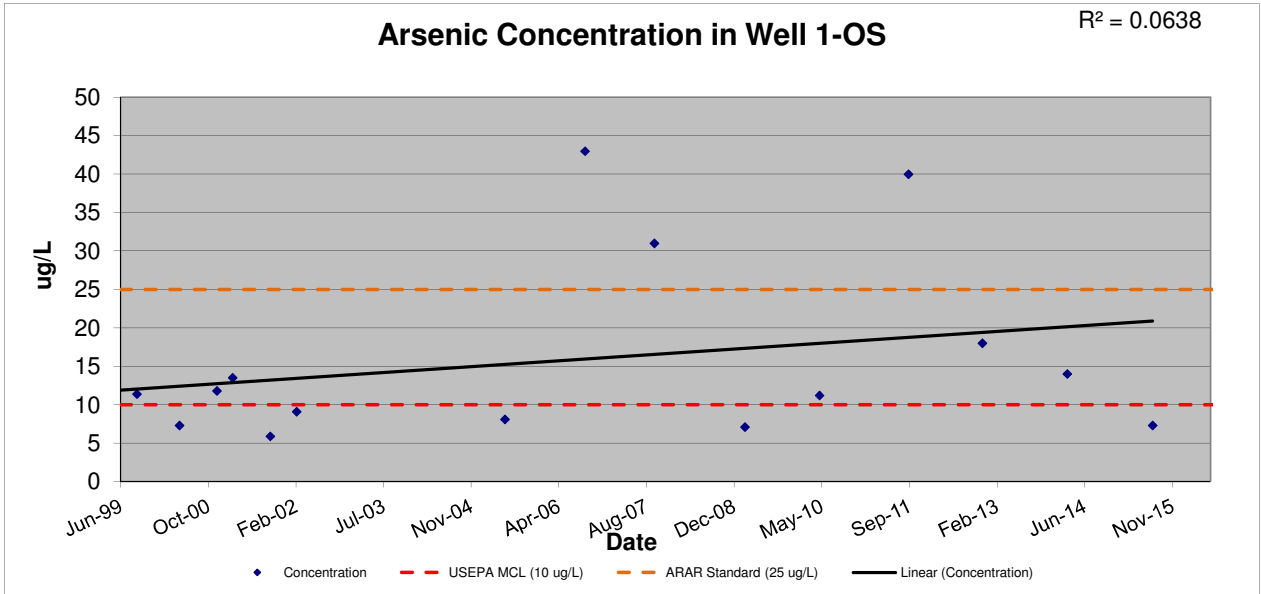
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Laboratory Qualifier Definitions

B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

N = Spiked sample recovery not within control limits.



Town of Ramapo Landfill
TABLE C-7
Chromium (ug/L)
ARAR Standard = 50 ug/L
USEPA MCL = 100 ug/L
Part 5 MCL = 100 ug/L

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96																													
DATE																																																									
Jun-99		NA		NA		NA		NA		NA		NA		NA		20.2		56.8		2		1.1		6.8		15			NA		NA		NA		ND		ND		ND		ND		ND														
Sep-99	1850		73.4		285		ND	321		75.7		87.7		ND	NA	10.6		2.7		59.2		ND		ND		ND		ND		NA		NA		NA		ND		ND		NA		NA		NA													
May-00	2100		58.6		415		4	B	687		51.2		36.8		< 0.5		69.3		NA	14.7		200		< 0.5		30.1		10		1.1	B	34.5		10.8		3	B	NA	NA	NA	0.75	B	< 0.5		< 0.5		< 0.5										
Sep-00		NA		NA		NA		NA		NA		NA		NA		16.9	B	17.3		2.2	B	7.4	B	5	B	1.6	B		NA	NA	NA	NA	< 0.9		< 0.9		< 0.9		< 0.9		< 0.9		< 0.9		< 0.9												
Dec-00	405		9.8	B	120		4.7	B	453		213		17.9		< 0.9		165		NA	7.2	B	34.7		< 0.9		8.8	B	22.9		3.6	B		NA		NA		NA		NA		NA		NA	< 0.9		1.4	B	< 0.9		< 0.9		< 0.9					
Jan-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		20.1		4.1	B	2.4	B		NA		NA		NA	< 0.9			NA		NA		NA		NA								
Mar-01	253		119		128		< 0.9		522		124		13.2		< 0.9		38.6		NA	3.9	B	51.9		< 0.9		25.8		49.9		7.7	B	17		28.8		4.1	B		NA		NA		NA	< 0.9		< 0.9		< 0.9		< 0.9							
Jul-01		NA		NA		NA		NA		NA		NA		NA		6.55	B	19.9		5.56	B	< 0.9		2.35	B	1.12	B		NA	NA	NA	NA	< 0.9		< 0.9		< 0.9		< 0.9		< 0.9		< 0.9		< 0.9		< 0.9										
Oct-01	20.6		47.1		87.1		3.9	B	467		12.7		4	B	2.2	B		NA	3.3	B	3.3	B	48.4		2.3	B	20.6		2.3	B	3.9	B	17.4		1.2	B	1.9	B		NA		NA		NA	1.2	B	1.8	B			NA		NA				
Mar-02	60.1		10.2		35.6		9.6	B	257		33.5		8.7	B	< 0.83			NA	10.5		24.6		22.1		< 0.83		16.4		4.8	B	1.2	B	12.5		2.4	B	< 0.83			NA	NA	NA	< 0.83		< 0.83		< 0.83		< 0.83		< 0.83						
Jul-02		NA		NA		NA		NA		NA		NA		NA		5.7	B	9.5	B	1.7	B	5.2	B	3.8	B	< 0.83			NA	NA	NA	NA	< 0.83		< 0.83		< 0.83		NA	NA	NA	< 0.83		< 0.83		< 0.83		< 0.83		< 0.83							
Oct-02	386	E	82.9	E	2040	E	4.6	B, E	1400	E	31.2	E	35	E	1.3	B, E		NA	1.2	B, E	9.9	B, E	108	E		NA	33.8	E	9.5	B, E	6.1	B, E	9.7	B, E	< 0.83	E	< 0.83	E		NA	NA	NA	< 0.83	E	< 0.83	E	< 0.83		< 0.83		< 0.83						
Apr-03		NA	< 0.8		89.8		4.8	B	4250		86.8		17.9		< 0.8			NA	5.6	B	5.6	B	36			NA	10.4		15.5		< 0.8		19.2		4.2	B	< 0.8			NA	NA	NA	< 0.8		< 0.8		< 0.8		< 0.8		< 0.8						
Mar-04		NA		NA	87.1				816			NA	9.4	B		NA	237			NA		NA	133			NA	10.3		19.4		2	B	10.4		2.8	B	2.6	B		NA	NA	NA	1.3	B	1.5	B	1.4	B	1.9	B	1.5	B	1.2	B			
Jun-05	31.4			NA	101			NA	2020			NA	56.7			NA	5.7	B		NA	5.7	B			NA	29.6		3.3	B	2.5	B	2.4	B	1.4	B		NA	NA	NA	NA	< 0.9		< 0.9		< 0.9		0.93	B	< 0.9		0.94	B					
Sep-06	2400			NA	120			NA	7200			NA	1300			NA	690			NA		NA	87			NA	140		30		42		55		36		4.1	J		NA	NA	NA	2.7	J	2.8	J	3.2	J	2	J	< 10		< 10				
Oct-07	530			NA	250			NA	3400			NA	270			NA	32			NA		NA	96			NA	85		41		11		330		150		4.3	J		NA	NA	NA	< 10		< 10		< 10		< 10		< 10		< 10				
Mar-09	140			NA	480			NA	3900			NA	230			NA	170			NA		NA	61			NA	680		27		11		300		38		< 10			NA	NA	NA	< 10		< 10		< 10		< 10		< 10		< 10				
May-10	1990			NA	722			NA	2570			NA	522			NA	278			NA		NA	158			NA	152		14		< 4		176		53.9		2.5	J		NA	NA	NA	NA	< 4		< 4		< 4			NA	< 4		< 4			
Sep-11	11100		970		1000		2.7	J	29700		2600		290			NA	120		11		93		480			NA	1500		< 4		< 4		430		380		< 4			NA	NA	NA	< 4		< 4		< 4		< 4			NA		NA			
Nov-12	2400			NA	280			NA	4100			NA	1700			NA	130			NA		NA	230			NA	140		2.9	J	< 4		100		2.6	J	< 4			NA	NA	NA	< 4		< 4		< 4		< 4				NA		NA		
Mar-14	5200			NA	1100			NA	2800			NA	540			NA	96			NA		NA	300			NA	85		3.7	J		ND	290		11			ND		NA		NA		< 2		< 2		3.3	J		NA		NA		NA		
Nov-14		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA					NA		< 2		< 2		3.3	J		NA		NA		NA		NA		NA					
Jul-15	6604			NA	62.2			NA	228.8			NA	132.9			NA	40.6			NA		NA	254.2			NA	230.4		2.8			2.4		56.7		2.5		2.4		2.4		1.5	J	7.9		0.27	J	0.24	J	0.21	J	0.54	J	<0.2		0.23	J

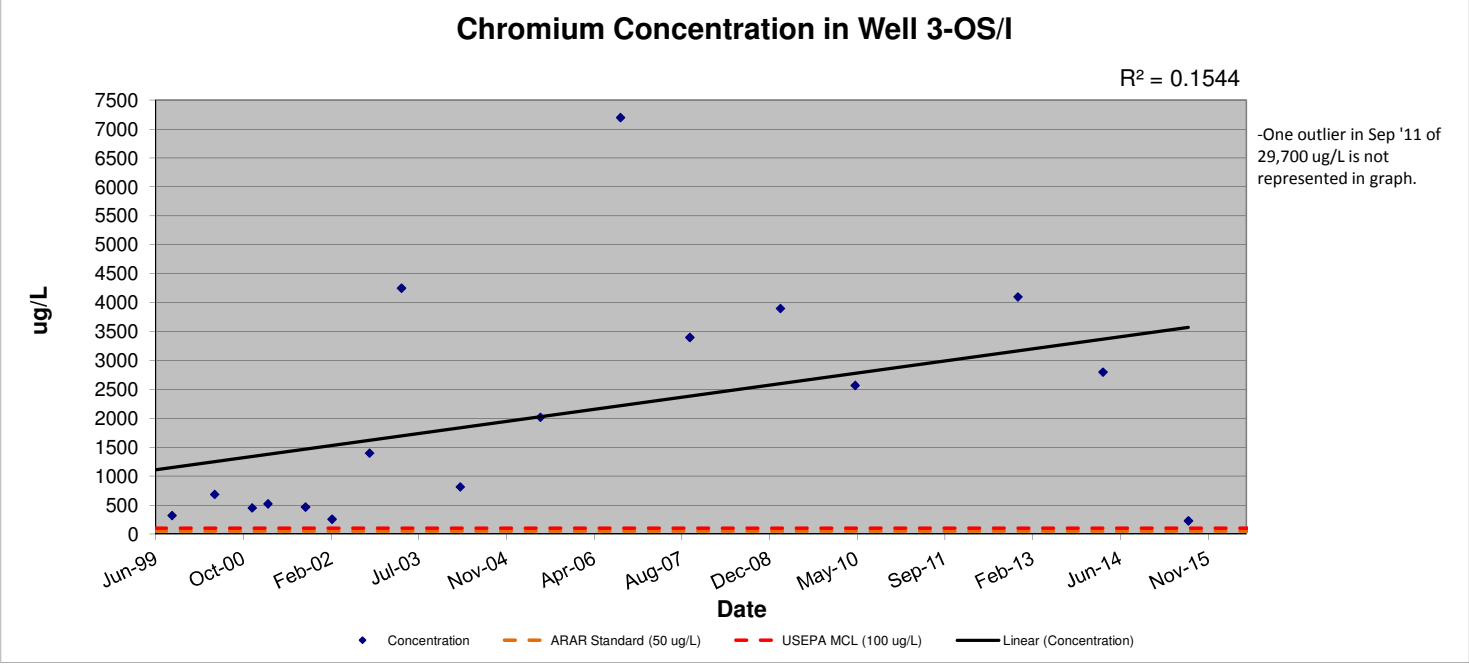
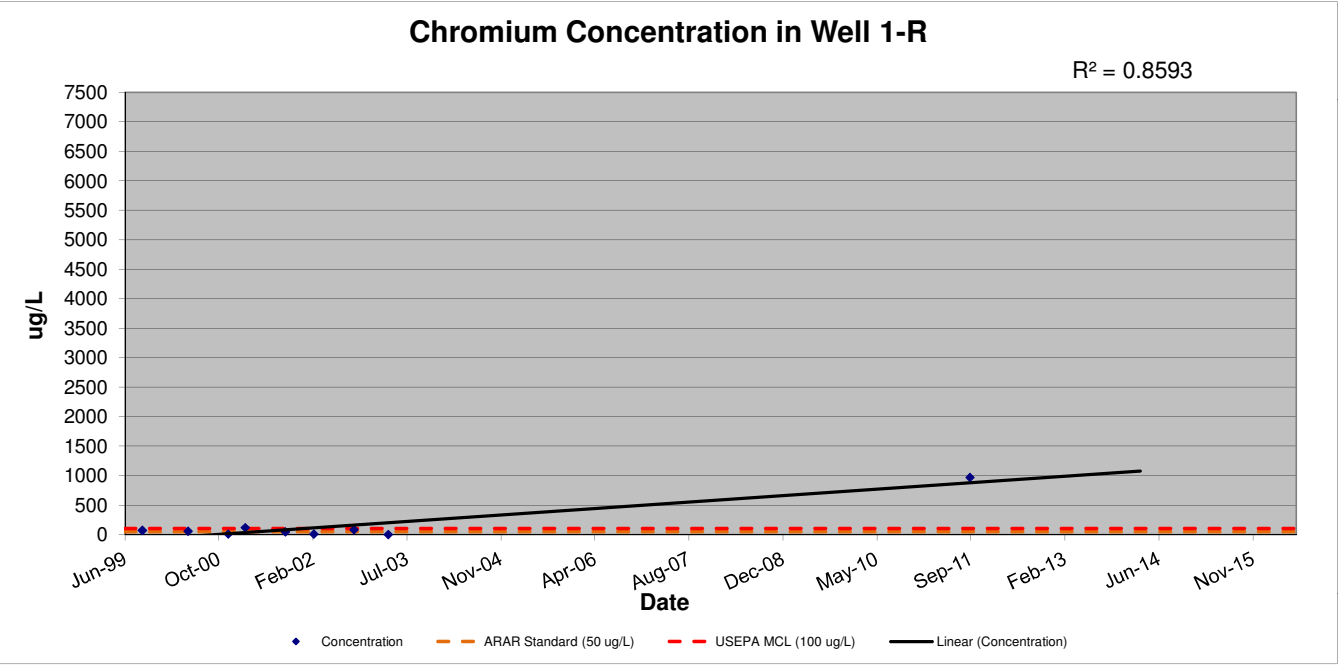
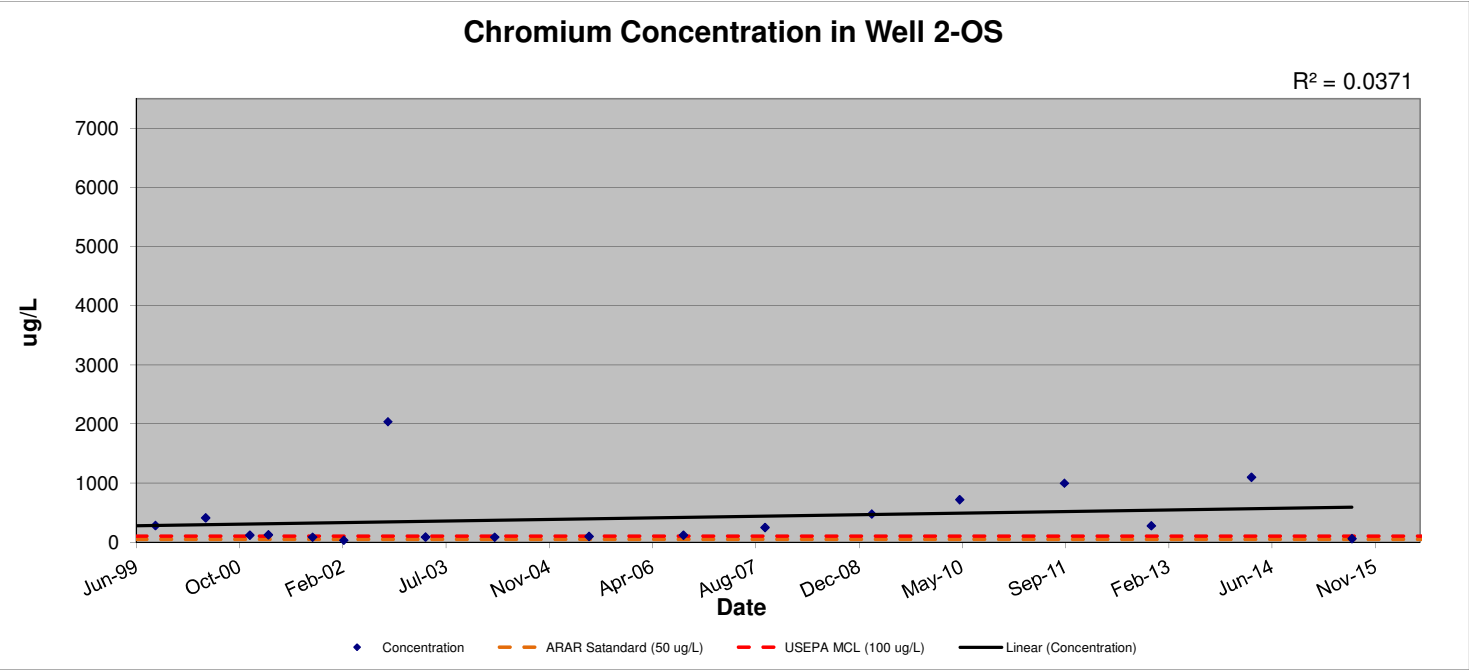
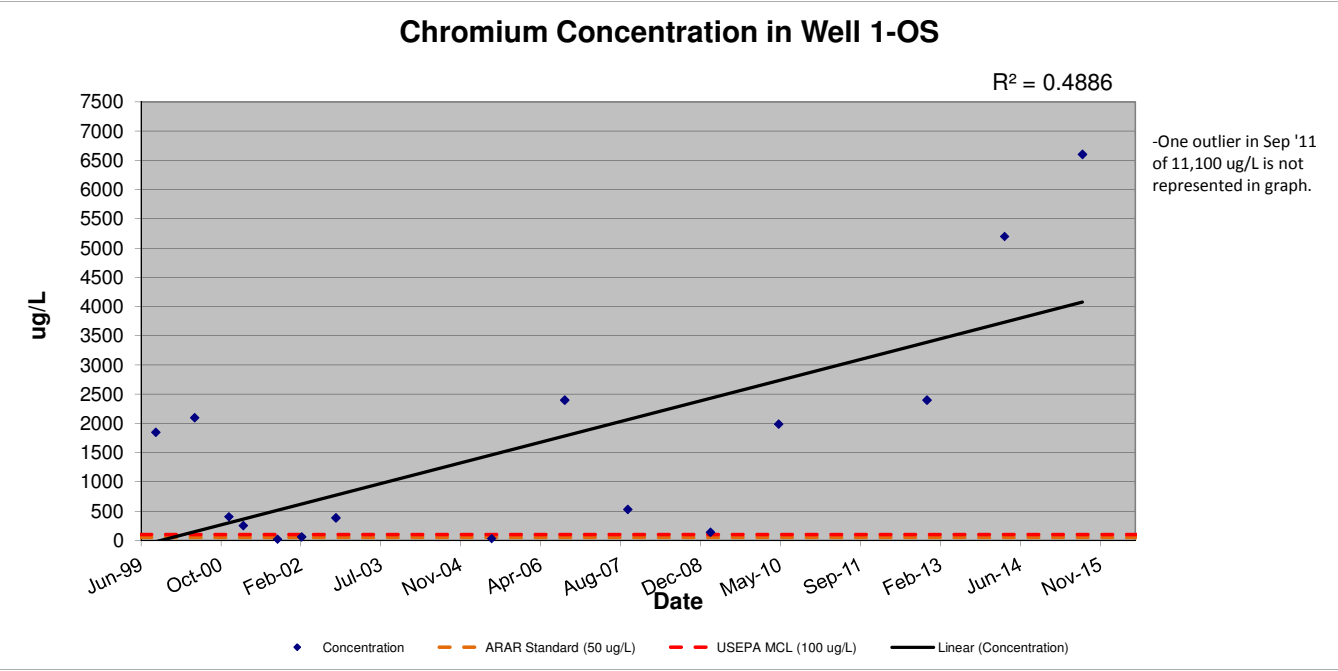
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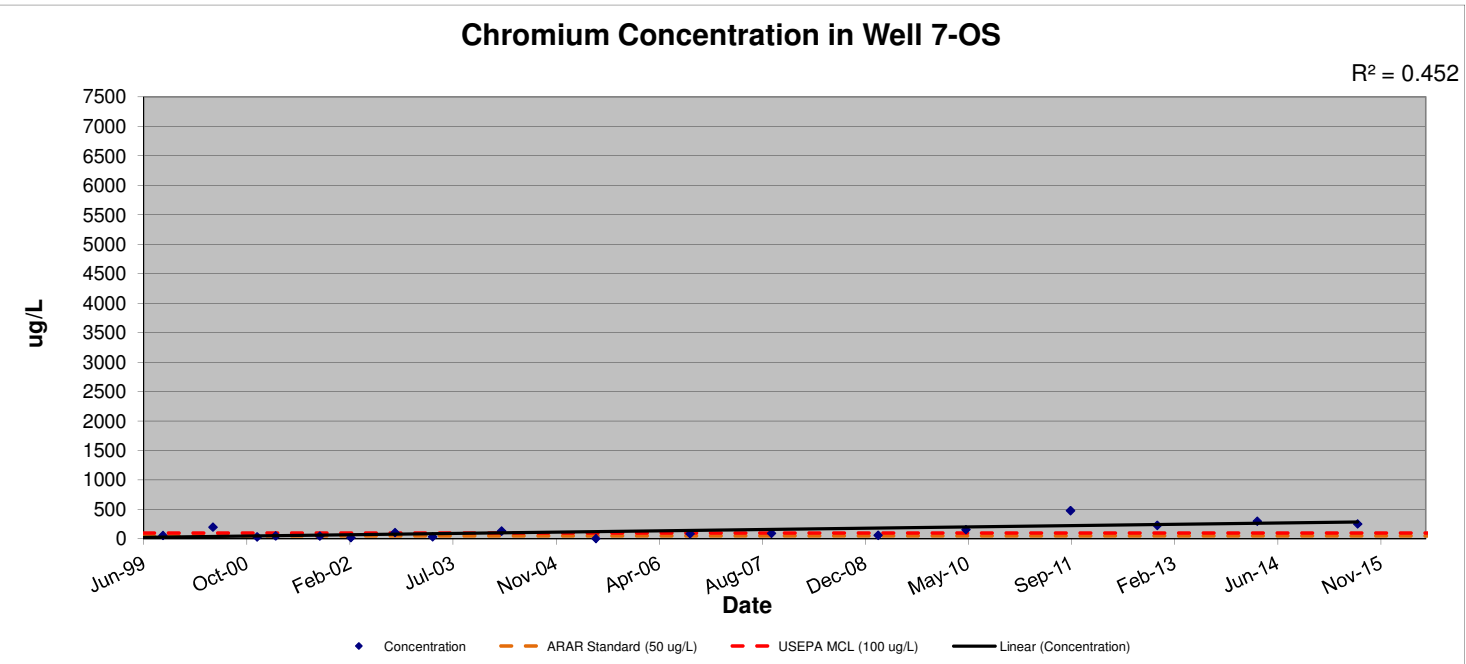
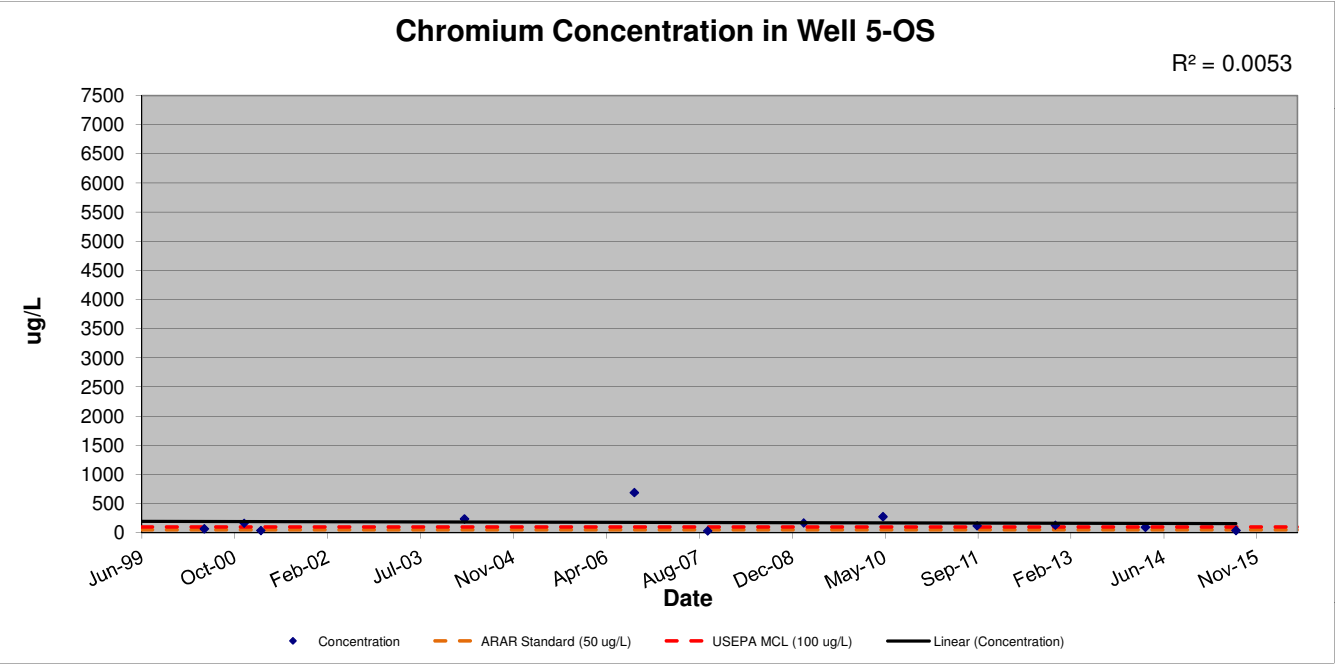
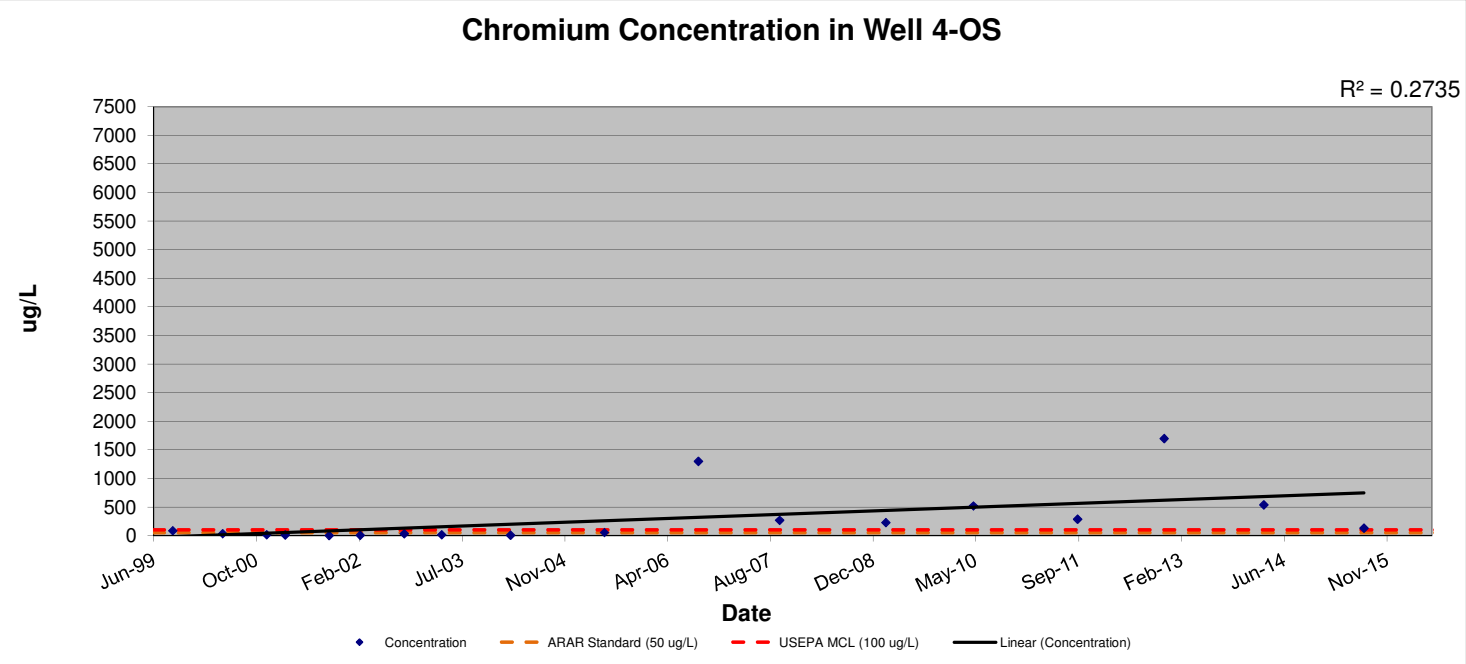
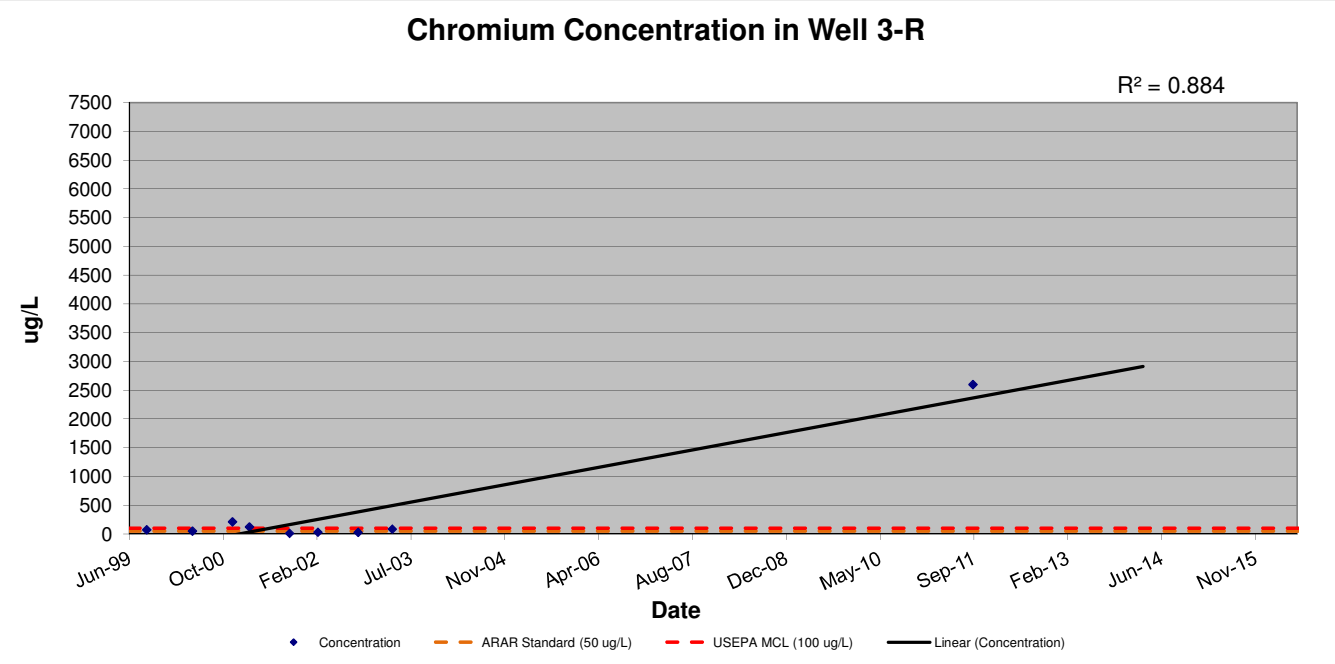
Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

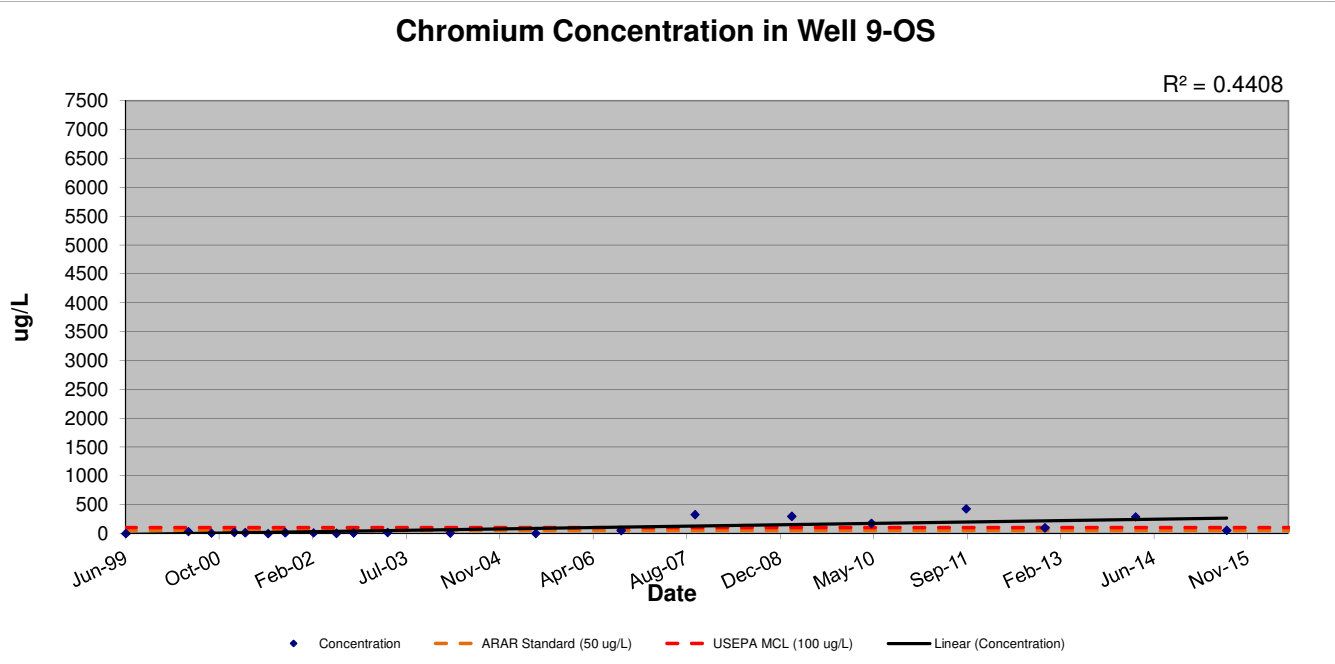
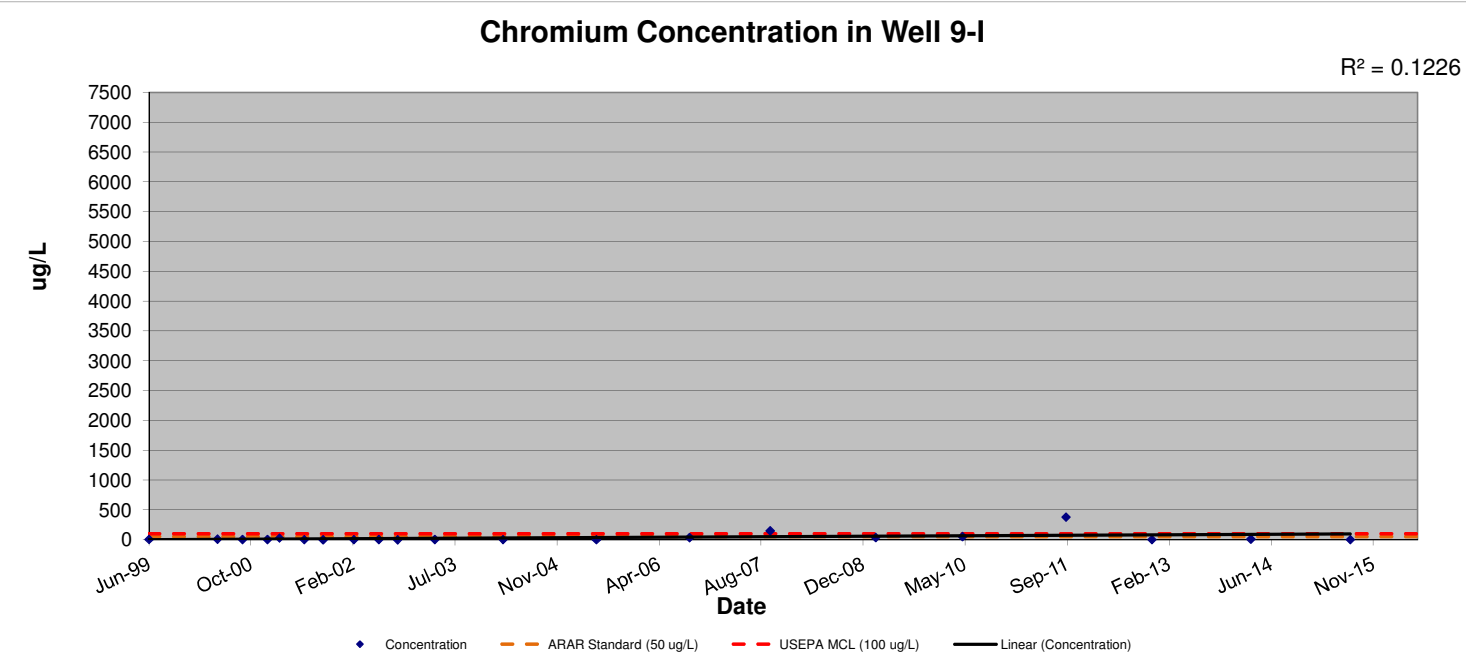
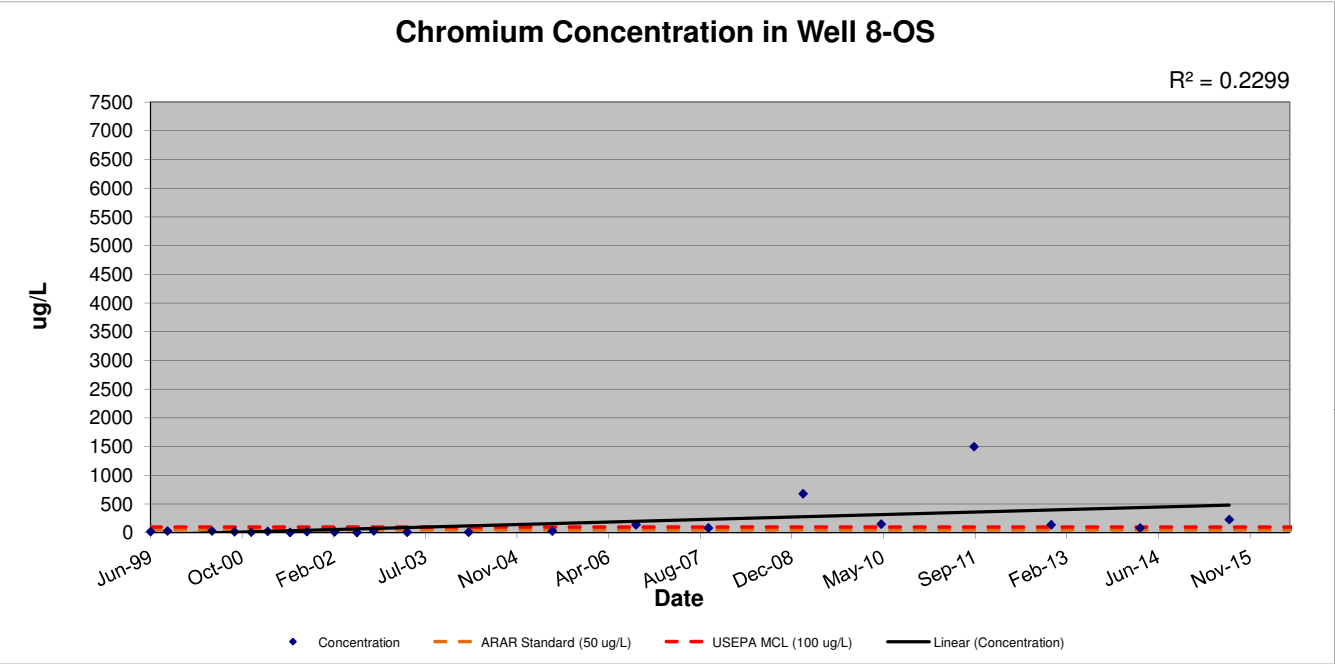
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MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Laboratory Qualifier Definitions

B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.
E = Indicates an estimated value because of the possible presence of interference.
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.







Town of Ramapo Landfill
TABLE C-8
Iron (ug/L)
ARAR Standard = 300 ug/L
USEPA MCL = Not Available
Part 5 MCL = 300 ug/L

Well ID	Well 1-OS		Well 1-R		Well 2-OS		Well 2-R		Well 3-OS/I		Well 3-R		Well 4-OS		Well 4-R		Well 5-OS		Well 5-I		Well 5-R		Well 7-OS		Well 7-R		Well 8-OS		Well 8-I		Well 8-R		Well 9-OS		Well 9-I		Well 9-R		Well 10-OS		Well 10-I		Well 10-R		Well PW-1		Well PW-2		SVWC-93		SVWC-94		SVWC-95		SVWC-96																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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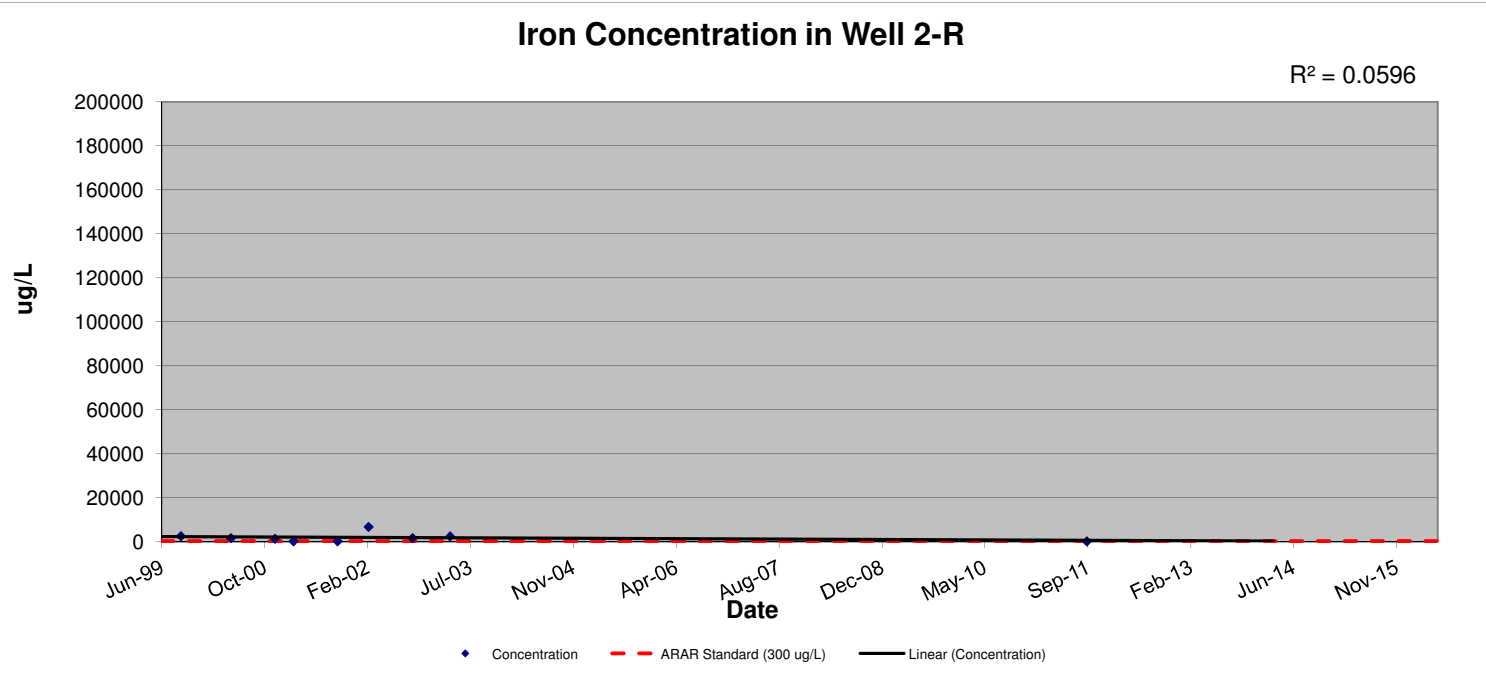
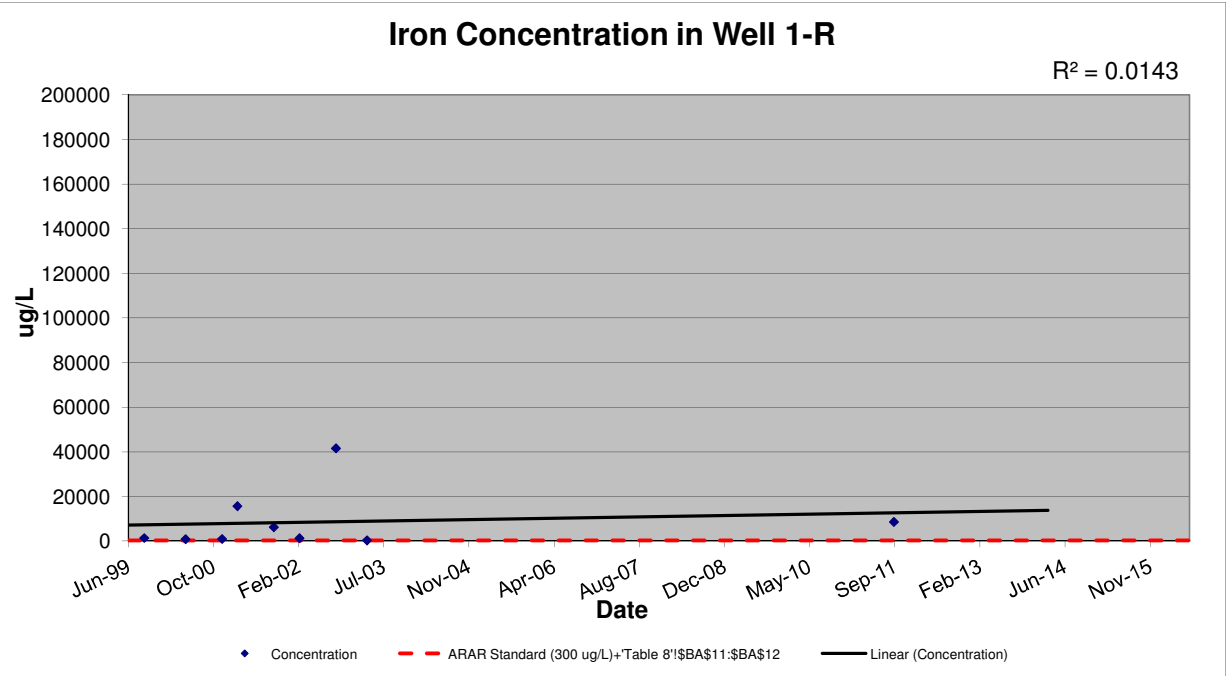
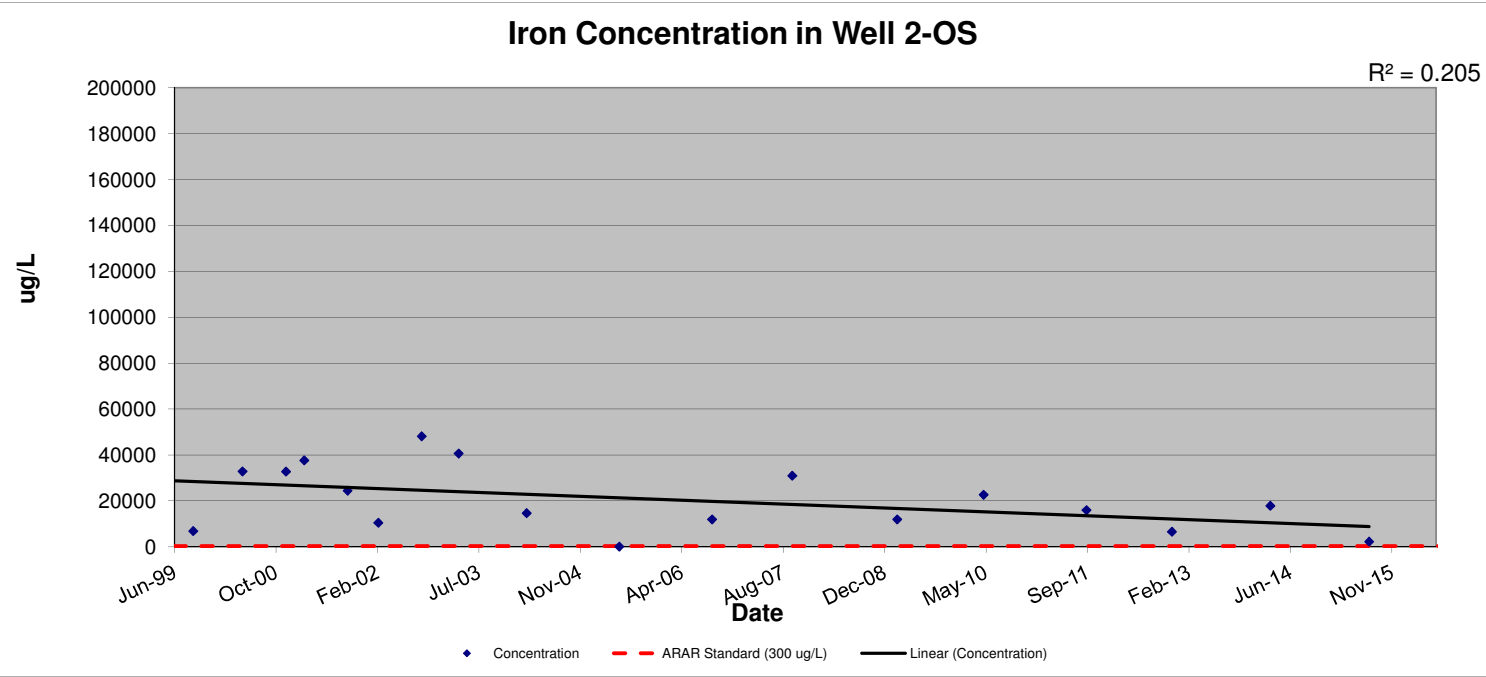
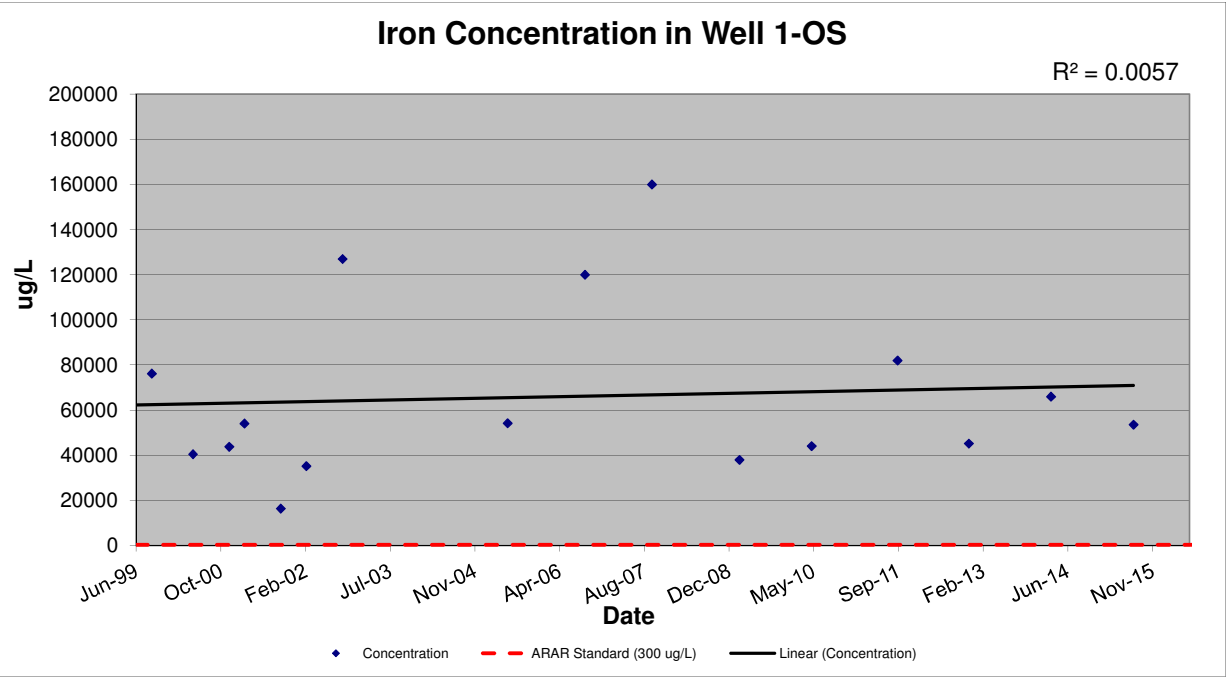
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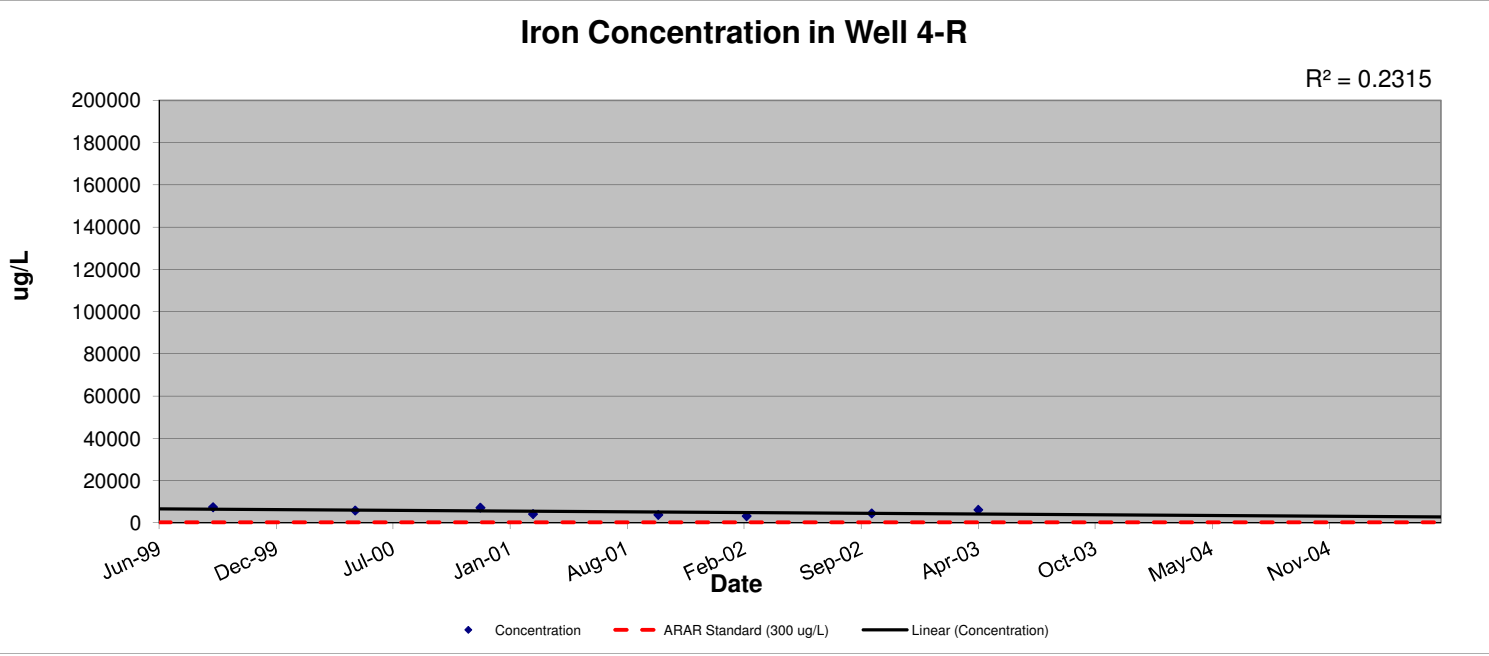
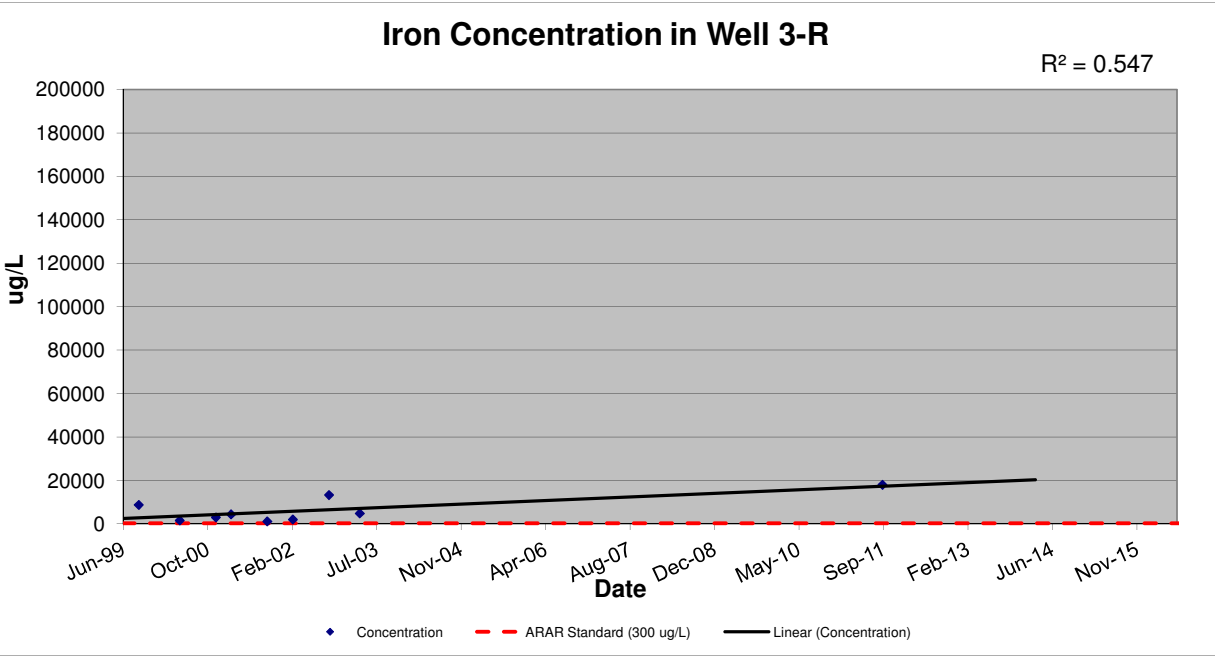
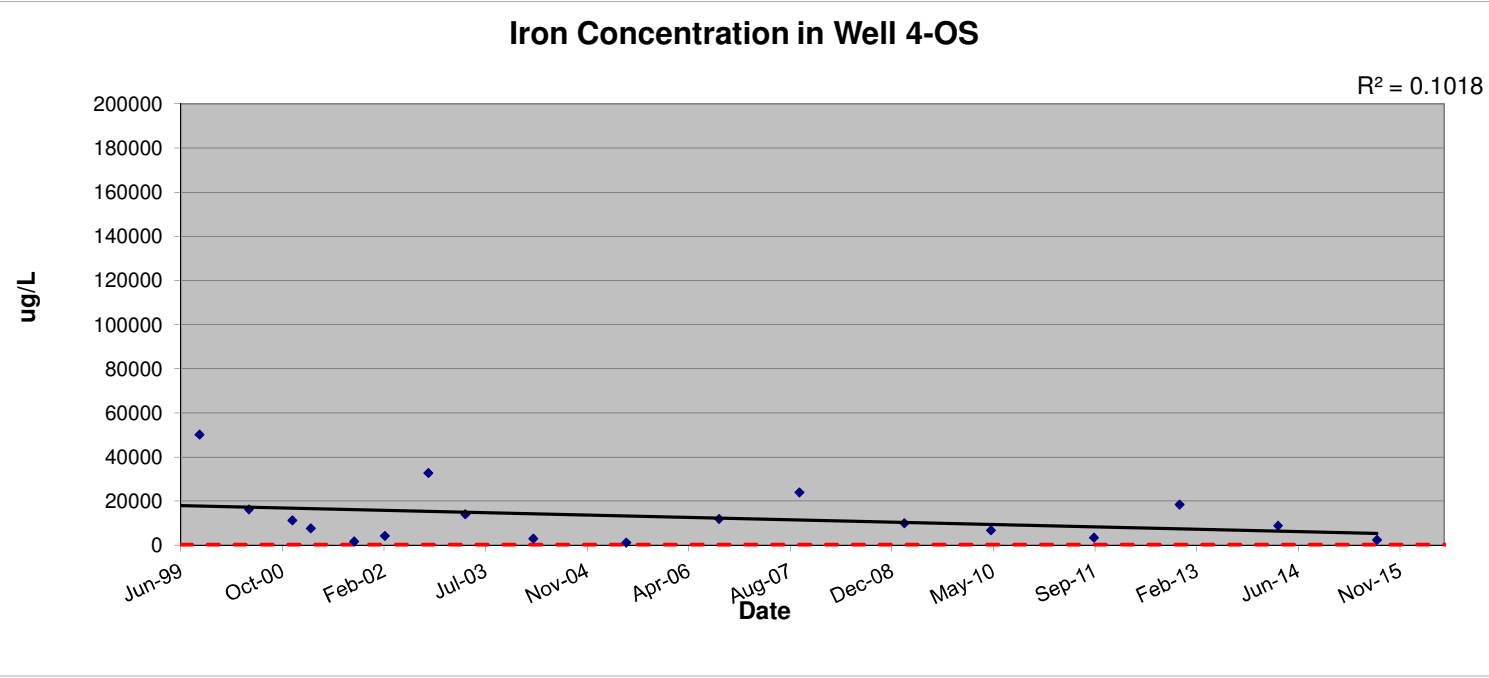
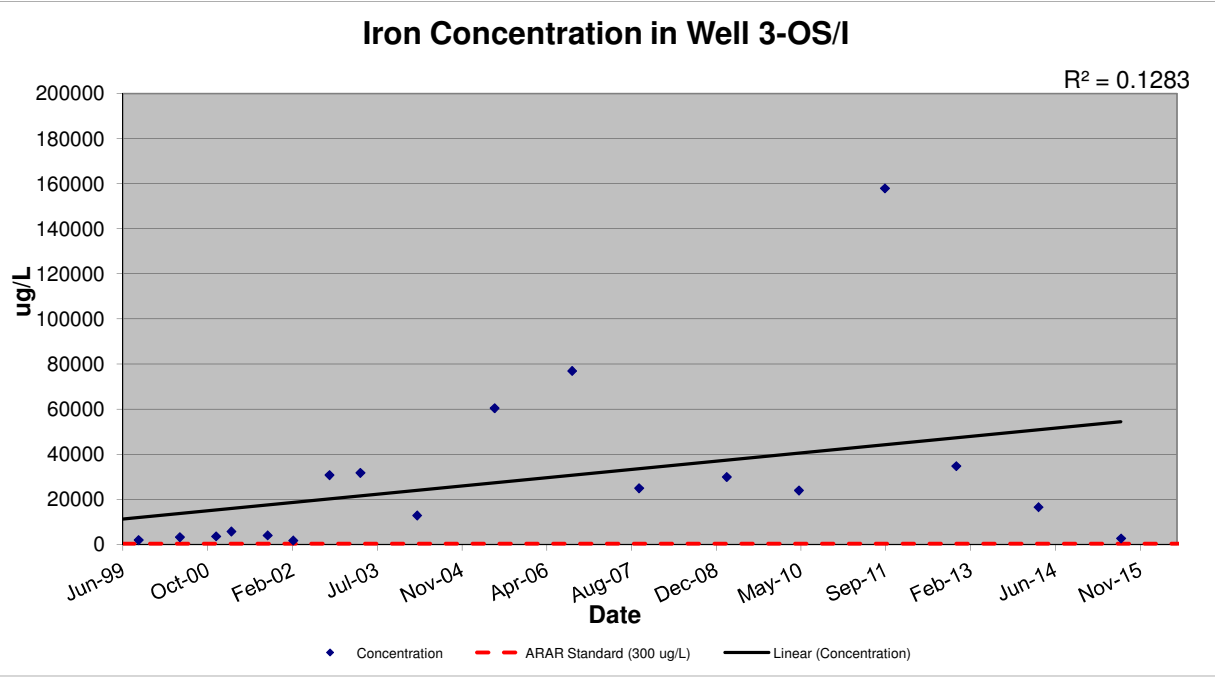
Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

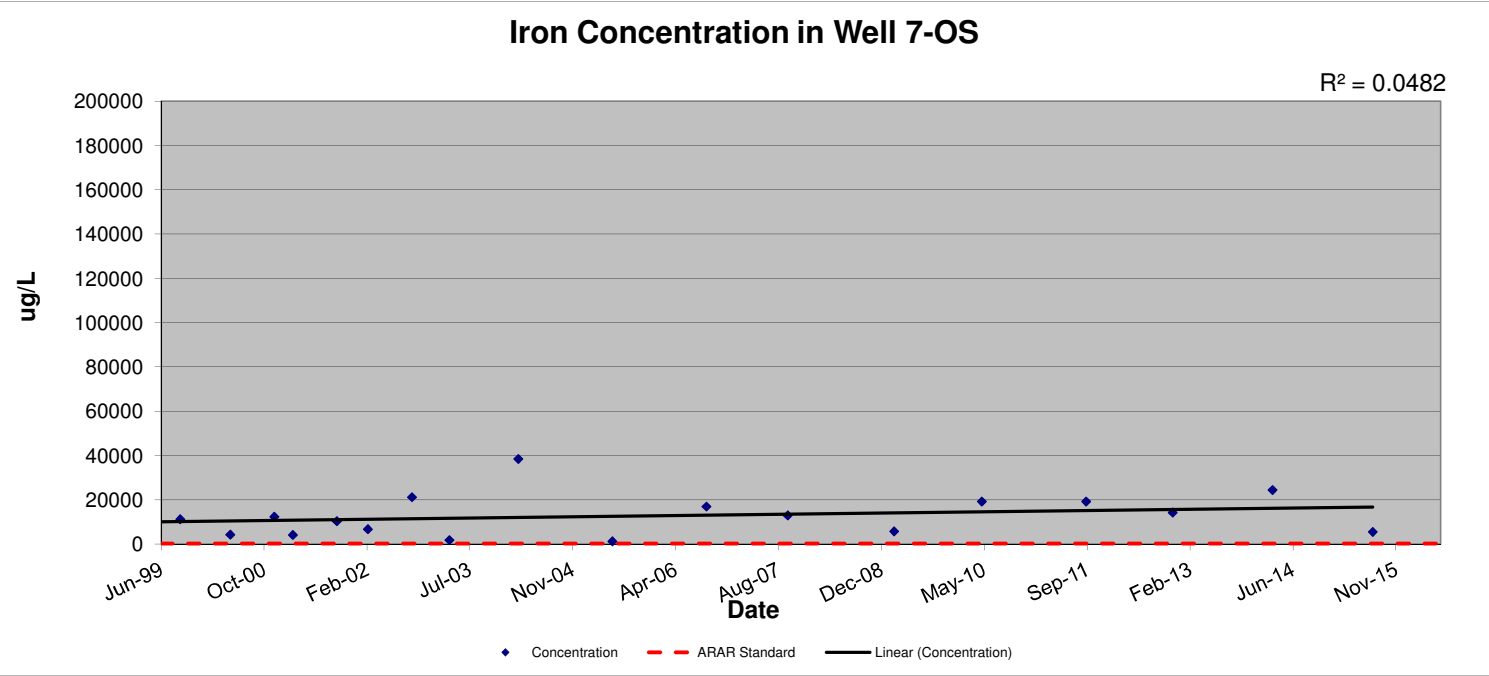
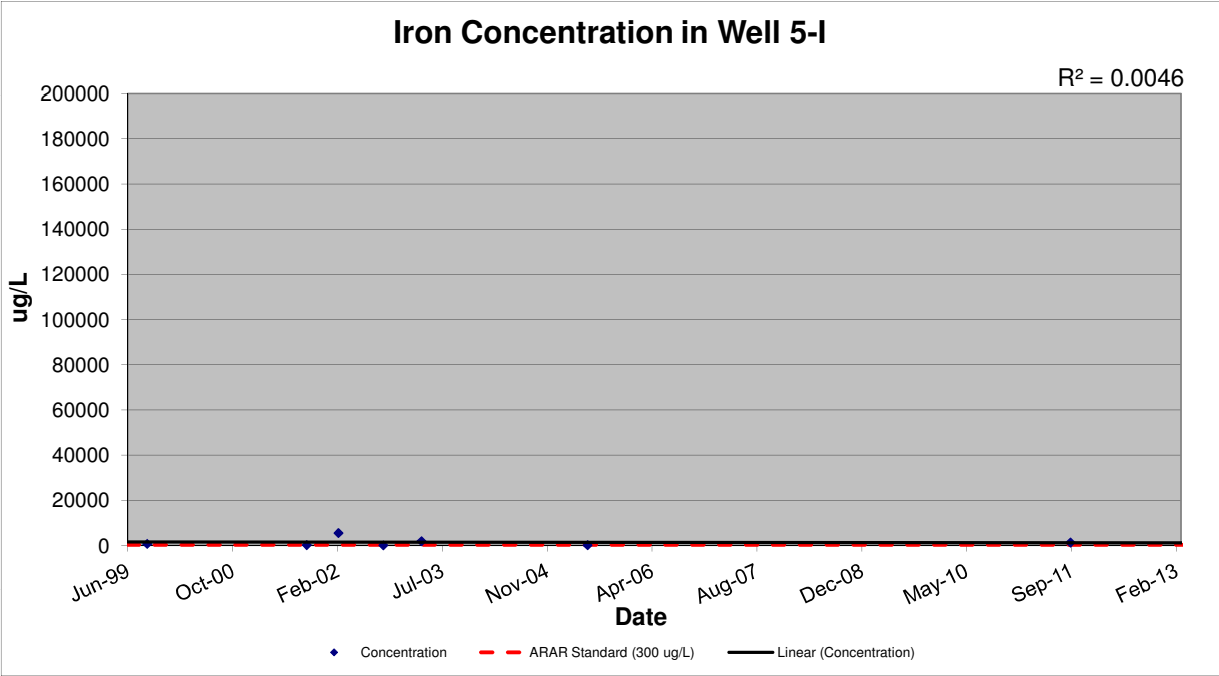
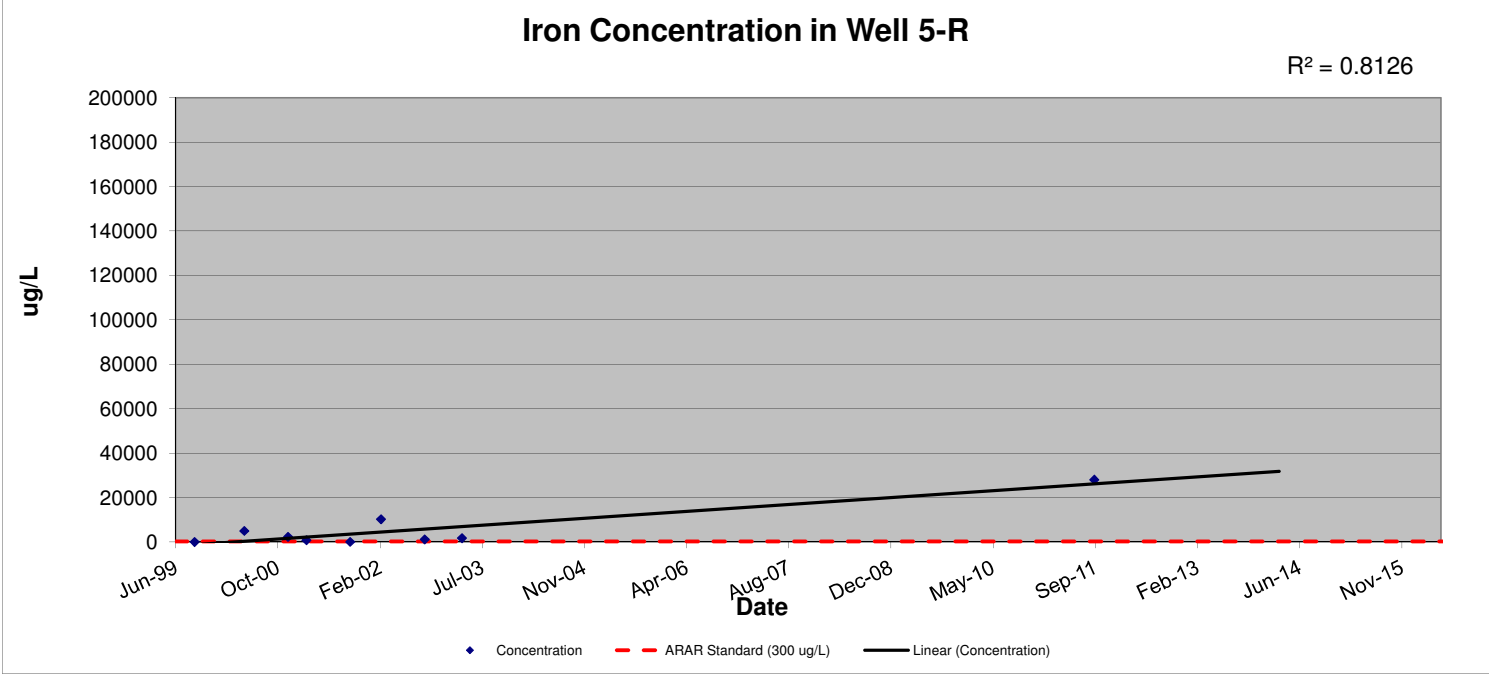
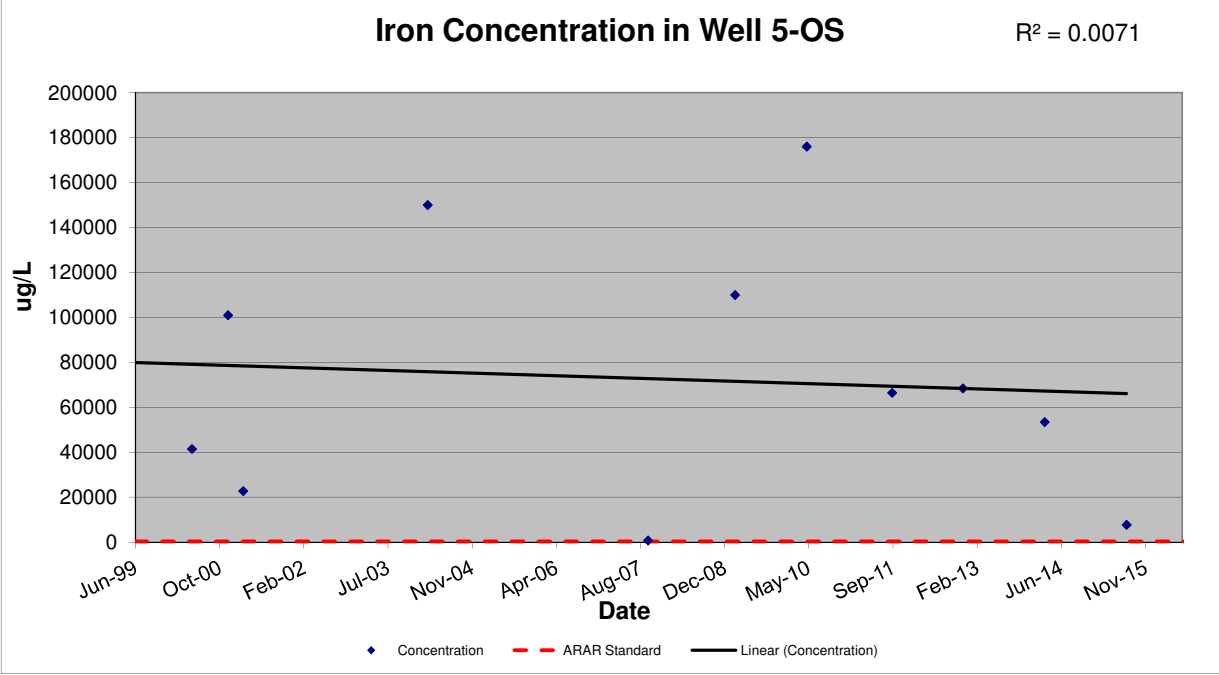
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MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

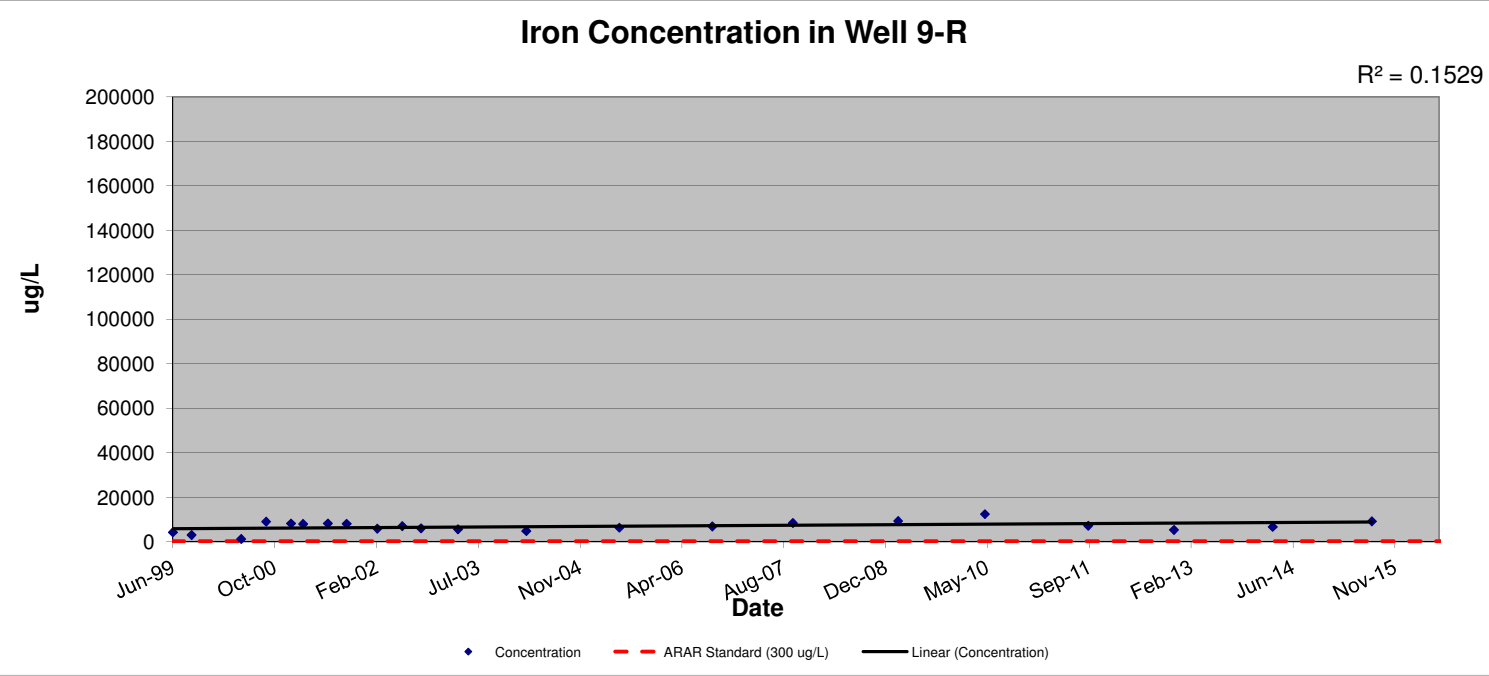
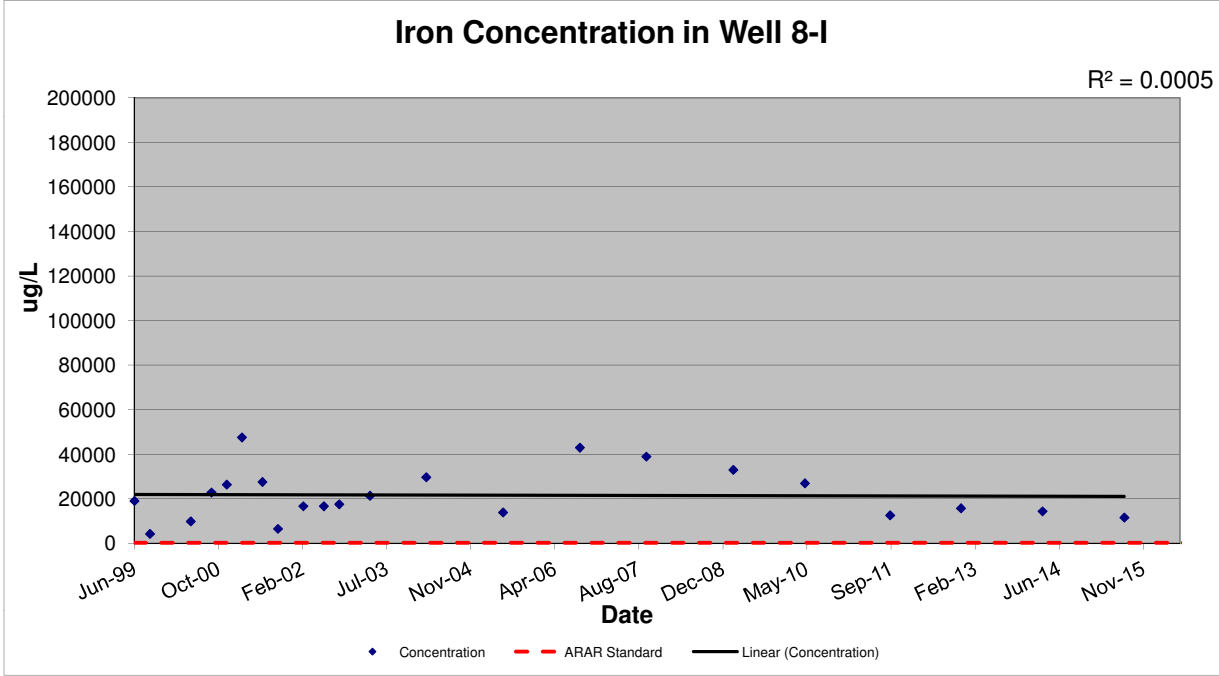
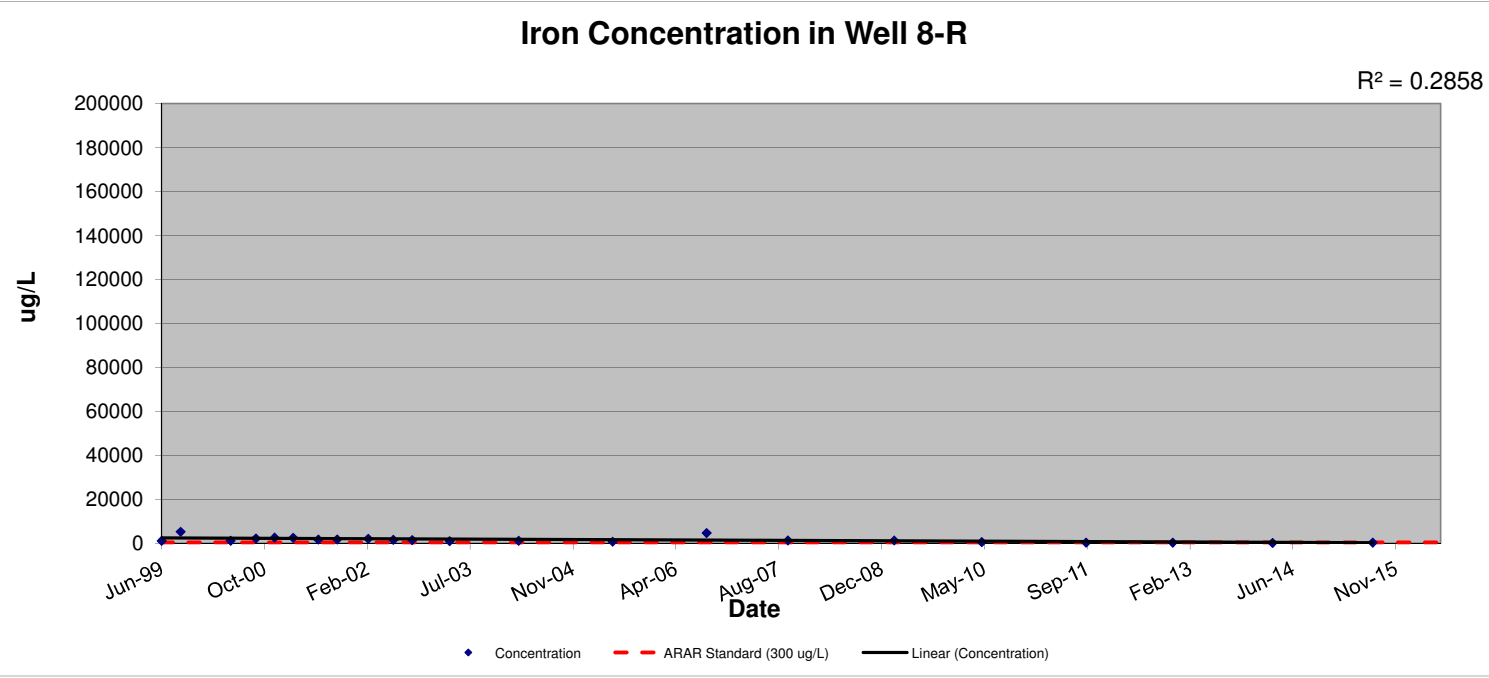
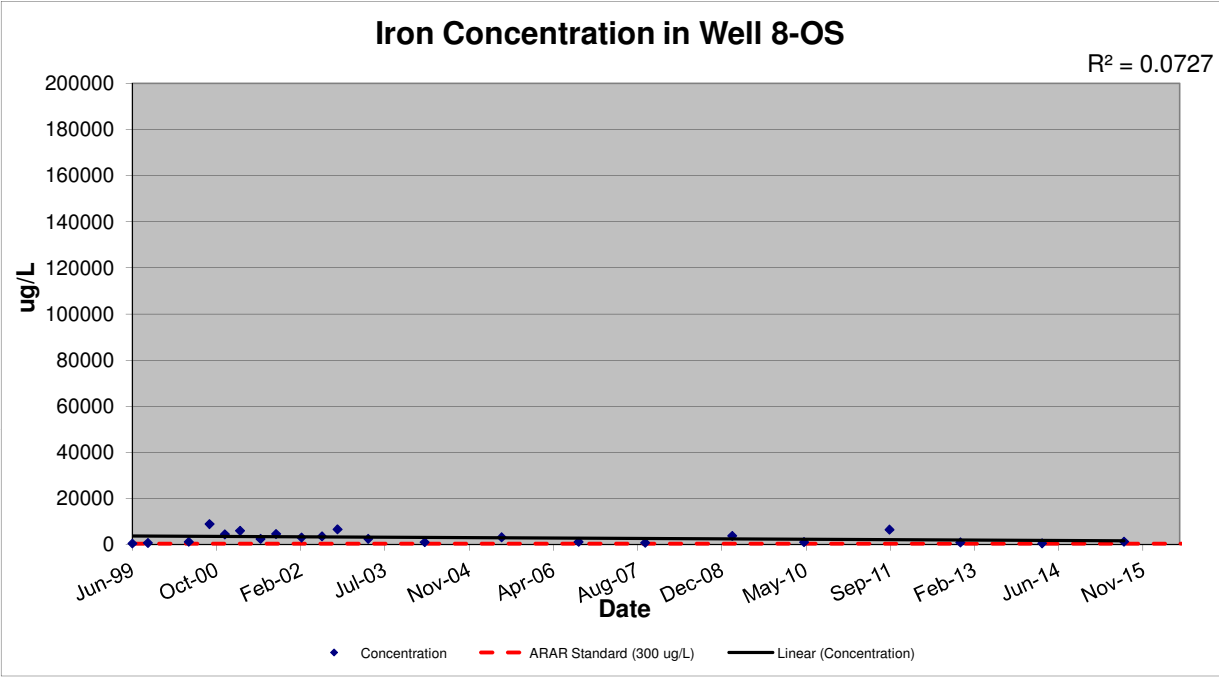
Laboratory Qualifier Definitions

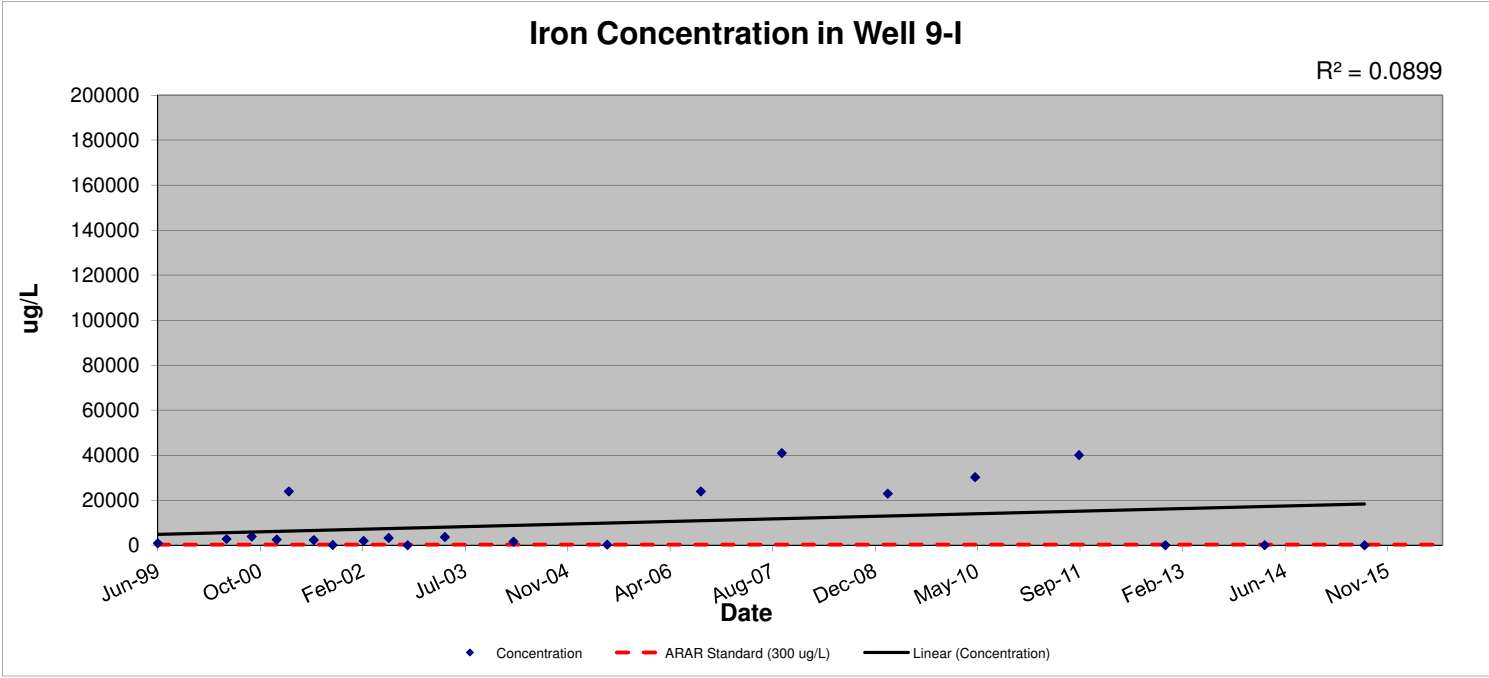
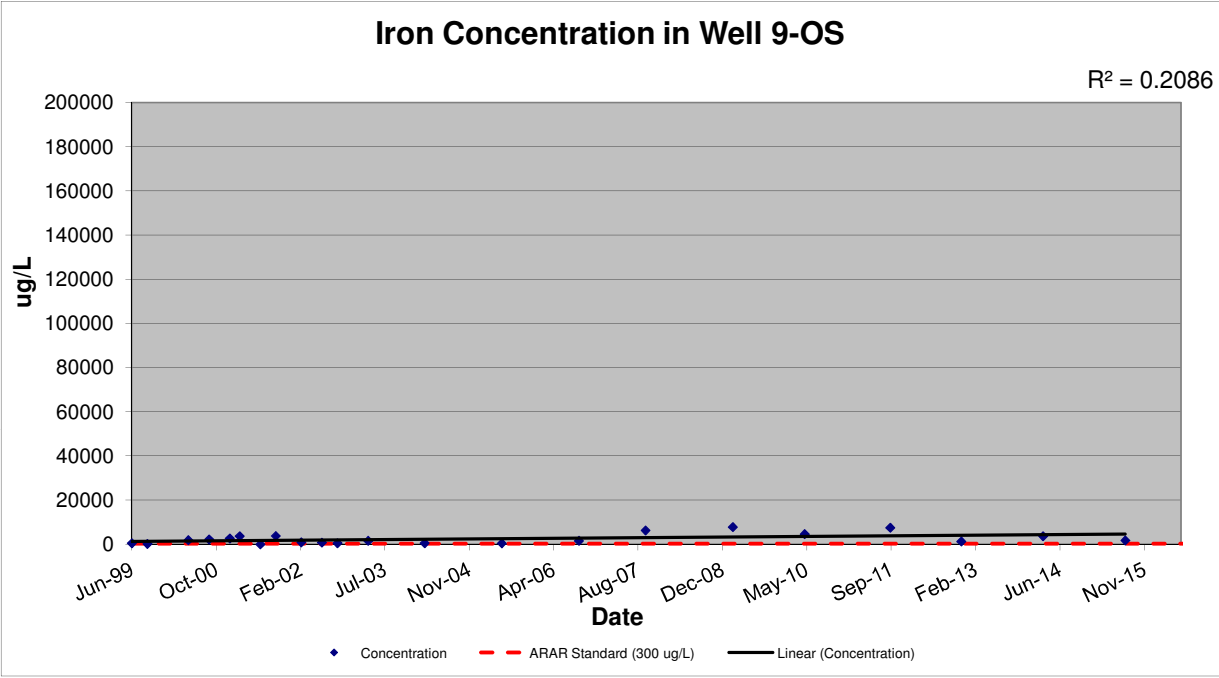
B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.
E = Indicates an estimated value because of the possible presence of interference.
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
N = Spiked sample recovery not within control limits.











Town of Ramapo Landfill
TABLE C-9
Lead (ug/L)
ARAR Standard = 25 ug/L
USEPA MCL = 15 ug/L
PART 5 MCL = Not Available

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Jun-99		NA		NA		NA		NA		NA		NA		NA		2.5			ND		ND		NA		NA		NA		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	

Notes:

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

ND = Not Detected

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC TOGS 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

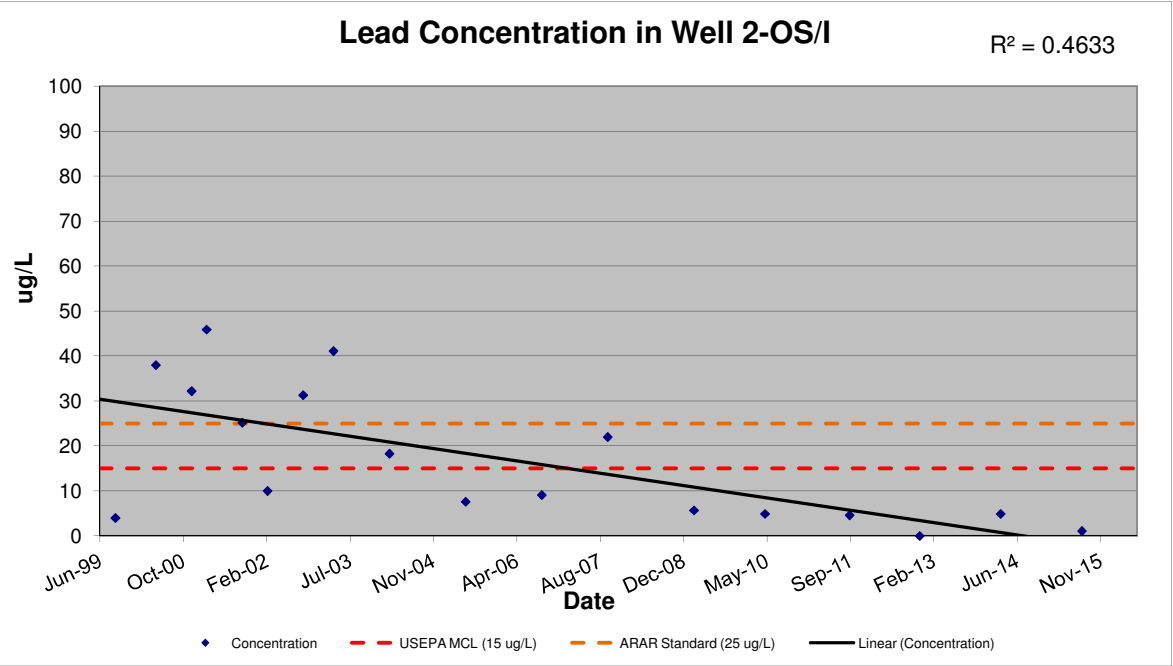
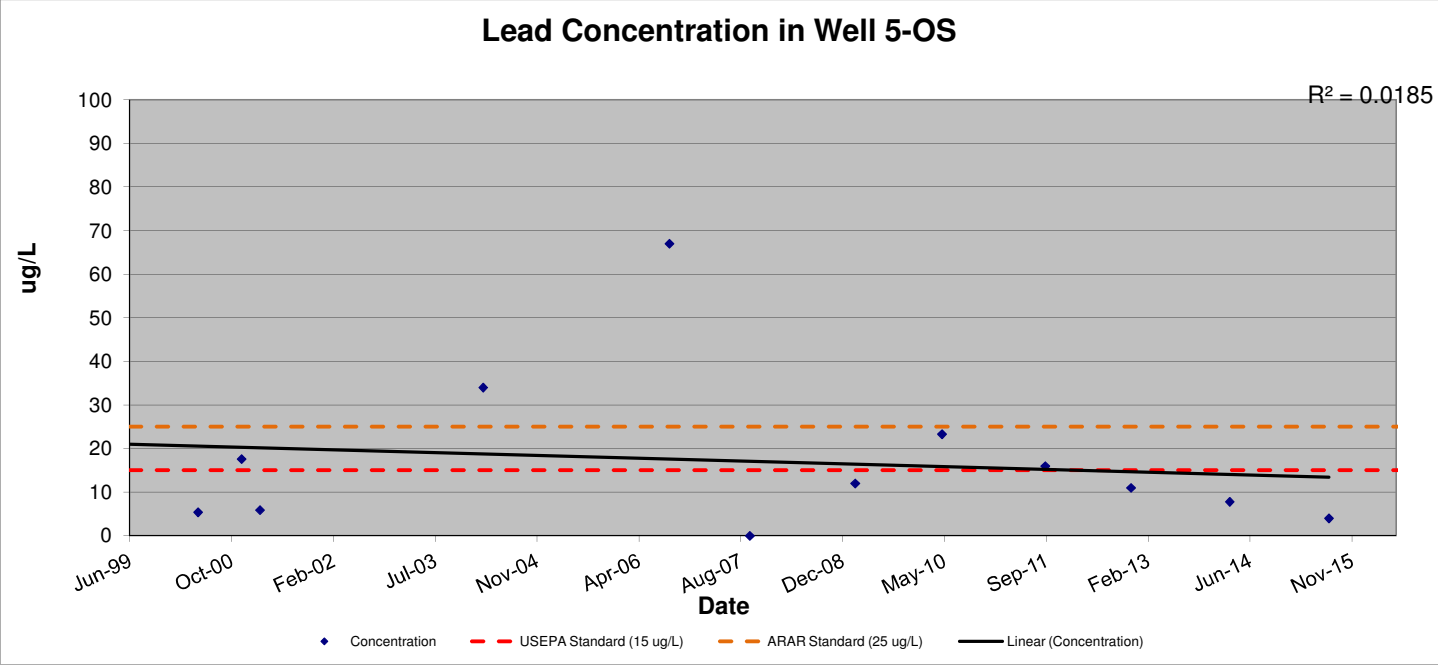
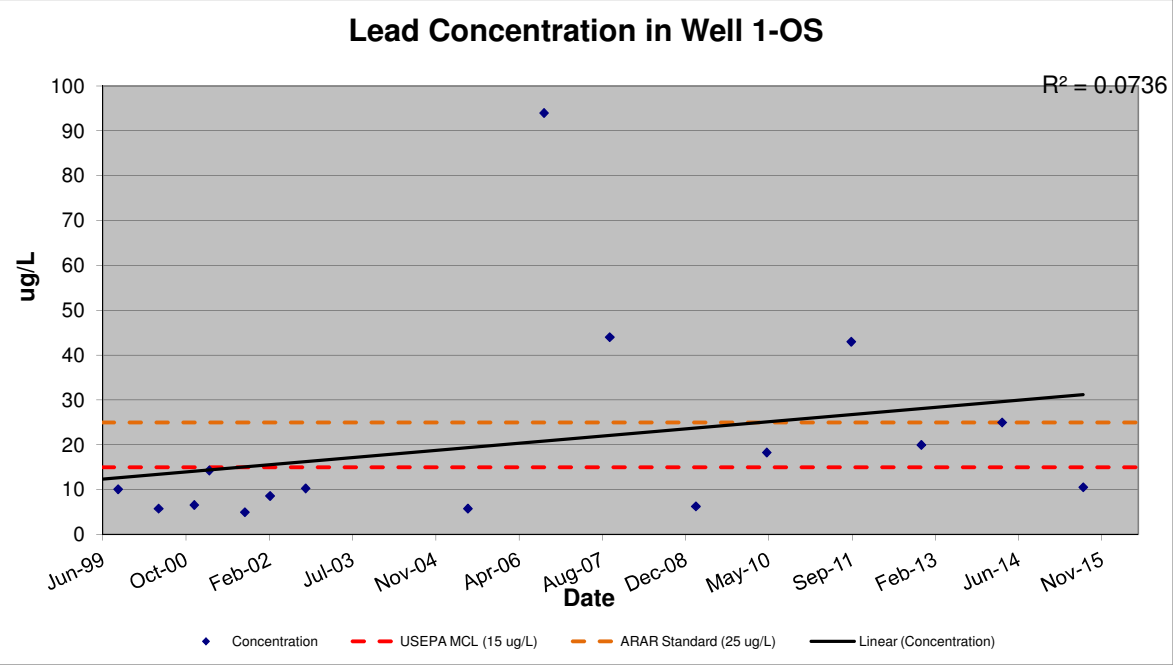
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Laboratory Qualifier Definitions

B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

N = Spiked sample recovery not within control limits.



Town of Ramapo Landfill
TABLE C-10
Magnesium (ug/L)
ARAR Guidance Value = 35,000 ug/L
USEPA MCL = Not Available
Part 5 MCL = Not Available

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96																												
DATE																																																								
Jun-99		NA		NA		NA		NA		NA		NA		NA	3470		4870		32900		3110		3040		3720			NA		NA		NA	2290		5310		4190		4940		5010		5350													
Sep-99		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		ND	6.5			NA		NA		NA		NA		NA		NA		NA		NA												
May-00	21700		20300		27700		15500		14100		24500		8310		18800		10100		NA	5850		12100		17600		1490	B	6100		32900		1760	B	2050	B	6160		NA		NA		NA	2780	B	4260	B	3780	B	4400	B	4990	B	5330			
Sep-00		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA								
Dec-00		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA								
Jan-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA								
Mar-01	24100		16200		29500		12100		14800		18200		6240		15800		6570		NA	4500	B	13600		17800		5250		30300		39300		2090	B	5640		9850			NA		NA		NA	2780	B	4190	B	6120		6360		6830		5550		
Jul-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA								
Oct-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA								
Mar-02	23100		6730		23500		12900		16600		18000		6500		14800			NA	6670		7060		12500		13900		3100		17300		38900		2160		4170		8460			NA		NA		NA	4340		4510		8880		9230		6480		7840	
Jul-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA						
Oct-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA						
Apr-03		NA	19600		25100		12900		15400		18000		9080		16400			NA	5570		4740	B	8230			NA	4390	B	18900		39500		1990	B	2940	B	7460			NA		NA		NA	3960	B	4000	B	5060		5890		5300		5480	
Jun-04		NA		NA	21000			NA	13200			NA	18500			NA	32100			NA		NA	11600			NA	8750		34100		41000		1420	B	1530	B	5850			NA		NA		NA	2680	B	4230	B	5900		6760		5790		5230	
Mar-05	14000			NA	15600			NA	10700			NA	17100			NA		NA	4510	B		NA	11500			NA	2950	B	31000		43000		1950	B	2230	B	8520			NA		NA		NA	5070		2320	B	6170		6520		6030		6250	
Sep-06	28000			NA	18000			NA	13000			NA	18000			NA	80000			NA		NA	9800			NA	4200		21000		44000		2000		5100		8300			NA		NA		NA	2700		3200		5200		5300		5100		4900	
Oct-07	30000			NA	22000			NA	14000			NA	20000			NA	4600			NA		NA	10000			NA	5100		18000		39000		2500		7900		9300			NA		NA		NA	2300		2400		6100		5900		6500		5800	
Mar-09	20000			NA	18000			NA	12000			NA	11000			NA	21000			NA		NA	12000			NA	9100		16000		40000		3300		5900		11000			NA		NA		NA	2800		2900		5900			NA	6700		6300	
May-10	22600			NA	14800			NA	11200			NA	15000			NA	36500			NA		NA	13500			NA	5770		23600		40700		2490		6300		13700			NA		NA		NA	4160		3430		4560			NA	5530		5240	
Sep-11	16200		20300		14600		14700		9700		16000		14600			NA	13500		5100		12800		8000			NA	4100		16900		41400		2600		7600		10000			NA		NA		NA	10100		2900		3800		3600			NA		NA
Nov-12	14500			NA	16100			NA	10500			NA	12200			NA			13100				NA			NA	4100		23300		42900		1400		1900		9000			NA		NA		NA	2500		3200		3900		4100		6700			NA
Mar-14	17600			NA	18100			NA	12500			NA	12400			NA	12700			NA		NA	14000			NA	4600		29300		43300		2200		1600		10400			NA		NA		NA	2300		2500		7500		8000		8200		7300	
Nov-14		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA				
Jul-15	13600			NA	18800			NA	12700			NA	17300			NA	5710			NA		NA	8680			NA	4480		28100		41500		3350		2490		13200		568		2860		2270		4600		3400		5500		5400		5200		6900	

Notes:

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

ND = Not Detected

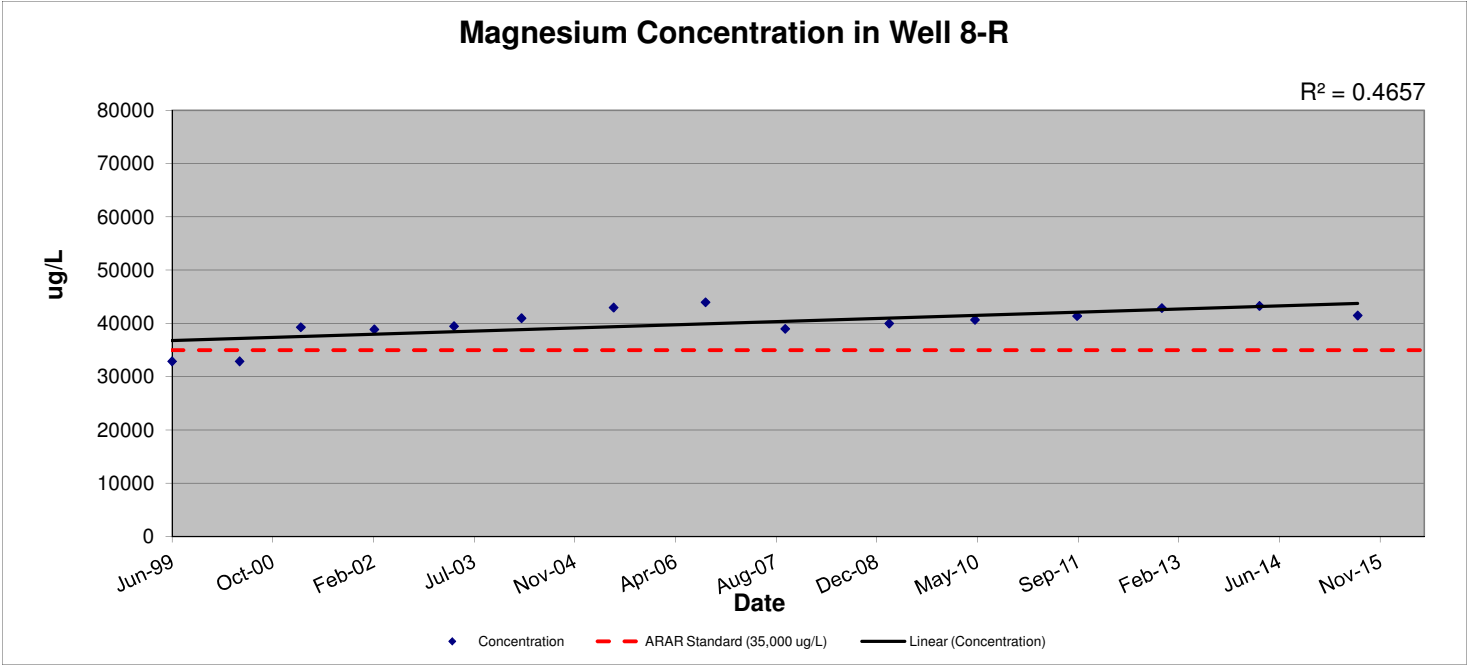
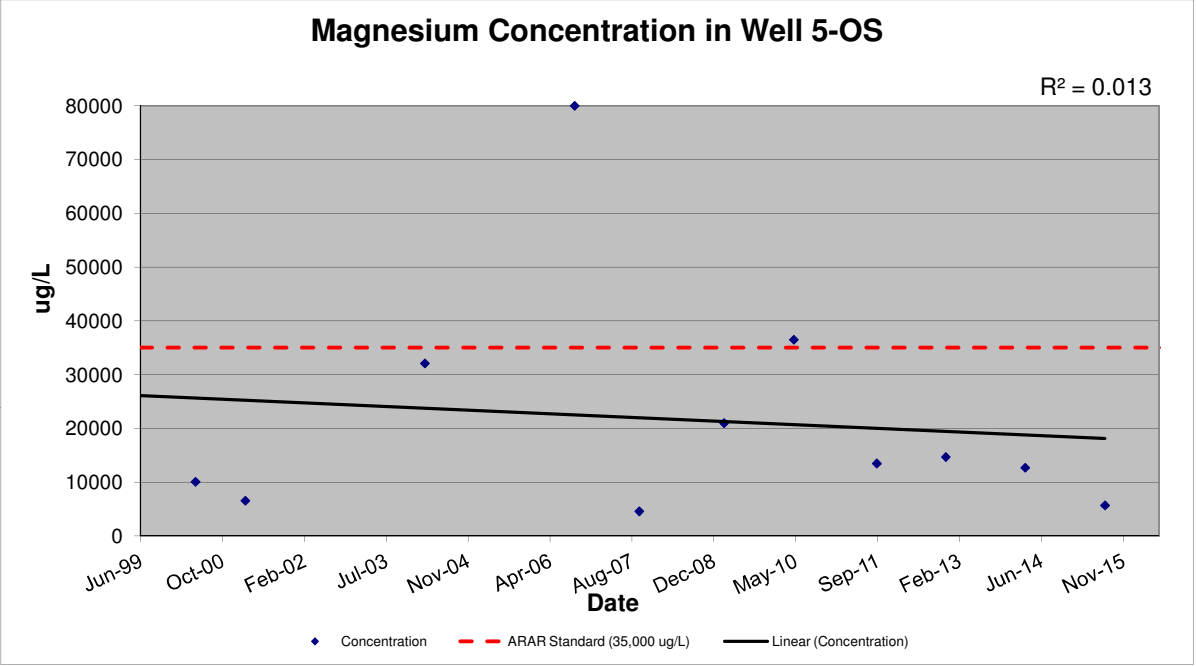
< = The compound was analyzed for but not detected at the laboratory detection limit listed.

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC TOGS 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Laboratory Qualifier Definitions

B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.



Town of Ramapo Landfill
TABLE C-11
Manganese (ug/L)
ARAR Standard = 300 ug/L
USEPA MCL = Not Available
Part 5 MCL = 300 ug/L

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Jun-99		NA		NA		NA		NA		NA		NA		NA		1400		1050		1900				15.1		18		1620			NA		NA		1.9		6.6		2.5		4.3		40.6		1.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Sep-99	9830		599		936		744		577		15100		1720		1180			NA	27.2		1.2		755		98.5		860		1570		2780		11.7		5.4		1320		NA	NA		NA		1.9		ND		ND		NA		NA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
May-00	5740		236		4110		497		5720		14200		1340		1320		533			NA	69.3		305		257		525		789		2640		40.1		109		1500		NA	NA		NA	0.81	B	1.8	B	0.49	B	3.6	B	40.4		< 0.2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Sep-00		NA		NA		NA		NA		NA		NA		NA		NA			NA		NA		NA		NA		3820		2810		2390		54.6		66.7		3020		NA	NA		NA	0.74	B	2.5	B	2.1	B	7.1	B	49.7		< 0.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Dec-00	5810		158		3370		247		5070		13100		1930		1240		1080			NA	33		1270		360		2410		2560		2120			NA		NA		NA		NA		NA	3.9	B	< 0.7	9.6	B	47.5		< 0.7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Jan-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		58.9		49.2		3100		NA	NA		NA	1.4	B		NA		NA		NA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Mar-01	4940		2070		3450		142		3750		10400		440		1040		323			NA	13.1	B	638	N	379	N	6760	N	3430		2250	N	93.2	N	561	N	2860	N		NA	NA		NA	13.6	B	6	B	2.2	B	4.7	B	49.8		< 0.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
Jul-01		NA		NA		NA		NA		NA		NA		NA		NA			NA		NA		NA		NA		5800		2990	N	2640		< 0.6		38		2960		NA	NA		NA	4.35	B	1.96	B	< 0.6	2.67	B	143		< 0.6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Oct-01	5310		909		3830		106		2040		12700		839		1070			NA	2.7	B	< 2.2		668		375		6340		1760		2060		77.6		4.9	B	3080		NA	NA		NA	< 2.2	4.7	B		NA	NA	NA		NA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Mar-02	6240		104		2300		616		2800		9950		759		1110			NA	132		154		592		292		1620		3670		1930		24.7		44.6		2490		NA	NA		NA	< 1.4	6	B	< 1.4		6.9	B	68.2		< 1.4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Jul-02		NA		NA		NA		NA		NA		NA		NA		NA			NA		NA		NA		NA		3390		2390		2160		19		75.8		2740		NA	NA		NA	< 1.9	6.9	B	< 1.9		4.6	B	77.4		< 1.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Oct-02	8160	E	1650	E	6940	E	404	E	13400	E	19400	E	3790	E	953	E		NA	3.7	B,E	21.7	E	1730	E		NA	6950	E	2980	E	1980	E	10.5	E	4.1	B,E	2880	E	NA	NA		NA	2.1	B,E	3.3	B,E	7.4	B	< 1.9	61.7		3.4	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Apr-03		NA	177		3100		157		24800		12100		620		1180			NA	63.6		29.5		124			NA	894		3140		2050		35.6		52.3		2630		NA	NA		NA	< 0.8	3.9	B	< 0.8		6.1	B	80		< 0.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Mar-04		NA		NA	2300			NA	7200			NA	338			NA	2040		NA				NA	2140		NA	1590		4650		2150		4.4	B	19		1980		NA	NA		NA	< 0.9	< 0.9	< 0.9	3.3	B	88		< 0.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Jun-05	4720			NA	778			NA	6450			NA	700			NA			NA	13.6			NA	222		NA	691		3090		2190		27.7		11.6		2730		NA	NA		NA	< 2.1	< 2.1	< 2.1	6.5	B	86		< 2.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Sep-06	2800			NA	1900			NA	9200			NA	860			NA			NA				5100			NA	1300		NA	110	1900		2200		51		290		2800		NA	NA		NA	0.75	J	1.4	J	0.62	J	3.2	J	25	J	< 50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Oct-07	5100			NA	3500			NA	4400			NA	2700			NA	14	J				NA		NA	920		NA	2000		2200		1900		140		560		2900		NA	NA		NA	< 50		5.6	J	< 50		3.8	J	96		< 50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
Mar-09	9000			NA	2200			NA	14000			NA	400			NA	1000					NA		NA	450		NA	610		3100		1900		150		290		3700		NA	NA		NA	< 50		1.8	J	< 50			NA	140		< 50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
May-10	14800	B		NA	1680			NA	2460	B		NA	223			NA	2230					NA	NA	1710	B		NA	399	B	4590	B	1960	B	90.1	B	392	B	4030	B		NA	NA		NA	1.2	J,B	3.1	B	0.3	J,B		NA	110	B	22	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Sep-11	8300	B	1500	B	780	B	530	B	4500	B	41400	B	160	B		NA	830	B	26	B		640	B	1200	B		NA	700	B	3500	B	2100	B	110	B	590	B	2700	B		NA	NA		NA	2.1	J,B	2.4	J,B	1.8	J,B	1.5	J,B		NA		NA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Nov-12	11600	B		NA	980	B		NA	2800	B		NA	560	B		NA	660	B				NA	1400	B		NA	280	B	3500	B	2000	B	19	B	3.8	B	2300	B		NA	NA		NA	1.3	J,B	2.6	J,B	0.89	J,B	0.75	J,B	200	B		NA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Mar-14	16900	B			NA	1900	B		2900	B		NA	740	B		NA	620	B				NA	1500	B		NA	100	B	3300	B	1900	B	51		4		3100		NA	NA		NA	1.6	J	41			ND		ND	130			ND																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
Nov-14		NA		NA		NA		NA		NA		NA		NA		NA			NA			NA		NA		NA		NA		NA		NA			NA		NA		NA	26.3		28.9		190			NA		NA		NA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Jul-15	12550			NA	363.3			NA	271.3			NA	275.9			NA	65.1					NA	65.1			NA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

Notes:

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

ND = Not Detected

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC TOGS 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

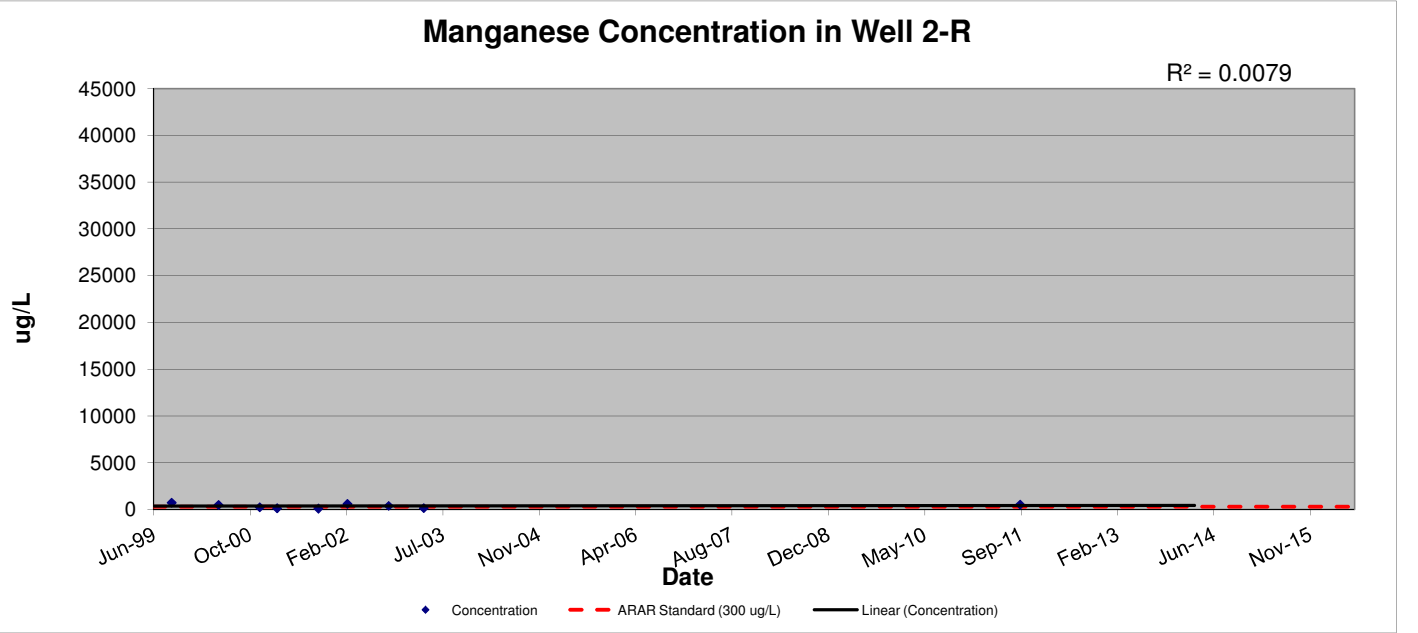
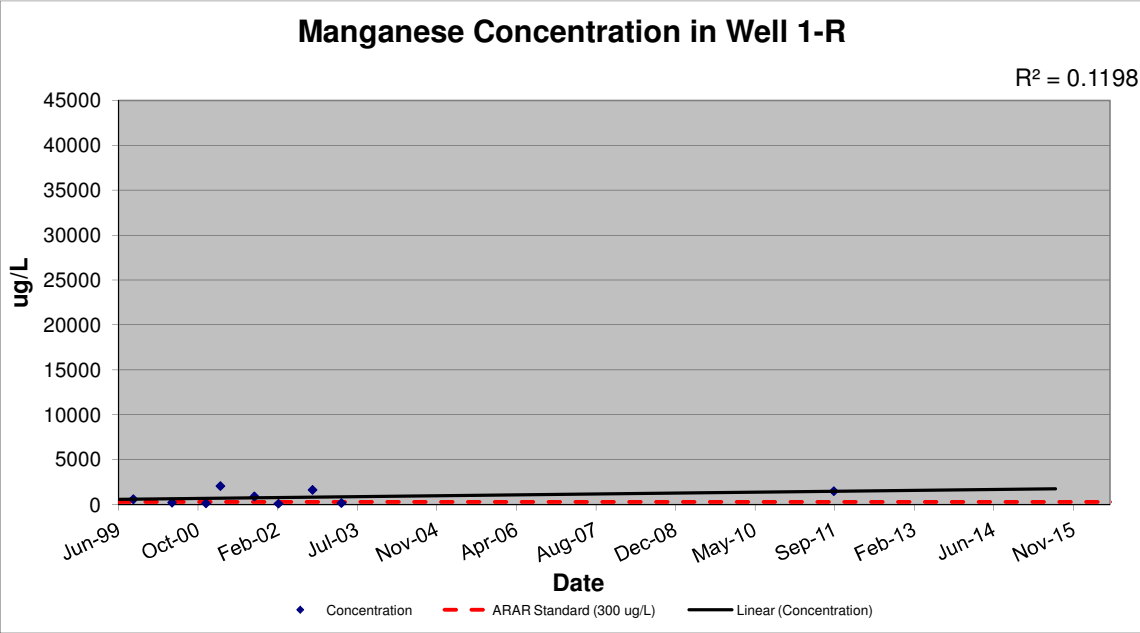
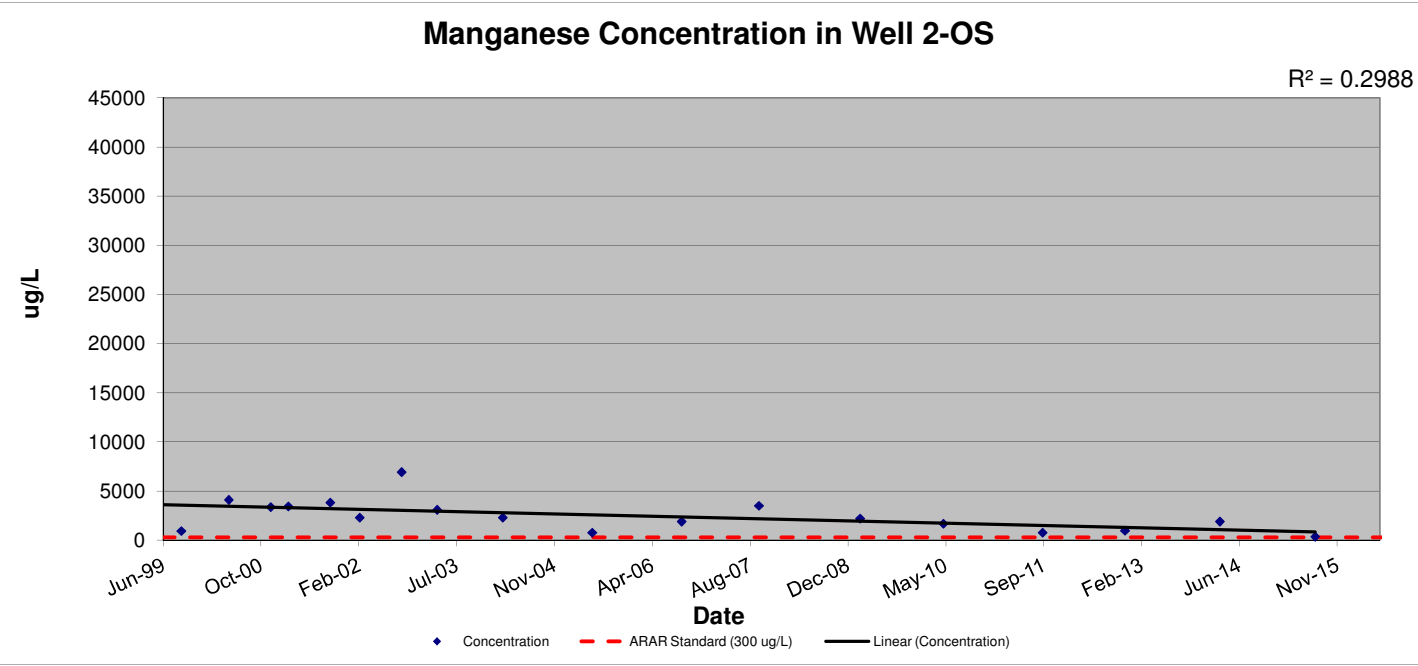
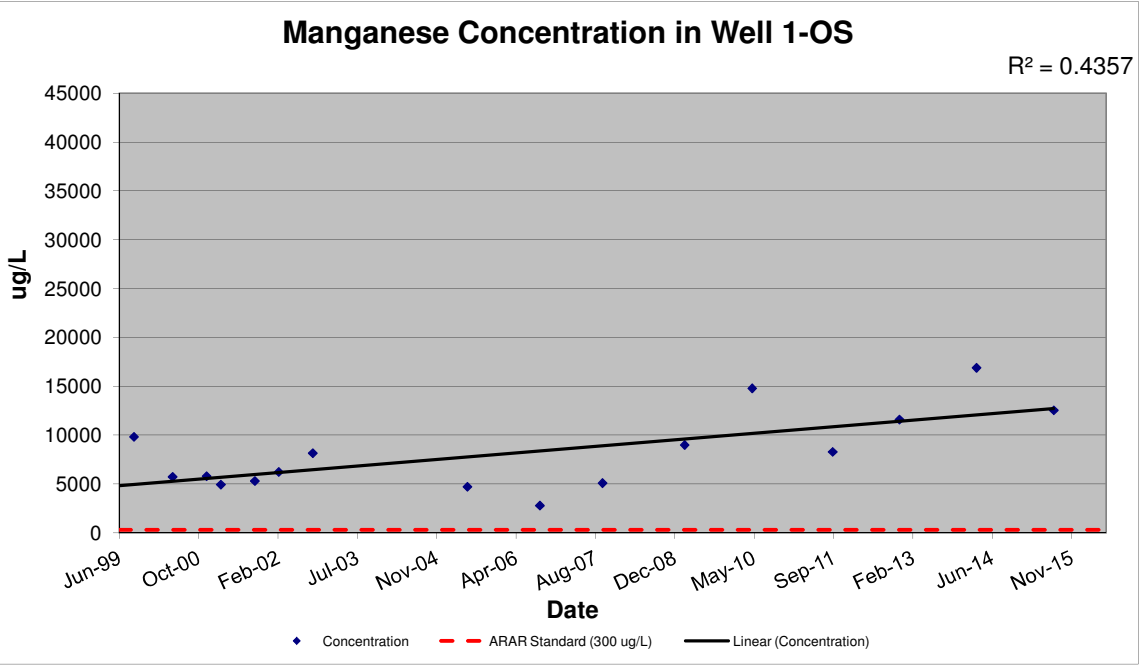
Laboratory Qualifier Definitions

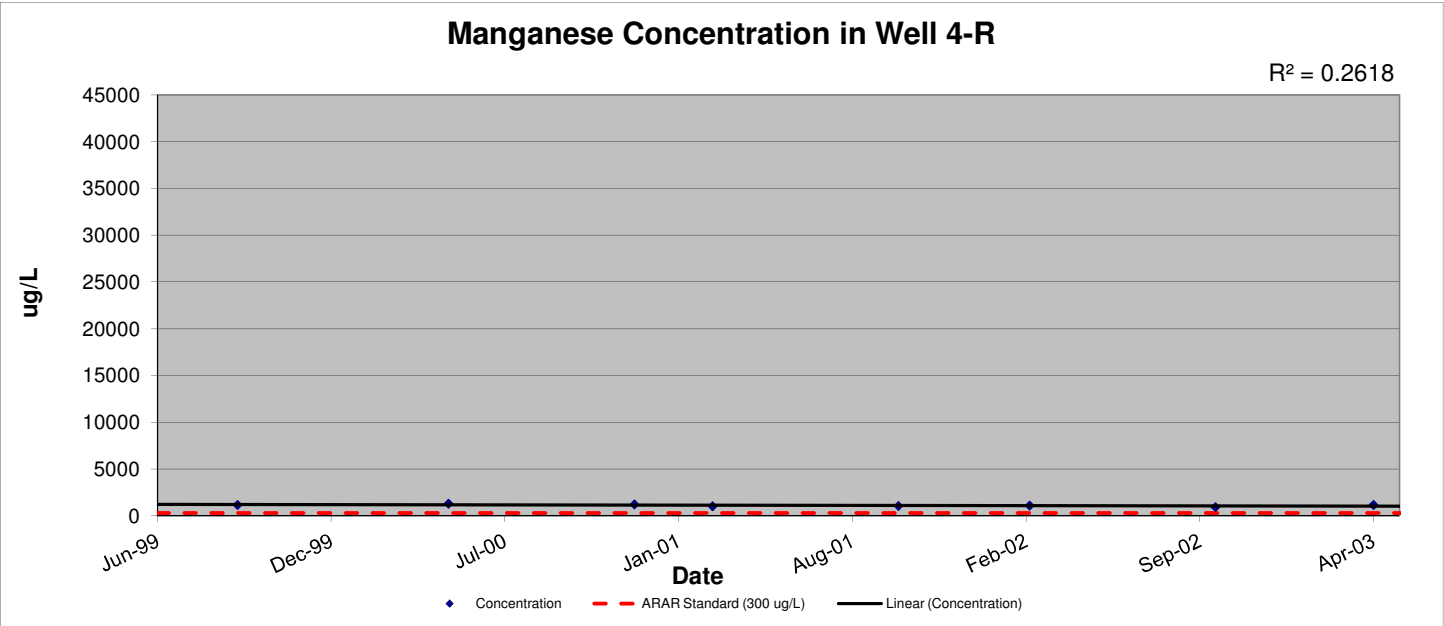
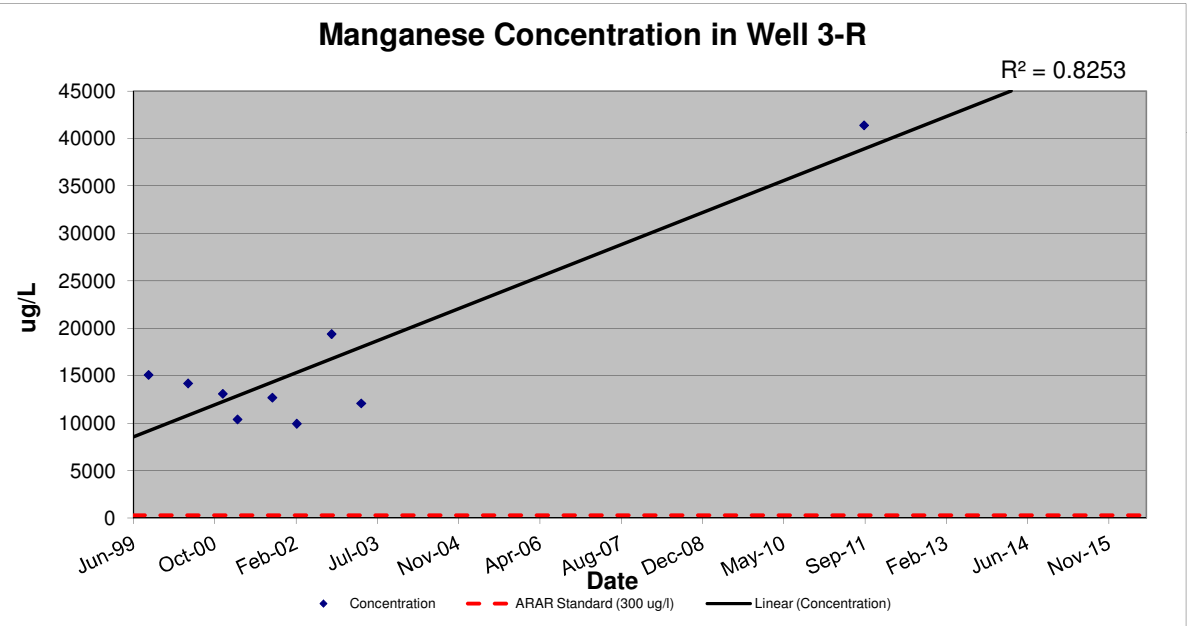
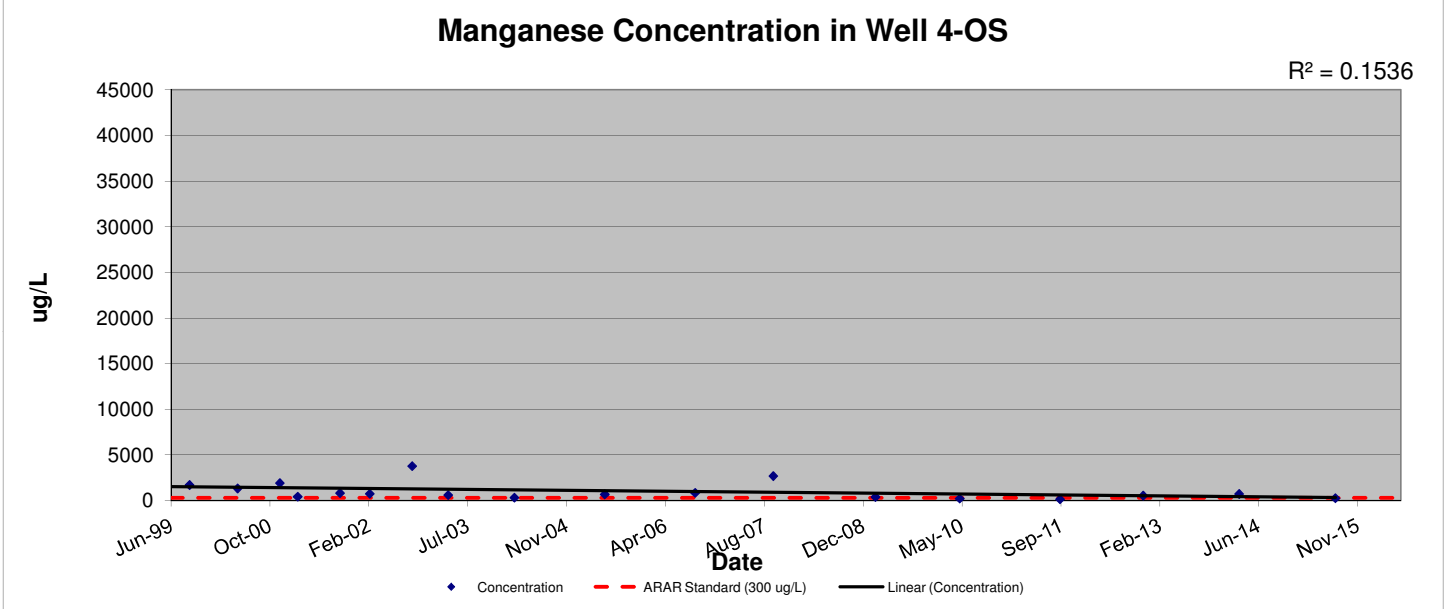
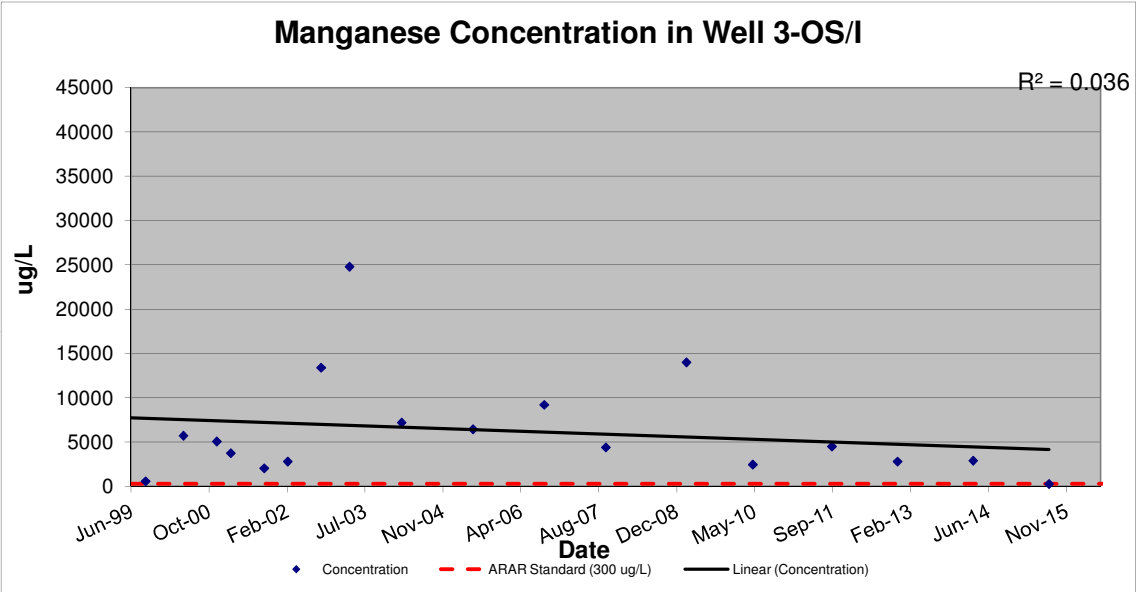
B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

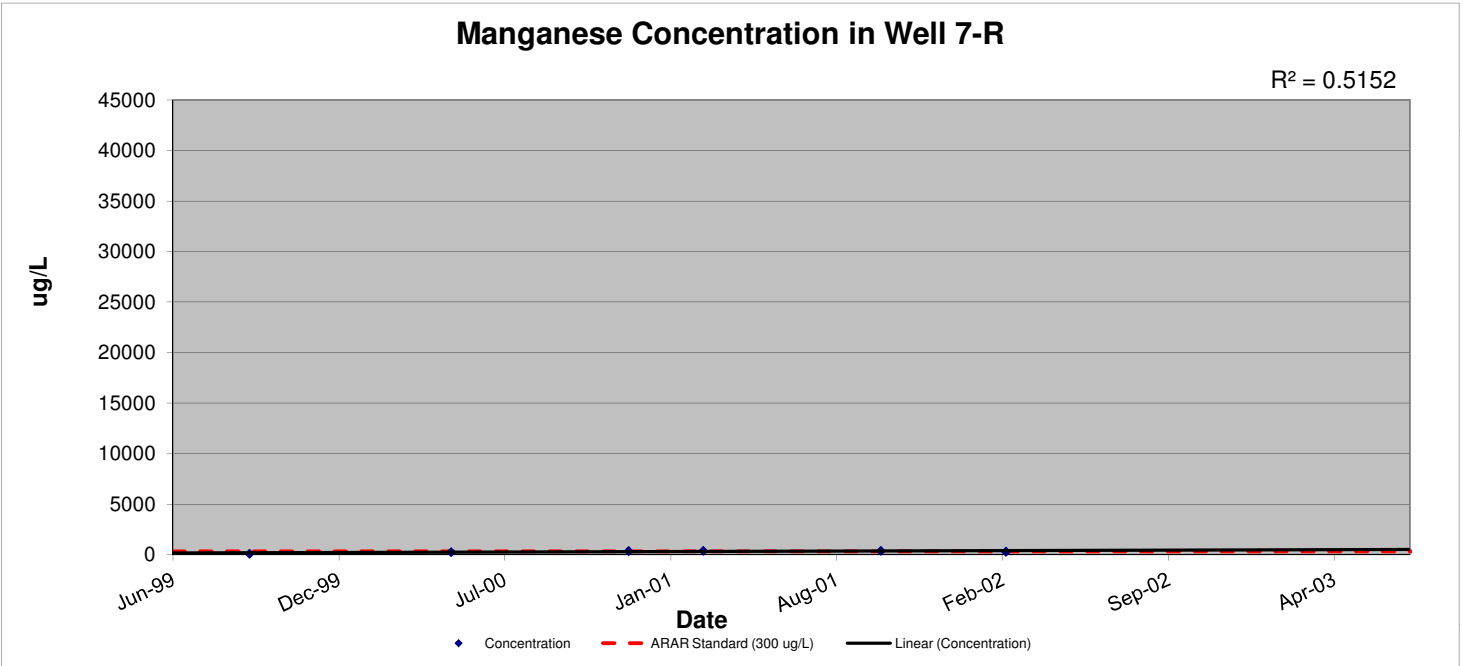
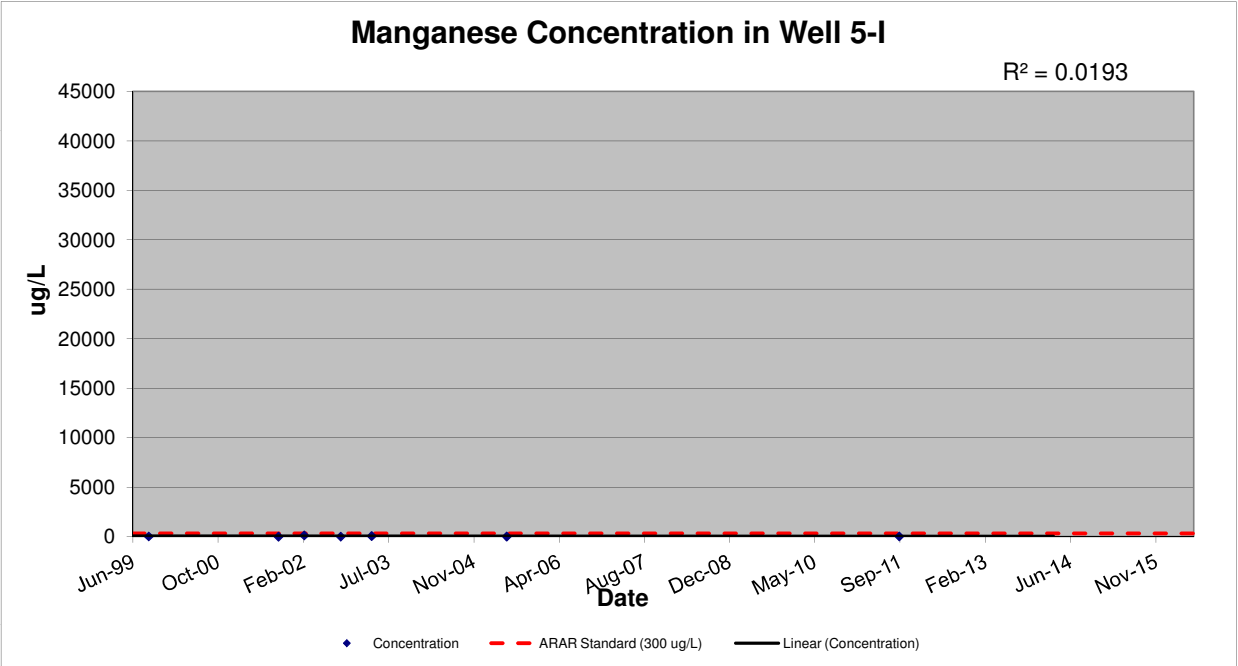
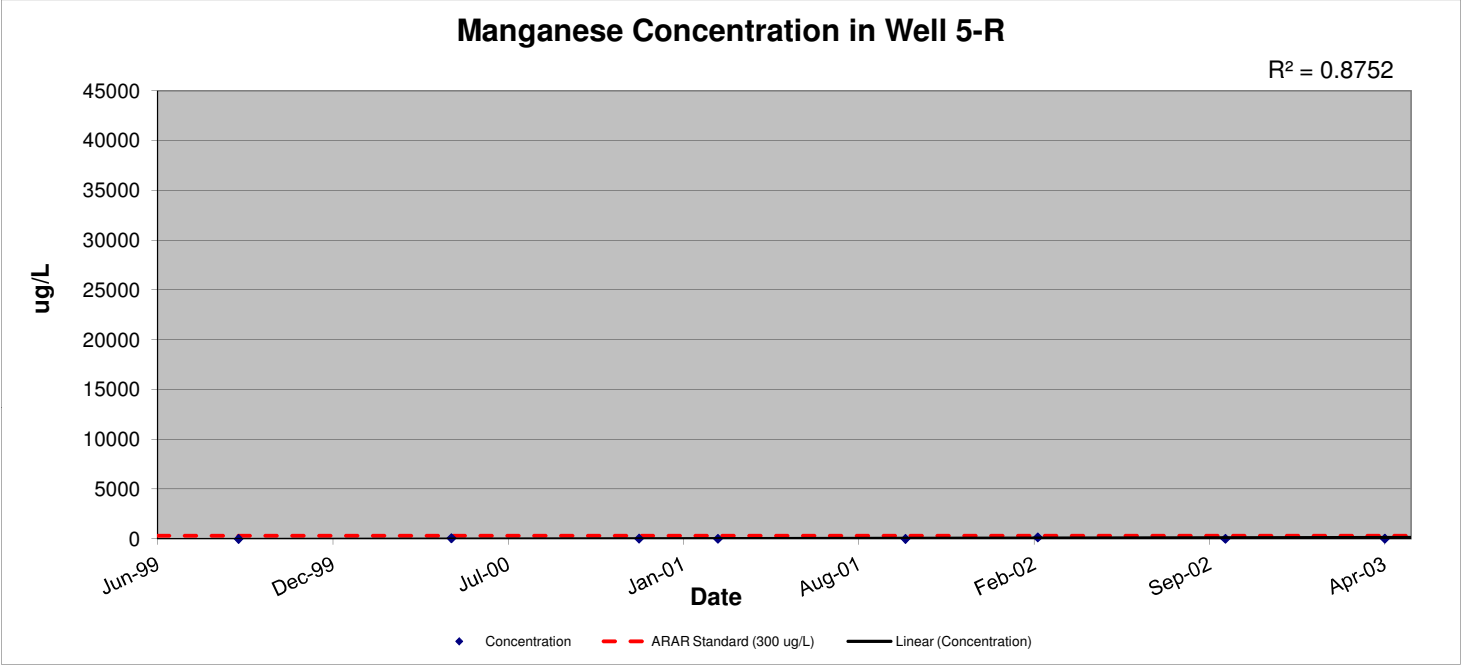
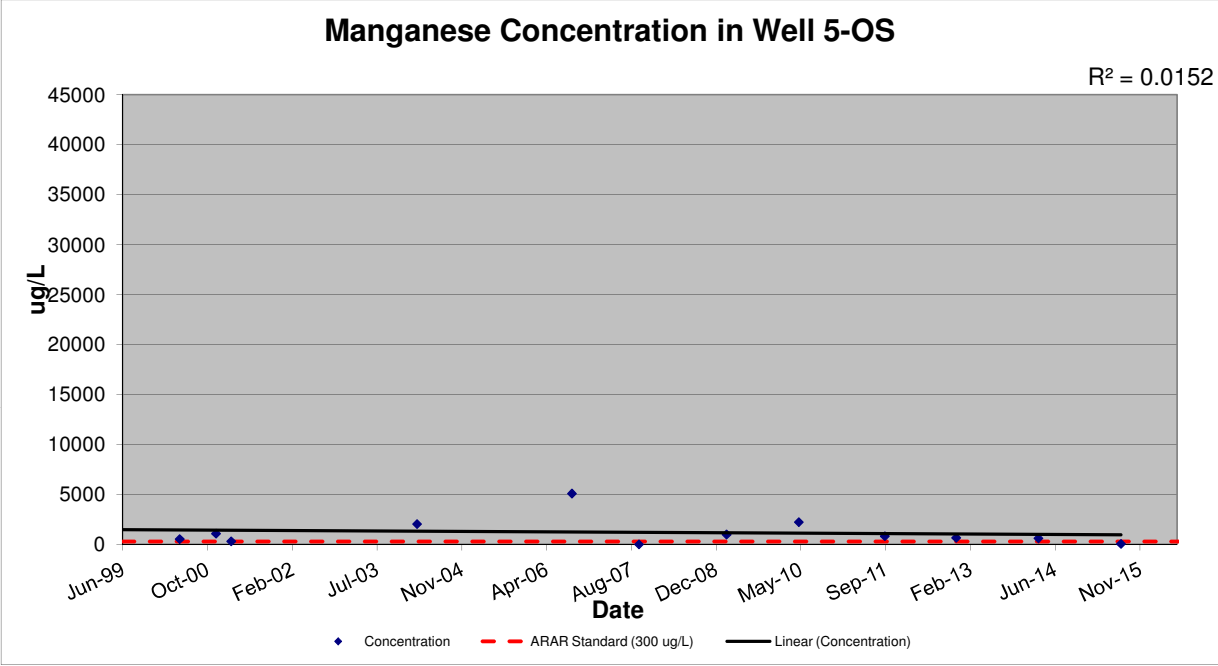
E = Indicates an estimated value because of the possible presence of interference.

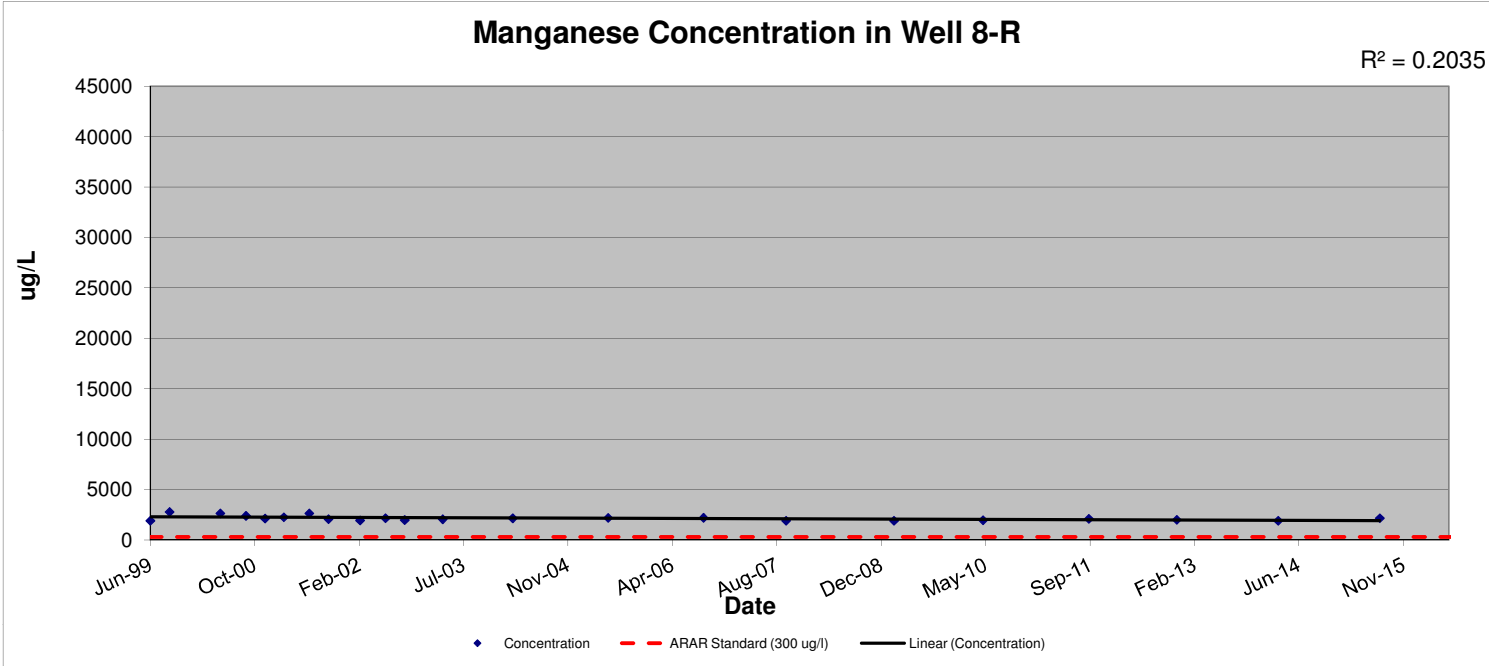
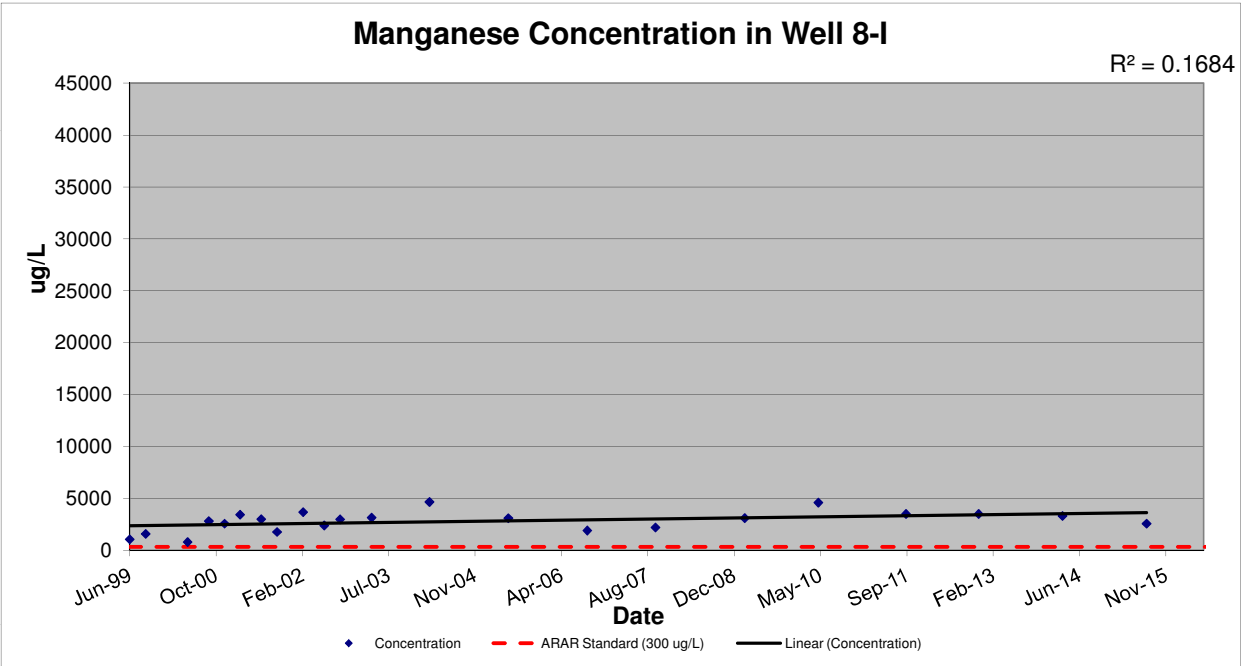
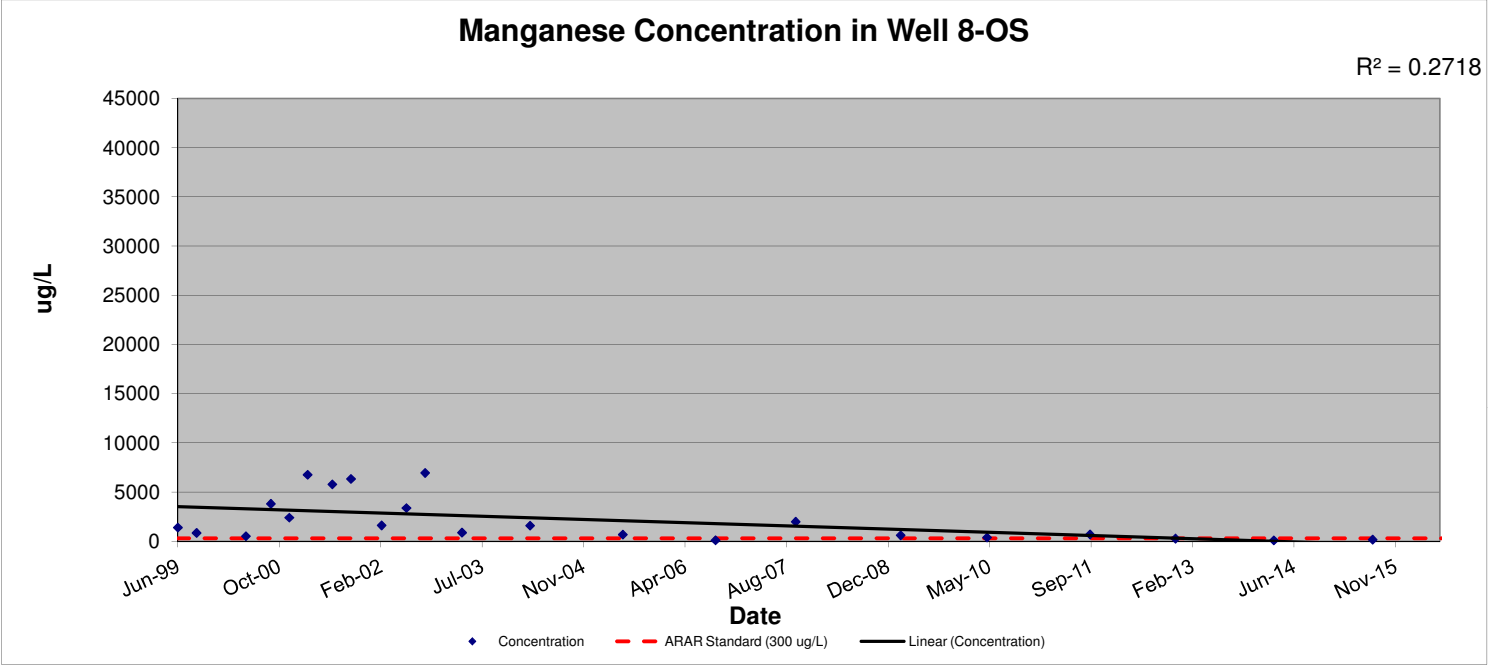
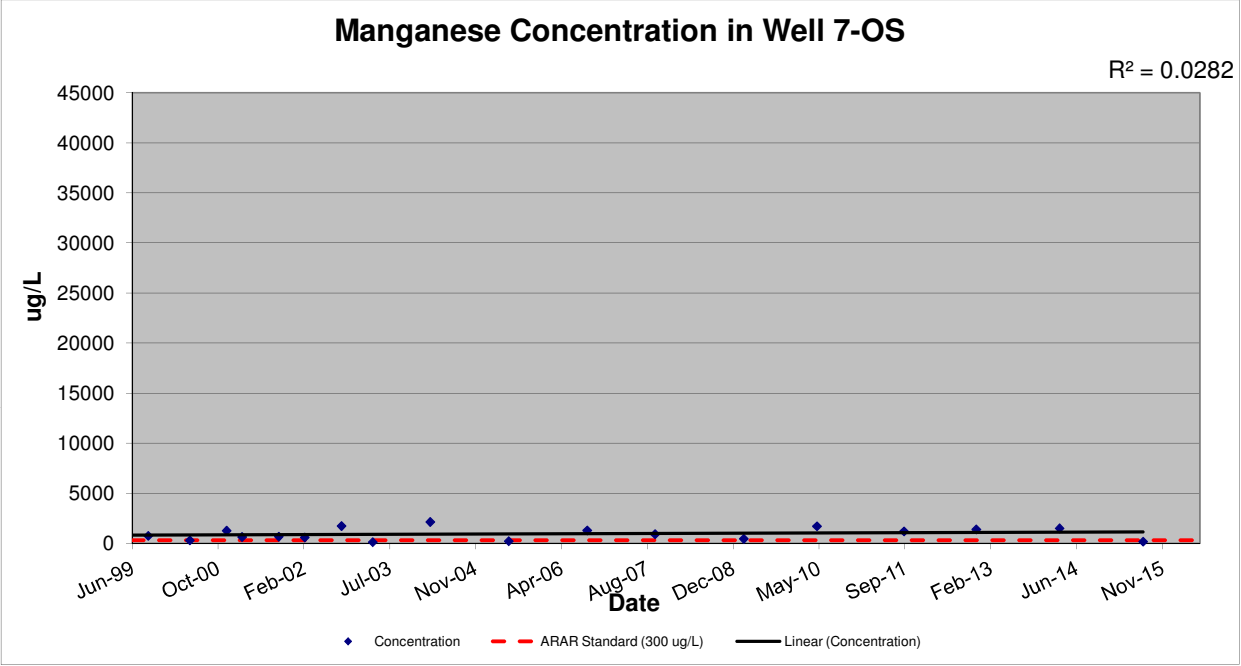
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

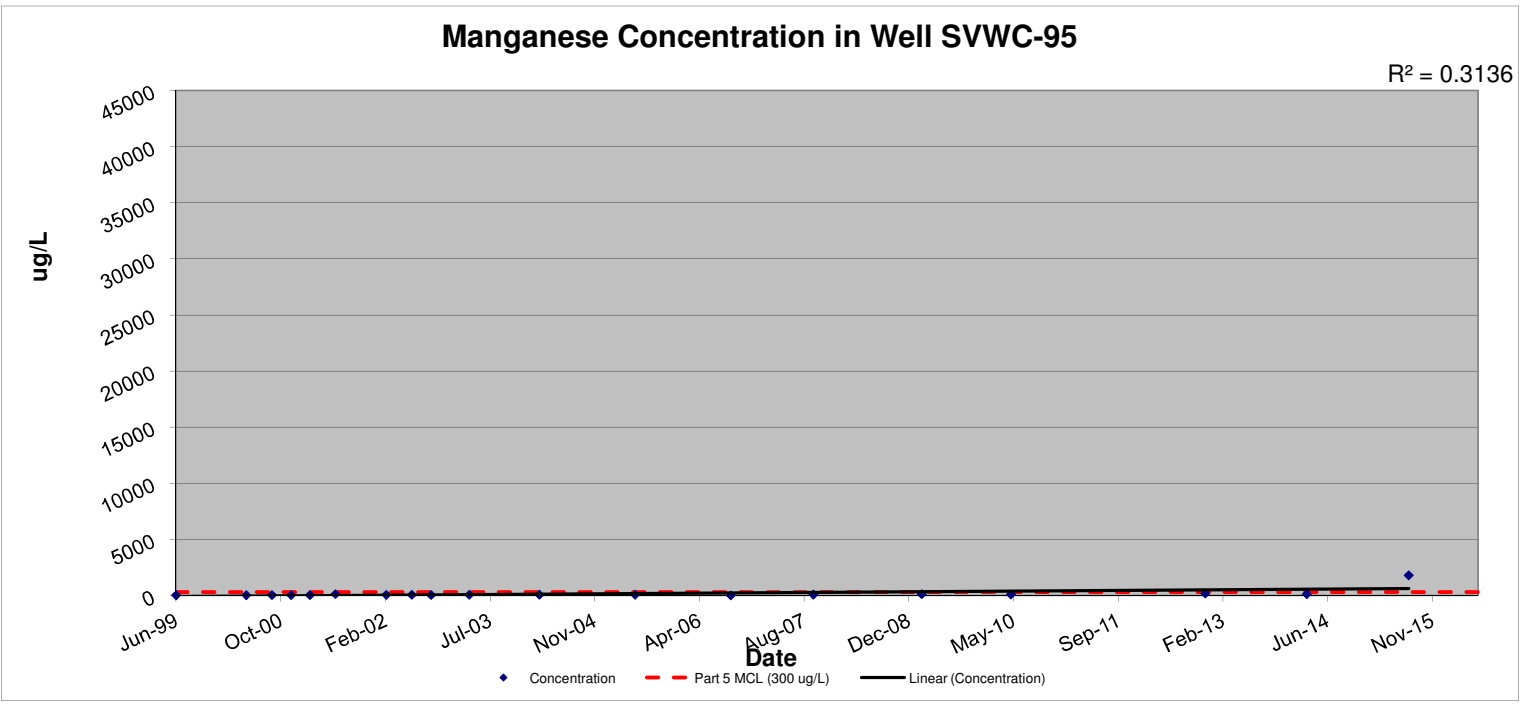
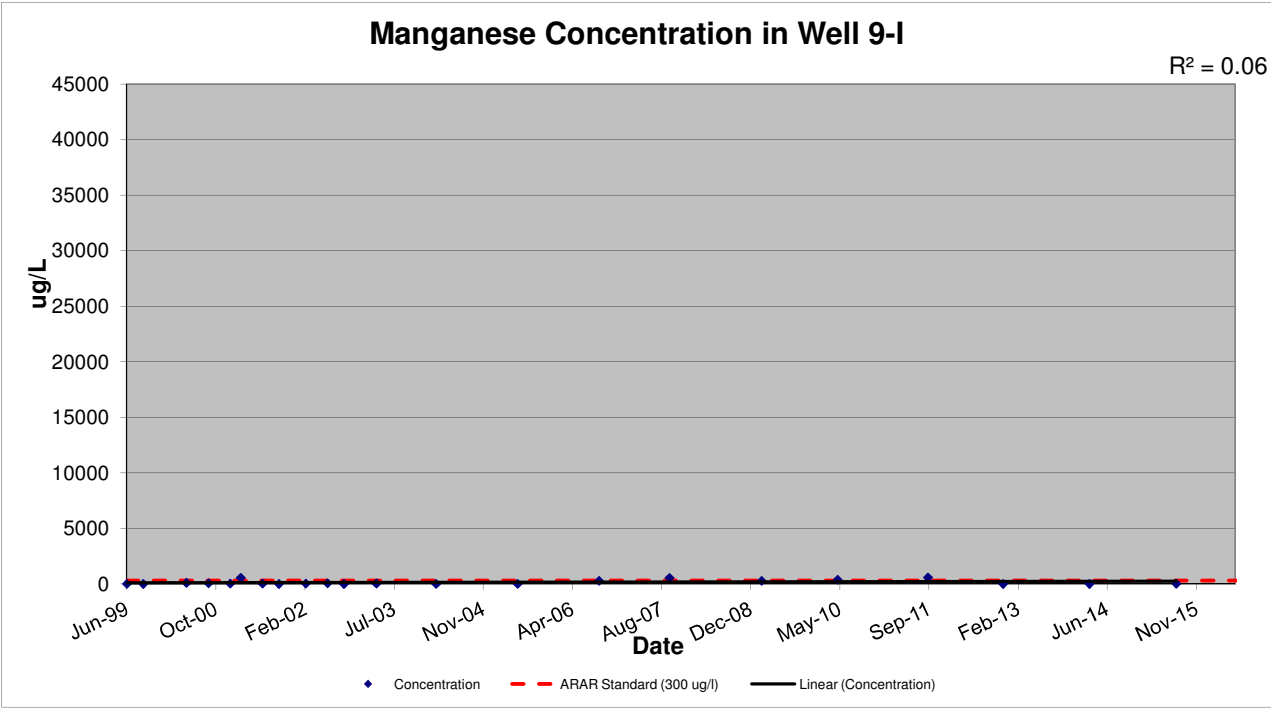
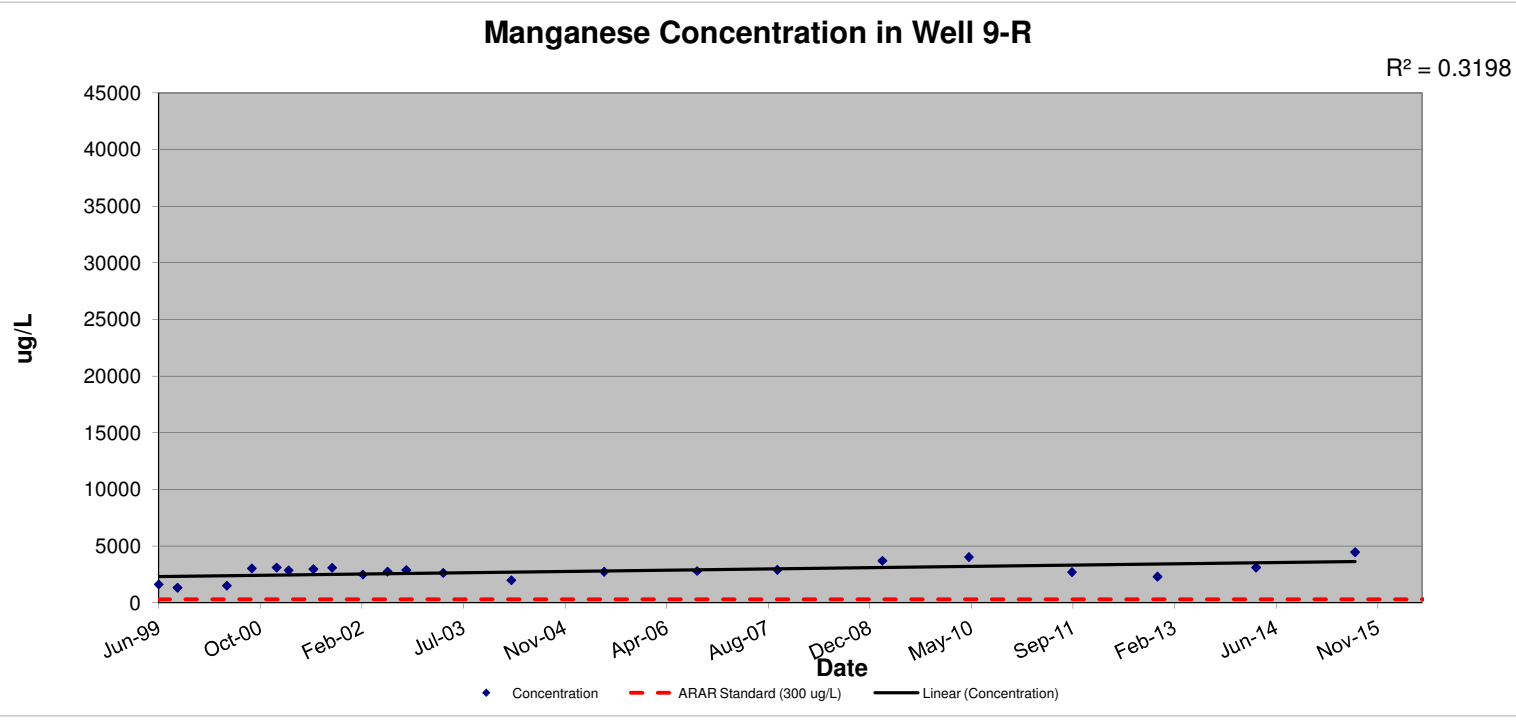
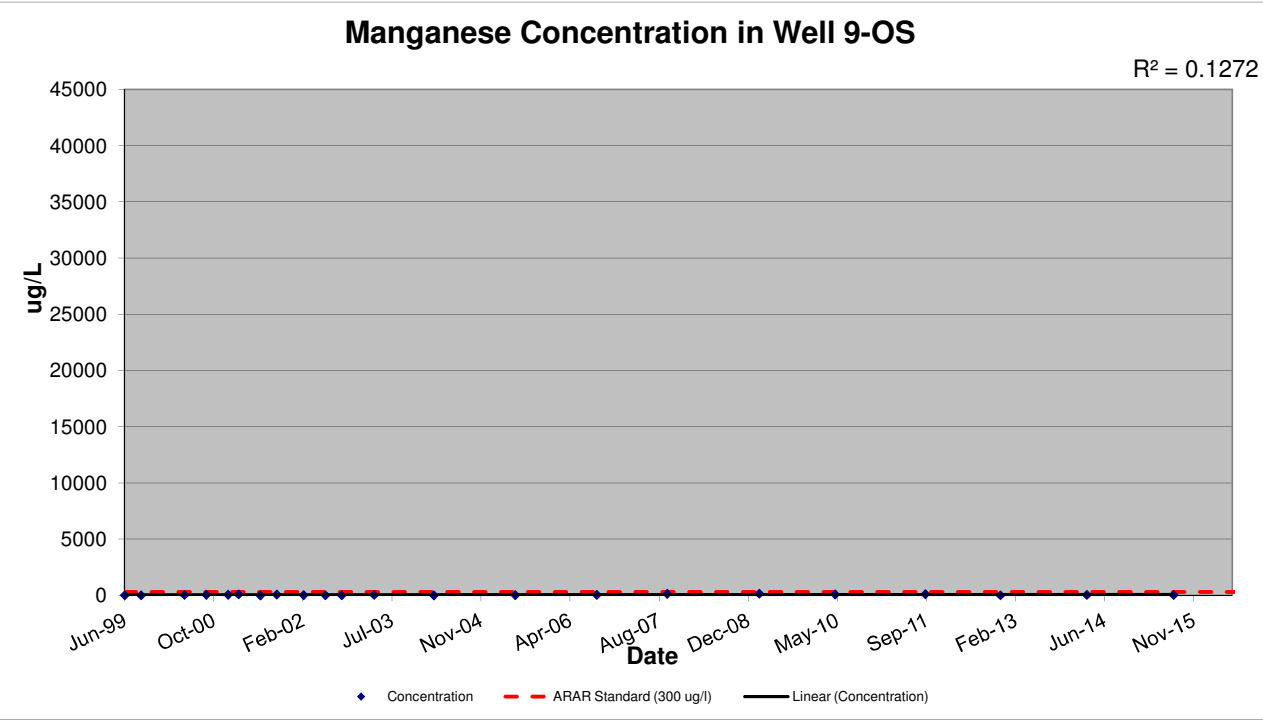
N = Spiked sample recovery not within control limits.











Town of Ramapo Landfill

TABLE C-12

Nickel (ug/L)

ARAR Standard = 100 ug/L

USEPA MCL = Not Available

Part 5 MCL = Not Available

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96																														
DATE																																																										
Jun-99		NA		NA		NA		NA		NA		NA		NA	1.1		34		15.7		ND	2.2		6.6			NA		NA		NA	1.1		1.2		2.7		4.1		3.3		3.8																
Sep-99		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA																
May-00	140		16.2	B	215		4.1	B	156		73.7		22.4	B	1.5	B	35	B		NA	8.2	B	9.4	B	1.9	B	2.2	B	5.9	B	16.2	B	2.4	B	4.6	B	3.7	B		NA		NA	< 1.1		< 1.1		2.6	B	< 1.1		< 1.1		1.3	B				
Sep-00		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA												
Dec-00		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA										
Jan-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA										
Mar-01	82.4		27.7	B	116		< 1.7		68.7		28.2	B	8.8	B	1.9	B	19.5	B		NA	2.3	B	10.3	B	2.2	B	19.4	B	40.4		22.6	B	4.7	B	18.2	B	5.7	B		NA		NA		NA	< 1.7		< 1.7		< 1.7		< 1.7		< 1.7					
Jul-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA										
Oct-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA										
Mar-02	28.8	B	38.2	B	34.9	B	9.5	B	128		8.6	B	5.4	B	< 2.8			NA	5	B	11.7	B	8.6	B	< 2.8		11.1	B	7	B	20.9	B	< 2.8		< 2.8		< 2.8		< 2.8		< 2.8		< 2.8		< 2.8		< 2.8		< 2.8									
Jul-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA										
Oct-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA										
Apr-03		NA	2.2	B	108		3.9	B	932		5.1	B	14.8	B	< 1.9			NA	2.7	B	2.1	B	3.5	B		NA	6.8	B	14.3	B	15	B	< 1.9		< 2.7	B	< 1.9			NA		NA		NA	< 1.9		< 1.9		< 1.9		< 1.9							
Mar-04		NA		NA	56.8			NA	434			NA	7.3	B		NA	132	E		NA		NA	41.8			NA	7.9	B	29.4	B	15	B	< 1.7		< 1.7		< 1.7			NA		NA		NA	< 1.7		< 1.7		42.7		< 1.7		1.9	B	< 1.7			
Jun-05	9.2	B		NA	52.1			NA	1460			NA	87.8			NA	< 2.3			NA	< 2.3			NA	61.9		15.6	B	11.5	B	< 2.3		< 2.3		< 2.3		< 2.3			NA		NA		NA	< 2.3		< 2.3		< 2.3									
Sep-06	270			NA	80			NA	1300			NA	40	J		NA	370			NA	NA	26	J		NA	5.8	J	20	J	36	J	6.7	J	18	J	1.8	J		NA		NA		NA	50		< 50		< 50		1.4	J	< 50						
Oct-07	750			NA	150			NA	730			NA	68			NA	14	J		NA	NA	26	J		NA	14	J	24	J	15	J	34	J	31	J	3.2	J		NA		NA		NA	< 50		7	J	5.5	J	< 50		1.2	J	< 50				
Mar-09	640			NA	490			NA	810			NA	44	J		NA	89			NA		NA	11	J		NA	17	J	18	J	15	J	28	J	19	J	2.5	J		NA		NA		NA	< 50		< 50		< 50		< 50		< 50					
May-10	527			NA	236			NA	492			NA	61.5			NA	147			NA		NA	28.5			NA	10.3		13.7		10.6		13.4		23.4		3.4	J		NA		NA		NA	< 10		< 10		< 10			NA	< 10		7.5	J		
Sep-11	880		130		410		4.3	J	1600		260		34			NA	56		4.4	J	61		37			NA	28		6	J	10		20		32		2.9	J		NA		NA		NA	< 10		< 10		< 10		<10			NA		NA		
Nov-12	180			NA	170			NA	650			NA	37			NA	67			NA		NA	29			NA	11		12		10		7.2	J	< 10		2.9	J		NA		NA		NA	< 10		< 10		< 10		< 10		< 10			NA		NA
Mar-14	440			NA	240			NA	400			NA	42			NA	47			NA		NA	36			NA	5.9	J	13		11		15			ND	2	J		NA		NA		NA		ND		ND		ND		6.7	J					
Nov-14		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA						
Jul-15	405.7			NA	152.6			NA	82.5			NA	37.5			NA	12			NA		NA	7.6			NA	12.9		13.8		14.4		3.4		3.6		3.9		3.6		2.2		14.8		0.5	J	0.6	J	0.54	J	0.9	J	4.99		0.158			

Notes:

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

ND = Not Detected

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC TOGS 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

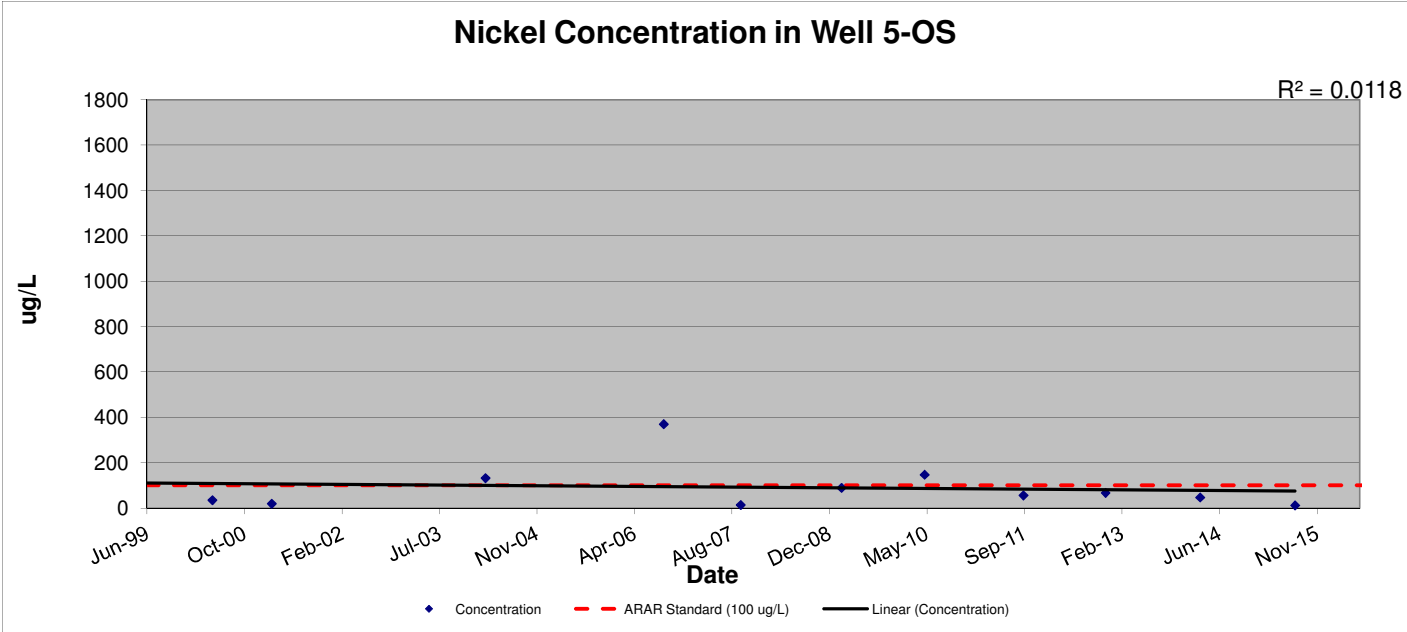
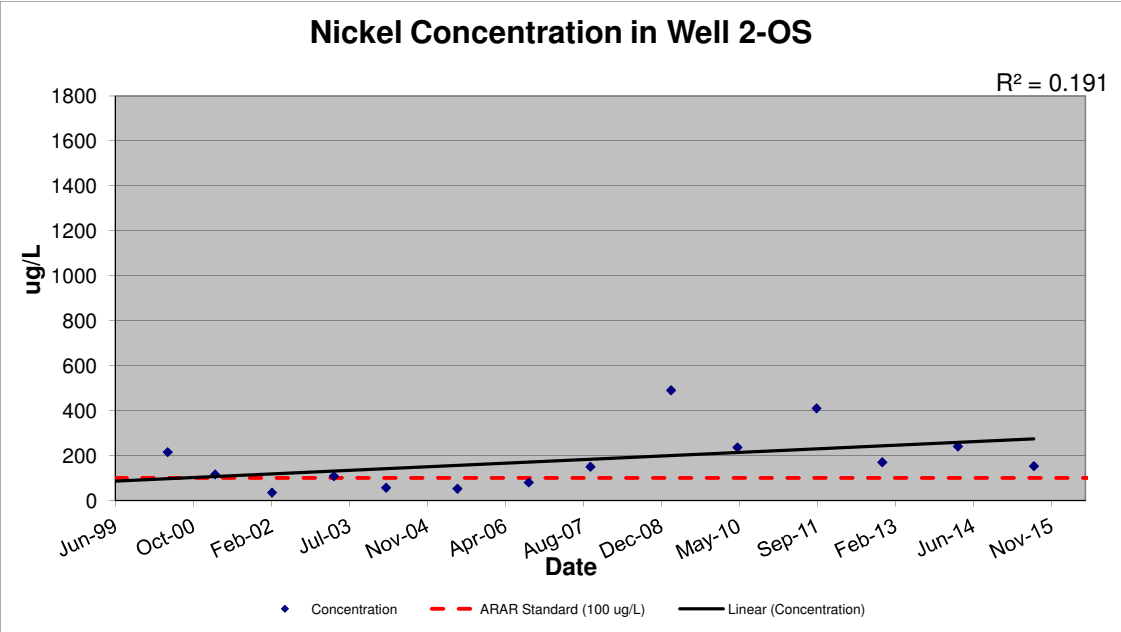
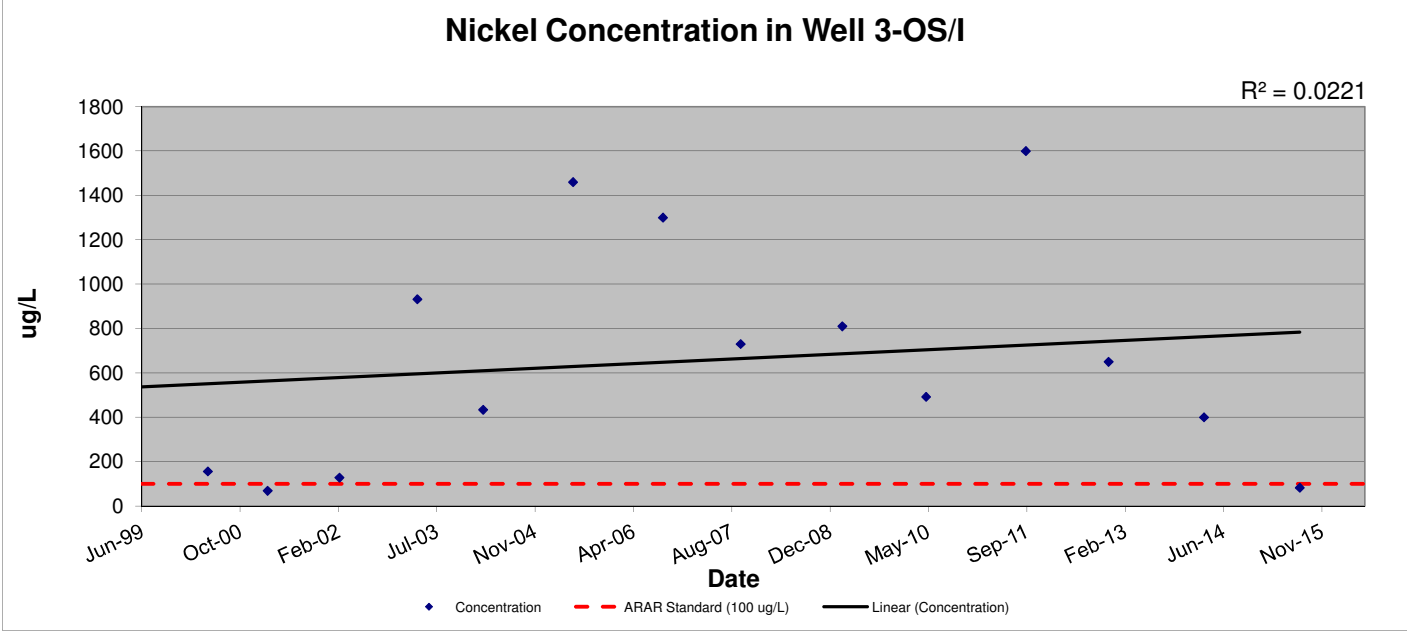
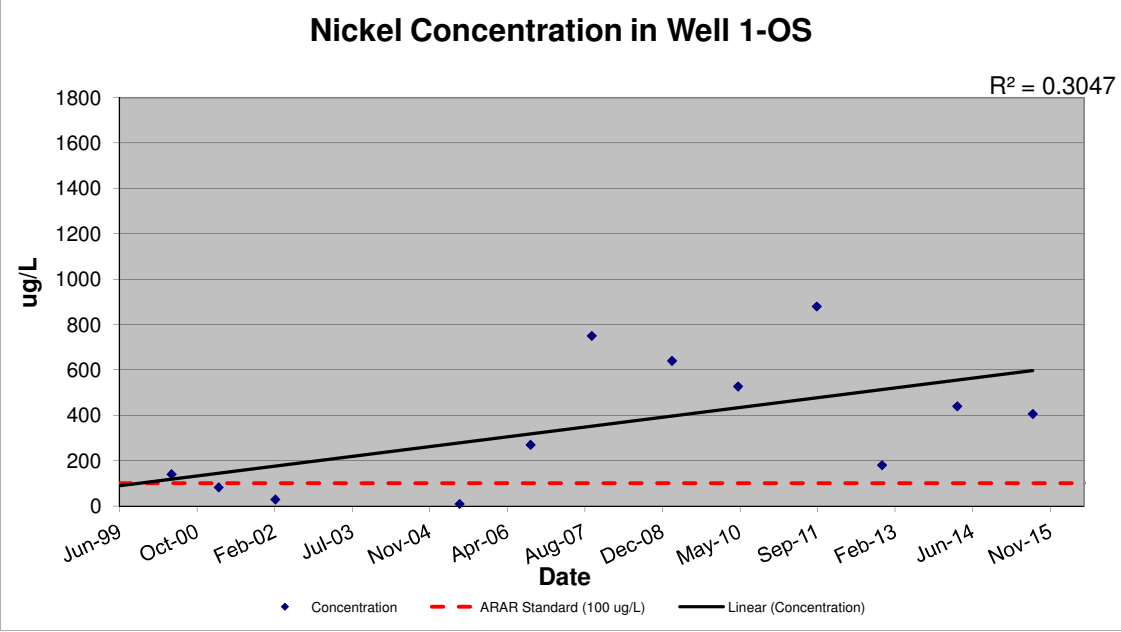
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Laboratory Qualifier Definitions

B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

E = Indicates an estimated value because of the possible presence of interference.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.



Town of Ramapo Landfill
TABLE C-13
Sodium (ug/L)
ARAR Standard = 20,000 ug/L
USEPA MCL = Not Available
Part 5 MCL = ⁽¹⁾

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96																												
DATE																																																								
Jun-99		NA		NA		NA		NA		NA		NA		NA		4980		16100		43400		5500		5610		13100			NA		NA		NA		4300		13200		31600		33400		32900		30400											
Sep-99		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA										
May-00	36400		29000		9960		10100		41600		43300		30500		13800		5530		NA	4480		19800		13900		3480	B	15000		71100		5080		NA		4400	B	14300		NA		NA		5430		9110		31400		32500		28800		35900		
Sep-00		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA						
Dec-00		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA						
Jan-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA						
Mar-01	42100		19100		9460		7760		38700		34900		24100		13700		4770	B		NA	3740	B	16900		11300		14200		90500		52400		3670	B	4950	B	27500		NA		NA		NA		6130		9330		36000		38700		38500		35200	
Jul-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA						
Oct-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA						
Mar-02	47800		69500		9450		7240		29800		32300		23500		9780		NA	4480		4860		12500		10500		5150		56200		74400		5120		6060		22200		NA		NA		NA		7160		8720		56000	E	48900	E	41900	E	43500	E	
Jul-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA						
Oct-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA						
Apr-03		NA	24200		7130		7670		31500		38000		26200		12900		NA	4540	B	4190	B	13100		NA	10900		46500		52200		4530	B	5830		20600		NA		NA		NA		8690		9000		39800		43000		34700		4040			
Mar-04		NA		NA	11000		NA	22600	E		NA	54600		NA	8870		NA	NA	5000	E		NA	17100	E	110000	E	47300	E	3220	B,E	3690	B	14600	E		NA		NA		NA		5410	E	7730	E	33800	E	35600	E	27700	E	30100	E			
Jun-05	37100	E		NA	8680	E		NA	29100	E		NA	20300		NA		NA	2880	B,E		NA	9190		NA	8400		124000		42200		4160	B	5530		22500		NA		NA		NA		11500		5400		44100		42300		41700		47400			
Sep-06	62000			NA	11000		NA	29000			NA	33000		NA	14000		NA	NA	7000		NA	28000		73000		46000		5.3		9400		28000			NA		NA		NA		14000		7400		52000		47000		36000		47000					
Oct-07	76000			NA	12000		NA	23000			NA	24000		NA	4100		NA	NA	7700		NA	15000		55000		48000		7200		9800		35000			NA		NA		NA		12000		6100		60000		52000		53000		56000					
Mar-09	97000			NA	11000		NA	36000			NA	48000		NA	8100		NA	NA	9700		NA	41000		50000		42000		8300		15000		44000			NA		NA		NA		12000		7400		52000			NA	49000		54000					
May-10	111000			NA	9300		NA	36900			NA	47900		NA	8000		NA	NA	11700		NA	30700		75600		41400		8200		14200		59300			NA		NA		NA		18600		8600		41600			NA	47200		48600					
Sep-11	101000		23900	B	10900		9700		57200		59000		60200		NA	7300		4600		6200	B	12500		NA	19800		56800	B	34600	B	11200	B	17100	B	48900	B		NA		NA		NA		68500	B	6900	B	45600	B	40400	B		NA		NA	
Nov-12	102000			NA	13100		NA	36300			NA	64500		NA	7300		NA	15900		NA	10800		97900		37800		9800		11400		45500			NA		NA		NA		32500		6800		45100		45900		42500			NA		NA			
Mar-14	117000	B		NA	10500	B		NA	35300			NA	71900		NA	7000			NA		14900		NA	24500	B	91800	B	37800		5500		13000		37600			NA		NA		25600	B	7200		54100	B	50100	B	48600	B	56100	B				
Nov-14		NA		NA	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		5740		17800		3220				NA		NA		NA		NA		NA		NA		NA		NA			
Jul-15	118000			NA	15100		NA	20500			NA	35600		NA	4090		NA	NA	15800		NA	31000		122000		42800		9770		9960		47200		2150		4210		6950		35000		7900		58000		66000		61000		64000						

Notes:

⁽¹⁾ While there is no Part 5 MCL for sodium, people on severely restricted diets should consult with the County Health Department for guidance if the reported sodium concentration is higher than 20,000 mg/L.

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

ND = Not Detected

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

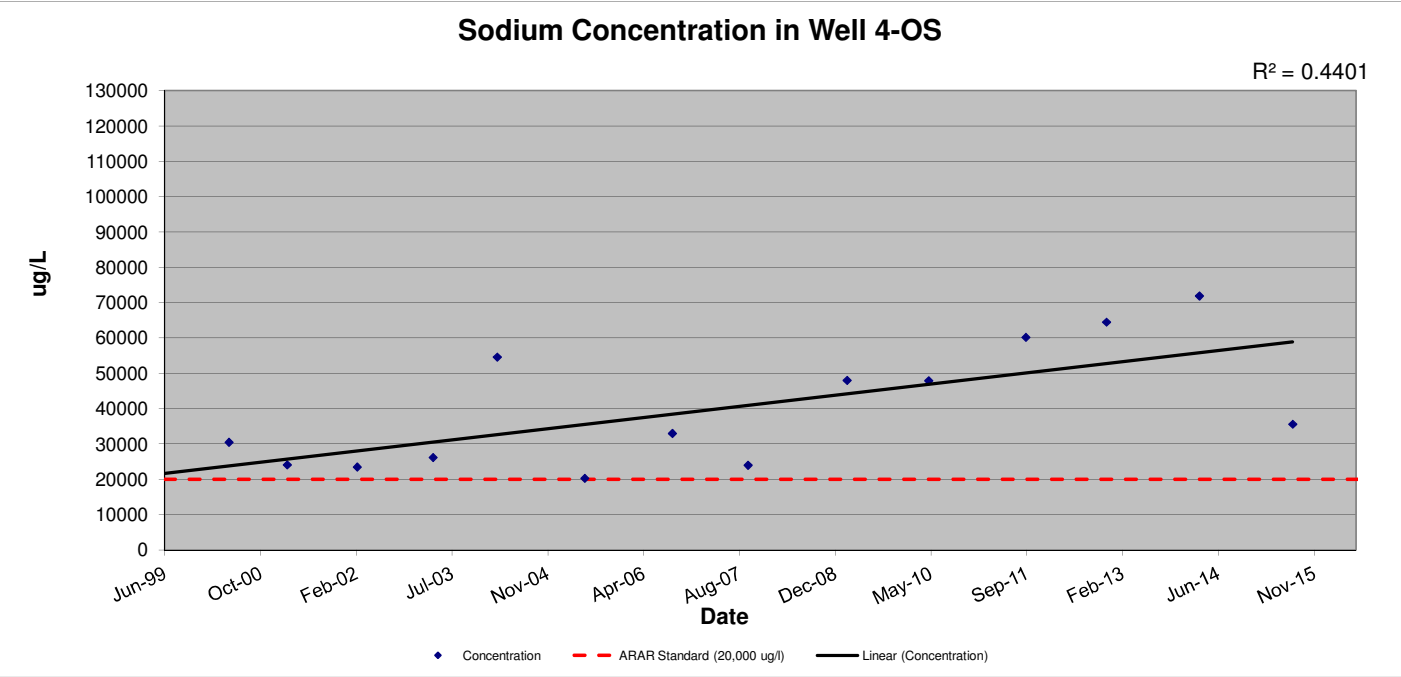
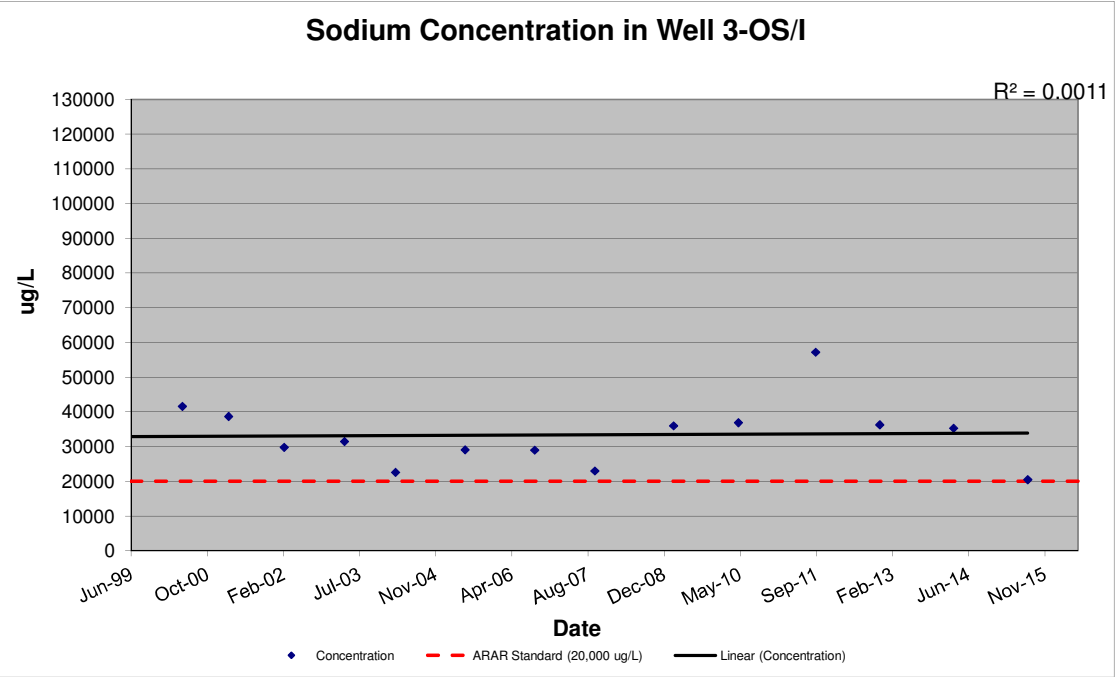
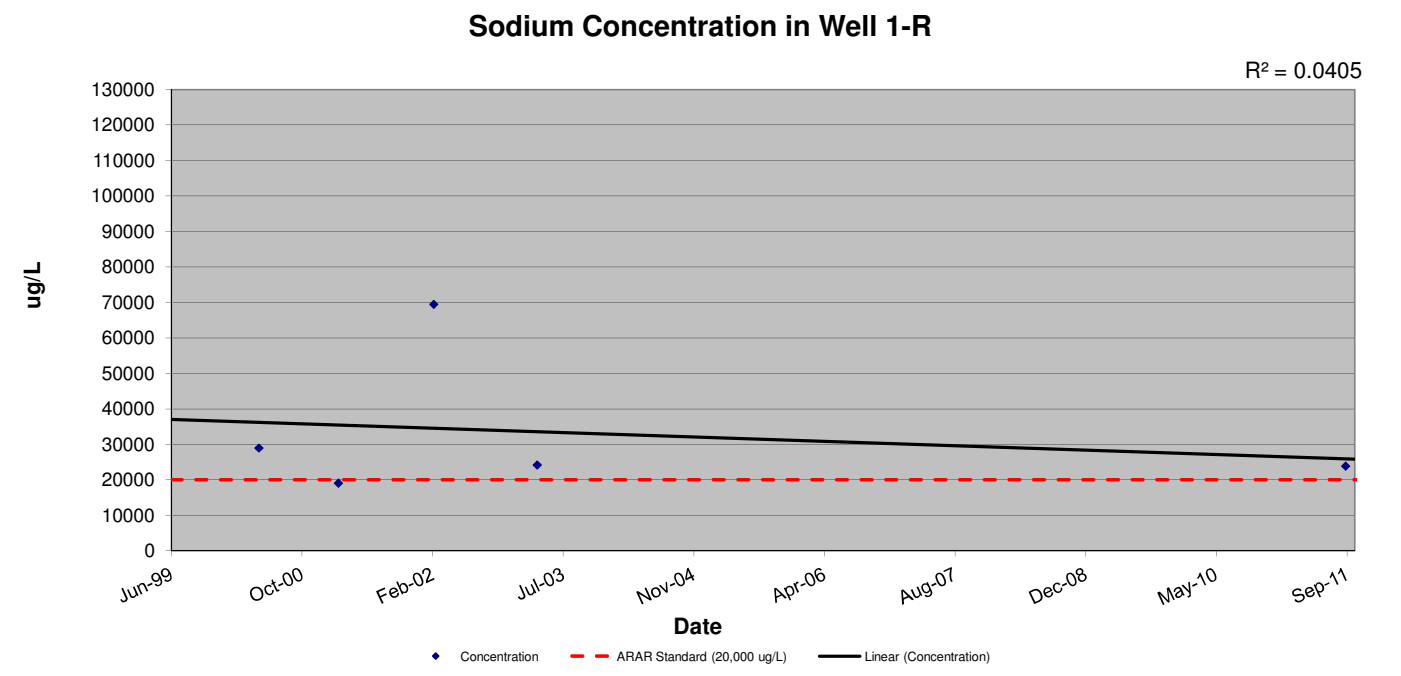
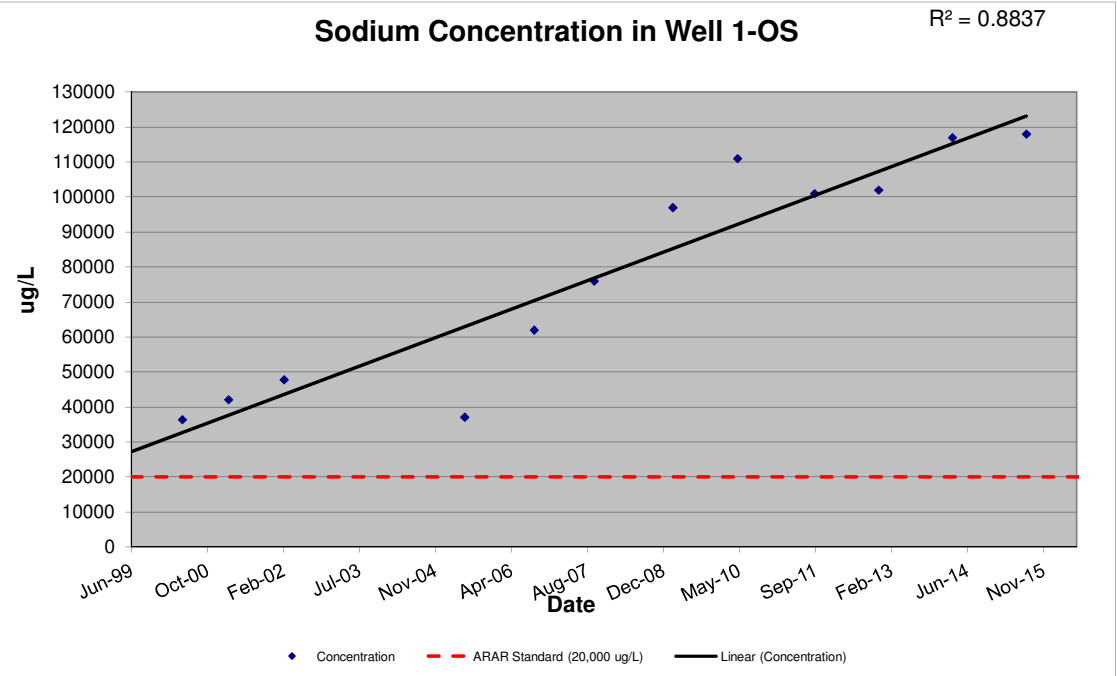
ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC TOGS 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

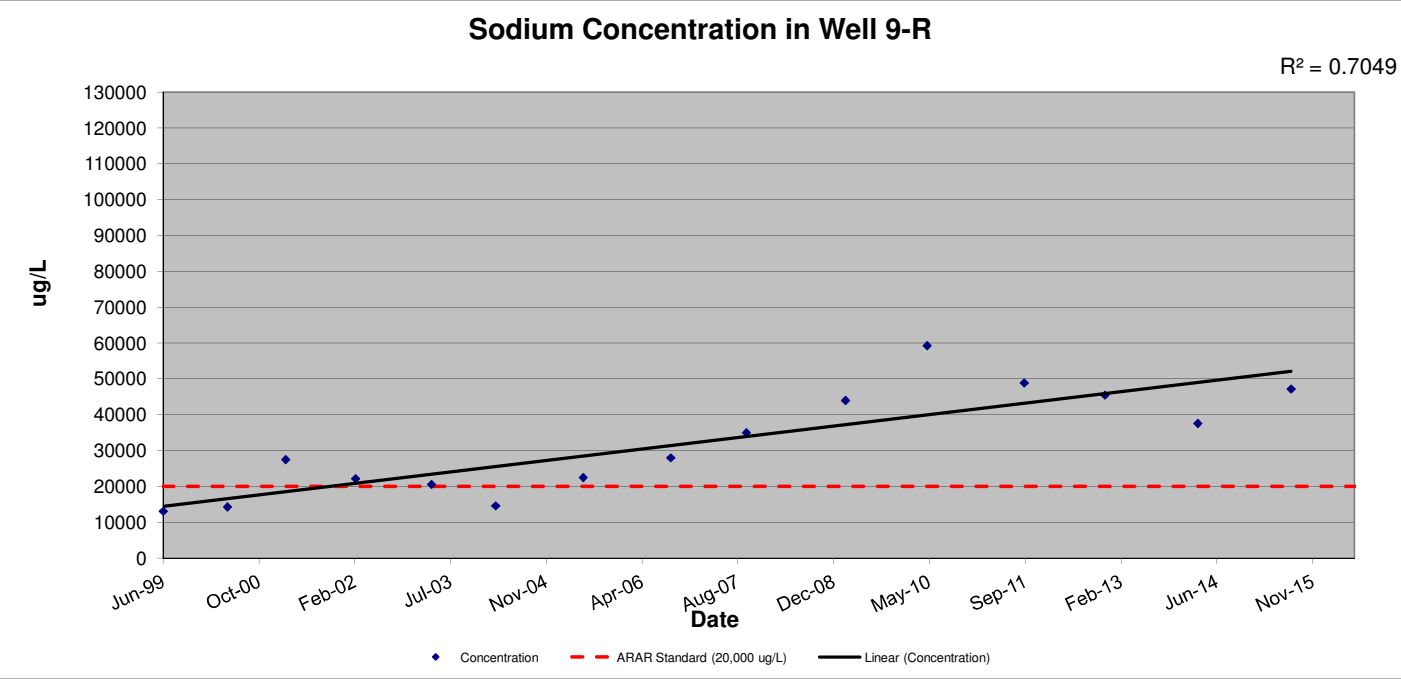
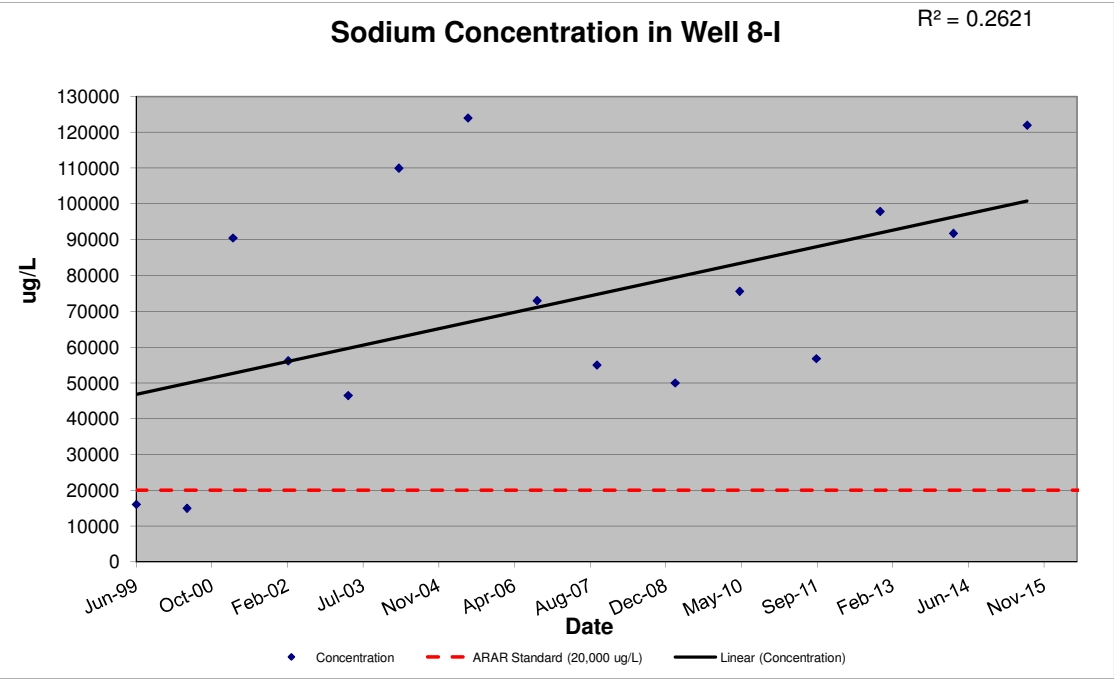
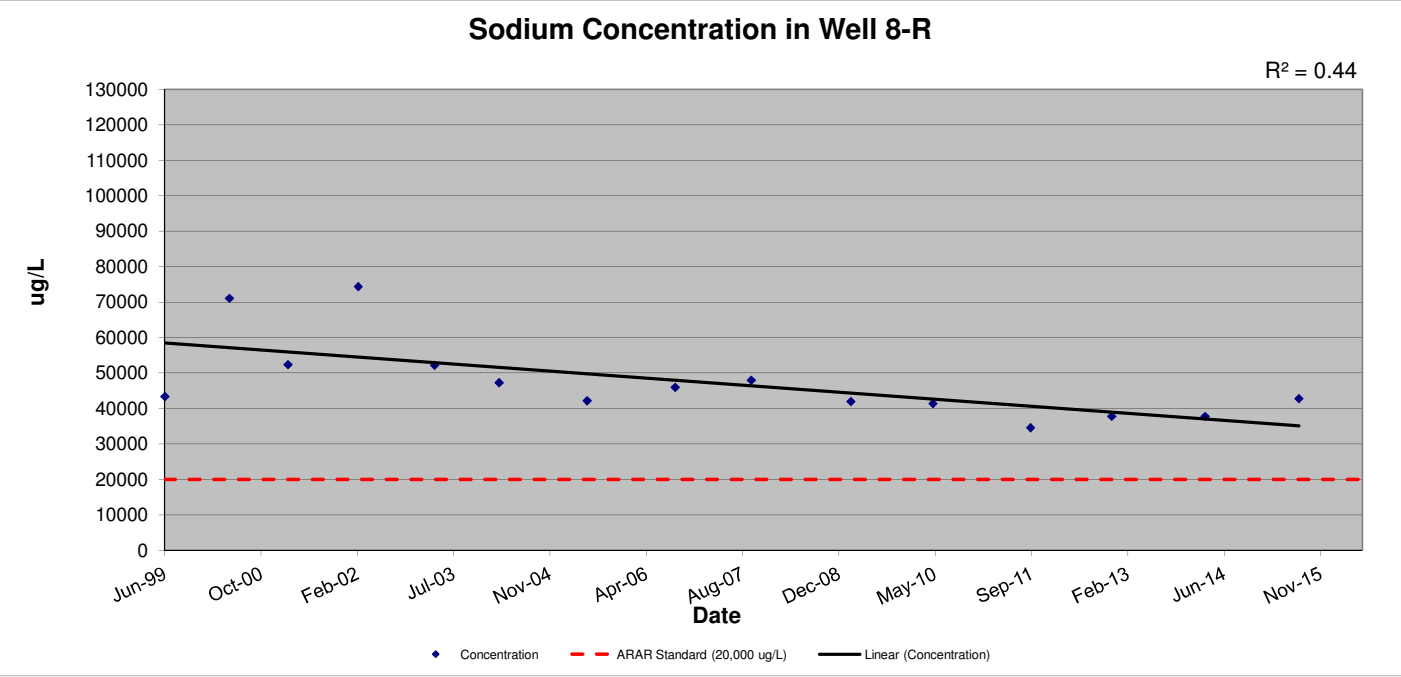
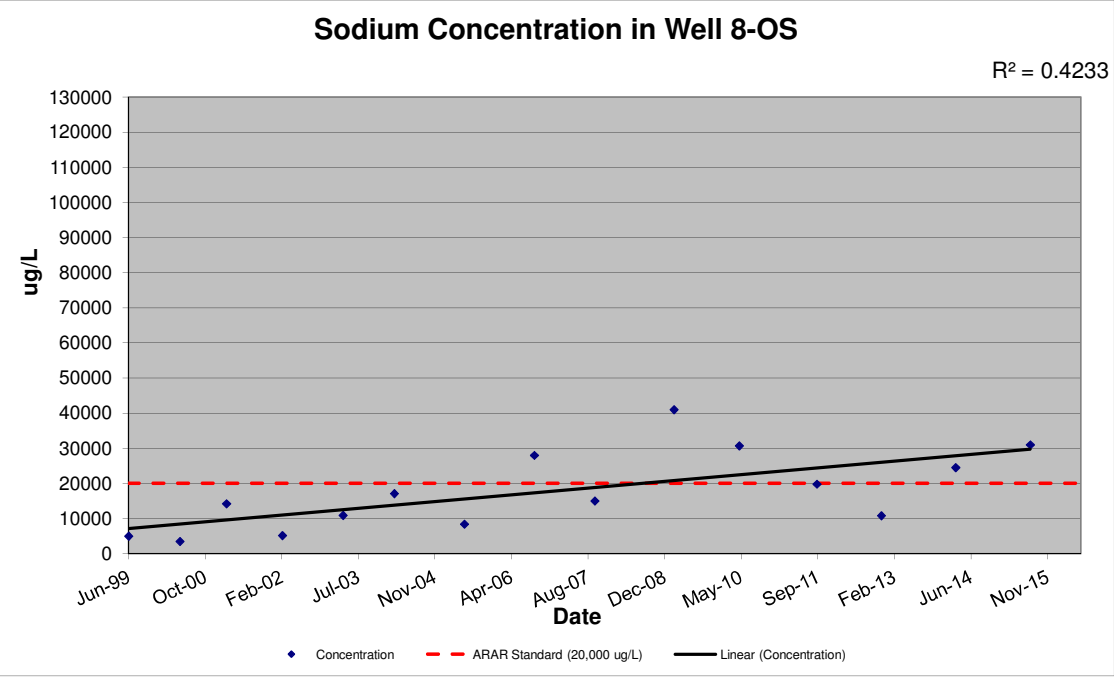
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

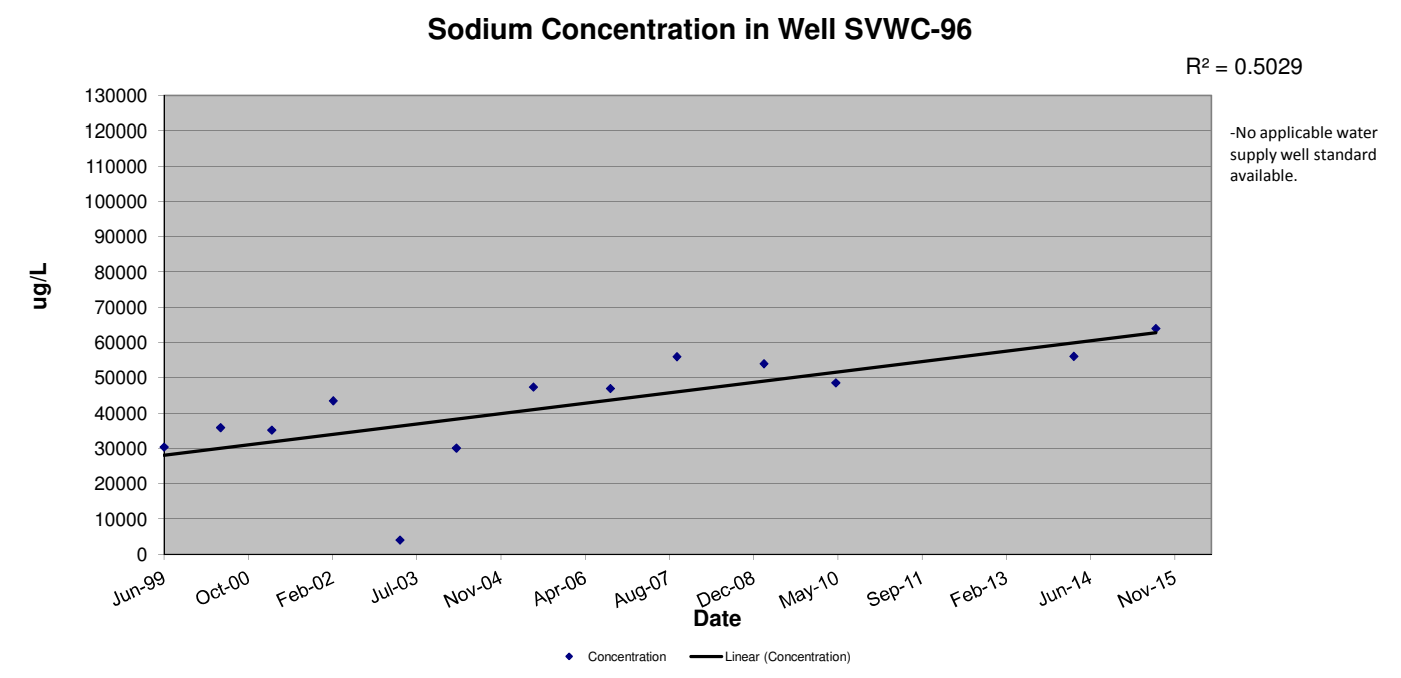
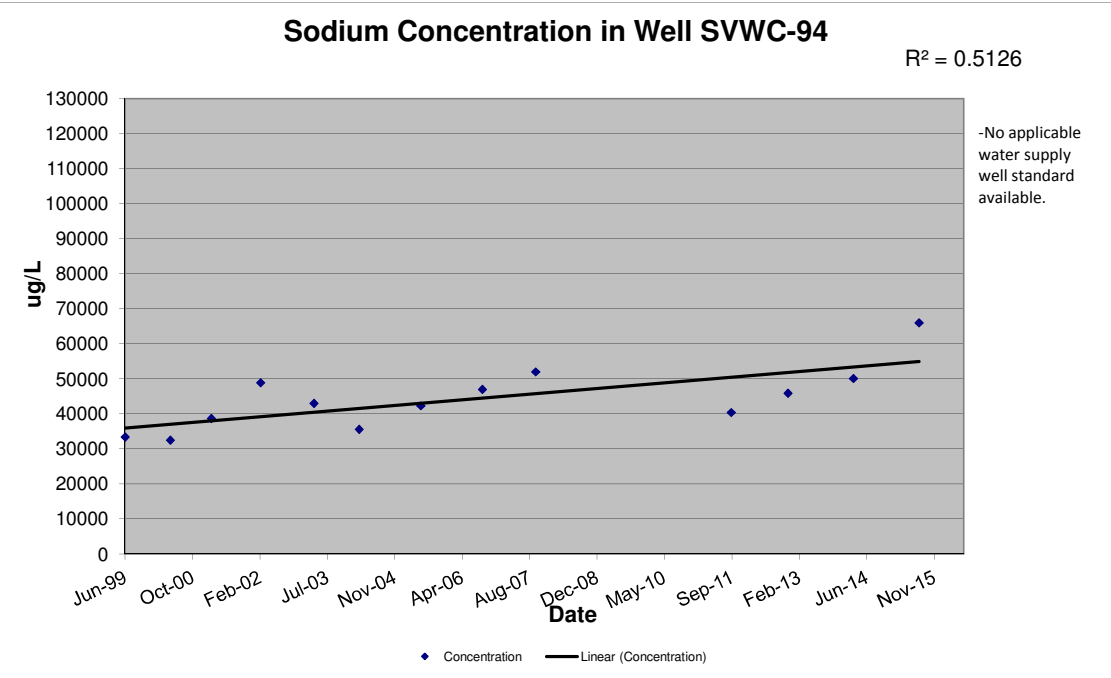
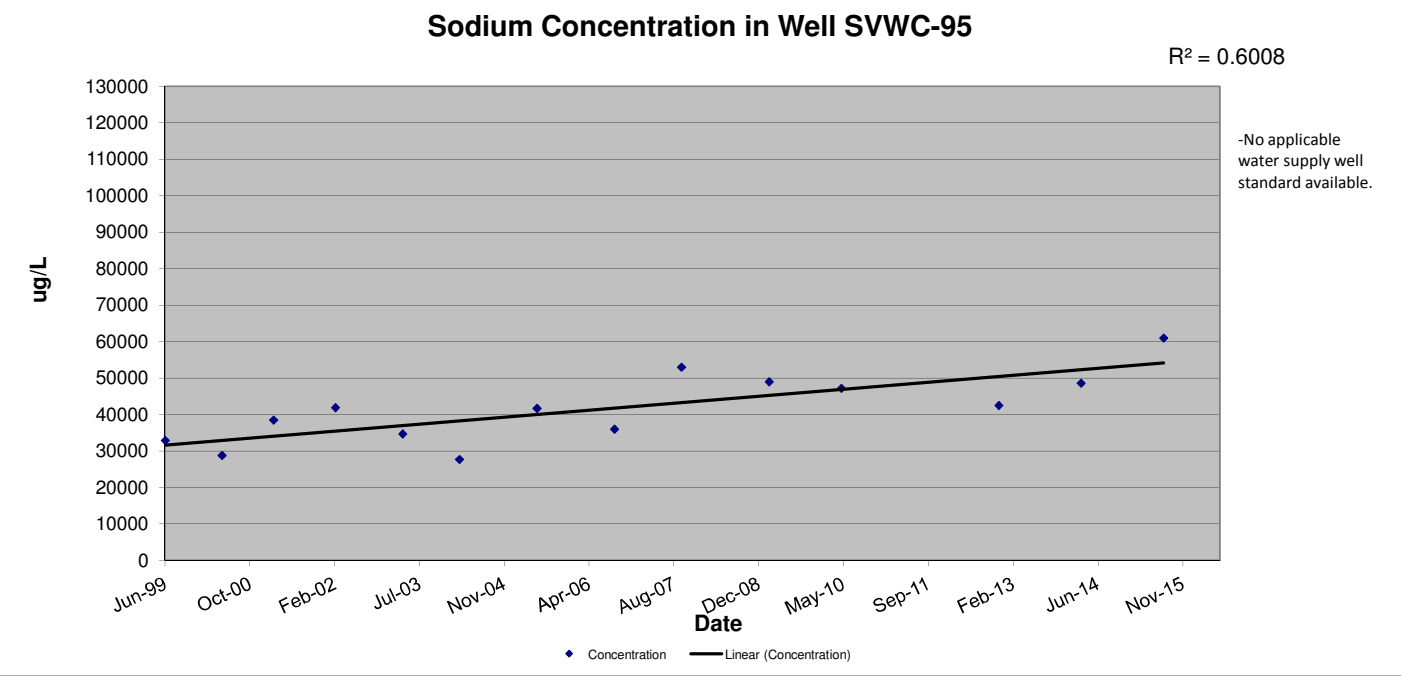
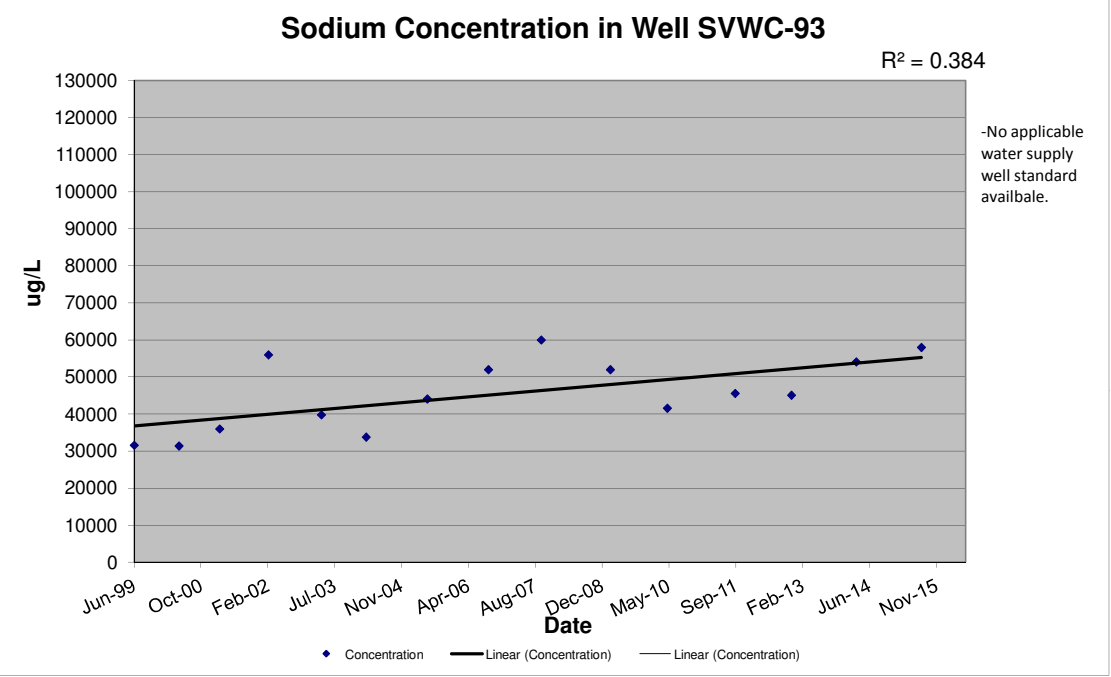
Laboratory Qualifier Definitions

B = Compound was found in the blank and the sample.

E = Indicates an estimated value because of the possible presence of interference.







Town of Ramapo Landfill
TABLE C-14
Thallium (ug/L)
ARAR Standard = 0.5 ug/L
USEPA MCL = 2 ug/L
Part 5 MCL = 2 ug/L

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96	
DATE																													
Jun-99		NA		NA		NA		NA		NA		NA		NA		ND		ND		ND		ND		ND		ND		ND	7.2
Sep-99		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
May-00	< 2.3		< 2.3		< 2.3		< 2.3		< 2.3		< 2.3		< 2.3		NA	< 2.3	< 2.3		< 2.3		< 2.3		NA	NA	NA	< 2.3	< 2.3	< 2.3	< 2.3
Sep-00		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
Dec-00		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
Jan-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
Mar-01	< 2.7		< 2.7		< 2.7		< 2.7		< 2.7		< 2.7	4.8	B		NA	22.8	< 2.7	< 2.7	< 2.7	< 2.7		NA	NA	NA	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7
Jul-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
Oct-01		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
Mar-02	< 3.6		< 3.6		< 3.6		< 3.6		< 3.6		< 3.6		< 3.6		< 3.6		< 3.6		< 3.6		4.4	B	< 3.6		NA	NA	NA	< 3.6	
Jul-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
Oct-02		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA
Apr-03		NA	< 3.5		4.8	B	< 3.5		< 3.5		< 3.5		< 3.5		NA	4.1	B	< 3.5	< 3.5		NA	< 3.5	< 3.5		< 3.5		NA	NA	
Mar-04		NA		NA	< 2.8		NA	< 3.3		NA	5.4	B		NA	< 2.8		NA	< 3.3		NA	< 3.3	< 3.3	< 3.3	< 3.3	NA	NA	NA	< 3.3	
Jun-05	10.4			NA	5.3	B		NA	12.7			NA	< 2.9	N		NA		NA	5.1	B		NA	< 2.9	N		NA	< 2.9	N	4.6
Sep-06	20			NA	16			NA	16			NA	24			NA	7.8	J		NA	NA	7.6	J		NA	9.8	J	12	9.4
Oct-07	9.9	J		NA	< 10			NA	< 10			NA	< 10			NA	< 10		< 10		< 10		< 10		NA	NA	NA	< 10	
Mar-09	< 20			NA	< 20			NA	< 40			NA	< 20			NA	< 20		< 20		< 20		< 20		< 20		< 20	NA	
May-10	< 0.5			NA	< 0.5			NA	0.5	J		NA	< 0.5	J		NA	< 0.5	J	< 0.5	J		NA	< 0.5		NA	< 0.5	< 0.5	NA	
Sep-11	0.2	J	0.18	J	0.029	J	0.11	J	0.011	J	0.47	J	0.14	J		NA	0.32	J	0.02	J	0.18	J	0.2	J		NA	< 0.5	0.28	J
Nov-12	0.13	J		NA	0.035	J		NA	< 0.5			NA	0.051	J		NA	0.44	J		NA	0.21	J		NA	< 0.5		< 0.5	0.014	J
Mar-14	0.098	J		NA	0.043	J		NA	0.024	J		NA	0.04			NA	0.39	J		NA		ND		ND		ND	0.022	J	ND
Nov-14		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	< 0.5	< 0.5	NA
Jul-15	0.06	J		NA	< 0.1			NA	< 0.1			NA	< 0.1			NA	< 0.1		< 0.1		< 0.1		< 0.1		< 0.1		< 0.1	< 0.1	< 0.1

Notes:

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

ND = Not Detected

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC TOGS 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998).

MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

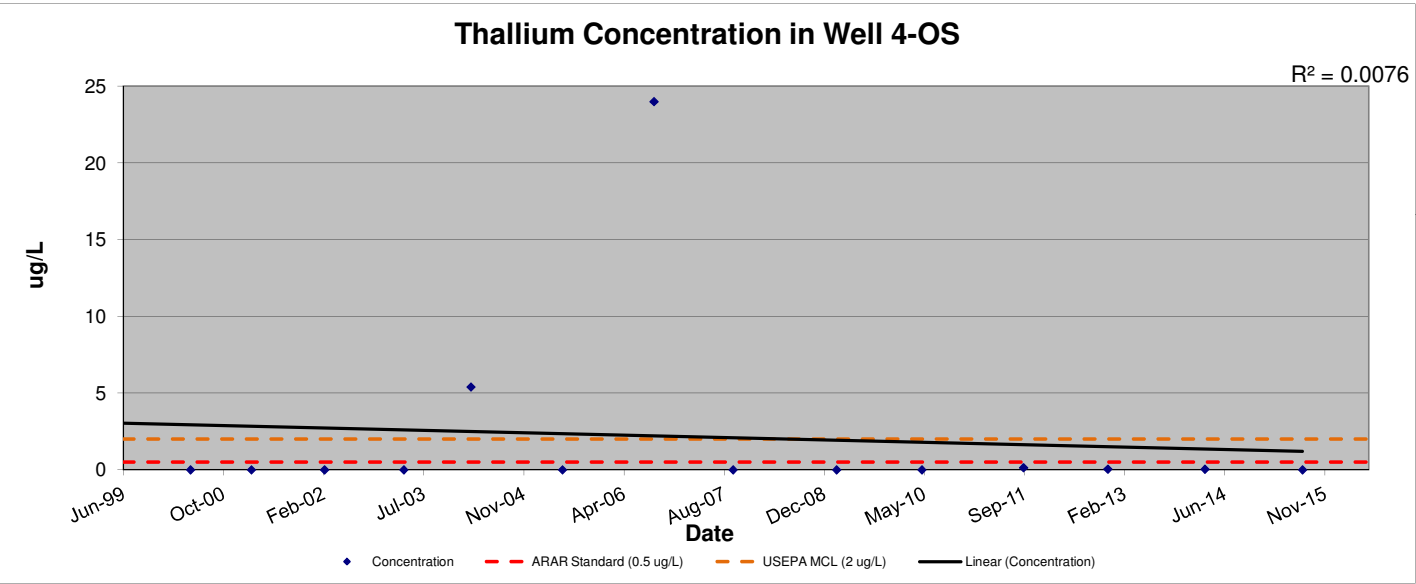
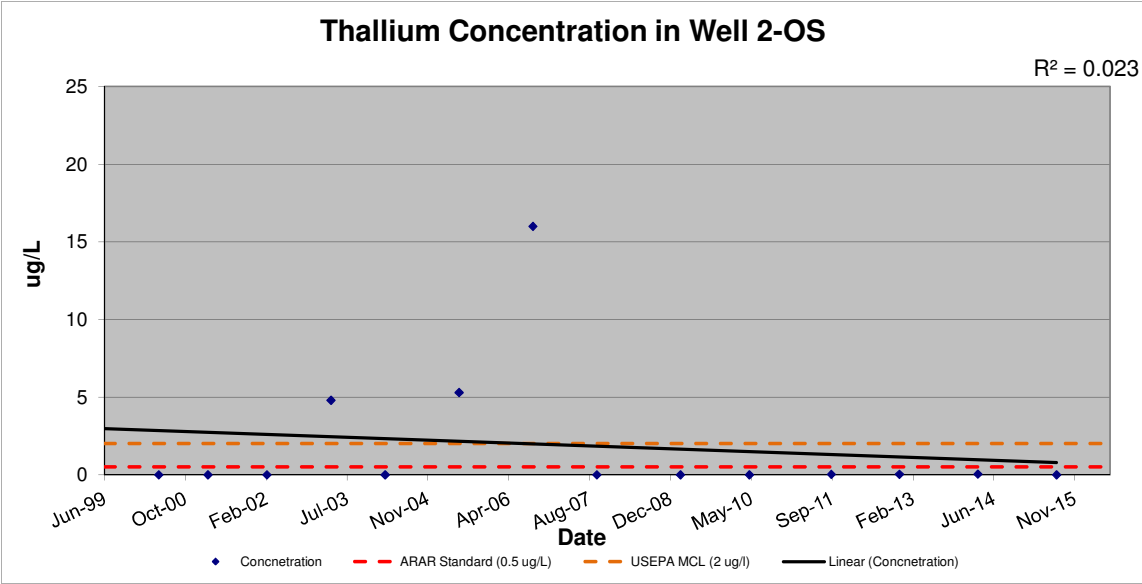
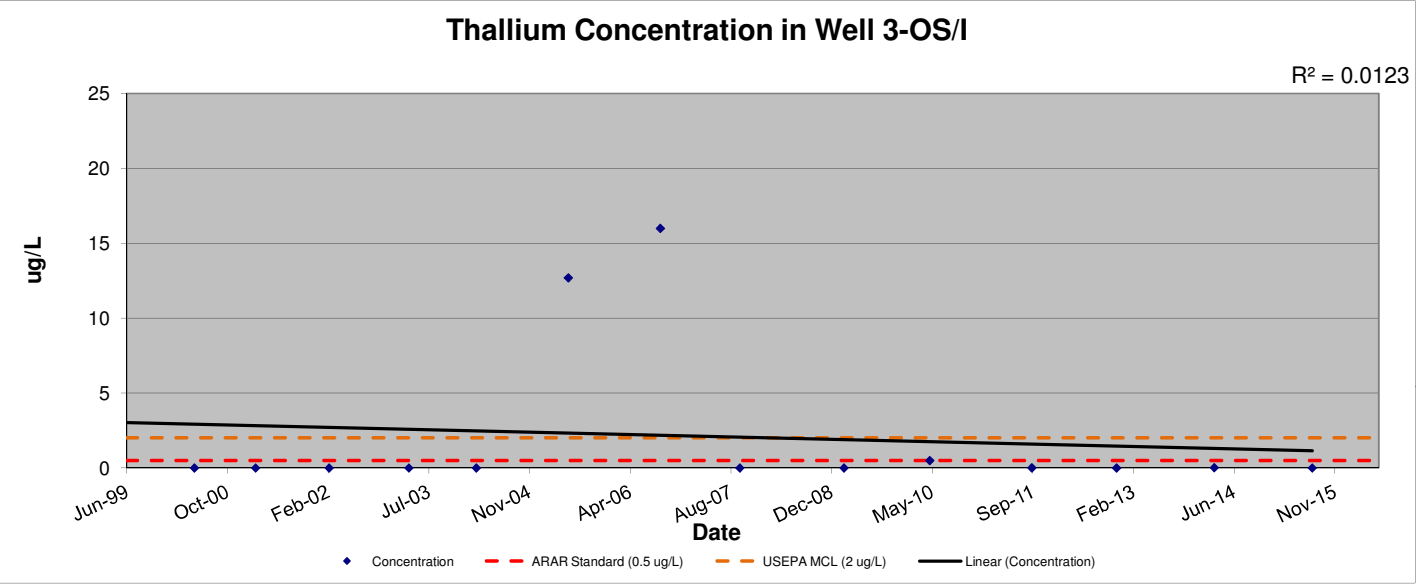
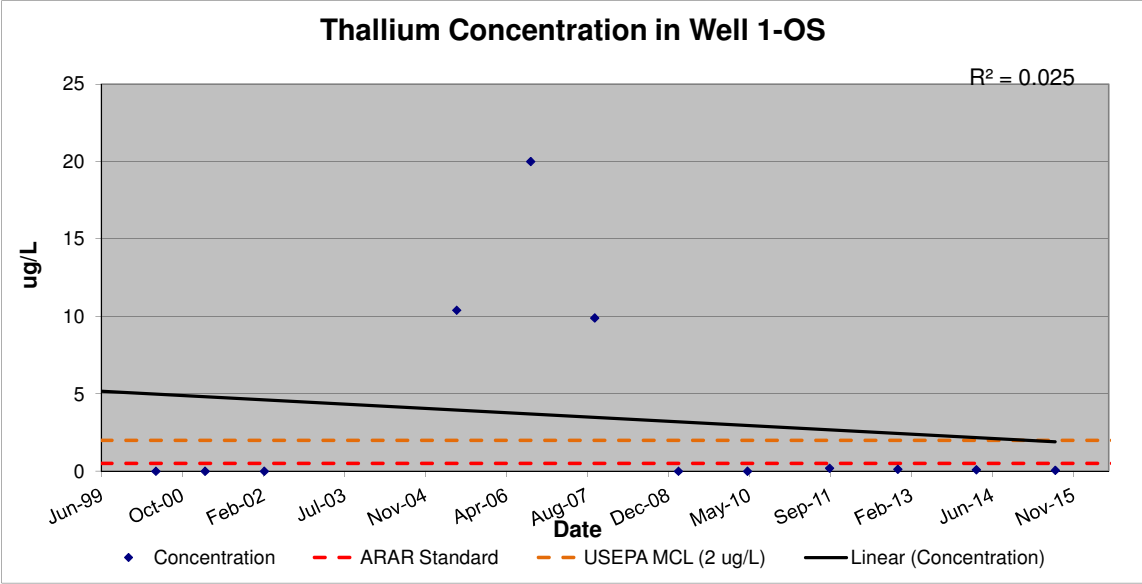
Laboratory Qualifier Definitions

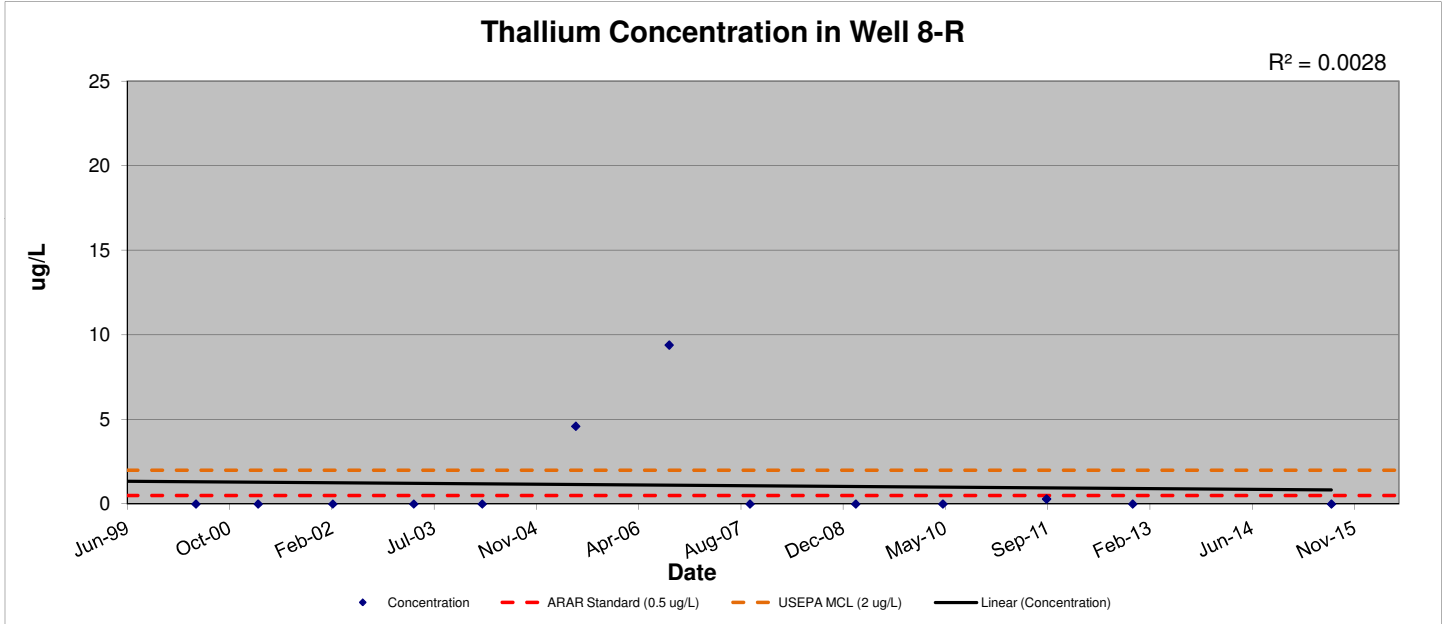
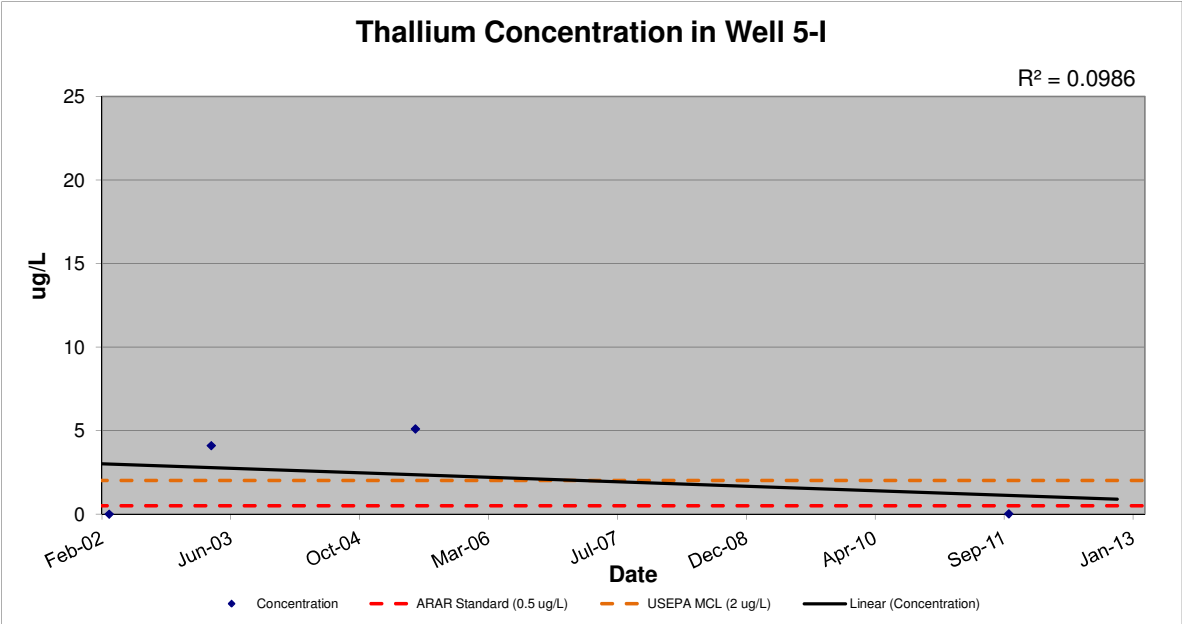
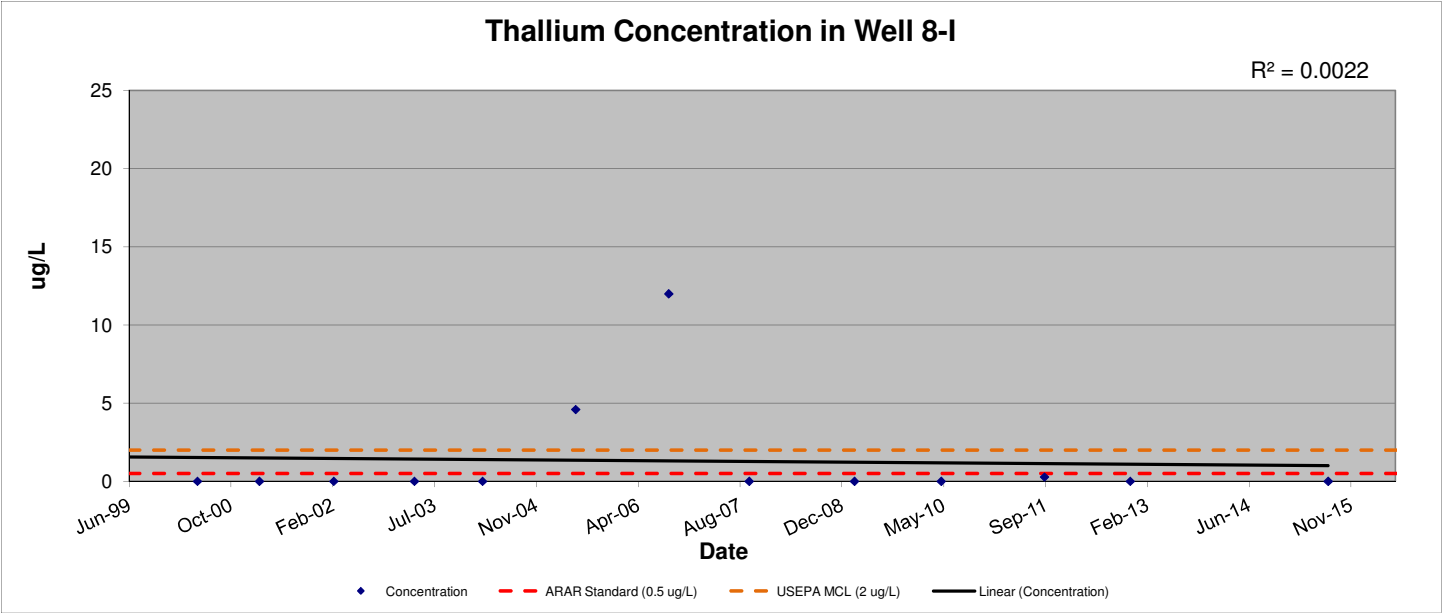
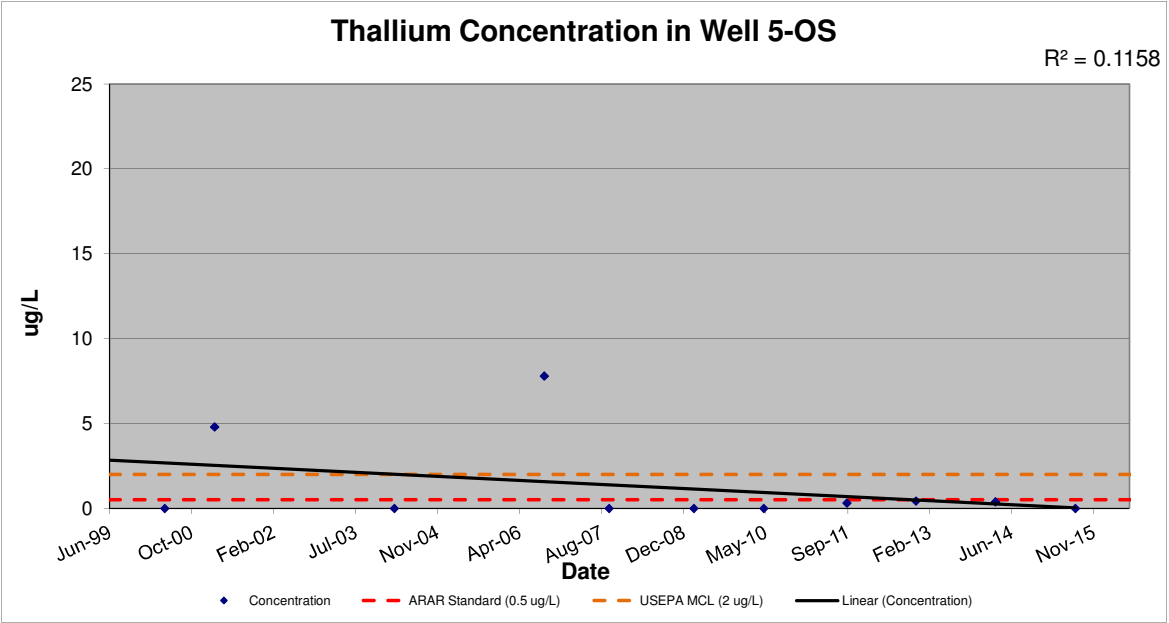
B = The reported value is less than the Contract Required Detection Limit, but greater than the Instrument Detection Limit.

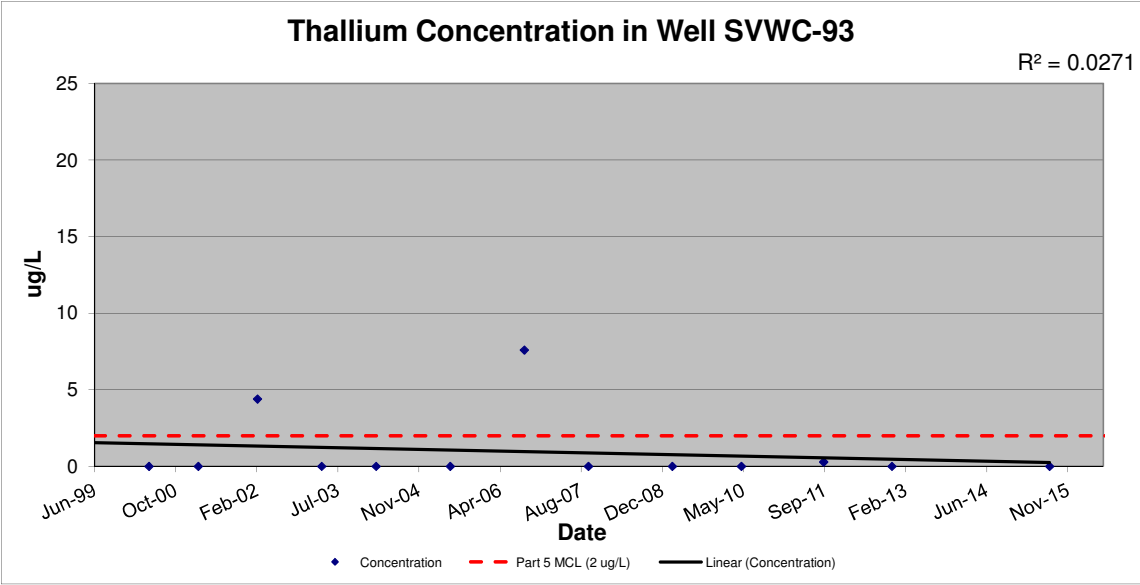
D14 = Dilution required due to high concentration of dissolved solids known to cause failure of routine quality control. Analytical method recommends a five-fold dilution for samples that contain greater than 2,000 mg/L of total solids.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

N = Spiked sample recovery not within control limits.







APPENDIX D

LEACHATE & GROUNDWATER VOLUMES

Table D-1
TOWN OF RAMAPO LANDFILL
Volume of Leachate/Groundwater Pumped from Landfill Extraction
Wells to RCSD #1 POTW

Year	Gallons
1995	20,553,200
1996	21,851,062
1997 ⁽¹⁾	22,888,055
1998 ⁽¹⁾	22,888,055
1999	7,280,848
2000	17,234,622
2001	12,328,217
2002	13,576,560
2003	18,415,267
2004	13,827,647
2005	18,285,355
2006	14,391,820
2007	11,671,388
2008	11,929,369
2009	13,692,046
2010	8,955,114
2011	9,763,081
2012	13,345,000
2013	18,202,000
2014	13,254,000
2015 ⁽²⁾	8,420,000

⁽¹⁾ Flow meter or totalizer did not function - no data available therefore values are based on previous records

⁽²⁾ Through 08/06/15

Note: The volumes for 1997 and 1998 are estimated. No data was recorded due to malfunctioning equipment.

APPENDIX E

LEACHATE & GROUNDWATER ANALYTICAL RESULTS

Table E-1
Historical Analytical Results for the Town of Ramapo Landfill
Rockland County Sewer District #1
Sample Location : Manhole Immediately Upstream of Wet Well

Parameter	Maximum Concentration	Units	August 20 & 21, 2009	January 13, 2010	May 19 & 20, 2010	January 26, 2011	July 20, 2011	March 14, 2012	May 17, 2012	August 22, 2012	July 25, 2013	January 23, 2014	May 15, 2014	July 10, 2014	January 14, 2015	April 16, 2015
pH	5-11	S.U.	7.8	7.3	6.8 (5/19, 7/15/20)	6.7	6.8	6.8	6.8	6.5	8.2	7.7	7.1	7.3	7.6	7.5
Phosphorus (Total)	-	ppm	0.41	1.32	0.02	0.13	0.07	0.185	0.105	0.03	0.198	3.74	0.264	0.05	0.05	0.05
Chlorides	-	ppm	160	180	200	200	257	123	92.6	90.8	148	1260	136	218	97.4	263
Ammonia	-	ppm	520	320	1.8	1	2.3	0.645	0.821	2.03	0.1	0.1	0.1	0.1	0.7	0.1
BOD	30	ppm	100	100	2	4	6	4	2	2	1	39	2	9	12	3
COD	-	ppm	161	576	35	43	55	52	20	9	---	2600	30	56	47	27
Suspended Solids	24	ppm	24	74	5	2	20	7	3	6	6	72	6	6	4	5
TKN	-	ppm	530	380	2.2	1	3.4	1.47	1.59	4.06	1.02	1500	0.64	1.03	2.25	0.35
Total Dissolved Solids	-	ppm	2,300	950	480	720	1,500	504	312	366	504	958	511	628	322	694
O&G Non-Polar	25	ppm	1.4	1.4	1.4	5	0.6	6.30	---	---	---	---	---	---	---	---
Boron	1.0	ppm	0.1	0.11	0.09	0.098	0.111	0.0792	0.0966	0.0725	0.106	0.1	0.068	0.096	0.05	0.08
Manganese	-	ppm	0.727	0.783	0.744	0.87	0.428	1.35	0.823	1.160	0.508	0.025	0.703	0.64	0.572	0.261
Antimony	-	ppm	0.005	0.005	0.005	0.015	0.0036	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001
Arsenic	0.25	ppm	0.004	0.007	0.004	0.01	0.0035	0.002	0.002	0.002	0.001	0.002	0.001	0.004	0.001	0.001
Beryllium	-	ppm	0.001	0.001	0.001	0.005	0.0008	0.001	0.00116	0.000106	0.001	0.001	0.001	0.001	0.001	0.001
Cadmium	0.07	ppm	0.001	0.001	0.001	0.002	0.0005	0.004	0.004	0.0038	0.004	0.004	0.004	0.004	0.004	0.004
Chromium	0.6	ppm	0.001	0.004	0.001	0.005	0.0039	0.011	0.016	0.011	0.025	0.011	0.004	0.004	0.004	0.004
Copper	1.0	ppm	0.018	0.085	0.002	0.025	0.158	0.015	0.024	0.01	0.010	0.067	0.01	0.01	0.01	0.01
Lead	1.0	ppm	0.002	0.002	0.002	0.01	0.0028	0.044	0.015	0.032	0.016	0.016	0.038	0.027	0.038	0.059
Mercury	0.05	ppm	0.0002	0.008	0.0002	0.0002	0.00007	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Nickel	1.0	ppm	0.003	0.01	0.002	0.005	0.0082	0.016	0.038	0.01	0.025	0.025	0.074	0.025	0.031	0.047
Silver	2.3	ppm	0.001	0.001	0.001	0.01	0.0012	0.01	0.01	0.01	0.010	0.01	0.01	0.01	0.01	0.01
Thallium	-	ppm	0.005	0.025	0.005	0.005	0.0038	0.05	0.033	0.033	0.033	0.039	0.075	0.05	0.05	0.053
Zinc	3.0	ppm	0.027	0.117	0.003	0.025	0.471	0.044	0.109	0.023	0.015	0.093	0.01	0.043	0.044	0.011
Selenium	0.1	ppm	0.01	0.01	0.01	0.01	0.0037	0.004	0.004	0.001	0.002	0.001	0.002	0.003	0.001	0.004
Molybdenum	0.14	ppm	0.01	0.01	0.01	0.01	0.0047	0.0024	0.0019	0.0027	0.00240	0.05	0.05	0.05	0.005	0.005
Cyanide Total	1.0	ppm	0.02	0.05	0.01	0.01	0.00498	0.01	0.01	0.01	0.01	0.057	0.01	0.01	0.01	0.01
Cyanide, Free	0.1	ppm	0.01	(3)	0.01	0.005	0.00468	---	---	---	---	---	---	---	---	---
Cyanide, Amenable	-	ppm	---	---	---	---	---	0.01	0.01	0.010	0.01	0.010	0.01	0.01	0.01	0.01
Phenol	-	ppm	0.03	0.015	0.015	0.015	0.015	0.05	0.05	0.05	0.01	0.067	0.05	0.01	0.01	0.016
USEPA Priority Pollutants ⁽⁴⁾	2.25	ppm	0.06	0.06	0.06	0.0206	0.028	0.085 ⁽⁵⁾	0.087 ⁽⁵⁾	0.089 ⁽⁵⁾	0.57	0.0197	0.00948	0.03611	0.00701	0.01403

Notes:

B = Indicates a value that is > than method detection limit (MDL) but < than laboratory quantitation limit.

J = Estimated value due to the compound was detected below the reporting limit.

u = Reported at concentration less than laboratory reporting limit.

(1) A surcharge will apply if BOD is > 250 ppm

(2) A surcharge will apply if Suspended Solids is > 300 ppm

(3) Could not report free Cyanide due to matrix interference

(4) Excluding metals, Phenol and Cyanides

(5) Does not include: Acrolein, Acrylonitrile, Benzidine, Parachlorometa cresol, 1, 2-diphenylhydrazine, 4-chlorophenyl phenyl ether, 4-bromophenyl phenyl ether, Methyl chloride, Methyl bromide, 4, 6 -dimino-o-cresol