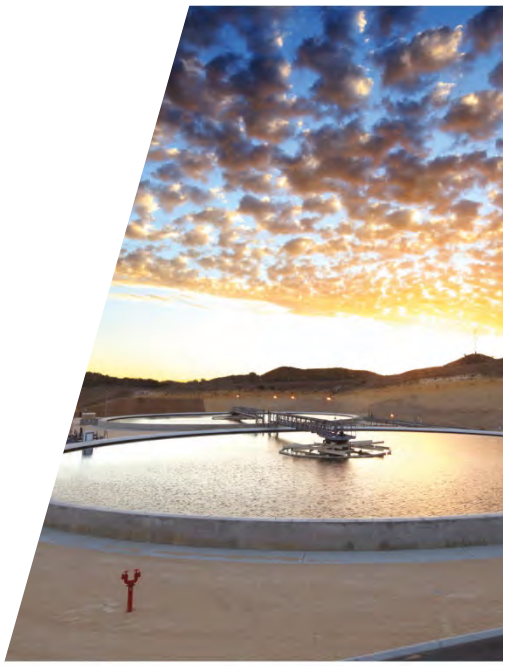
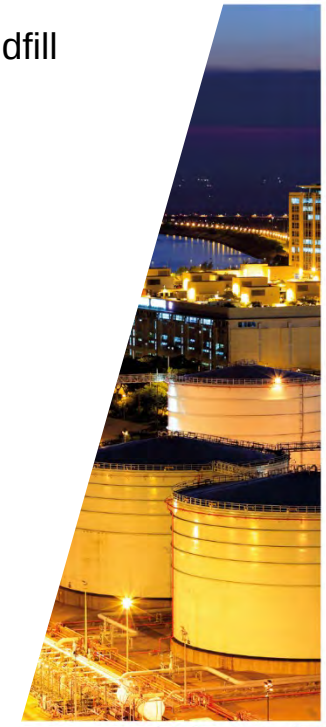


2019 Biennial Monitoring Report

Former Crucible Specialty Metals Landfill
Town of Geddes, Onondaga County,
New York



EnPro Holdings, Inc.

Certification Statement

I, Damian J. Vanetti, certify that I am currently a New York State registered professional engineer and that this Biennial Monitoring Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10), and that all activities were performed in full accordance with the DER-approved Post-Closure Work Plan Update (S&ME Northeast, P.C., October 2011) and any DER-approved modifications.

Damian J. Vanetti
N.Y.S. Registration No. 068011

April 8, 2020
Date

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1. Introduction

This report summarizes laboratory analytical results and field observations of the biennial groundwater monitoring and the annual landfill integrity observation activities completed in October 2019 at the Former Crucible Specialty Metals Landfill Site (referred to as the 'Site,' Figure 1). The Site, which consists of an approximately 20-acre closed landfill, is located north of Interstate 690 and south of Onondaga Lake in the Town of Geddes, Onondaga County, New York, and is part of an approximately 252-acre parcel owned by Onondaga County (Figures 1 and 2). A Site Layout Map is included as Figure 3.

Post-closure monitoring activities are outlined in the New York State Department of Environmental Conservation (NYSDEC) approved Post-Closure Work Plan Update (S&ME Northeast, P.C., October 2011), as modified by the NYSDEC-approved Monitoring Variance Request (GHD, March 23, 2017) and the NYSDEC-approved 2017 Annual Monitoring Report (GHD, February 5, 2018), and includes biennial groundwater monitoring and annual landfill integrity observations. GHD Consulting Services Inc. (GHD) personnel conducted biennial groundwater monitoring and annual landfill integrity observation on October 23, 2019. Laboratory analytical services were provided by Alpha Analytical of Westborough, Massachusetts. Currently, the next scheduled groundwater monitoring event will be in October 2021 and the next scheduled landfill integrity observation event will be in October 2020 in accordance with the approved post-closure monitoring plan and subsequent variance requests.

In addition, the NYSDEC approved the decommissioning of five (5) groundwater monitoring wells and piezometers (DW-101, DW-103, PZ-101.1, PZ-101.2, and PZ-101.3) from the monitoring program. DW-101, PZ-101.1, PZ-101.2, and PZ-101.3 were decommissioned by others in 2018. DW-103 was decommissioned by GHD in 2019.

1.1 Background

EnPro Holdings, Inc. (EnPro) is responsible for the Operations, Maintenance, and Monitoring (OM&M) of the Site, which is a closed landfill formerly operated by Crucible Specialty Metals. According to historic documents, the landfill began receiving waste, generally consisting of hazardous and non-hazardous solid waste from the Crucible steel mill, in 1973. Disposal of hazardous waste, which reportedly consisted of caustic solids, acid pickling sludge, and electric arc furnace and argon-oxygen decarburization dusts, reportedly ceased in March 1982. Disposal of non-hazardous waste, which reportedly consisted of slag, construction and refractory debris, absorbents, miscellaneous boiler house ashes, coolant swarves, mill scale, and wastewater treatment plant dewatered sludge, reportedly ceased in 1986 when landfill closure began. Landfill closure was reportedly completed in 1989.

Previous reports indicated that Crucible Specialty Metals utilized a landfill site located on top of the abandoned Solvay Process Waste Beds, which are generally composed of waste material from the production of soda ash. The top terrace of the waste beds, where the landfill is located, is reportedly approximately 60 feet higher in elevation than Onondaga Lake. The surrounding lands are primarily occupied by Ninemile Creek and Interstate 690 to the west and south; the New York State Fair Grounds overflow and Onondaga County Lakeview Amphitheater parking lots to the south; the

Onondaga County Lakeview Amphitheater, which was constructed in 2015, adjoining the Site to the north and east; and Onondaga Lake further to the north and east. There are no residences within 1,000 feet of the closed landfill.

The Onondaga County Lakeview Amphitheater construction during 2015 included the modification of several monitoring points in accordance with the *Monitoring Well Work Plan, Lakeview Amphitheater Project* (Gilbane Building Company, July 10, 2015), with NYSDEC approval. The modifications were completed by others under contract with Onondaga County and included lowering eight (8) monitoring points (steel well casings and PVC risers) to surface elevations established during construction (MS-301.1, MS-301.2, MS-301.3, MS-301.4, MS-301.5, PZ-8.1, PZ-8.2, and W-201R); raising two (2) monitoring points (steel well casings and PVC risers) to accommodate areas that were filled (W-10.1 and W-10.2); replacing the steel well casing, PVC riser, and concrete pad at one (1) monitoring point that was damaged during work activities (MS-104.2); lowering the steel casing and PVC riser of one (1) inclinometer (INC-4); lowering the steel bar riser of one (1) settlement plate (PL-4); and decommissioning one (1) groundwater monitoring well (CM-108). Following final modifications, a survey of the final ground elevations and PVC riser elevations was completed by others and provided to GHD. The reference point elevations in the groundwater elevation tables were subsequently updated to reflect the modifications.

1.2 Purpose

The objectives of the current post-closure landfill monitoring program are to document groundwater quality and contaminant concentrations following landfill closure and document observations of the landfill cover system integrity. Groundwater monitoring is conducted biennially with groundwater elevations recorded at twenty-four (24) groundwater monitoring wells and piezometers (Table 1) and groundwater samples taken from fourteen (14) groundwater monitoring well locations (MS-104.3; MS-104.4; MS-104.5; MS-106.1; MS-106.2; MS-106.3; MS-106.4; MS-301.1; MS-301.2; MS-301.3; MS-301.4; MS-301.5; W-201R; and W-5.6 on Figure 3).

The assessment of the landfill cover system integrity is completed annually by visual inspection of the cover surface material for erosion and/or subsidence, observation of the stormwater management features for general function, and annual maintenance of the cover system by mowing to preclude woody growth.

The purpose of this report is to present the results, findings, conclusions, and recommendations associated with the 2019 monitoring activities.

1.3 Post Closure Monitoring Schedule

The post-closure monitoring schedule, required analysis, and required reporting are as follows:

Monitoring/Reporting Requirement	Schedule/Required Analysis
Groundwater Monitoring and Observations	Biennially in the Fall Depth to Groundwater Measurements and Groundwater Elevation Calculations from 24 Groundwater Monitoring Wells and Piezometers (Table 1) Groundwater samples from 14 groundwater monitoring wells (MS-104.3; MS-104.4; MS-104.5; MS-106.1; MS-106.2; MS-106.3; MS-106.4; MS-301.1; MS-301.2; MS-301.3; MS-301.4; MS-301.5; W-201R; and W-5.6) for Phenols, Total Chromium, Total Iron, Specific Conductivity, and pH analysis Completion of Groundwater Monitoring Well and Piezometer Observation Form (Appendix A) Completion of Groundwater Field Sampling Logs (Appendix A)
Landfill Integrity Observations	Annually in the Fall Completion of Post-Closure Observation Form (Appendix A)
Landfill Mowing	Annually in the Fall, Prior to Landfill Integrity Observations
Monitoring and Observation Reports	Annually Due by March 1 of the year following monitoring/observations

2. Landfill Observations

GHD contracted with Lorne Rudy Tractor Services of Bridgeport, New York, to mow the landfill prior to annual observation activities in order to allow access to the groundwater monitoring wells and piezometers and observation of the integrity of the landfill cover surface. An all-wheel drive tractor with a brush hog was used to clear the majority of the vegetation on the landfill area, with hand-trimming performed in the vicinity of each groundwater monitoring well and piezometer.

On October 23, 2019, GHD personnel walked the landfill and completed a Post-Closure Observation Form (Appendix A), which included non-intrusive observations of:

- Erosion damage
- Subsidence
- Visual condition of vegetative cover
- General functionality of stormwater management and run-off control systems
- Monitoring well and piezometer condition
- Visual condition of the landfill cover surface

The visual inspections identified the following conditions that required attention and/or maintenance:

1. Groundwater monitoring well W-10.2, which is currently only used to measure depth to groundwater and calculate groundwater elevations, was observed to be heavily damaged. The steel stick-up protective casings, concrete pad, and well cover were all missing and the top of the polyvinyl chloride (PVC) riser pipe appeared to be damaged.
2. The protective casing cover at groundwater monitoring well W-10.1 was broken. The cover was still in place but was not able to be locked.
3. One stormwater manhole cover and riser near the southern corner of the landfill (MH-4 on Figure 3) was displaced, leaving an opening into the manhole.
4. Off-site soils being spread in the vicinity of piezometer cluster PZ-5 by others were observed during the 2018 Annual Inspection. These activities did not appear to be directly impacting PZ-5; however, they extended up to the piezometer and appeared to be still on-going at the time of the 2019 visual inspection. The soil surface was not stabilized with vegetation at the time of the inspection.
5. Unknown access and use of perimeter road along northwestern side of landfill was matting down vegetation and causing minor ground disturbance.

Representative photographs taken during landfill observations are included in Appendix B.

2.1 NYSDEC RCRA Facility Inspection

On October 23, 2019, NYSDEC performed a periodic inspection of the landfill and routine maintenance and monitoring activities to ensure they were being completed in accordance with the Post-Closure Work Plan. Based on the NYSDEC's inspection, it was determined that the landfill was in compliance; however, one manhole structure required repair, as discussed above.

A copy of the NYSDEC's inspection report is included for reference as Appendix G.

3. Water Levels and Groundwater Quality

3.1 Water Levels

Prior to conducting biennial groundwater monitoring activities, depth to water and depth of well measurements were recorded using an electronic water level indicator at twenty-four (24) groundwater monitoring wells and piezometers. Groundwater monitoring wells and piezometers DW-101, DW-103, PZ-101.1, PZ-101.2, and PZ-101.3 were decommissioned in 2018 and 2019 (as approved by the NYSDEC).

Each of the depth to water and total depth of well measurements was made in reference to the top of the PVC casing. These readings were recorded on a field log (Appendix A) for use in calculating groundwater elevations at a later date. Water elevation data is summarized in Table 1 and time series plots showing the change in groundwater elevations over time at each monitoring location are included in Appendix C.

During the October 2019 monitoring event, depth to water measurements at the Site ranged from 25.03-feet (MS-104.5) to 60.47-feet (MS-106.1) below top of casing (approximately 23.12-feet and 56.65-feet below ground surface, respectively), and calculated groundwater elevations ranged from 369.38-feet (MS-301.2) to 403.57-feet (MS-104.5) above mean sea level. Based on these observations, and the fact that Crucible Specialty Metals Waste is reportedly present from approximately 420-feet to 433-feet above mean sea level (Calocerinos & Spina Consulting Engineers, *Crucible Specialty Metals Revised Landfill Closure Plan*, January 1986), the groundwater monitoring wells associated with monitoring the Site are completed not in the Crucible Specialty Metals Waste but rather in the Solvay Process Waste materials. As a result, groundwater samples taken from these wells represent groundwater quality within the Solvay Process Waste and do not necessarily identify impacts associated with Crucible landfill activities at the Site, especially since the layer of Solvay Process Waste separating the bottom of the Crucible Specialty Metals Waste from the current groundwater table is approximately 20-feet thick.

Groundwater elevation contours for the Site have historically been generated using groundwater monitoring wells MS-104.5, MS-106.5, MS-301.5, and W-5.5 since they are reportedly screened across the water table; however, monitoring wells MS-106.5 and W-5.5 have been decommissioned, which prevents generation of a relevant groundwater elevation contour figure. It is assumed that groundwater flow direction remains similar to the radial flow away from the closed landfill that was identified in previous groundwater monitoring events. In addition, one piezometer (PZ-2.1) was dry and one groundwater monitoring well (MS-106.4) only contained 0.22-feet of groundwater during the October 2019 monitoring event.

3.2 Groundwater Sampling Methods

Biennial groundwater quality monitoring is conducted at fourteen (14) existing groundwater monitoring wells (Figure 3), in accordance with the NYSDEC-approved Updated Post-Closure Work Plan (S&ME Northeast, P.C., October 2011), the NYSDEC-approved Monitoring Variance Request (GHD, March 23, 2017), and 2017 Annual Monitoring Report (GHD, February 5, 2018). During the October 2019 monitoring event, a total of thirteen (13) groundwater samples were taken for laboratory analysis from groundwater monitoring wells: MS-104.3; MS-104.4; MS-104.5; MS-106.1; MS-106.2; MS-106.3; MS-301.1; MS-301.2; MS-301.3; MS-301.4; MS-301.5; W-201R, and W-5.6. Groundwater well MS-106.4 contained less than 1-foot of water column, which prevented taking of a groundwater sample during the

October 2019 monitoring event. In addition, for quality assurance/quality control (QA/QC) purposes a blind field duplicate sample, a matrix spike (MS) sample, a matrix spike duplicate (MSD) sample, one (1) rinse blank sample, and one (1) trip blank were taken and analyzed for the same analytical list as the groundwater samples.

After recording depth to groundwater and total depth of well measurements, each of the thirteen (13) sampled wells was purged using a Proactive Stainless Steel Monsoon Pump, which was equipped with a flow controller to regulate the flow rate. Dedicated poly tubing and twine were used at each well. The pump was decontaminated between each well by washing it in an Alconox and potable water solution and rinsing it with potable water.

Field parameters (i.e., temperature, pH, specific conductivity, and turbidity) were recorded after every few minutes of purging using a YSI ProDSS multi-parameter water quality meter. Once field parameters stabilized (Table 2), the water quality meter was disconnected and groundwater samples were taken for laboratory analysis. The groundwater samples were placed directly from the dedicated tubing into laboratory provided containers, packed in ice-filled coolers, and submitted to Alpha Analytical for analysis. Each sample was analyzed for total phenols by Environmental Protection Agency (EPA) Method 420.1 and total chromium and total iron by EPA Method 200.7 with preparation by EPA Method 3005A. Field observations of the purged water, which included a description of color, turbidity, sheen, and odor, were recorded in a field book and are included on the field sampling logs in Appendix A. Specific conductivity and pH results were obtained in the field using the YSI ProDSS multi-parameter water quality meter. Laboratory analytical results are summarized and compared to Site-specific standards on the tables included in Appendix D. Groundwater field sampling logs are included in Appendix A, time series plots are included in Appendix D, and a copy of the laboratory analytical report is included in Appendix E.

Purge water was containerized in one (1) steel 55-gallon drum that was labeled and staged on-Site for disposal, which occurred on January 7, 2020. Disposal documentation is provided in Appendix H. Sampling debris (i.e., poly tubing, twine, personal protective equipment, etc.) was disposed of as municipal solid waste.

3.3 Upper and Lower Confidence Levels

As a result of reviewing historic reports during preparation of the 2015 Annual Monitoring Report, it was identified that the groundwater monitoring well-specific upper and lower confidence limits (UCL and LCL) appeared to have been recalculated following each groundwater monitoring event. Based on discussions with the NYSDEC at that time, it was determined that the well-specific UCL and LCL for each groundwater monitoring well should have been calculated based on pre-closure groundwater quality data and should not have changed over time. As requested by the NYSDEC, GHD recalculated the UCL and LCL for each groundwater monitoring well using the most historic data available for each location and included the results in that report.

GHD performed a confidence calculation using a normal distribution (at the 99-percent confidence interval) for each of the sixteen (16) groundwater monitoring wells monitored at that time. The calculations were performed using pre-closure groundwater monitoring data, if available, or the four (4) most historic rounds of available groundwater quality data. Specifically, the well-specific UCL and LCL values were calculated based on groundwater quality data from the following dates:

Groundwater Monitoring Well ID	Dates of Historic Groundwater Quality Data Used to Calculate UCL and LCL
MS-104.3	February, May, August, and November 1987; February, May, August, and November 1988; and February, May, and August 1989
MS-104.4	February, May, August, and November 1987; February, May, August, and November 1988; and February, May, and August 1989
MS-104.5	February, May, August, and November 1987; February, May, August, and November 1988; and February, May, and August 1989
MS-106.1	June and December 1990 and June and November 1991
MS-106.2	June and December 1990 and June and November 1991
MS-106.3	June and December 1990 and June and November 1991
MS-106.4	June and December 1990 and June and November 1991
MS-106.5	June and December 1990 and June and November 1991
MS-301.1	June and December 1990 and June and November 1991
MS-301.2	June and December 1990 and June and November 1991
MS-301.3	June and December 1990 and June and November 1991
MS-301.4	June and December 1990 and June and November 1991
MS-301.5	June and December 1990 and June and November 1991
W-105R	October 1999, June and October 2000, and June 2001
W-201R	June and November 1994 and May and October 1995
W-5.6	June and December 1990 and June and November 1991

A table of the well-specific UCL and LCL values is included as Table 3. The calculated UCL values are compared to the laboratory analytical results for each sample location. As requested by the NYSDEC, laboratory data that falls above the UCL are noted as exceedances even if the results do not exceed the NYSDEC Class GA Groundwater Standards or Guidance Values (also shown on the tables in Appendix D for reference). The field parameter results (pH and specific conductivity) are compared to the UCL and LCL values for each sample location. Field parameter results that fall outside the UCL and LCL range are noted as exceedances; however, readings lower than the LCL for pH would generally indicate that groundwater quality is heading towards a more neutral pH, which would generally indicate an improvement in water quality.

3.4 Groundwater Analytical Results

3.4.1 Field Parameter Results

Field parameter results, including available historic data, are compared to the well-specific LCL and UCL on the tables in Appendix D. Appendix D also includes time-series plots for each field parameter and each groundwater monitoring well. Figure 4 summarizes field parameters that are above a well-specific UCL.

Field parameters taken during the October 2019 biennial groundwater monitoring event identified the following concentrations outside the well-specific UCL and LCL range:

- pH in six (6) of the thirteen (13) wells exceeded the UCL, specifically MS-104.3, MS-106.1, MS-301.2, MS-301.3, MS-301.4, and W-201R. None of the measured pH readings were identified below the LCL
- Specific Conductivity in two (2) of the thirteen (13) wells exceeded the UCL, specifically MS-301.1 and MS-301.2. Six (6) of the specific conductivity measurements were identified below the LCL, specifically MS-104.3, MS-104.4, MS-106.2, MS-106.3, MS-301.4, and MS-301.5.

The identified pH and specific conductivity values are generally consistent with historical results (Appendix D).

3.4.2 Laboratory Analytical Results

Laboratory analytical results of groundwater samples taken during the October 2019 biennial groundwater monitoring event identified the following concentrations detected above the laboratory detection limits:

- Total phenols in ten (10) of the samples analyzed, specifically MS-104.3, MS-104.4, MS-104.5, MS-106.1, MS-106.2, MS-106.3, MS-301.4, MS-301.5, W-201R, and W-5.6. Identified concentrations ranged from 0.019 mg/L to 0.23 mg/L.
- Total chromium in eight (8) of the fourteen (14) samples analyzed, specifically MS-104.3, MS-104.5, MS-106.1, MS-106.2, MS-301.2, MS-301.4, MS-301.5, and W-201R. Identified concentrations ranged from to 0.002 mg/L to 0.021 mg/L.
- Total iron in all fourteen (14) samples analyzed, including the Duplicate (taken from MS-301.3). Identified concentrations ranged from 0.027 mg/L to 96.3 mg/L.

Laboratory analytical results, including available historical groundwater quality data, are compared to the well-specific UCL, as well as the Class GA groundwater standards taken from TOGS 1.1.1 (NYSDEC, June 1998), on the tables in Appendix D. Appendix D also includes time-series plots for each analyte and each groundwater monitoring well. Figure 4 summarizes groundwater analytical results that exceeded the well-specific UCL during the October 2019 monitoring event.

In general, laboratory analytical results indicate that concentrations of analytes of concern in groundwater are typically below the well-specific UCLs, with the exception of:

- Iron concentrations in eight (8) groundwater samples, specifically MS-104.3, MS-104.4, MS-106.1, MS-106.2, MS-106.3, MS-301.2, MS-301.4, and MS-301.5.

A total of five (5) QA/QC samples were taken during the October 2019 monitoring event - one (1) blind field duplicate, one (1) MS sample, one (1) MSD sample, one (1) trip blank, and one (1) rinse blank. All QA/QC samples were analyzed for the same analytes as the groundwater samples.

The laboratory analytical results of the blind field duplicate sample were compared to the parent sample (both taken from MS-301.3), and relative percent differences (RPD) between the results were calculated to determine the precision of groundwater sampling and laboratory analysis techniques. The relative percent differences between the two (2) samples are:

- Total phenols – 0.00%
- Total chromium – 0.00%
- Total iron – 5.23%

The relative percent differences for each of the analytes are lower than the generally accepted 20% difference.

Analysis of the trip blank and rinse blank samples identified estimated total iron concentrations of 0.016 mg/L and 0.017 mg/L, respectively. Given the similarity of these concentrations, and their minor nature relative to total iron concentrations identified in groundwater samples taken from the Site groundwater monitoring wells, it is believed that the concentrations identified are representative of the blank water provided by the laboratory. Based on this, it is believed that the concentrations detected in the trip and rinse blank samples are indications that the samples were not contaminated as a result of sampling activities or transport to the laboratory.

3.5 Monitoring Well Decommissioning

The NYSDEC approved decommissioning of groundwater monitoring wells DW-101 and DW-103 and piezometers PZ-101.1, PZ-101.2, and PZ-101.3. Decommissioning of DW-101, PZ-101.1, PZ-101.2, and PZ-101.3 was performed by SJB Services, Inc., and documented by the New York State Department of Transportation, on March 15, 2018. Since documentation was not received by GHD prior to completion of the 2018 annual report, a discussion of the activities is included here.

> Decommissioning of these wells consisted of removing the protective steel stick-ups and PVC casings to a depth of approximately 1-foot below ground surface. The PVC screen interval was filled with bentonite chips, the remainder of the PVC casing was grouted in place, and the surface was prepared to receive gravel subbase and asphalt pavement associated with improvements being performed in the vicinity of the wells by others.

Decommissioning of DW-103 was performed by Parratt-Wolff, Inc., and documented by GHD, on April 12, 2019 and consisted of removing the remainder of the damaged protective steel stick-up and PVC casing to a depth of approximately 1-foot below ground surface. The remainder of the PVC casing and screen was grouted in place and the surface was restored to surrounding grade with bagged store bought topsoil.

Decommissioning logs for these monitoring wells and piezometers are provided in Appendix F.

4. Conclusions

Visual observations of the closed landfill did not identify issues that required immediate attention. The annual mowing of the landfill surface has been effective at removing woody growth that could adversely impact the cover system. Generally, the stormwater management and control features are in place and appear to be functioning as intended. The dislodged manhole cover was repositioned by hand on January 7, 2020 and is secure.

In general, laboratory analytical results indicate improvements in groundwater quality since the landfill was closed. Based on results from the most recent round of groundwater sampling (October 2019), exceedances of the well-specific UCLs are limited to samples taken from the following groundwater monitoring wells:

- Total Chromium – None
- Total Iron –MS-104.3; MS-104.4; MS-106.1; MS-106.2; MS-106.3; MS-301.2; MS-301.4; and MS-301.5
- Total Phenols – None
- Specific Conductivity – MS-301.1 and MS-301.2
- pH – MS-104.3; MS-106.1; MS-301.2; MS-301.3; MS-301.4; and W-201R

Historic laboratory analytical results indicate that total chromium concentrations in samples from all monitoring points have never exceeded the well-specific UCL or the NYS Class GA groundwater standard. Total iron concentrations occasionally exceed the well-specific UCLs; however, the identified concentrations are below the NYS Class GA groundwater standard with the exception of samples taken from four (4) Site wells, MS-301.1, MS-301.2, MS-301.3, and MS-301.4. Total phenol concentrations across the Site are generally below the well-specific UCLs but routinely exceed the NYS Class GA groundwater standard.

Following the October 2017 monitoring activities, the NYSDEC approved discontinuation of inclinometer and settlement plate measurements. The inclinometers and settlement plates remain in place.

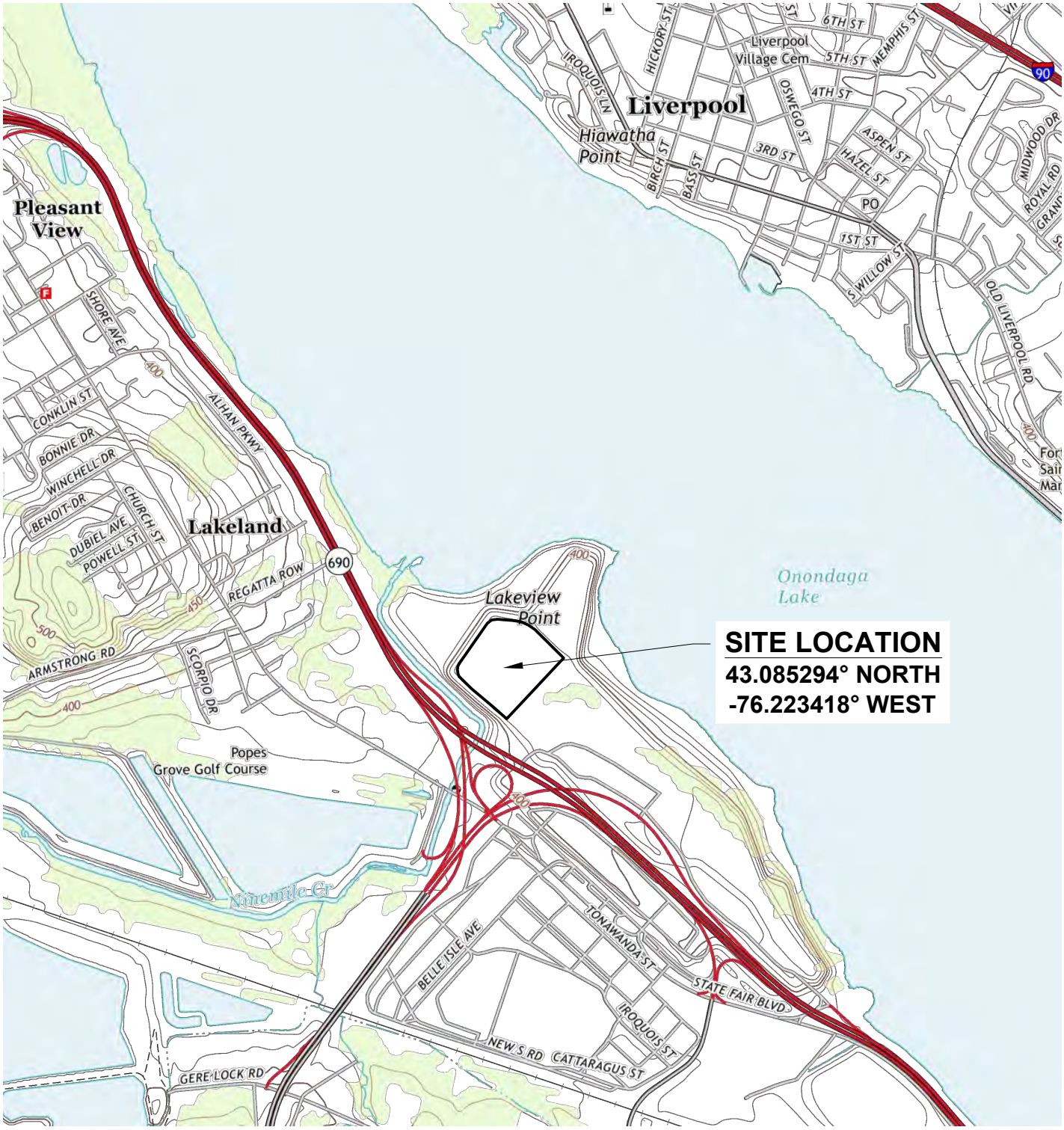
Based on recent and historic groundwater monitoring events, EnPro requests that the NYSDEC consider the following modifications to the on-going monitoring program:

- Reduce the frequency of groundwater monitoring to once every three years based on the historic consistency of the data, with the next monitoring event occurring in fall 2022. pH is the only parameter which has consistently been above the UCL (below the UCL or LCL in most cases would be indicative of an improvement in water quality with respect to pH), which is likely a result of the underlying Solvay Process Waste in which the monitoring wells are completed.
- Decommission well W-10.2, which is currently only used for water level measurements, since it is heavily damaged and appears to be approximately 16 feet shallower than it was during the 2017 monitoring event (assumed something fell into well when it was damaged).
- Remove requirement for on-going monitoring at groundwater monitoring wells MS-104.3 and MS-104.4 due to observed decreasing concentrations and consistency of groundwater analytical results between MS-104.3, MS-104.4, and MS-104.5 during recent monitoring events. Sampling and analysis of MS-104.5 would continue and would provide for effective on-going monitoring of the shallowest groundwater in this area of the Site.

- Remove requirement for on-going monitoring at groundwater monitoring wells MS-106.1 and MS-106.2 due to observed decreasing concentrations and consistency of groundwater analytical results between MS-106.1, MS-106.2, MS-106.3, and MS-106.4 during recent monitoring events. Sampling and analysis of MS-106.3 and MS-106.4 would continue and would provide for effective on-going monitoring of the shallowest groundwater in this area of the Site.
- Remove requirement for on-going monitoring at groundwater monitoring wells MS-301.1 and MS-301.2 due to the depth of the screened intervals below the bottom of waste and the observed consistency of groundwater elevations and groundwater analytical results between MS-301.1, MS-301.2, and MS-301.3. Sampling and analysis of MS-301.3, MS-301.4, and MS-301.5 would continue and would provide for effective on-going monitoring of the shallowest groundwater in this area of the Site. Continuing to monitor MS-301.3 would also provide for continued monitoring of the deeper groundwater interval in this area of the Site to determine if changes are occurring over time.

If NYSDEC concurs with these modifications, a Monitoring Variance Request, if requested, will be submitted on behalf of EnPro Holdings, Inc. for NYSDEC review and approval.

Figures



CONTOUR INTERVAL: 10 FEET

MAPS TAKEN FROM: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLES:
SYRACUSE WEST, NY (2013) AND
CAMILLUS, NY (2013)
(U.S. GEOLOGICAL SURVEY WEBSITE)

0 1000 2000 3000 4000'

SCALE 1"=2000' AT ORIGINAL SIZE

QUADRANGLE LOCATION

N

GHD

EnPro Holdings, Inc.
Former Crucible Specialty Metals Landfill Site
2019 Biennial Groundwater Monitoring

Site Location Map

Job Number	86-18809
Revision	A
Date	12.04.2019

Figure 1

One Remington Park Drive, Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801 **E** cazmail@ghd.com **W** www.ghd.com

Plot Date: 4 December 2019 - 12:03 PM Cad File No: G:\86\18809\Groundwater Monitoring\2019 Annual\Figures\Site Location Map.dwg

0 250' 500' 750'

SCALE 1"=500' AT ORIGINAL SIZE

N

NOTES:

1. AERIAL PHOTOGRAPHS ARE 2018 ONE FOOT RESOLUTION AND WERE OBTAINED FROM THE NEW YORK STATE GIS CLEARINGHOUSE.

GHD

One Remington Park Drive, Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801 **E** cazmail@ghd.com **W** www.ghd.com

EnPro Holdings, Inc.
Former Crucible Specialty Metals Landfill Site
2019 Biennial Groundwater Monitoring

Site Vicinity Aerial

Job Number	86-18809
Revision	A
Date	01.09.2019

Figure 2

Plot Date: 9 January 2020 - 3:14 PM Cad File No: G:\86\18809\Groundwater Monitoring\2019 Annual\Figures\Figure 2 - Site Vicinity Aerial.dwg

ONONDAGA COUNTY
LAKEVIEW AMPHITHEATER

MS-106.1, MS-106.2,
MS-106.3, AND
MS-106.4

W-201R

PZ-8.1

INC-4

MS-301.1, MS-301.2,
MS-301.3, MS-301.4,
AND MS-301.5

MS-106.5

CM-107

MS-104.1, MS-104.2,
MS-104.3, MS-104.4,
AND MS-104.5

PZ-5.1/PZ-5.2/PZ-5.3

W-5.5

W-5.6

DW-103

W-105R

INC-1

INC-2

INC-3

W-10.1

W-10.2

PZ-2.1/PZ-2.2/PZ-2.3

PL-1
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PL-43
PL-44
PL-45
PL-46
PL-47
PL-48
PL-49

MH-1
MH-2
MH-3
MH-4

NINE MILE CREEK

LEGEND

- MONITORING WELL
- PIEZOMETER
- SETTLEMENT PLATE
- INCLINOMETER
- DECOMMISSIONED WELL
- OUTFALL
- DROP INLET
- STORMWATER MANHOLE

0 100' 200' 300'
SCALE 1"=200' AT ORIGINAL SIZE

N

NOTES:
1. ALL OBJECT AND STRUCTURE LOCATIONS ARE APPROXIMATE AND WERE TAKEN FROM S&ME NORTHEAST, P.C. PROJECT NO. 4335-14-211NE FIGURE NO. 3 - SITE PLAN.
2. AERIAL PHOTOGRAPHS ARE 2018 ONE FOOT RESOLUTION AND WERE OBTAINED FROM THE NEW YORK STATE GIS CLEARINGHOUSE.

GHD

EnPro Holdings, Inc.
Former Crucible Specialty Metals Landfill Site
2019 Biennial Groundwater Monitoring

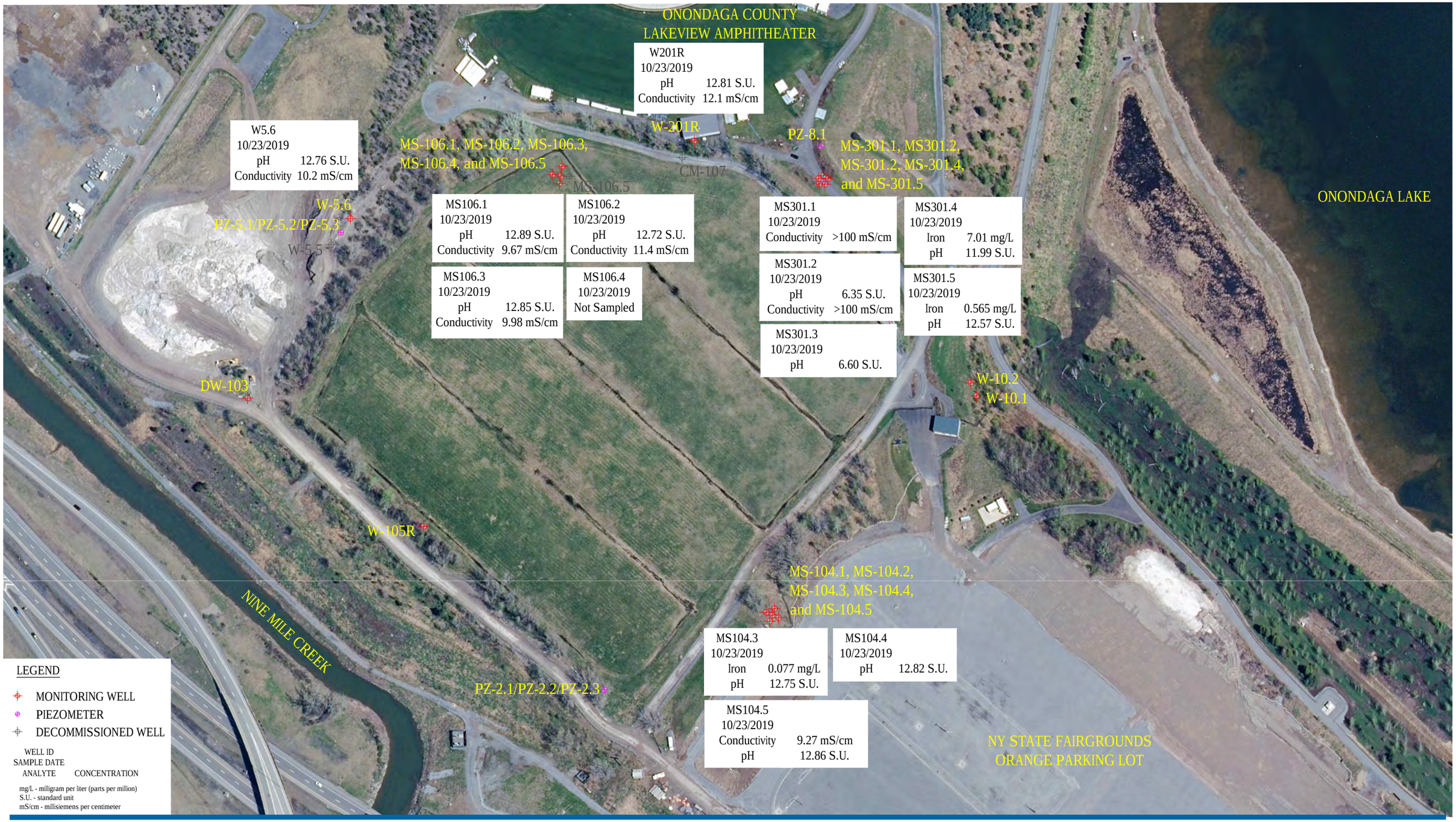
Site Layout Map

Job Number	86-18809
Revision	A
Date	12.04.2019

Figure 3

One Remington Park Drive, Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801 **E** cazmail@ghd.com **W** www.ghd.com

Plot Date: 20 January 2020 - 8:58 AM Cad File No: G:\86\18809\Groundwater Monitoring\2019 Annual\Figures\Figure 3 - Site Layout Map.dwg



LEGEND

- MONITORING WELL
- PIEZOMETER
- DECOMMISSIONED WELL

WELL ID
SAMPLE DATE
ANALYTE CONCENTRATION

mg/L - milligram per liter (parts per million)
S.U. - standard unit
mS/cm - millisiemens per centimeter

0 100' 200' 300'
SCALE 1"=200' AT ORIGINAL SIZE

N

NOTES:
1. ONLY LABORATORY ANALYTICAL RESULTS THAT EXCEED THE WELL-SPECIFIC UPPER CONFIDENCE LIMIT ARE SHOWN HERE. FOR A COMPLETE SUMMARY OF ANALYTICAL RESULTS, REFER TO TABLES IN REPORT.
2. ALL OBJECT AND STRUCTURE LOCATIONS ARE APPROXIMATE AND WERE TAKEN FROM S&ME NORTHEAST, P.C. PROJECT NO. 4335-14-211NE FIGURE NO. 3 - SITE PLAN.
3. AERIAL PHOTOGRAPHS ARE 2018 ONE FOOT RESOLUTION AND WERE OBTAINED FROM THE NEW YORK STATE GIS CLEARINGHOUSE.

EnPro Holdings, Inc.
Former Crucible Specialty Metals Landfill Site
2019 Biennial Groundwater Monitoring

Groundwater Results - Exceedances of UCLs

Job Number 86-18809
Revision A
Date 01.09.2019

Figure 4

One Remington Park Drive, Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801 **E** cazmail@ghd.com **W** www.ghd.com

Plot Date: 20 January 2020 - 9:01 AM Cad File No: G:\86\18809\Groundwater Monitoring\2019 Annual\Figures\Figure 4 - Groundwater Results.dwg

Tables

Table 1
Groundwater Elevation Data
2019 Biennial Monitoring Event

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
CM108	6/2/1998	40.9	386.3	
CM108	10/15/1998	44.3	382.9	
CM108	5/21/1999	40.5	386.7	
CM108	11/10/1999	43.1	384.1	
CM108	7/31/2000	39.2	388.0	
CM108	11/28/2000	43.9	383.3	
CM108	6/20/2001	43.1	384.2	
CM108	4/24/2002	38.4	388.8	
CM108	11/8/2002	-	-	DRY
CM108	6/11/2003	38.5	388.7	
CM108	10/24/2003	-	-	DRY
CM108	6/24/2004	37.7	389.5	
CM108	11/3/2004	42.7	384.6	
CM108	6/15/2005	42.2	385.0	
CM108	11/8/2005	-	-	DRY
CM108	6/26/2006	41.8	385.4	
CM108	11/6/2006	37.5	389.7	
CM108	4/20/2007	35.6	391.6	
CM108	9/21/2007	-	-	DRY
CM108	4/18/2008	37.0	390.2	
CM108	11/3/2008	47.0	379.5	
CM108	11/5/2011	-	-	Not Measured
CM108	10/15/2012	-	-	Not Measured
CM108	9/23/2013	-	-	Not Measured
CM108	10/20/2014	-	-	Not Measured
CM108	10/30/2015	-	-	Decommissioned
DW101	6/2/1998	60.1	372.93	
DW101	10/15/1998	62.2	370.83	
DW101	5/21/1999	59.7	373.33	
DW101	11/10/1999	60.3	372.73	
DW101	7/31/2000	58.2	374.83	
DW101	11/28/2000	59.4	373.63	
DW101	6/20/2001	59.5	373.53	
DW101	10/10/2001	60.0	373.03	
DW101	4/24/2002	58.8	374.23	
DW101	11/8/2002	59.4	373.63	
DW101	6/11/2003	58.5	374.53	
DW101	10/24/2003	59.9	373.13	
DW101	6/24/2004	58.7	374.33	
DW101	11/3/2004	59.2	373.83	
DW101	6/15/2005	59.2	373.83	
DW101	11/8/2005	58.8	374.23	
DW101	6/26/2006	59.1	373.93	
DW101	11/6/2006	58.4	374.63	
DW101	4/20/2007	57.3	375.73	
DW101	9/21/2007	59.9	373.13	
DW101	4/18/2008	58.9	374.13	
DW101	11/3/2008	59.4	373.63	
DW101	10/20/2014	59.7	373.35	
DW101	10/30/2015	59.5	373.53	
DW101	10/27/2016	59.4	373.63	
DW101	10/25/2017	58.4	374.59	
DW101	3/15/2018	-	-	Decommissioned

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
DW103	6/2/1998	56.6	370.5	
DW103	10/15/1998	59.0	368.1	
DW103	5/21/1999	56.9	370.2	
DW103	11/10/1999	57.5	369.6	
DW103	7/31/2000	56.8	370.3	
DW103	11/28/2000	58.6	368.5	
DW103	6/20/2001	57.0	370.1	
DW103	10/10/2001	57.4	369.7	
DW103	4/24/2002	56.4	370.7	
DW103	11/8/2002	57.1	370.0	
DW103	6/11/2003	56.6	370.5	
DW103	10/24/2003	57.7	369.4	
DW103	11/3/2004	57.6	369.5	
DW103	6/15/2005	57.8	369.3	
DW103	11/8/2005	57.6	369.5	
DW103	6/26/2006	57.8	369.3	
DW103	11/6/2006	58.4	368.7	
DW103	4/20/2007	56.1	371.0	
DW103	9/21/2007	58.6	368.5	
DW103	4/18/2008	57.5	369.6	
DW103	11/3/2008	58.1	369.0	
DW103	11/5/2011	57.9	369.1	
DW103	10/15/2012	58.7	368.4	
DW103	9/23/2013	58.1	369.0	
DW103	10/20/2014	58.4	368.7	
DW103	10/29/2015	55.1	371.9	
DW103	10/27/2016	55.2	371.8	
DW103	10/25/2017	55.7	371.4	
DW103	4/12/2019	-	-	Decommissioned
MS104.3	6/2/1998	29.0	399.5	
MS104.3	10/15/1998	35.7	392.8	
MS104.3	5/21/1999	30.2	398.3	
MS104.3	11/10/1999	37.5	391.0	
MS104.3	7/31/2000	28.5	400.0	
MS104.3	11/28/2000	33.2	395.3	
MS104.3	6/20/2001	32.2	396.3	
MS104.3	10/10/2001	34.8	393.7	
MS104.3	4/24/2002	27.7	400.8	
MS104.3	11/8/2002	34.9	393.6	
MS104.3	6/11/2003	28.1	400.4	
MS104.3	10/24/2003	35.0	393.5	
MS104.3	6/24/2004	26.9	401.6	
MS104.3	11/3/2004	31.2	397.3	
MS104.3	6/15/2005	30.6	397.9	
MS104.3	11/8/2005	29.4	399.1	
MS104.3	6/26/2006	30.0	398.5	
MS104.3	11/6/2006	37.1	391.4	
MS104.3	4/20/2007	23.6	404.9	
MS104.3	9/21/2007	34.6	393.9	
MS104.3	4/18/2008	26.0	402.5	
MS104.3	11/3/2008	34.6	393.9	
MS104.3	11/5/2011	29.5	399.1	
MS104.3	10/15/2012	36.6	391.9	
MS104.3	9/23/2013	31.3	397.2	
MS104.3	10/20/2014	29.8	398.7	
MS104.3	10/29/2015	28.7	399.8	
MS104.3	10/27/2016	28.8	399.7	
MS104.3	10/25/2017	32.2	396.3	
MS104.3	10/23/2019	29.2	399.3	

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
MS104.4	6/2/1998	27.9	400.3	
MS104.4	10/15/1998	32.4	395.8	
MS104.4	5/21/1999	28.7	399.5	
MS104.4	11/10/1999	36.5	391.7	
MS104.4	7/31/2000	28.5	399.7	
MS104.4	11/28/2000	32.3	395.9	
MS104.4	6/20/2001	29.1	399.1	
MS104.4	10/10/2001	33.6	394.6	
MS104.4	4/24/2002	26.0	402.2	
MS104.4	11/8/2002	33.8	394.4	
MS104.4	6/11/2003	26.8	401.4	
MS104.4	10/24/2003	33.8	394.4	
MS104.4	6/24/2004	25.8	402.4	
MS104.4	11/3/2004	30.0	398.2	
MS104.4	6/15/2005	28.4	399.8	
MS104.4	11/8/2005	27.9	400.3	
MS104.4	6/26/2006	28.7	399.5	
MS104.4	11/6/2006	25.8	402.4	
MS104.4	4/20/2007	22.6	405.6	
MS104.4	9/21/2007	33.1	395.1	
MS104.4	4/18/2008	24.9	403.3	
MS104.4	11/3/2008	33.7	394.5	
MS104.4	11/5/2011	28.1	400.1	
MS104.4	10/15/2012	35.4	392.8	
MS104.4	9/23/2013	30.0	398.2	
MS104.4	10/20/2014	27.7	400.5	
MS104.4	10/29/2015	27.4	400.9	
MS104.4	10/27/2016	27.0	401.2	
MS104.4	10/25/2017	30.9	397.3	
MS104.4	10/23/2019	27.7	400.6	
MS104.5	6/2/1998	24.8	403.8	
MS104.5	10/15/1998	32.4	396.2	
MS104.5	5/21/1999	26.1	402.5	
MS104.5	11/10/1999	-	-	DRY
MS104.5	7/31/2000	24.5	404.1	
MS104.5	11/28/2000	30.8	397.8	
MS104.5	6/20/2001	26.7	401.9	
MS104.5	10/10/2001	32.6	396.0	
MS104.5	4/24/2002	23.6	405.0	
MS104.5	11/8/2002	32.5	396.1	
MS104.5	6/11/2003	24.1	404.5	
MS104.5	10/24/2003	32.5	396.1	
MS104.5	6/24/2004	23.9	404.7	
MS104.5	11/3/2004	27.6	401.0	
MS104.5	6/15/2005	25.8	402.8	
MS104.5	11/8/2005	25.9	402.7	
MS104.5	6/26/2006	26.1	402.5	
MS104.5	11/6/2006	23.4	405.2	
MS104.5	4/20/2007	20.8	407.8	
MS104.5	9/21/2007	32.2	396.4	
MS104.5	4/18/2008	23.1	405.5	
MS104.5	11/3/2008	32.8	395.8	
MS104.5	11/5/2011	26.0	402.6	
MS104.5	10/15/2012	34.7	393.9	
MS104.5	9/23/2013	27.8	400.7	
MS104.5	10/20/2014	23.1	405.5	
MS104.5	10/29/2015	24.7	403.9	
MS104.5	10/27/2016	23.9	404.7	
MS104.5	10/25/2017	29.1	399.5	
MS104.5	10/23/2019	25.0	403.6	

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
MS106.1	6/2/1998	55.5	380.5	
MS106.1	10/15/1998	60.8	375.2	
MS106.1	5/21/1999	57.1	378.9	
MS106.1	11/10/1999	63.5	372.5	
MS106.1	7/31/2000	55.3	380.7	
MS106.1	11/28/2000	60.1	375.9	
MS106.1	6/20/2001	57.6	378.4	
MS106.1	10/10/2001	61.6	374.4	
MS106.1	4/24/2002	55.7	380.3	
MS106.1	11/8/2002	61.4	374.6	
MS106.1	6/11/2003	54.8	381.2	
MS106.1	10/24/2003	61.4	374.6	
MS106.1	6/24/2004	54.0	382.0	
MS106.1	11/3/2004	58.0	378.0	
MS106.1	6/15/2005	57.1	378.9	
MS106.1	11/8/2005	59.4	376.6	
MS106.1	6/26/2006	59.1	376.9	
MS106.1	11/6/2006	54.8	381.2	
MS106.1	4/20/2007	51.5	384.5	
MS106.1	9/21/2007	61.2	374.8	
MS106.1	4/18/2008	52.9	383.1	
MS106.1	11/3/2008	60.1	375.9	
MS106.1	11/5/2011	57.8	378.2	
MS106.1	10/15/2012	62.9	373.1	
MS106.1	9/23/2013	60.7	375.3	
MS106.1	10/20/2014	63.4	372.6	
MS106.1	10/30/2015	60.0	376.1	
MS106.1	10/26/2016	60.7	375.3	
MS106.1	10/25/2017	61.7	374.4	
MS106.1	10/23/2019	60.5	375.5	
MS106.2	6/2/1998	52.3	384.1	
MS106.2	10/15/1998	58.9	377.5	
MS106.2	5/21/1999	56.7	379.7	
MS106.2	11/10/1999	61.0	375.4	
MS106.2	7/31/2000	52.0	384.4	
MS106.2	11/28/2000	57.3	379.1	
MS106.2	6/20/2001	54.4	382.0	
MS106.2	10/10/2001	28.8	407.6	
MS106.2	4/24/2002	52.4	384.0	
MS106.2	11/8/2002	58.7	377.7	
MS106.2	6/11/2003	51.3	385.1	
MS106.2	10/24/2003	58.2	378.2	
MS106.2	6/24/2004	50.0	386.4	
MS106.2	11/3/2004	54.7	381.7	
MS106.2	6/15/2005	53.2	383.2	
MS106.2	11/8/2005	57.1	379.3	
MS106.2	6/26/2006	53.5	382.9	
MS106.2	11/6/2006	51.2	385.2	
MS106.2	4/20/2007	47.0	389.4	
MS106.2	9/21/2007	57.6	378.8	
MS106.2	4/18/2008	48.4	388.0	
MS106.2	11/3/2008	57.6	378.8	
MS106.2	11/5/2011	54.4	382.0	
MS106.2	10/15/2012	59.7	376.6	
MS106.2	9/23/2013	57.1	379.2	
MS106.2	10/20/2014	60.0	376.4	
MS106.2	10/30/2015	57.0	379.4	
MS106.2	10/26/2016	59.1	377.3	
MS106.2	10/25/2017	58.3	378.1	
MS106.2	10/23/2019	57.9	378.5	

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
MS106.3	6/2/1998	41.8	392.1	
MS106.3	10/15/1998	53.3	380.6	
MS106.3	5/21/1999	45.2	388.7	
MS106.3	11/10/1999	56.5	377.4	
MS106.3	7/31/2000	40.6	393.3	
MS106.3	11/28/2000	51.5	382.4	
MS106.3	6/20/2001	46.1	387.8	
MS106.3	10/10/2001	54.1	379.8	
MS106.3	4/24/2002	40.6	393.3	
MS106.3	11/8/2002	53.7	380.2	
MS106.3	6/11/2003	40.2	393.7	
MS106.3	10/24/2003	52.7	381.2	
MS106.3	6/24/2004	39.1	394.8	
MS106.3	11/3/2004	47.7	386.2	
MS106.3	6/15/2005	43.7	390.2	
MS106.3	11/8/2005	52.5	381.4	
MS106.3	6/26/2006	44.8	389.1	
MS106.3	11/6/2006	40.6	393.3	
MS106.3	4/20/2007	35.2	398.7	
MS106.3	9/21/2007	51.2	382.7	
MS106.3	4/18/2008	37.1	396.8	
MS106.3	11/3/2008	53.0	380.9	
MS106.3	11/5/2011	47.7	386.3	
MS106.3	10/15/2012	55.4	378.6	
MS106.3	9/23/2013	50.9	383.0	
MS106.3	10/20/2014	55.3	378.7	
MS106.3	10/30/2015	51.7	382.2	
MS106.3	10/26/2016	55.4	378.6	
MS106.3	10/25/2017	53.1	380.9	
MS106.3	10/23/2019	53.4	380.6	
MS106.4	6/2/1998	42.2	391.7	
MS106.4	10/15/1998	-	-	DRY
MS106.4	5/21/1999	44.1	389.8	
MS106.4	11/10/1999	-	-	DRY
MS106.4	7/31/2000	41.4	392.5	
MS106.4	11/28/2000	50.1	383.8	
MS106.4	6/20/2001	44.6	389.3	
MS106.4	10/10/2001	-	-	DRY
MS106.4	4/24/2002	41.4	392.5	
MS106.4	11/8/2002	51.0	382.9	
MS106.4	6/11/2003	40.9	393.0	
MS106.4	10/24/2003	50.6	383.3	
MS106.4	6/24/2004	39.7	394.2	
MS106.4	11/3/2004	45.9	388.0	
MS106.4	6/15/2005	43.3	390.6	
MS106.4	11/8/2005	50.7	383.2	
MS106.4	6/26/2006	43.9	390.0	
MS106.4	11/6/2006	40.5	393.4	
MS106.4	4/20/2007	34.8	399.1	
MS106.4	9/21/2007	49.3	384.6	
MS106.4	4/18/2008	37.1	396.8	
MS106.4	11/3/2008	49.9	384.0	
MS106.4	11/5/2011	45.3	388.6	
MS106.4	10/15/2012	-	-	DRY
MS106.4	9/23/2013	49.3	384.7	
MS106.4	10/20/2014	-	-	DRY
MS106.4	10/30/2015	50.3	383.7	
MS106.4	10/26/2016	-	-	DRY
MS106.4	10/25/2017	50.5	384.5	
MS106.4	10/23/2019	50.9	384.1	

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
MS106.5	6/2/1998	40.4	393.5	
MS106.5	10/15/1998	-	-	DRY
MS106.5	5/21/1999	-	-	DRY
MS106.5	11/10/1999	-	-	DRY
MS106.5	7/31/2000	-	-	DRY
MS106.5	11/28/2000	-	-	DRY
MS106.5	6/20/2001	-	-	DRY
MS106.5	10/10/2001	-	-	DRY
MS106.5	4/24/2002	-	-	DRY
MS106.5	11/8/2002	-	-	DRY
MS106.5	6/11/2003	38.0	395.9	
MS106.5	10/24/2003	-	-	DRY
MS106.5	6/24/2004	37.5	396.4	
MS106.5	11/3/2004	-	-	DRY
MS106.5	6/15/2005	41.7	392.2	
MS106.5	11/8/2005	-	-	DRY
MS106.5	6/26/2006	-	-	DRY
MS106.5	11/6/2006	36.3	397.6	
MS106.5	4/20/2007	29.9	404.0	
MS106.5	9/21/2007	-	-	DRY
MS106.5	4/18/2008	34.1	399.8	
MS106.5	11/3/2008	-	-	DRY
MS106.5	11/5/2011	40.1	393.8	
MS106.5	10/15/2012	-	-	DRY
MS106.5	9/23/2013	-	-	DRY
MS106.5	10/20/2014	-	-	DRY
MS106.5	10/30/2015	-	-	DRY
MS106.5	10/26/2016	-	-	DRY
MS106.5	10/25/2017	-	-	DRY
MS106.5	10/26/2017	-	-	Decommissioned
MS301.1	6/2/1998	57.4	367.5	
MS301.1	10/15/1998	58.2	366.7	
MS301.1	5/21/1999	58.0	366.9	
MS301.1	11/10/1999	58.3	366.6	
MS301.1	7/31/2000	57.9	367.0	
MS301.1	11/28/2000	58.1	366.8	
MS301.1	6/20/2001	58.0	366.9	
MS301.1	10/10/2001	58.6	366.3	
MS301.1	4/24/2002	57.6	367.3	
MS301.1	11/8/2002	58.1	366.8	
MS301.1	6/11/2003	57.4	367.5	
MS301.1	10/24/2003	59.0	365.9	
MS301.1	6/24/2004	57.7	367.2	
MS301.1	11/3/2004	58.1	366.8	
MS301.1	6/15/2005	58.1	366.8	
MS301.1	11/8/2005	57.8	367.1	
MS301.1	6/26/2006	58.0	366.9	
MS301.1	11/6/2006	57.6	367.3	
MS301.1	4/20/2007	56.4	368.5	
MS301.1	9/21/2007	58.8	366.1	
MS301.1	4/18/2008	57.9	367.0	
MS301.1	11/3/2008	58.4	366.5	
MS301.1	11/5/2011	58.2	366.7	
MS301.1	10/15/2012	59.0	365.9	
MS301.1	9/23/2013	58.4	366.5	
MS301.1	10/20/2014	58.6	366.2	
MS301.1	10/29/2015	56.7	368.2	
MS301.1	10/26/2016	53.8	371.0	
MS301.1	10/25/2017	57.0	367.9	
MS301.1	10/23/2019	56.2	371.4	

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
MS301.2	6/2/1998	56.1	368.5	
MS301.2	10/15/1998	58.7	365.9	
MS301.2	5/21/1999	56.7	367.9	
MS301.2	11/10/1999	60.3	364.3	
MS301.2	7/31/2000	55.7	368.9	
MS301.2	11/28/2000	58.5	366.1	
MS301.2	6/20/2001	57.4	367.2	
MS301.2	10/10/2001	59.7	364.9	
MS301.2	4/24/2002	55.4	369.2	
MS301.2	11/8/2002	59.3	365.3	
MS301.2	6/11/2003	55.5	369.1	
MS301.2	10/24/2003	60.1	364.5	
MS301.2	6/24/2004	55.0	369.6	
MS301.2	11/3/2004	57.5	367.1	
MS301.2	6/15/2005	57.3	367.3	
MS301.2	11/8/2005	58.2	366.4	
MS301.2	6/26/2006	57.1	367.5	
MS301.2	11/6/2006	54.9	369.7	
MS301.2	4/20/2007	53.0	371.6	
MS301.2	9/21/2007	60.0	364.6	
MS301.2	4/18/2008	53.9	370.7	
MS301.2	11/3/2008	58.6	366.0	
MS301.2	11/5/2011	57.1	367.5	
MS301.2	10/15/2012	60.1	364.5	
MS301.2	9/23/2013	59.6	365.1	
MS301.2	10/20/2014	62.4	362.2	
MS301.2	10/29/2015	57.9	366.8	
MS301.2	10/26/2016	57.5	367.2	
MS301.2	10/25/2017	59.1	365.5	
MS301.2	10/23/2019	57.8	369.4	
MS301.3	6/2/1998	55.6	369.3	
MS301.3	10/15/1998	58.4	366.5	
MS301.3	5/21/1999	56.6	368.3	
MS301.3	11/10/1999	60.1	364.8	
MS301.3	7/31/2000	55.3	369.6	
MS301.3	11/28/2000	58.2	366.7	
MS301.3	6/20/2001	57.0	367.9	
MS301.3	10/10/2001	59.4	365.5	
MS301.3	4/24/2002	55.0	369.9	
MS301.3	11/8/2002	58.9	366.0	
MS301.3	6/11/2003	55.1	369.8	
MS301.3	10/24/2003	59.9	365.0	
MS301.3	6/24/2004	54.4	370.5	
MS301.3	11/3/2004	57.1	367.8	
MS301.3	6/15/2005	56.8	368.1	
MS301.3	11/8/2005	57.3	367.6	
MS301.3	6/26/2006	56.5	368.4	
MS301.3	11/6/2006	54.4	370.5	
MS301.3	4/20/2007	52.0	372.9	
MS301.3	9/21/2007	59.4	365.5	
MS301.3	4/18/2008	53.0	371.9	
MS301.3	11/3/2008	58.1	366.8	
MS301.3	11/5/2011	56.2	368.7	
MS301.3	10/15/2012	59.4	365.6	
MS301.3	9/23/2013	58.8	366.2	
MS301.3	10/20/2014	61.9	363.1	
MS301.3	10/29/2015	57.2	367.8	
MS301.3	10/26/2016	54.8	370.1	
MS301.3	10/25/2017	58.4	366.5	
MS301.3	10/23/2019	57.1	370.3	

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
MS301.4	6/2/1998	49.5	374.9	
MS301.4	10/15/1998	53.2	371.2	
MS301.4	5/21/1999	50.1	374.3	
MS301.4	11/10/1999	55.5	368.9	
MS301.4	7/31/2000	48.8	375.6	
MS301.4	11/28/2000	53.0	371.4	
MS301.4	6/20/2001	51.1	373.3	
MS301.4	10/10/2001	54.3	370.1	
MS301.4	4/24/2002	48.6	375.8	
MS301.4	11/8/2002	54.2	370.2	
MS301.4	6/11/2003	48.7	375.7	
MS301.4	10/24/2003	54.7	369.7	
MS301.4	6/24/2004	47.9	376.5	
MS301.4	11/3/2004	51.5	372.9	
MS301.4	6/15/2005	50.7	373.7	
MS301.4	11/8/2005	52.2	372.2	
MS301.4	6/26/2006	50.5	373.9	
MS301.4	11/6/2006	48.2	376.2	
MS301.4	4/20/2007	45.0	379.4	
MS301.4	9/21/2007	54.2	370.2	
MS301.4	4/18/2008	46.3	378.1	
MS301.4	11/3/2008	52.9	371.5	
MS301.4	11/5/2011	50.8	373.7	
MS301.4	10/15/2012	54.5	369.9	
MS301.4	9/23/2013	53.1	371.4	
MS301.4	10/20/2014	55.9	368.5	
MS301.4	10/29/2015	50.2	374.2	
MS301.4	10/26/2016	50.9	373.5	
MS301.4	10/25/2017	52.2	372.3	
MS301.4	10/23/2019	51.2	376.1	
MS301.5	6/2/1998	38.9	386.0	
MS301.5	10/15/1998	45.5	379.4	
MS301.5	5/21/1999	39.9	385.0	
MS301.5	11/10/1999	46.4	378.5	
MS301.5	7/31/2000	38.3	386.6	
MS301.5	11/28/2000	44.7	380.2	
MS301.5	6/20/2001	41.2	383.7	
MS301.5	10/10/2001	45.3	379.6	
MS301.5	4/24/2002	36.5	388.4	
MS301.5	11/8/2002	45.1	379.8	
MS301.5	6/11/2003	37.2	387.7	
MS301.5	10/24/2003	45.3	379.6	
MS301.5	6/24/2004	37.4	387.5	
MS301.5	11/3/2004	41.9	383.0	
MS301.5	6/15/2005	40.5	384.4	
MS301.5	11/8/2005	43.4	381.5	
MS301.5	6/26/2006	40.4	384.5	
MS301.5	11/6/2006	36.8	388.1	
MS301.5	4/20/2007	31.7	393.2	
MS301.5	9/21/2007	44.7	380.2	
MS301.5	4/18/2008	35.2	389.7	
MS301.5	11/3/2008	43.1	381.8	
MS301.5	11/5/2011	40.5	384.4	
MS301.5	10/15/2012	46.0	378.9	
MS301.5	9/23/2013	43.2	381.7	
MS301.5	10/20/2014	45.5	379.3	
MS301.5	10/29/2015	39.6	385.3	
MS301.5	10/26/2016	39.6	385.2	
MS301.5	10/25/2017	41.7	383.2	
MS301.5	10/23/2019	40.7	386.6	

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
PZ101.1	6/2/1998	50.9	382.5	
PZ101.1	11/28/2000	47.9	385.5	
PZ101.1	6/20/2001	46.3	387.1	
PZ101.1	10/10/2001	49.0	384.4	
PZ101.1	4/24/2002	45.0	388.4	
PZ101.1	11/8/2002	48.7	384.7	
PZ101.1	6/11/2003	44.7	388.7	
PZ101.1	10/24/2003	49.0	384.4	
PZ101.1	6/24/2004	43.8	389.6	
PZ101.1	11/3/2004	46.6	386.8	
PZ101.1	6/15/2005	46.0	387.4	
PZ101.1	11/8/2005	47.1	386.3	
PZ101.1	6/26/2006	46.0	387.4	
PZ101.1	11/6/2006	44.7	388.7	
PZ101.1	4/20/2007	41.8	391.6	
PZ101.1	9/21/2007	49.0	384.4	
PZ101.1	4/18/2008	43.5	389.9	
PZ101.1	11/3/2008	48.7	384.7	
PZ101.1	10/20/2014	48.3	385.1	
PZ101.1	10/30/2015	47.5	385.9	
PZ101.1	10/27/2016	49.3	384.1	
PZ101.1	10/25/2017	47.9	385.5	
PZ101.1	3/15/2018	-	-	Decommissioned
PZ101.2	6/2/1998	39.9	394.0	
PZ101.2	11/28/2000	40.2	393.7	
PZ101.2	6/20/2001	37.7	396.2	
PZ101.2	10/10/2001	41.2	392.7	
PZ101.2	4/24/2002	36.1	397.8	
PZ101.2	11/8/2002	41.3	392.6	
PZ101.2	6/11/2003	35.9	398.0	
PZ101.2	10/24/2003	41.6	392.3	
PZ101.2	6/24/2004	34.6	399.3	
PZ101.2	11/3/2004	38.4	395.5	
PZ101.2	6/15/2005	37.4	396.5	
PZ101.2	11/8/2005	39.2	394.7	
PZ101.2	6/26/2006	37.6	396.3	
PZ101.2	11/6/2006	35.9	398.0	
PZ101.2	4/20/2007	32.5	401.4	
PZ101.2	9/21/2007	41.8	392.1	
PZ101.2	4/18/2008	34.4	399.5	
PZ101.2	11/3/2008	41.5	392.4	
PZ101.2	10/20/2014	41.0	392.9	
PZ101.2	10/27/2016	42.5	391.4	
PZ101.2	10/25/2017	40.6	393.3	
PZ101.2	3/15/2018	-	-	Decommissioned
PZ101.3	6/2/1998	36.8	396.5	
PZ101.3	11/28/2000	39.5	393.8	
PZ101.3	6/20/2001	37.0	396.3	
PZ101.3	10/10/2001	40.5	392.8	
PZ101.3	4/24/2002	35.0	398.3	
PZ101.3	11/8/2002	40.5	392.8	
PZ101.3	6/11/2003	34.9	398.4	
PZ101.3	10/24/2003	41.0	392.3	
PZ101.3	6/24/2004	33.6	399.7	
PZ101.3	11/3/2004	37.7	395.6	
PZ101.3	6/15/2005	36.7	396.6	
PZ101.3	11/8/2005	38.3	395.0	
PZ101.3	6/26/2006	36.8	396.5	
PZ101.3	11/6/2006	34.7	398.6	
PZ101.3	4/20/2007	31.6	401.7	
PZ101.3	9/21/2007	41.3	392.0	
PZ101.3	4/18/2008	33.3	400.0	
PZ101.3	11/3/2008	40.8	392.5	
PZ101.3	10/20/2014	40.5	392.8	
PZ101.3	10/27/2016	41.9	391.4	
PZ101.3	10/25/2017	40.0	393.3	
PZ101.3	3/15/2018	-	-	Decommissioned

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
PZ2.1	6/2/1998	51.2	377.4	
PZ2.1	10/15/1998	51.4	377.2	
PZ2.1	5/21/1999	51.7	376.9	
PZ2.1	11/10/1999	54.1	374.5	
PZ2.1	7/31/2000	46.8	381.8	
PZ2.1	11/28/2000	50.1	378.5	
PZ2.1	6/20/2001	47.0	381.6	
PZ2.1	10/10/2001	50.3	378.3	
PZ2.1	4/24/2002	47.2	381.4	
PZ2.1	11/8/2002	50.3	378.3	
PZ2.1	6/11/2003	45.5	383.1	
PZ2.1	10/24/2003	50.3	378.3	
PZ2.1	6/24/2004	43.8	384.8	
PZ2.1	11/3/2004	47.9	380.7	
PZ2.1	6/15/2005	46.3	382.3	
PZ2.1	11/8/2005	48.3	380.3	
PZ2.1	6/26/2006	47.2	381.4	
PZ2.1	11/6/2006	46.4	382.2	
PZ2.1	4/20/2007	41.3	387.3	
PZ2.1	9/21/2007	49.6	379.0	
PZ2.1	4/18/2008	43.2	385.4	
PZ2.1	11/3/2008	50.1	378.5	
PZ2.1	11/5/2011	-	-	DRY
PZ2.1	10/15/2012	50.9	377.6	
PZ2.1	9/23/2013	49.0	379.6	
PZ2.1	10/20/2014	49.9	378.7	
PZ2.1	10/29/2015	48.0	380.6	
PZ2.1	10/27/2016	49.6	379.0	
PZ2.1	10/25/2017	49.4	379.1	
PZ2.1	10/23/2019	-	-	DRY
PZ2.2	6/2/1998	41.8	386.6	
PZ2.2	10/15/1998	41.9	386.5	
PZ2.2	5/21/1999	42.1	386.3	
PZ2.2	11/10/1999	-	-	Probe Stop
PZ2.2	7/31/2000	-	-	Probe Stop
PZ2.2	11/28/2000	-	-	Probe Stop
PZ2.2	6/20/2001	-	-	Probe Stop
PZ2.2	10/10/2001	-	-	Probe Stop
PZ2.2	4/24/2002	35.5	392.9	
PZ2.2	11/8/2002	-	-	Probe Stop
PZ2.2	6/11/2003	-	-	Probe Stop
PZ2.2	10/24/2003	-	-	Probe Stop
PZ2.2	6/24/2004	33.3	395.1	
PZ2.2	11/3/2004	-	-	DRY
PZ2.2	6/15/2005	36.9	391.5	
PZ2.2	11/8/2005	-	-	Probe Stop
PZ2.2	6/26/2006	-	-	Probe Stop
PZ2.2	11/6/2006	-	-	Probe Stop
PZ2.2	4/20/2007	26.9	401.5	
PZ2.2	9/21/2007	37.3	391.1	
PZ2.2	4/18/2008	31.2	397.2	
PZ2.2	11/3/2008	-	-	DRY
PZ2.2	11/5/2011	-	-	DRY
PZ2.2	10/15/2012	-	-	DRY
PZ2.2	9/23/2013	-	-	DRY
PZ2.2	10/20/2014	-	-	DRY
PZ2.2	10/29/2015	-	-	DRY
PZ2.2	10/27/2016	-	-	DRY
PZ2.2	10/25/2017	-	-	DRY
PZ2.2	10/23/2019	-	-	No longer part of monitoring program

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
PZ2.3	6/2/1998	-	-	DRY
PZ2.3	10/15/1998	-	-	DRY
PZ2.3	5/21/1999	-	-	DRY
PZ2.3	11/10/1999	-	-	DRY
PZ2.3	7/31/2000	-	-	DRY
PZ2.3	11/28/2000	-	-	DRY
PZ2.3	6/20/2001	-	-	DRY
PZ2.3	10/10/2001	-	-	DRY
PZ2.3	4/24/2002	-	-	DRY
PZ2.3	11/8/2002	-	-	DRY
PZ2.3	6/11/2003	-	-	DRY
PZ2.3	10/24/2003	-	-	DRY
PZ2.3	6/24/2004	-	-	DRY
PZ2.3	11/3/2004	-	-	DRY
PZ2.3	6/15/2005	-	-	DRY
PZ2.3	11/8/2005	-	-	DRY
PZ2.3	6/26/2006	-	-	DRY
PZ2.3	11/6/2006	-	-	DRY
PZ2.3	4/20/2007	22.5	406.0	
PZ2.3	9/21/2007	-	-	DRY
PZ2.3	4/18/2008	26.8	401.7	
PZ2.3	11/3/2008	-	-	DRY
PZ2.3	11/5/2011	-	-	DRY
PZ2.3	10/15/2012	-	-	DRY
PZ2.3	9/23/2013	-	-	DRY
PZ2.3	10/20/2014	-	-	DRY
PZ2.3	10/29/2015	-	-	DRY
PZ2.3	10/27/2016	35.8	392.7	
PZ2.3	10/25/2017	-	-	DRY
PZ2.3	10/23/2019	-	-	No longer part of monitoring program
PZ5.1	6/2/1998	44.7	381.8	
PZ5.1	10/15/1998	49.6	376.9	
PZ5.1	5/21/1999	45.5	381.0	
PZ5.1	11/10/1999	52.5	374.0	
PZ5.1	7/31/2000	45.5	381.0	
PZ5.1	11/28/2000	48.8	377.7	
PZ5.1	6/20/2001	46.3	380.2	
PZ5.1	10/10/2001	50.6	375.9	
PZ5.1	4/24/2002	44.9	381.6	
PZ5.1	11/8/2002	50.6	375.9	
PZ5.1	6/11/2003	44.1	382.4	
PZ5.1	10/24/2003	50.1	376.4	
PZ5.1	6/24/2004	43.0	383.5	
PZ5.1	11/3/2004	46.5	380.0	
PZ5.1	6/15/2005	45.6	380.9	
PZ5.1	11/8/2005	48.0	378.5	
PZ5.1	6/26/2006	45.9	380.6	
PZ5.1	11/6/2006	44.4	382.1	
PZ5.1	4/20/2007	40.3	386.2	
PZ5.1	9/21/2007	50.3	376.2	
PZ5.1	4/18/2008	41.9	384.6	
PZ5.1	11/3/2008	48.6	377.9	
PZ5.1	11/5/2011	-	-	Obstructed
PZ5.1	10/15/2012	52.3	374.2	
PZ5.1	9/23/2013	49.0	377.5	
PZ5.1	10/20/2014	51.8	374.7	
PZ5.1	10/29/2015	47.8	378.7	
PZ5.1	10/26/2016	48.8	377.7	
PZ5.1	10/25/2017	49.9	376.6	
PZ5.1	10/23/2019	48.3	378.3	

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
PZ5.2	6/2/1998	40.7	385.8	
PZ5.2	10/15/1998	47.4	379.1	
PZ5.2	5/21/1999	41.6	384.9	
PZ5.2	11/10/1999	51.1	375.4	
PZ5.2	7/31/2000	41.9	384.6	
PZ5.2	11/28/2000	46.3	380.2	
PZ5.2	6/20/2001	42.9	383.6	
PZ5.2	10/10/2001	48.3	378.2	
PZ5.2	4/24/2002	41.2	385.3	
PZ5.2	11/8/2002	48.4	378.1	
PZ5.2	6/11/2003	39.8	386.7	
PZ5.2	10/24/2003	47.5	379.0	
PZ5.2	6/24/2004	38.6	387.9	
PZ5.2	11/3/2004	43.2	383.3	
PZ5.2	6/15/2005	41.2	385.3	
PZ5.2	11/8/2005	45.6	380.9	
PZ5.2	6/26/2006	41.8	384.7	
PZ5.2	11/6/2006	40.7	385.8	
PZ5.2	4/20/2007	35.1	391.4	
PZ5.2	9/21/2007	47.5	379.0	
PZ5.2	4/18/2008	37.3	389.2	
PZ5.2	11/3/2008	46.1	380.4	
PZ5.2	11/5/2011	-	-	Obstructed
PZ5.2	10/15/2012	50.7	375.8	
PZ5.2	9/23/2013	45.8	380.7	
PZ5.2	10/20/2014	49.6	376.9	
PZ5.2	10/29/2015	45.2	381.4	
PZ5.2	10/26/2016	46.6	379.9	
PZ5.2	10/25/2017	46.9	379.6	
PZ5.2	10/23/2019	45.2	381.3	
PZ5.3	6/2/1998	-	-	DRY
PZ5.3	10/15/1998	-	-	DRY
PZ5.3	5/21/1999	-	-	DRY
PZ5.3	11/10/1999	-	-	DRY
PZ5.3	7/31/2000	-	-	DRY
PZ5.3	11/28/2000	-	-	DRY
PZ5.3	6/20/2001	-	-	DRY
PZ5.3	10/10/2001	-	-	DRY
PZ5.3	4/24/2002	-	-	DRY
PZ5.3	11/8/2002	-	-	DRY
PZ5.3	6/11/2003	-	-	DRY
PZ5.3	10/24/2003	-	-	DRY
PZ5.3	6/24/2004	-	-	Probe Stop
PZ5.3	11/3/2004	-	-	Probe Stop
PZ5.3	6/15/2005	-	-	Probe Stop
PZ5.3	11/8/2005	-	-	Probe Stop
PZ5.3	6/26/2006	-	-	Probe Stop
PZ5.3	11/6/2006	-	-	Probe Stop
PZ5.3	4/20/2007	19.8	406.7	
PZ5.3	9/21/2007	-	-	DRY
PZ5.3	4/18/2008	21.3	405.2	
PZ5.3	11/3/2008	-	-	DRY
PZ5.3	11/5/2011	-	-	Probe Stop
PZ5.3	10/15/2012	-	-	DRY
PZ5.3	9/23/2013	-	-	DRY
PZ5.3	10/20/2014	-	-	DRY
PZ5.3	10/29/2015	-	-	DRY
PZ5.3	10/26/2016	-	-	DRY
PZ5.3	10/25/2017	-	-	DRY
PZ5.3	10/23/2019	-	-	No longer part of monitoring program

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
PZ8.1	6/2/1998	50.2	376.2	
PZ8.1	10/15/1998	52.5	373.9	
PZ8.1	5/21/1999	51.0	375.4	
PZ8.1	11/10/1999	53.5	372.9	
PZ8.1	7/31/2000	46.8	379.6	
PZ8.1	11/28/2000	51.4	375.0	
PZ8.1	6/20/2001	50.2	376.2	
PZ8.1	10/10/2001	53.2	373.2	
PZ8.1	4/24/2002	45.3	381.1	
PZ8.1	11/8/2002	52.6	373.8	
PZ8.1	6/11/2003	47.8	378.6	
PZ8.1	10/24/2003	53.0	373.4	
PZ8.1	6/24/2004	47.2	379.2	
PZ8.1	11/3/2004	50.1	376.3	
PZ8.1	6/15/2005	51.5	374.9	
PZ8.1	11/8/2005	51.1	375.3	
PZ8.1	6/26/2006	50.0	376.4	
PZ8.1	11/6/2006	46.6	379.8	
PZ8.1	4/20/2007	43.6	382.8	
PZ8.1	9/21/2007	53.2	373.2	
PZ8.1	4/18/2008	45.5	380.9	
PZ8.1	11/3/2008	51.0	375.4	
PZ8.1	11/5/2011	48.8	377.6	
PZ8.1	10/15/2012	53.9	372.5	
PZ8.1	9/23/2013	52.2	374.2	
PZ8.1	10/20/2014	47.8	378.6	
PZ8.1	10/29/2015	49.4	377.0	
PZ8.1	10/26/2016	49.6	376.8	
PZ8.1	10/25/2017	46.7	379.7	
PZ8.1	10/23/2019	50.3	377.0	
PZ8.2	6/2/1998	40.9	385.5	
PZ8.2	10/15/1998	46.4	380.0	
PZ8.2	5/21/1999	42.1	384.3	
PZ8.2	11/10/1999	48.6	377.8	
PZ8.2	7/31/2000	40.8	385.6	
PZ8.2	11/28/2000	44.7	381.7	
PZ8.2	6/20/2001	41.8	384.6	
PZ8.2	10/10/2001	47.1	379.3	
PZ8.2	4/24/2002	39.5	386.9	
PZ8.2	11/8/2002	46.8	379.6	
PZ8.2	6/11/2003	36.8	389.6	
PZ8.2	10/24/2003	46.7	379.7	
PZ8.2	6/24/2004	36.9	389.5	
PZ8.2	11/3/2004	42.6	383.8	
PZ8.2	6/15/2005	43.4	383.0	
PZ8.2	11/8/2005	46.4	380.0	
PZ8.2	6/26/2006	41.1	385.3	
PZ8.2	11/6/2006	42.6	383.8	
PZ8.2	4/20/2007	30.0	396.4	
PZ8.2	9/21/2007	47.1	379.3	
PZ8.2	4/18/2008	34.9	391.5	
PZ8.2	11/3/2008	43.3	383.1	
PZ8.2	11/5/2011	40.3	386.0	
PZ8.2	10/15/2012	48.6	377.8	
PZ8.2	9/23/2013	44.7	381.7	
PZ8.2	10/20/2014	54.0	372.4	
PZ8.2	10/29/2015	41.0	385.4	
PZ8.2	10/26/2016	39.5	386.9	
PZ8.2	10/25/2017	52.9	373.4	
PZ8.2	10/23/2019	42.8	384.6	

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
W10.1	6/2/1998	33.5	390.5	
W10.1	10/15/1998	39.9	384.1	
W10.1	5/21/1999	34.7	389.3	
W10.1	11/10/1999	42.2	381.8	
W10.1	7/31/2000	34.5	389.5	
W10.1	11/28/2000	38.7	385.3	
W10.1	6/20/2001	35.9	388.1	
W10.1	10/10/2001	40.4	383.6	
W10.1	4/24/2002	32.5	391.5	
W10.1	11/8/2002	40.9	383.1	
W10.1	6/11/2003	32.6	391.4	
W10.1	10/24/2003	40.4	383.6	
W10.1	6/24/2004	32.3	391.7	
W10.1	11/3/2004	36.6	387.4	
W10.1	6/15/2005	35.7	388.3	
W10.1	11/8/2005	37.9	386.1	
W10.1	6/26/2006	35.6	388.4	
W10.1	11/6/2006	31.8	392.2	
W10.1	4/20/2007	26.8	397.2	
W10.1	9/21/2007	40.8	383.2	
W10.1	4/18/2008	30.2	393.8	
W10.1	11/3/2008	39.1	384.9	
W10.1	11/5/2011	34.9	389.1	
W10.1	10/15/2012	42.4	381.7	
W10.1	9/23/2013	38.4	385.6	
W10.1	10/20/2014	40.5	383.5	
W10.1	10/29/2015	36.4	387.6	
W10.1	10/27/2016	35.7	388.4	
W10.1	10/25/2017	40.4	383.6	
W10.1	10/23/2019	36.9	387.4	Broken Cover (3.5")
W10.2	6/2/1998	25.4	399.0	
W10.2	10/15/1998	31.5	392.9	
W10.2	5/21/1999	26.3	398.1	
W10.2	11/10/1999	34.5	389.9	
W10.2	7/31/2000	26.4	398.0	
W10.2	11/28/2000	30.1	394.3	
W10.2	6/20/2001	27.5	396.9	
W10.2	10/10/2001	32.1	392.3	
W10.2	4/24/2002	24.7	399.7	
W10.2	11/8/2002	36.2	388.2	
W10.2	6/11/2003	24.5	399.9	
W10.2	10/24/2003	31.8	392.6	
W10.2	6/24/2004	24.5	399.9	
W10.2	11/3/2004	27.9	396.5	
W10.2	6/15/2005	27.3	397.1	
W10.2	11/8/2005	29.9	394.5	
W10.2	6/26/2006	27.2	397.2	
W10.2	11/6/2006	24.0	400.4	
W10.2	4/20/2007	19.0	405.4	
W10.2	9/21/2007	32.4	392.0	
W10.2	4/18/2008	22.5	401.9	
W10.2	11/3/2008	39.1	385.3	
W10.2	11/5/2011	26.0	398.4	
W10.2	10/15/2012	34.2	390.1	
W10.2	9/23/2013	29.6	394.8	
W10.2	10/20/2014	31.3	393.1	
W10.2	10/29/2015	27.6	396.7	
W10.2	10/27/2016	27.3	397.0	
W10.2	10/25/2017	31.3	393.1	
W10.2	10/23/2019	27.1	396.9	No stick up or pad. Top of PVC looks broken

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
W105R	11/10/1999	49.3	378.9	
W105R	7/31/2000	40.0	388.2	
W105R	11/28/2000	45.9	382.3	
W105R	6/20/2001	40.4	387.8	
W105R	10/10/2001	46.4	381.8	
W105R	4/24/2002	40.7	387.5	
W105R	11/8/2002	47.6	380.6	
W105R	6/11/2003	38.3	389.9	
W105R	10/24/2003	46.6	381.6	
W105R	11/3/2004	42.3	385.9	
W105R	11/8/2005	43.9	384.3	
W105R	6/26/2006	40.6	387.6	
W105R	11/6/2006	39.4	388.8	
W105R	4/20/2007	29.8	398.4	
W105R	9/21/2007	43.3	384.9	
W105R	4/18/2008	32.9	395.3	
W105R	11/3/2008	46.0	382.2	
W105R	11/5/2011	-	-	DRY
W105R	10/15/2012	47.3	380.9	
W105R	9/23/2013	43.9	384.3	
W105R	10/20/2014	44.7	383.5	
W105R	10/30/2015	44.1	384.1	
W105R	10/27/2016	47.3	380.9	
W105R	10/25/2017	44.0	384.2	
W105R	10/23/2019	45.0	383.2	
W201R	6/2/1998	36.8	389.7	
W201R	10/15/1998	44.2	382.3	
W201R	5/21/1999	37.7	388.8	
W201R	11/10/1999	45.9	380.6	
W201R	7/31/2000	35.7	390.8	
W201R	11/28/2000	42.3	384.2	
W201R	6/20/2001	38.9	387.6	
W201R	10/10/2001	43.7	382.8	
W201R	4/24/2002	35.6	390.9	
W201R	11/8/2002	44.1	382.4	
W201R	6/11/2003	36.0	390.5	
W201R	10/24/2003	43.3	383.2	
W201R	6/24/2004	35.0	391.5	
W201R	11/3/2004	39.5	387.0	
W201R	6/15/2005	35.9	390.6	
W201R	11/8/2005	43.4	383.1	
W201R	6/26/2006	37.9	388.6	
W201R	11/6/2006	35.6	390.9	
W201R	4/20/2007	31.6	394.9	
W201R	9/21/2007	43.0	383.5	
W201R	4/18/2008	33.4	393.1	
W201R	11/3/2008	42.9	383.6	
W201R	11/5/2011	38.8	387.7	
W201R	10/15/2012	44.8	381.7	
W201R	9/23/2013	41.9	384.6	
W201R	10/20/2014	44.4	382.1	
W201R	10/26/2016	45.3	381.2	
W201R	10/25/2017	43.0	383.5	
W201R	10/23/2019	43.2	383.3	

Well ID	Measurement Date	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Comments
W5.5	6/2/1998	23.2	403.1	
W5.5	10/15/1998	-	-	DRY
W5.5	5/21/1999	23.0	403.3	
W5.5	11/10/1999	-	-	DRY
W5.5	7/31/2000	-	-	DRY
W5.5	11/28/2000	-	-	DRY
W5.5	6/20/2001	23.5	402.8	
W5.5	10/10/2001	-	-	DRY
W5.5	4/24/2002	21.8	404.5	
W5.5	11/8/2002	-	-	DRY
W5.5	6/11/2003	22.2	404.1	
W5.5	10/24/2003	-	-	DRY
W5.5	6/24/2004	22.5	403.8	
W5.5	11/3/2004	23.2	403.1	
W5.5	6/15/2005	-	-	DRY
W5.5	11/8/2005	-	-	DRY
W5.5	6/26/2006	22.9	403.4	
W5.5	11/6/2006	21.4	404.9	
W5.5	4/20/2007	19.7	406.6	
W5.5	9/21/2007	-	-	DRY
W5.5	4/18/2008	21.2	405.1	
W5.5	11/3/2008	22.6	403.7	
W5.5	11/5/2011	22.6	403.7	
W5.5	10/15/2012	-	-	DRY
W5.5	9/23/2013	-	-	DRY
W5.5	10/20/2014	-	-	DRY
W5.5	10/29/2015	-	-	DRY
W5.5	10/26/2016	-	-	DRY
W5.5	10/25/2017	-	-	DRY
W5.5	10/26/2017	-	-	Decommissioned
W5.6	6/2/1998	43.5	382.8	
W5.6	10/15/1998	48.4	377.9	
W5.6	5/21/1999	44.5	381.8	
W5.6	11/10/1999	53.0	373.3	
W5.6	7/31/2000	43.4	382.9	
W5.6	11/28/2000	47.5	378.8	
W5.6	6/20/2001	45.0	381.3	
W5.6	10/10/2001	49.9	376.4	
W5.6	4/24/2002	43.9	382.4	
W5.6	11/8/2002	49.8	376.5	
W5.6	6/11/2003	42.5	383.8	
W5.6	10/24/2003	48.9	377.4	
W5.6	6/24/2004	41.6	384.7	
W5.6	11/3/2004	45.4	380.9	
W5.6	6/15/2005	44.3	382.0	
W5.6	11/8/2005	46.7	379.6	
W5.6	6/26/2006	44.6	381.7	
W5.6	11/6/2006	42.3	384.0	
W5.6	4/20/2007	32.2	394.1	
W5.6	9/21/2007	49.1	377.2	
W5.6	4/18/2008	41.5	384.8	
W5.6	11/3/2008	47.3	379.0	
W5.6	11/5/2011	44.7	381.7	
W5.6	10/15/2012	51.3	375.1	
W5.6	9/23/2013	47.7	378.6	
W5.6	10/20/2014	50.7	375.7	
W5.6	10/29/2015	46.4	380.0	
W5.6	10/26/2016	47.5	378.9	
W5.6	10/25/2017	48.3	378.1	
W5.6	10/23/2019	46.9	379.4	

Table 2
Summary of Groundwater Field Parameters
2019 Biennial Monitoring Event

Well I.D.	Date and Time	Temp (°C)	pH (units)	Conductivity (mS/cm)	Turbidity (NTU)	Amount Purged (gal)	Comments
MS104.3	10/23/19 16:30	12.17	12.82	10.6	48.20	-	Water dark and murky, No odor, No sheen.
	10/23/19 16:35	12.47	12.79	10.6	26.40		
	10/23/19 16:40	12.67	12.77	10.6	27.90		
	10/23/19 16:45	12.87	12.76	10.7	25.20		
	10/23/19 16:50	12.89	12.75	10.7	21.50		
	10/23/19 16:55	13	12.75	10.8	18.60		
MS104.4	10/23/19 16:47	10.97	12.91	9.680	17.90	4.5	Water clear, No Odor, Slight film.
	10/23/19 16:52	11.3	12.88	9.520	23.40		
	10/23/19 16:57	11.69	12.85	9.220	26.60		
	10/23/19 17:02	11.82	12.8	8.500	11.60		
	10/23/19 17:07	11.85	12.82	8.550	7.10		
	10/23/19 17:12	11.77	12.82	9.360	4.33		
	10/23/19 17:17	11.81	12.82	9.380	2.39		
	10/23/19 17:22	11.78	12.82	9.320	1.46		
MS104.5	10/23/19 17:10	11.98	12.86	9.250	9.48	–	Clear, Some turbidity, No odor, No sheen
	10/23/19 17:15	11.94	12.86	9.290	6.09		
	10/23/19 17:20	11.93	12.86	9.270	2.82		
MS106.1	10/23/19 14:05	11.79	12.91	9.660	25.10	-	Whiteish color, no odor, no sheen.
	10/23/19 14:10	12.05	12.89	9.670	8.38		
MS106.2	10/23/19 15:30	12	12.81	11.9	64.30	5	Clear, Whiteish, No odor, No sheen.
	10/23/19 15:35	12.87	12.79	11.2	21.50		
	10/23/19 15:40	13.24	12.76	10.3	7.15		
	10/23/19 15:45	13.3	12.74	10.4	5.80		
	10/23/19 15:50	13.56	12.72	11.4	5.32		
MS106.3	10/23/19 14:07	13.02	12.85	10.00	11.10	1.5	Clear, Colorless, No odor, No sheen.
	10/23/19 14:12	13.07	12.85	9.98	4.89		
MS106.4	10/23/19	-	-	-	-	-	Well had less than 1-foot of water column, no sample taken.
MS301.1	10/23/19 9:40	12.16	5.66	>100	4.33	7	Clear, Colorless, No odor, No sheen.
	10/23/19 9:45	11.61	6.07	>100	3.74		
	10/23/19 9:50	12.09	6.22	>100	0.90		
	10/23/19 9:55	12	6.3	>100	1.25		
	10/23/19 10:00	12.03	6.33	>100	1.58		
	10/23/19 10:05	12.06	6.35	>100	0.86		
	10/23/19 10:10	12.29	6.35	>100	1.26		
MS301.2	10/23/19 10:20	10.7	6.3	>100	490.00	7	Slightly Cloudy, Light Gray color, No odor, No sheen
	10/23/19 10:25	10.79	6.37	>100	109.00		
	10/23/19 10:30	11.07	6.38	>100	58.40		
	10/23/19 10:35	11.06	6.39	>100	22.60		
	10/23/19 10:40	11.13	6.4	>100	24.70		
	10/23/19 10:45	11.09	6.41	>100	32.60		
MS301.3	10/23/19 11:10	12.28	6.58	95.2	17.40	6	Clear, Colorless, No odor, No sheen.
	10/23/19 11:15	12.42	6.59	95.6	9.69		
	10/23/19 11:20	12.62	6.6	95.4	7.19		
	10/23/19 11:25	12.44	6.6	95.7	4.28		
	10/23/19 11:30	12.73	6.6	94.7	4.45		
	10/23/19 11:35	12.85	6.6	95.0	6.27		
MS301.4	10/23/19 11:32	10.95	12.09	30.1	22.10	1.5	Slightly Cloudy, Light Gray color, Moderate Odor, No sheen
	10/23/19 11:37	11.19	12.02	28.8	17.20		
	10/23/19 11:42	11.61	11.99	28.7	14.60		
MS301.5	10/23/19 12:05	12.11	12.82	13.3	49.60	3.5	Clear, Colorless, No odor, No sheen.
	10/23/19 12:10	12.32	12.9	12.5	25.80		
	10/23/19 12:15	13.08	12.88	12.3	11.50		
	10/23/19 12:20	12.52	12.89	12.0	6.65		
	10/23/19 12:25	12	12.57	11.8	-		
W201R	10/23/19 13:00	11.7	12.86	11.9	14.20	-	Whiteish clear color, No odor, No sheen.
	10/23/19 13:05	12.13	12.83	11.8	10.10		
	10/23/19 13:10	12.09	12.82	11.9	6.30		
	10/23/19 13:15	12.31	12.81	12.1	4.26		
W5.6	10/23/19 15:52	10.94	12.77	12.0	15.70	3	Clear, Colorless, No odor, No sheen.
	10/23/19 15:57	11.08	12.83	10.4	3.95		
	10/23/19 16:02	11.76	12.8	10.4	2.70		
	10/23/19 16:07	11.73	12.77	10.8	1.43		
	10/23/19 16:12	11.82	12.76	10.2	1.83		

Table 3
Summary of Well-Specific Upper and Lower Confidence Limits

Well ID	Confidence Limits	Sp. Cond. (mS/cm)	pH (S.U.)	Phenols (mg/L)	Chromium (mg/L)	Iron (mg/L)
MS-104.3	UCL	47.52	12.56	0.646	0.05	0.053
	LCL	26.30	11.44	0.262	0.05	0.049
MS-104.4	UCL	13.01	12.85	0.045	0.05	0.050
	LCL	11.17	11.66	0.028	0.05	0.050
MS-104.5	UCL	10.17	12.94	0.045	0.05	0.050
	LCL	9.00	11.61	0.003	0.05	0.050
MS-106.1	UCL	17.77	12.55	0.101	0.05	0.050
	LCL	9.36	12.43	-0.012	0.05	0.050
MS-106.2	UCL	34.31	12.85	0.363	0.05	0.050
	LCL	21.55	11.98	0.221	0.05	0.050
MS-106.3	UCL	17.22	12.96	0.086	0.05	0.050
	LCL	10.12	12.27	-0.006	0.05	0.050
MS-106.4	UCL	14.41	13.14	0.015	0.05	0.050
	LCL	7.19	12.26	0.015	0.05	0.050
MS-106.5	UCL	8.90	13.28	0.010	0.05	0.050
	LCL	8.90	12.33	0.010	0.05	0.050
MS-301.1	UCL	103.35	7.29	0.010	0.05	113.258
	LCL	68.05	4.70	0.010	0.05	66.792
MS-301.2	UCL	128.74	6.36	5.846	0.05	89.551
	LCL	85.12	5.15	2.634	0.05	39.149
MS-301.3	UCL	112.09	6.53	5.336	0.05	38.177
	LCL	76.98	5.20	3.164	0.05	18.373
MS-301.4	UCL	95.03	11.20	3.849	0.05	0.204
	LCL	66.50	9.62	3.005	0.05	0.019
MS-301.5	UCL	34.74	12.59	0.435	0.05	0.114
	LCL	28.39	12.15	0.195	0.05	0.022
W-5.6	UCL	18.35	12.79	0.110	0.05	0.050
	LCL	7.98	12.19	-0.032	0.05	0.050
W-105R	UCL	13.06	12.77	0.135	0.05	0.073
	LCL	8.08	11.66	-0.003	0.05	0.040
W-201R	UCL	20.12	12.79	0.161	0.05	0.213
	LCL	3.37	11.74	0.111	0.05	-0.010

UCL - Upper Confidence Limit

LCL - Lower Confidence Limit

UCL and LCL derived from a confidence calculation using a normal distribution based on historic data available for each monitoring well, as described in more detail in the text

Appendices

Appendix A
Site Observation Forms and Groundwater Sampling Logs

WELL OBSERVATION FORM
FORMER CRUCIBLE SPECIALTY METALS LANDFILL - GEDDES, NY

DATE: _____

Well ID	Depth to Water (feet)	Depth of Well (feet)	Condition - well cap, casing, well cover, pad, etc.	Actions
DW-101	—	—	DECom	
DW-103	—	—	DECommissioned in 2019	
MS-104.1	32.50	53.21		
MS-104.2	27.95	53.75		
MS-104.3	29.22	54.18		
MS-104.4	27.65	40.48		
MS-104.5	25.03	34.58		
MS-106.1	60.47	82.18		
MS-106.2	57.85	74.17		
MS-106.3	53.35	61.16		
MS-106.4	50.94	51.16		
MS-106.5	—	—	Decommissioned on 10-26-17	
MS-301.1	56.24	168.93		
MS-301.2	57.82	96.76		
MS-301.3	57.12	82.94		
MS-301.4	51.18	67.93		
MS-301.5	40.71	50.89		
PZ-101.1	—	—	DECom	
PZ-101.2	—	—	DECom	
PZ-101.3	—	—	DECom	
PZ-2.1	DRY	44.40		
PZ-2.2	—	26.83	No Longer Part of Monitoring Program	
PZ-2.3	—	37.38	No Longer Part of Monitoring Program	
PZ-5.1	48.25	64.00		
PZ-5.2	45.22	57.86		
PZ-5.3	—	21.44	No Longer Part of Monitoring Program	
PZ-8.1	50.28	55.17		
PZ-8.2	42.78	46.11		
W-10.1	36.91	63.05	BROKEN COVER (3.5")	
W-10.2	27.06	31.33	NO STICK UP OR PAD, TOP OF PVC LOOKS	BROKEN
W-105R	45.03	49.26		
W-201R	43.20	59.62		
W-5.5	—	—	Decommissioned on 10-26-17	
W-5.6	46.92	63.08		

All depths recorded from top of PVC well casing.

POST-CLOSURE OBSERVATION FORM
FORMER CRUCIBLE SPECIALTY METALS LANDFILL – GEDDES, NY

DATE: 10-23-2019

PERSONNEL: IAN McNAMARA

OBSERVATION CHECKLIST:

1. Is there evidence of erosion:

   On the landfill cap? NO

   On top of the landfill? NO

   On side slopes? NO

   In drainage ditches? NO

   On the surrounding Solvay Waste Beds? NO

2. If erosion has occurred, is it severe enough to warrant:

   Immediate action? –

   Action prior to next scheduled observation? –

3. Is there evidence of settlement and subsidence:

   On the landfill? NO

   On the surrounding Solvay Waste Beds? NO

   Adjacent to the groundwater monitoring well? NO

4. If settlement and subsidence have occurred, is it severe enough to warrant:

   Immediate action? –

   Action prior to next scheduled observation? –

5. Is the vegetative cover in good condition?

YES, THICK AND HEALTHY, SOME MINOR WOODY GROWTH ON PERIMETER, BUT BEING ADDRESSED BY MOWING TODAY

6. If not in good condition, describe condition, possible causes, and possible remedies.

–

7. Are there dead or brown spots in the vegetative cover?

NONE APPARENT OTHER THAN DUE TO TIME OF YEAR

8. Does the cover appear to be periodically mowed? YES - ANNUALLY

9. Are tress or bushes growing on site with roots that could penetrate the synthetic liner in the cap?
NO - TREE WOODY GROWTH OUTSIDE OF PERIMETER DRAINAGE DITCH AND ACCESS ROAD

10. Does the vegetative cover appear to have adequate water?
YES

11. Is there evidence of decomposition gases forming on the site?
NO

12. Is there evidence of vectors, dust, or odors present?
NO

13. Is the landfill security system (access fence to Fair Grounds parking lot) intact?
YES

14. Was the landfill entrance gate locked upon arrival?
NO - ONGOING ACTIVITIES IN AREA BY OTHERS KEEPING IT UNLOCKED

15. Is there evidence of trespassing or vandalism on the site?
UNKNOWN USE OF PERIMETER ACCESS ROAD ALONG NORTHERN SIDE.

16. Does the drainage system appear to be functioning properly?
YES

17. Are the following clear of dirt and debris?

Drainage ditches? YES

Catch basin grates? YES - SOME LEAVES/VEGETATION

Catch basin sumps? UNKNOWN - STANDING WATER PREVENTED OBSERVATION

Storm sewer pipes? UNKNOWN

Storm water outfall? YES

18. With regard to monitoring wells on site, do any have damage?
YES - W-10.2 STICKUP + PAD GONE, PVC BROKEN,
- W-10.1 COVER BROKEN

19. Does the survey benchmark for the site appear to be undisturbed? YES -

20. What is the condition of the four manholes?
COULD ONLY LOCATE ONE - COVER + RISER DISPLACED LEAVING AN OPENING INTO MANHOLE

Manhole that could be located was near southern corner of landfill near Site access drives. Determined to be MH-4 after the inspection, based on discovery of a historic manhole location figure. The approximate manhole locations were added to the Site figures for future reference.

21. Is there indication of possible rupture, puncture, or other damage that might puncture the synthetic liner in the cap?

NO

22. Is the taking of samples from the synthetic liner scheduled for this event?

NO LONGER REQUIRED

23. If scheduled, were samples from the synthetic liner taken as specified?

-

24. Do the above items appear to need immediate attention?

YES - MANHOLE COVER NEEDS TO BE ADDRESSED

25. Additional comments and observations.

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): DT, AP | **Sample ID:** MS104.3 | **Sample Time:** 17:00

Well Information:

Depth of Well (ft., Top of PVC):	54.18
Initial Static Water Level (ft., Top of PVC):	29.22
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =		gallons
2 in. Casing:	24.96	ft. of water x .16 =	3.99	gallons
3 in. Casing:		ft. of water x .36 =		gallons
4 in. Casing:		ft. of water x .64 =		gallons

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: - gallons

Dry: yes | no

Field Tests:

		Units:		Units:
Temperature:	13	°C	pH: 12.75	units
Salinity:		%	ORP: 16.7	mV
Spec. Cond.:	10.8	mS/cm	Turbidity: 18.60	NTU
Diss. Oxygen:	0.34	mg/L		

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	X
Dis. Bailer:	
Ded. Pump:	
Other:	

Analysis: Total Iron; Total Chromium; Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Water clear, No odor, Heavy blocky film.

Additional Comments: MS/MSD taken here at 17:00

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): DT, AP | **Sample ID:** MS104.4 | **Sample Time:** 17:25

Well Information:

Depth of Well (ft., Top of PVC):	40.48
Initial Static Water Level (ft., Top of PVC):	27.65
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =	gallons
2 in. Casing:	12.83	ft. of water x .16 =	2.05 gallons
3 in. Casing:		ft. of water x .36 =	gallons
4 in. Casing:		ft. of water x .64 =	gallons

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: 4.5 gallons

Dry: yes no

Field Tests:

		Units:			Units:
Temperature:	11.78	°C	pH:	12.82	units
Salinity:		%	ORP:	-123.0	mV
Spec. Cond.:	9.32	mS/cm	Turbidity:	1.46	NTU
Diss. Oxygen:	1.66	mg/L			

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	X
Dis. Bailer:	
Ded. Pump:	
Other:	

Analysis: Total Iron; Total Chromium; Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Water clear, No Odor, Slight film.

Additional Comments:

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): DT, AP | **Sample ID:** MS104.5 | **Sample Time:** 17:25

Well Information:

Depth of Well (ft., Top of PVC):	34.58
Initial Static Water Level (ft., Top of PVC):	25.03
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =	gallons
2 in. Casing:	9.55	ft. of water x .16 =	1.53 gallons
3 in. Casing:		ft. of water x .36 =	gallons
4 in. Casing:		ft. of water x .64 =	gallons

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: - gallons

Dry: yes no

Field Tests:

		Units:			Units:
Temperature:	11.93	°C	pH:	12.86	units
Salinity:		%	ORP:	154.0	mV
Spec. Cond.:	9.27	mS/cm	Turbidity:	2.82	NTU
Diss. Oxygen:	7.25	mg/L			

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	X
Dis. Bailer:	
Ded. Pump:	
Other:	

Analysis: Total Iron; Total Chromium; Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Clear, Some turbidity, No odor, No sheen

Additional Comments:

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): DT, AP | **Sample ID:** MS106.1 | **Sample Time:** 14:25

Well Information:

Depth of Well (ft., Top of PVC):	82.18
Initial Static Water Level (ft., Top of PVC):	60.47
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =	gallons
2 in. Casing:	21.71	ft. of water x .16 =	3.47 gallons
3 in. Casing:		ft. of water x .36 =	gallons
4 in. Casing:		ft. of water x .64 =	gallons

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: - gallons

Dry: yes no

Field Tests:

		Units:			Units:
Temperature:	12.05	°C	pH:	12.89	units
Salinity:		%	ORP:	-77.0	mV
Spec. Cond.:	9.67	mS/cm	Turbidity:	8.38	NTU
Diss. Oxygen:	10.28	mg/L			

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	X
Dis. Bailer:	
Ded. Pump:	
Other:	

Analysis: Total Iron; Total Chromium; Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Water was whiteish, No odor, No sheen

Additional Comments:

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): DT, AP | **Sample ID:** MS106.2 | **Sample Time:** 15:55

Well Information:

Depth of Well (ft., Top of PVC):	74.17
Initial Static Water Level (ft., Top of PVC):	57.85
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =	gallons
2 in. Casing:	16.32	ft. of water x .16 =	2.61 gallons
3 in. Casing:		ft. of water x .36 =	gallons
4 in. Casing:		ft. of water x .64 =	gallons

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: 5 gallons

Dry: yes no

Field Tests:

		Units:			Units:
Temperature:	13.56	°C	pH:	12.72	units
Salinity:		%	ORP:	205.0	mV
Spec. Cond.:	11.4	mS/cm	Turbidity:	5.32	NTU
Diss. Oxygen:	0.75	mg/L			

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	X
Dis. Bailer:	
Ded. Pump:	
Other:	

Analysis: Total Iron; Total Chromium; Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Whiteish color, Clear, No odor, No sheen.

Additional Comments:

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): IEM, DT, AP | **Sample ID:** MS106.3 | **Sample Time:** 14:25

Well Information:

Depth of Well (ft., Top of PVC):	61.16
Initial Static Water Level (ft., Top of PVC):	53.35
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =		gallons
2 in. Casing:	7.81	ft. of water x .16 =	1.25	gallons
3 in. Casing:		ft. of water x .36 =		gallons
4 in. Casing:		ft. of water x .64 =		gallons

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: 1.5 gallons

Dry: yes no

Field Tests:

		Units:			Units:
Temperature:	13.07	°C	pH:	12.85	units
Salinity:		%	ORP:	214.0	mV
Spec. Cond.:	9.98	mS/cm	Turbidity:	4.89	NTU
Diss. Oxygen:	3.46	mg/L			

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	X
Dis. Bailer:	
Ded. Pump:	
Other:	

Analysis: Total Iron; Total Chromium; Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Clear, Colorless, No odor, No sheen

Additional Comments: Well went dry after 1.5 gallons purged, let recharge before sampling

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill **Date:** 10/23/2019 **Project #:** 86-18809

Sampler(s): IEM, DT, AP **Sample ID:** MS106.4 **Sample Time:**

Well Information:

Depth of Well (ft., Top of PVC): 51.36
Initial Static Water Level (ft., Top of PVC): 50.9
Depth to LNAPL/DNAPL (Top of PVC):
LNAPL/DNAPL Thickness (inches):

Well Volume Calculation:

1 in. Casing: ft. of water x .04 = gallons
2 in. Casing: ft. of water x .16 = gallons
3 in. Casing: ft. of water x .36 = gallons
4 in. Casing: ft. of water x .64 = gallons

Evacuation Method:

Submersible: Centrifugal:
Airlift: Pos. Displ.:
Bailer: Ded. Pump:

Volume of Water Removed: gallons
Dry: yes no

Field Tests: Units:

Temperature: °C
Salinity: %
Spec. Cond.: mS/cm
Diss. Oxygen: mg/L

pH: units
ORP: mV
Turbidity: NTU

Sampling Method:

Stainless Bailer:
Teflon Bailer:
Pos. Disp. Pump:
Dis. Bailer:
Ded. Pump:
Other:

Analysis:

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample:

Additional Comments: Well contained insufficient water, no sample taken

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): DT, AP | **Sample ID:** MS301.1 | **Sample Time:** 10:15

Well Information:

Depth of Well (ft., Top of PVC):	168.93
Initial Static Water Level (ft., Top of PVC):	56.24
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =	gallons
2 in. Casing:	112.69	ft. of water x .16 =	18.03 gallons
3 in. Casing:		ft. of water x .36 =	gallons
4 in. Casing:		ft. of water x .64 =	gallons

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: 7 gallons

Dry: yes | no

Field Tests:

		Units:			Units:
Temperature:	12.29	°C	pH:	6.35	units
Salinity:		%	ORP:	2.34	mV
Spec. Cond.:	>100.0	mS/cm	Turbidity:	1.26	NTU
Diss. Oxygen:	0.23	mg/L			

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	X
Dis. Bailer:	
Ded. Pump:	
Other:	

Analysis: Total Iron; Total Chromium; Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Clear, Colorless, No odor, No sheen.

Additional Comments:

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): DT, AP | **Sample ID:** MS301.2 | **Sample Time:** 10:50

Well Information:

Depth of Well (ft., Top of PVC):	96.76
Initial Static Water Level (ft., Top of PVC):	57.82
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =	gallons
2 in. Casing:	38.94	ft. of water x .16 =	6.23 gallons
3 in. Casing:		ft. of water x .36 =	gallons
4 in. Casing:		ft. of water x .64 =	gallons

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: 7 gallons

Dry: yes | no

Field Tests:

		Units:			Units:
Temperature:	11.09	°C	pH:	6.41	units
Salinity:		%	ORP:	-89.0	mV
Spec. Cond.:	>100	mS/cm	Turbidity:	32.60	NTU
Diss. Oxygen:	0.20	mg/L			

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	X
Dis. Bailer:	
Ded. Pump:	
Other:	

Analysis: Total Iron; Total Chromium; Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Slighty Cloudy, light grey color, no odor, no sheen

Additional Comments:

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): DT, AP | **Sample ID:** MS301.3 | **Sample Time:** 11:40

Well Information:

Depth of Well (ft., Top of PVC):	82.94
Initial Static Water Level (ft., Top of PVC):	57.12
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =	gallons
2 in. Casing:	25.82	ft. of water x .16 =	4.13 gallons
3 in. Casing:		ft. of water x .36 =	gallons
4 in. Casing:		ft. of water x .64 =	gallons

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: 6 gallons

Dry: yes | no

Field Tests:

		Units:			Units:
Temperature:	12.89	°C	pH:	6.6	units
Salinity:		%	ORP:	192.0	mV
Spec. Cond.:	95.0	mS/cm	Turbidity:	0.27	NTU
Diss. Oxygen:	0.28	mg/L			

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	X
Dis. Bailer:	
Ded. Pump:	
Other:	

Analysis: Total Iron; Total Chromium; Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Clear, Colorless, No odor, No sheen.

Additional Comments: Duplicate sample taken here at 9:00

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): DT, AP | **Sample ID:** MS301.4 | **Sample Time:** 12:00

Well Information:

Depth of Well (ft., Top of PVC):	67.93
Initial Static Water Level (ft., Top of PVC):	51.18
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =		gallons
2 in. Casing:	16.75	ft. of water x .16 =	2.68	gallons
3 in. Casing:		ft. of water x .36 =		gallons
4 in. Casing:		ft. of water x .64 =		gallons
			11.7	

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: 1.5 gallons

Dry: yes / no

Field Tests:

		Units:			Units:
Temperature:	11.61	°C	pH:	11.99	units
Salinity:		%	ORP:	-237.0	mV
Spec. Cond.:	28.7	mS/cm	Turbidity:	14.60	NTU
Diss. Oxygen:	1.11	mg/L			

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	
Dis. Bailer:	X
Ded. Pump:	
Other:	

Analysis:

- Total Iron
- Total Chromium
- Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Slightly cloudy, Light grey color, Moderate odor, No sheen.

Additional Comments: Well went dry after 1.5 gallons purged, let recharge before sampling

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): DT, AP | **Sample ID:** MS301.5 | **Sample Time:** 12:35

Well Information:

Depth of Well (ft., Top of PVC):	50.89
Initial Static Water Level (ft., Top of PVC):	40.71
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =	gallons
2 in. Casing:	10.18	ft. of water x .16 =	1.63 gallons
3 in. Casing:		ft. of water x .36 =	gallons
4 in. Casing:		ft. of water x .64 =	gallons

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: 3.5 gallons

Dry: yes no

Field Tests:

		Units:			Units:
Temperature:	12	°C	pH:	12.57	units
Salinity:		%	ORP:	164.0	mV
Spec. Cond.:	11.8	mS/cm	Turbidity:	-	NTU
Diss. Oxygen:	1.05	mg/L			

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	X
Dis. Bailer:	
Ded. Pump:	
Other:	

Analysis: Total Iron; Total Chromium; Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Clear, Colorless, No odor, No sheen.

Additional Comments: Well went dry after 3.5 gallons purged, let recharge before sampling

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): DT, AP | **Sample ID:** W5.6 | **Sample Time:** 16:15

Well Information:

Depth of Well (ft., Top of PVC):	63.08
Initial Static Water Level (ft., Top of PVC):	46.92
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =		gallons
2 in. Casing:	16.16	ft. of water x .16 =	2.59	gallons
3 in. Casing:		ft. of water x .36 =		gallons
4 in. Casing:		ft. of water x .64 =		gallons

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: 3 gallons

Dry: yes | no

Field Tests:

		Units:		Units:
Temperature:	11.82	°C	pH:	12.76 units
Salinity:		%	ORP:	-98.0 mV
Spec. Cond.:	10.2	mS/cm	Turbidity:	1.83 NTU
Diss. Oxygen:	5.58	mg/L		

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	X
Dis. Bailer:	
Ded. Pump:	
Other:	

Analysis: Total Iron; Total Chromium; Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Clear, Colorless, No odor, No sheen

Additional Comments:

Groundwater Field Sampling Log

Site Name: Former Crucible Landfill | **Date:** 10/23/2019 | **Project #:** 86-18809

Sampler(s): DT, AP | **Sample ID:** W201R | **Sample Time:** 13:20

Well Information:

Depth of Well (ft., Top of PVC):	56.92
Initial Static Water Level (ft., Top of PVC):	43.2
Depth to LNAPL/DNAPL (Top of PVC):	
LNAPL/DNAPL Thickness (inches):	

Well Volume Calculation:

1 in. Casing:		ft. of water x .04 =		gallons
2 in. Casing:	13.72	ft. of water x .16 =	2.20	gallons
3 in. Casing:		ft. of water x .36 =		gallons
4 in. Casing:		ft. of water x .64 =		gallons

Evacuation Method:

Submersible:		Centrifugal:	
Airlift:		Pos. Displ.:	X
Bailer:		Ded. Pump:	

Volume of Water Removed: - gallons

Dry: yes | no

Field Tests:

		Units:			Units:
Temperature:	12.31	°C	pH:	12.81	units
Salinity:		%	ORP:	213.0	mV
Spec. Cond.:	12.1	mS/cm	Turbidity:	4.26	NTU
Diss. Oxygen:	8.74	mg/L			

Sampling Method:

Stainless Bailer:	
Teflon Bailer:	
Pos. Disp. Pump:	X
Dis. Bailer:	
Ded. Pump:	
Other:	

Analysis: Total Iron; Total Chromium; Phenols

Observations:

Weather: 46 - 55°F, Partly Sunny, Wind SE 12-13 mph

Physical Appearance and Odor of Sample: Water clear, No odor, No sheen, Slight film on surface.

Additional Comments:

Appendix B
Representative Photographs

Photograph Number 1: Looking north from near south corner of landfill.

Photograph Number 2: Looking northeast along eastern edge of landfill.

One Remington Park Drive Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801

Photograph Number 3: Looking west along northern edge of landfill.

Photograph Number 4: Looking south along western edge of landfill.

One Remington Park Drive Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801

Photograph Number 5: Representative view of stormwater catch basin

Photograph Number 6: Representative view of stormwater swale crossing landfill.

One Remington Park Drive Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801

Photograph Number 7: View of manhole with cover and frame displaced.

Photograph Number 8: Stormwater outfall pipe.

One Remington Park Drive Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801

Photograph Number 9: Stormwater outfall rip-rap area leading to Nine Mile Creek.

Photograph Number 10: Unknown access and use of perimeter road along northwestern side of landfill was matting down vegetation and causing minor ground disturbance.

One Remington Park Drive Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801

Photograph Number 11: Monitoring well DW-103 prior to decommissioning.

Photograph Number 12: DW-103 after decommissioning. The well screen and casing was filled with bentonite grout, the steel protective casing was removed and the PVC casing was cut down to 1-foot below ground surface.

One Remington Park Drive Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801

Photograph Number 13: The DW-103 decommissioning surface void was backfilled with bentonite grout and bagged topsoil to match surrounding grades.

Photograph Number 14: View of soil being spread by others in vicinity of PZ-5.1, PZ-5.2, and PZ-5.3.

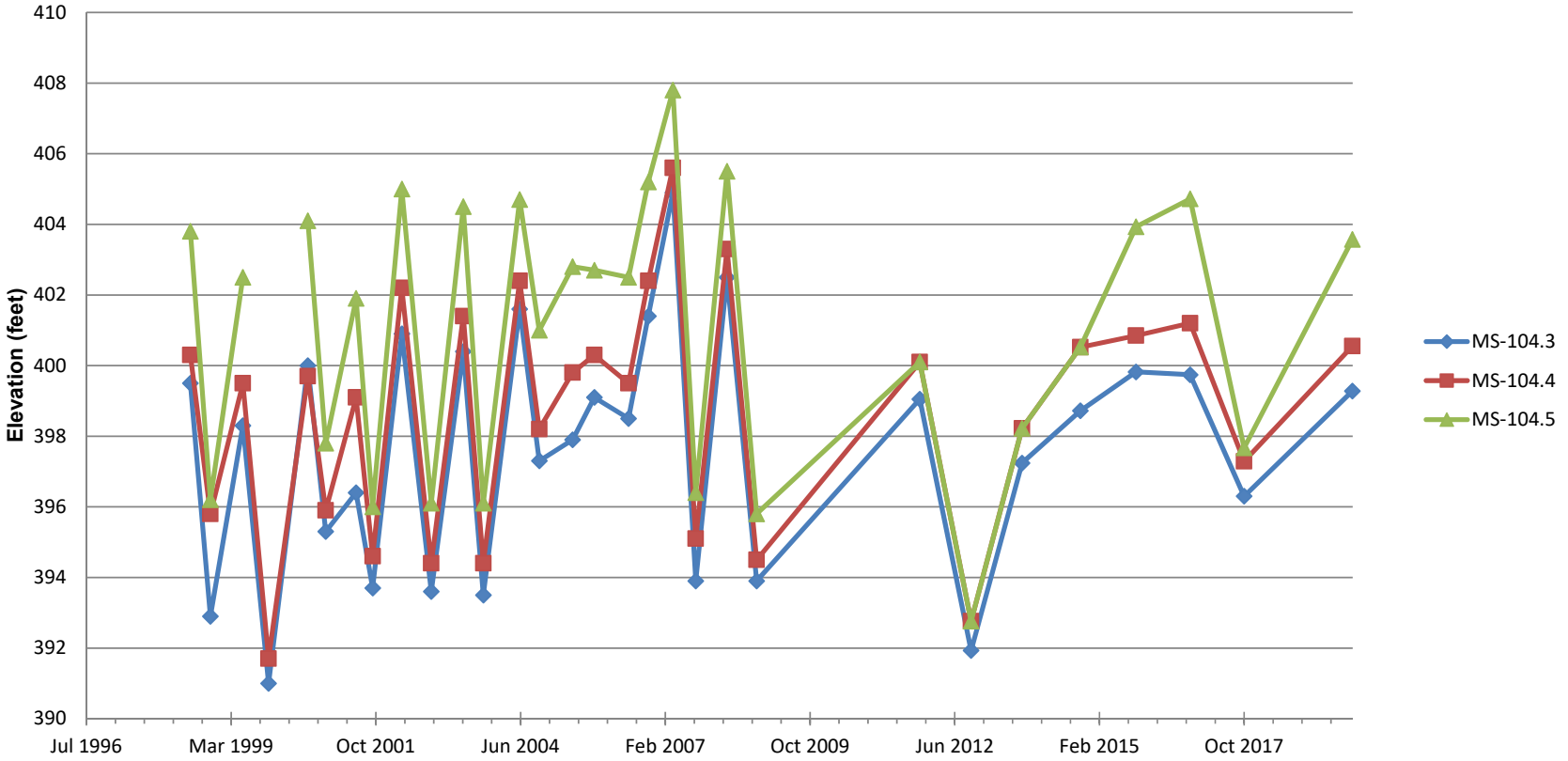
One Remington Park Drive Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801

Photograph Number 15: View of damaged W-10.2 with no protective casing or concrete pad and apparent broken PVC riser. Unknown cause of damage.

Photograph Number 16: View of repositioned manhole MH-4 cover. The dug out soil and sod was replaced around the manhole cover.

One Remington Park Drive Cazenovia NY 13035 USA **T** 1 315 679 5800 **F** 1 315 679 5801

Appendix C
Groundwater Elevation Data Plots



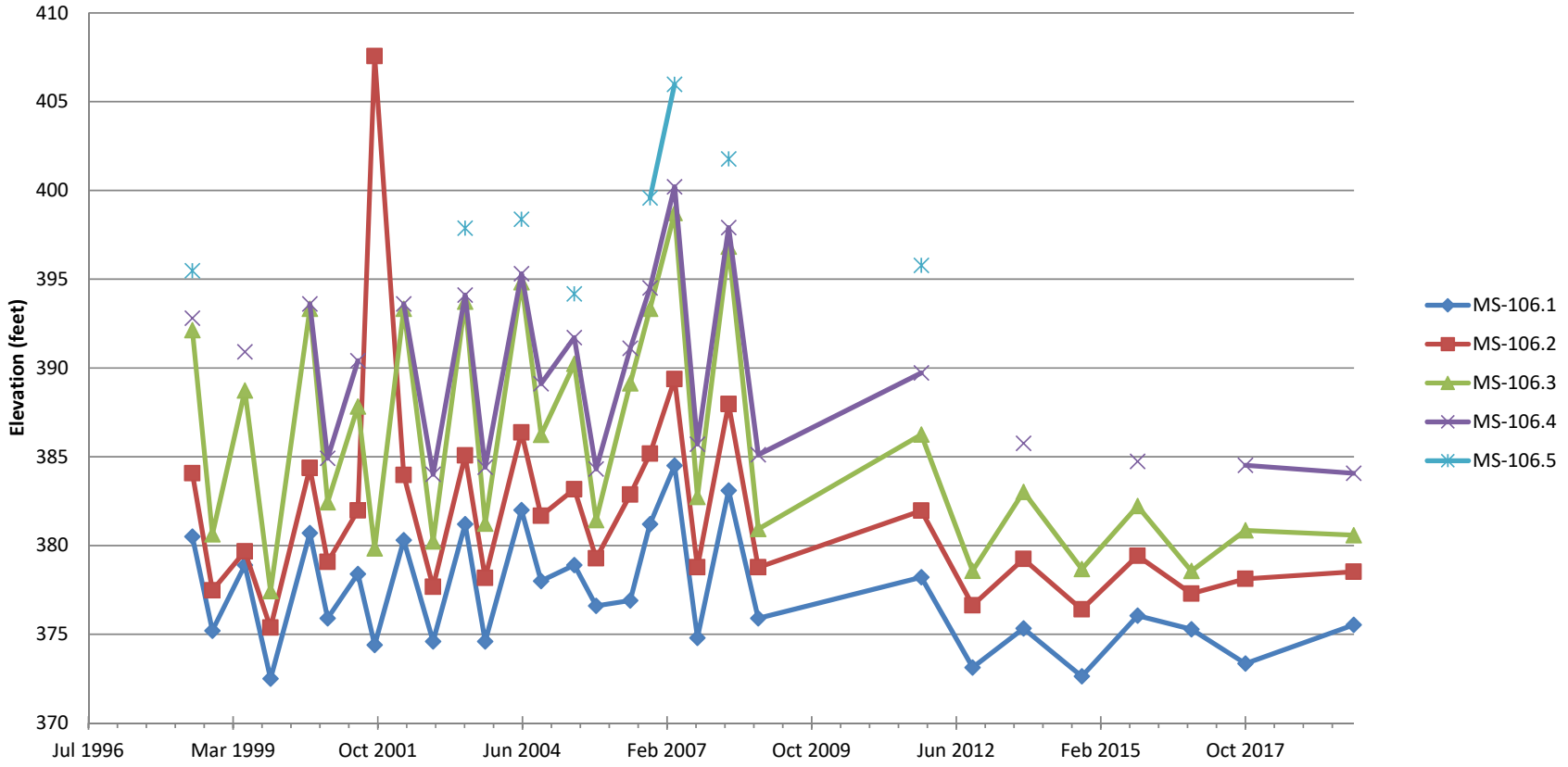
Appendix C

MS-104 Cluster - Groundwater Elevation

Former Crucible Specialty Metals LF, Where([WL1_WaterLevels_AHD_Using_Timeseries_TOC].[LocCode] In('MS104.3' , 'MS104.4' , 'MS104.5'))

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

GHD

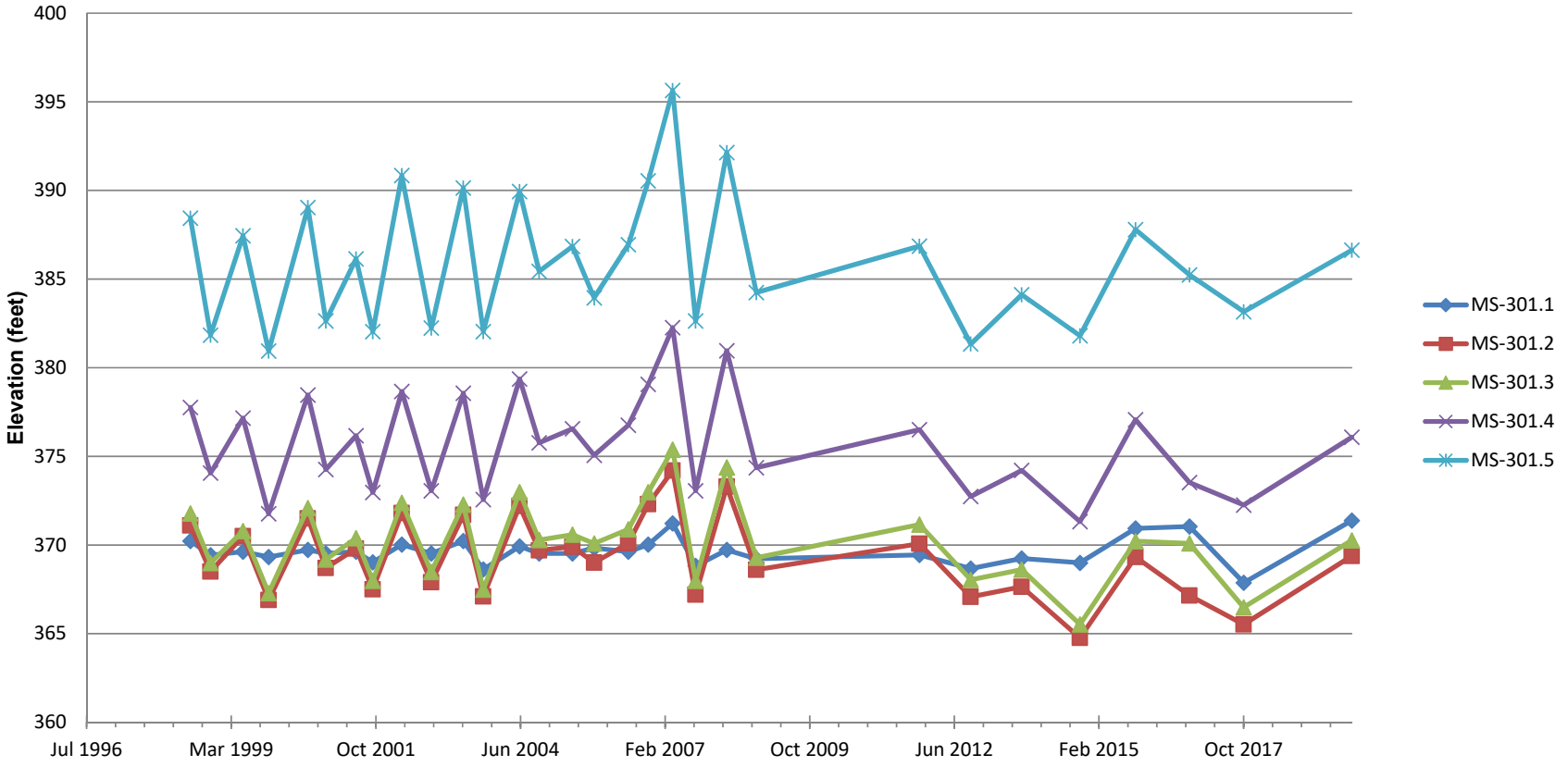


Appendix C

MS-106 Cluster - Groundwater Elevation

Former Crucible Specialty Metals LF, Where([WL1_WaterLevels_AHD_Using_Timeseries_TOC].[LocCode] In('MS106.1' , 'MS106.2' , 'MS106.3' , 'MS106.4' , 'MS106.5'))

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

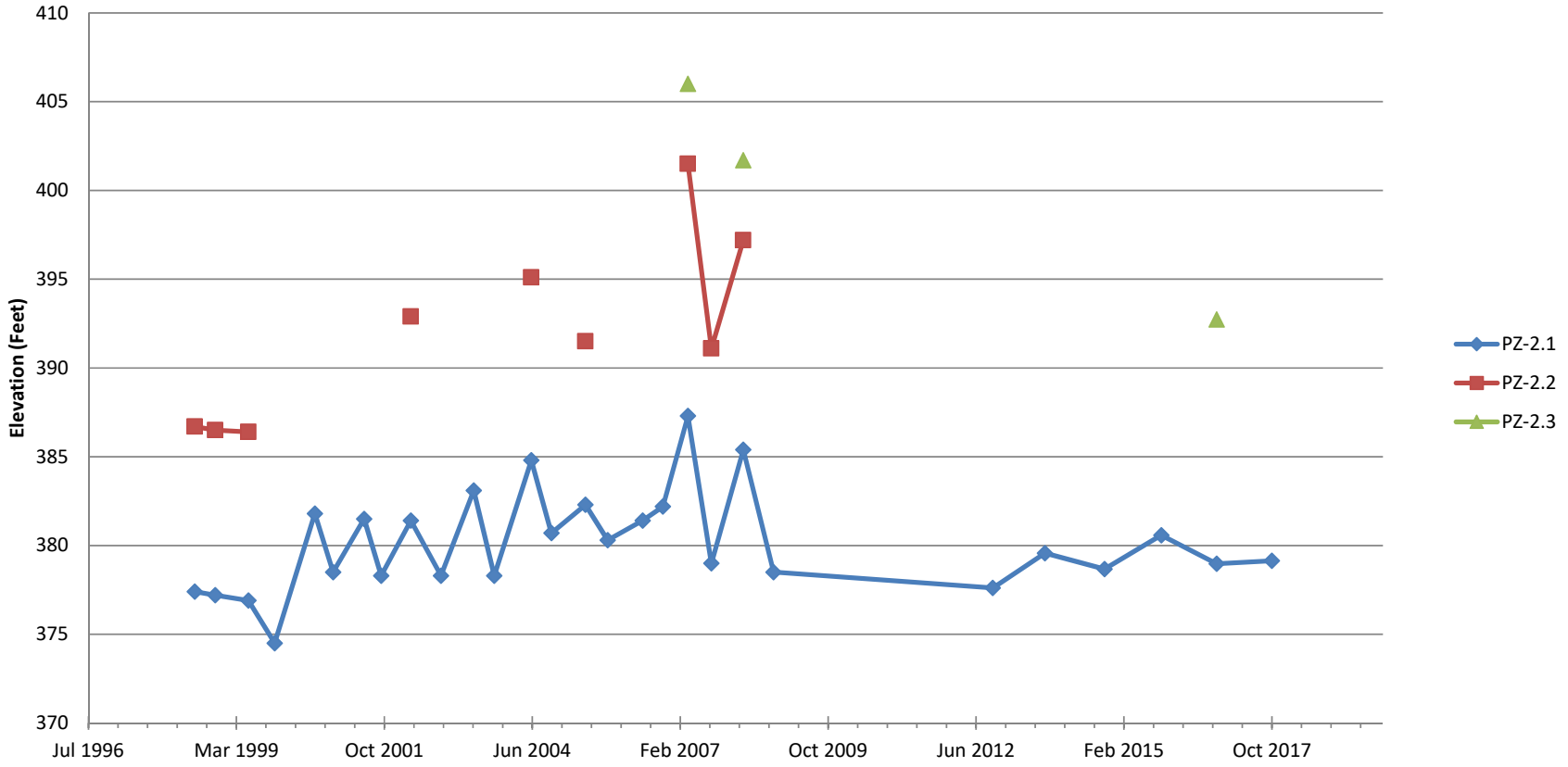


Appendix C

MS-301 Cluster - Groundwater Elevation

Former Crucible Specialty Metals LF, Where([WL1_WaterLevels_AHD_Using_Timeseries_TOC].[LocCode] In('MS301.1' , 'MS301.2' , 'MS301.3' , 'MS301.4' , 'MS301.5'))

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

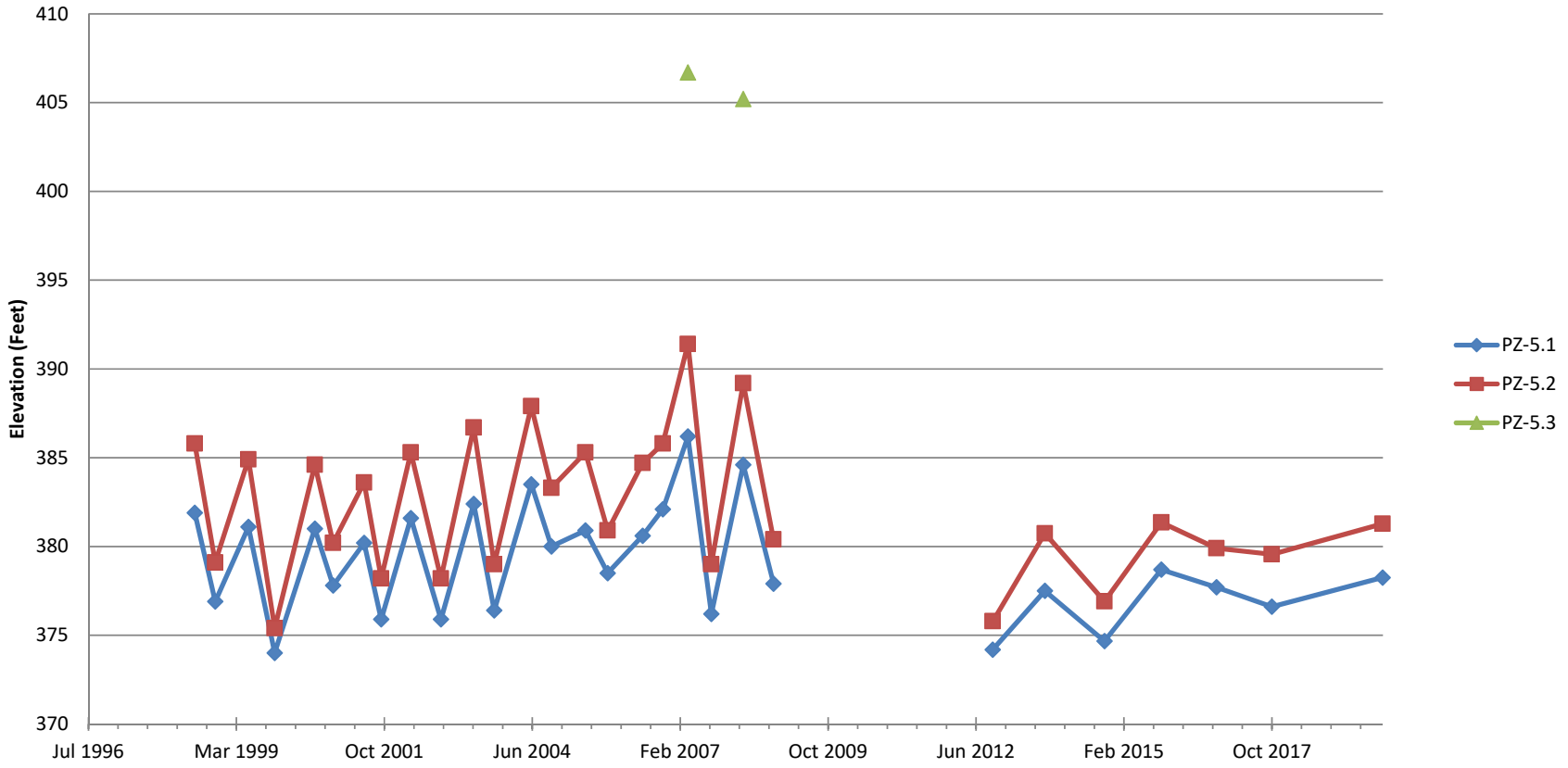


Appendix C

PZ-2 Cluster - Groundwater Elevation

Former Crucible Specialty Metals LF, Where([WL1_WaterLevels_AHD_Using_Timeseries_TOC].[LocCode] In('PZ2.1' , 'PZ2.2' , 'PZ2.3'))

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

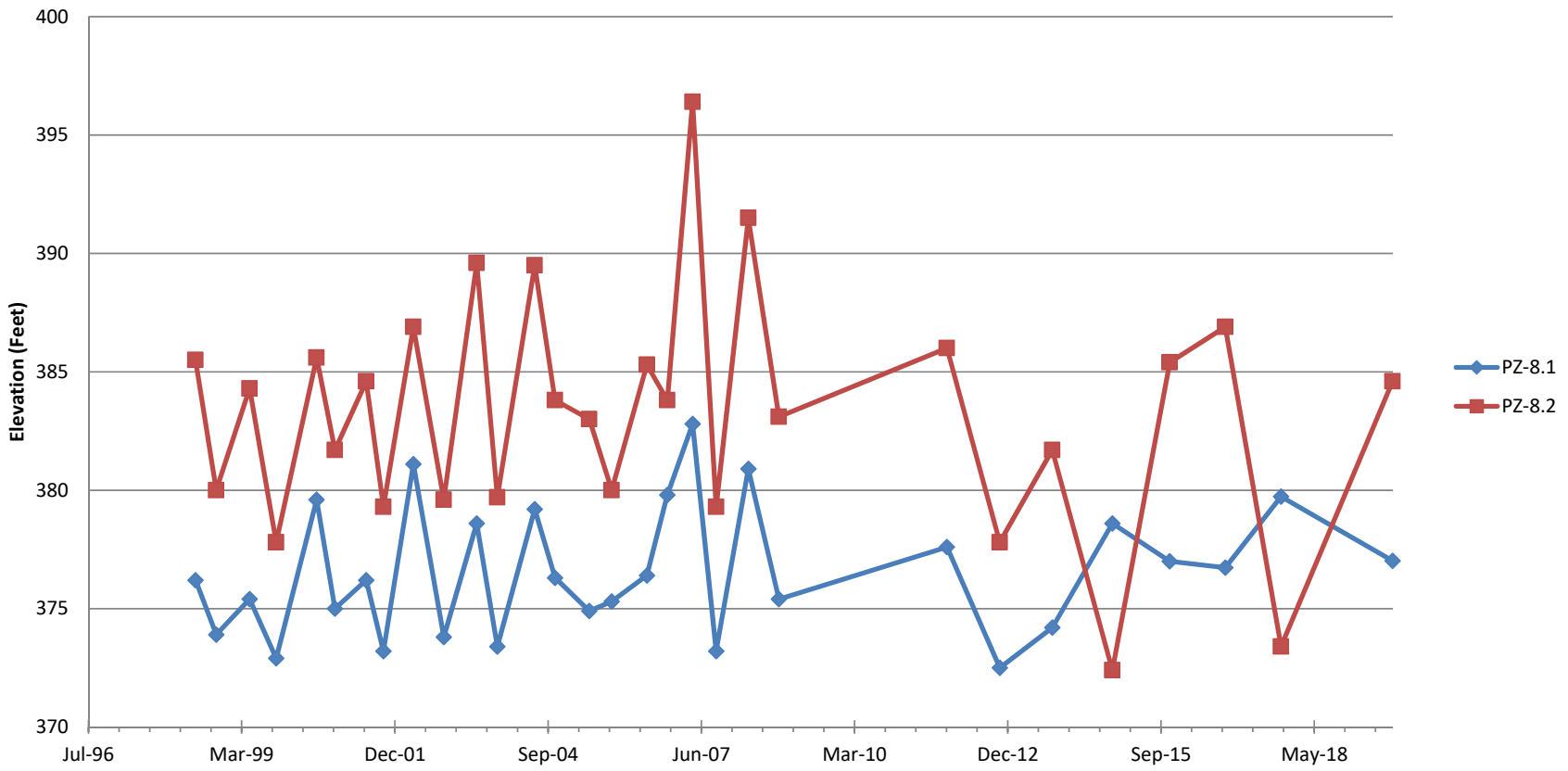


Appendix C

PZ-5 Cluster - Groundwater Elevation

Former Crucible Specialty Metals LF, Where([WL1_WaterLevels_AHD_Using_Timeseries_TOC].[LocCode] In('PZ5.1' , 'PZ5.2' , 'PZ5.3'))

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

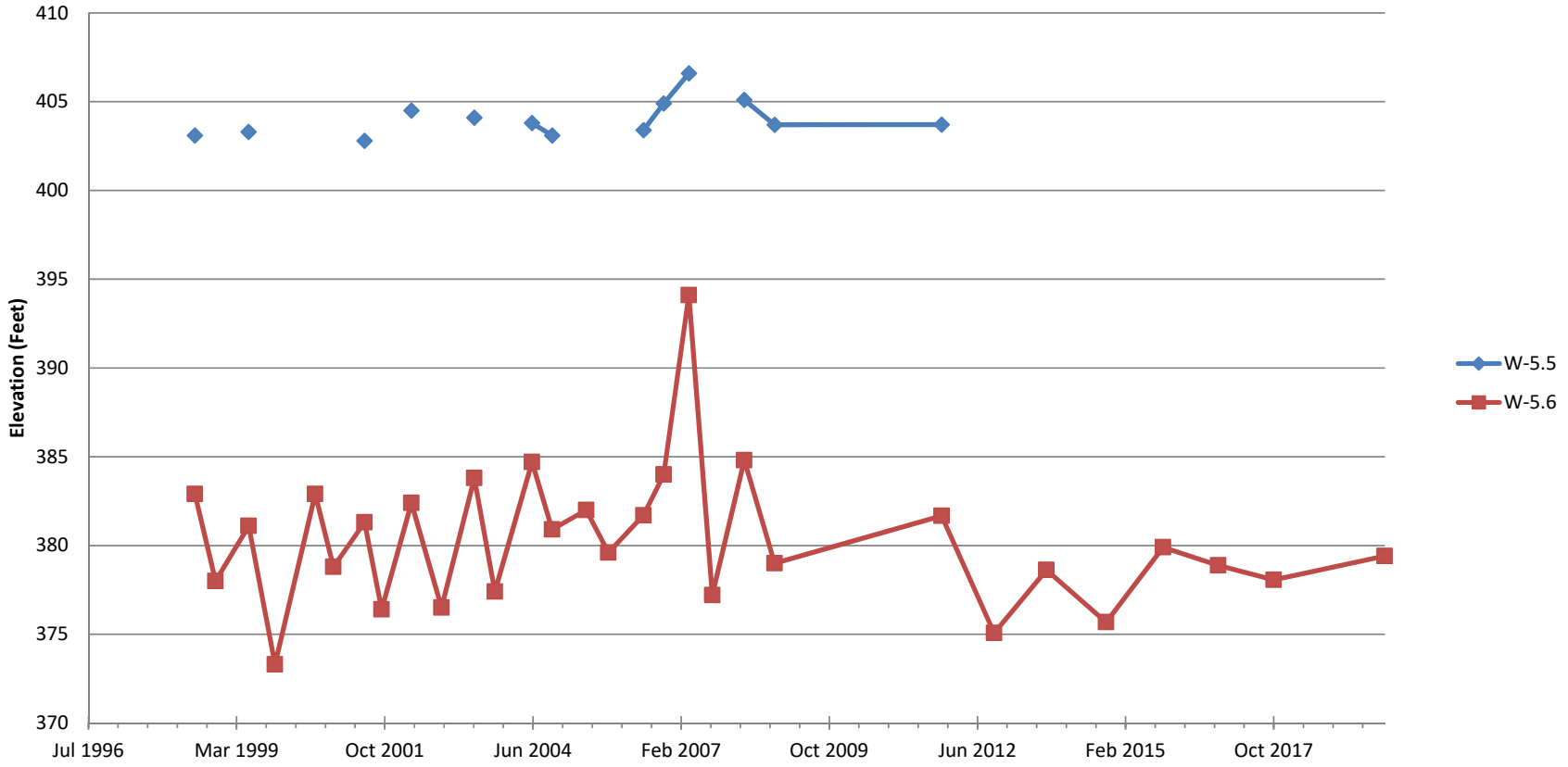


Appendix C

PZ-8 Cluster - Groundwater Elevation

Former Crucible Specialty Metals LF, Where([WL1_WaterLevels_AHD_Using_Timeseries_TOC].[LocCode] In('PZ8.1' , 'PZ8.2'))

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

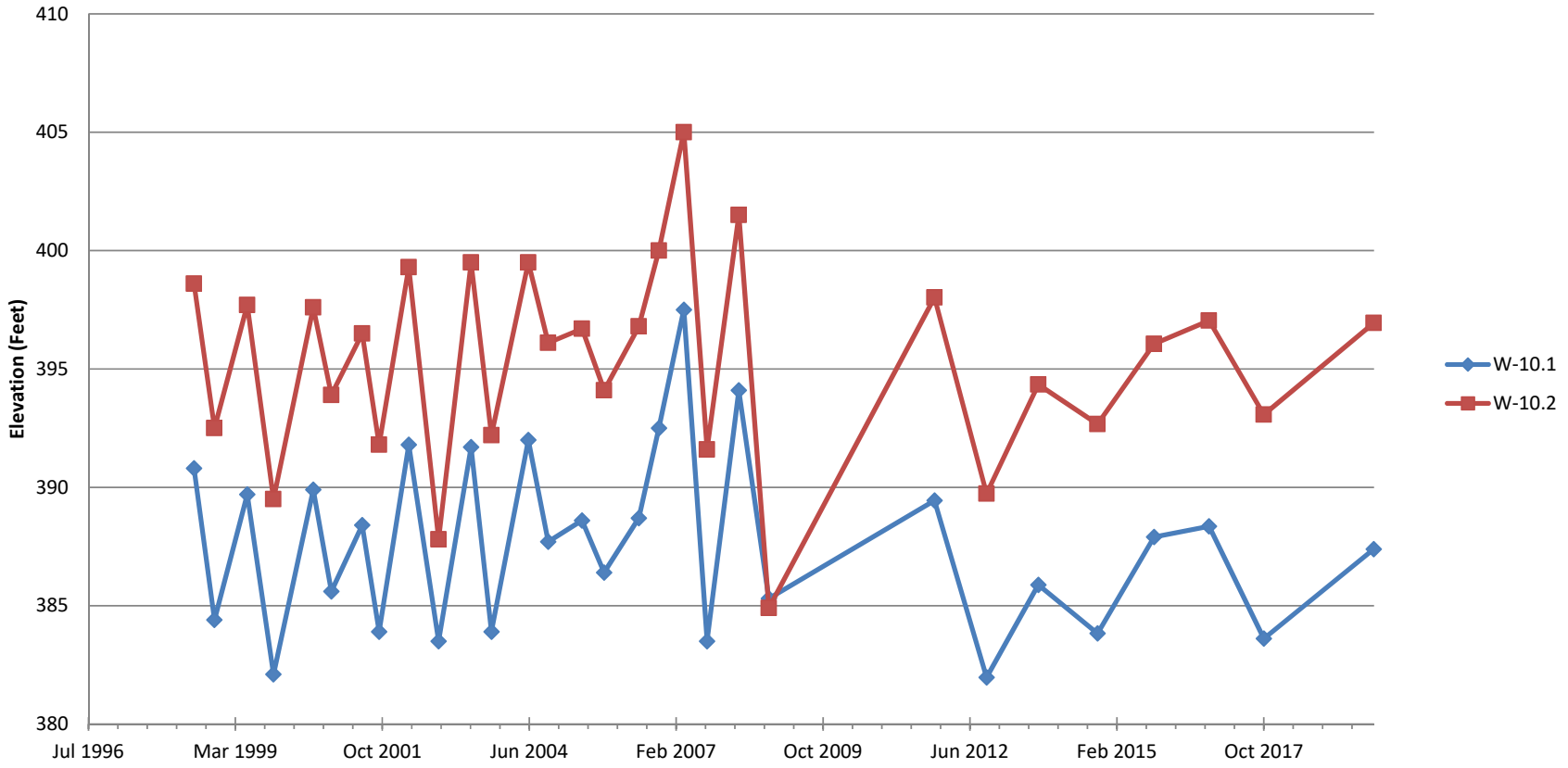


Appendix C

W-5 Cluster - Groundwater Elevation

Former Crucible Specialty Metals LF, Where([WL1_WaterLevels_AHD_Using_Timeseries_TOC].[LocCode] In('W5.5' , 'W5.6'))

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	



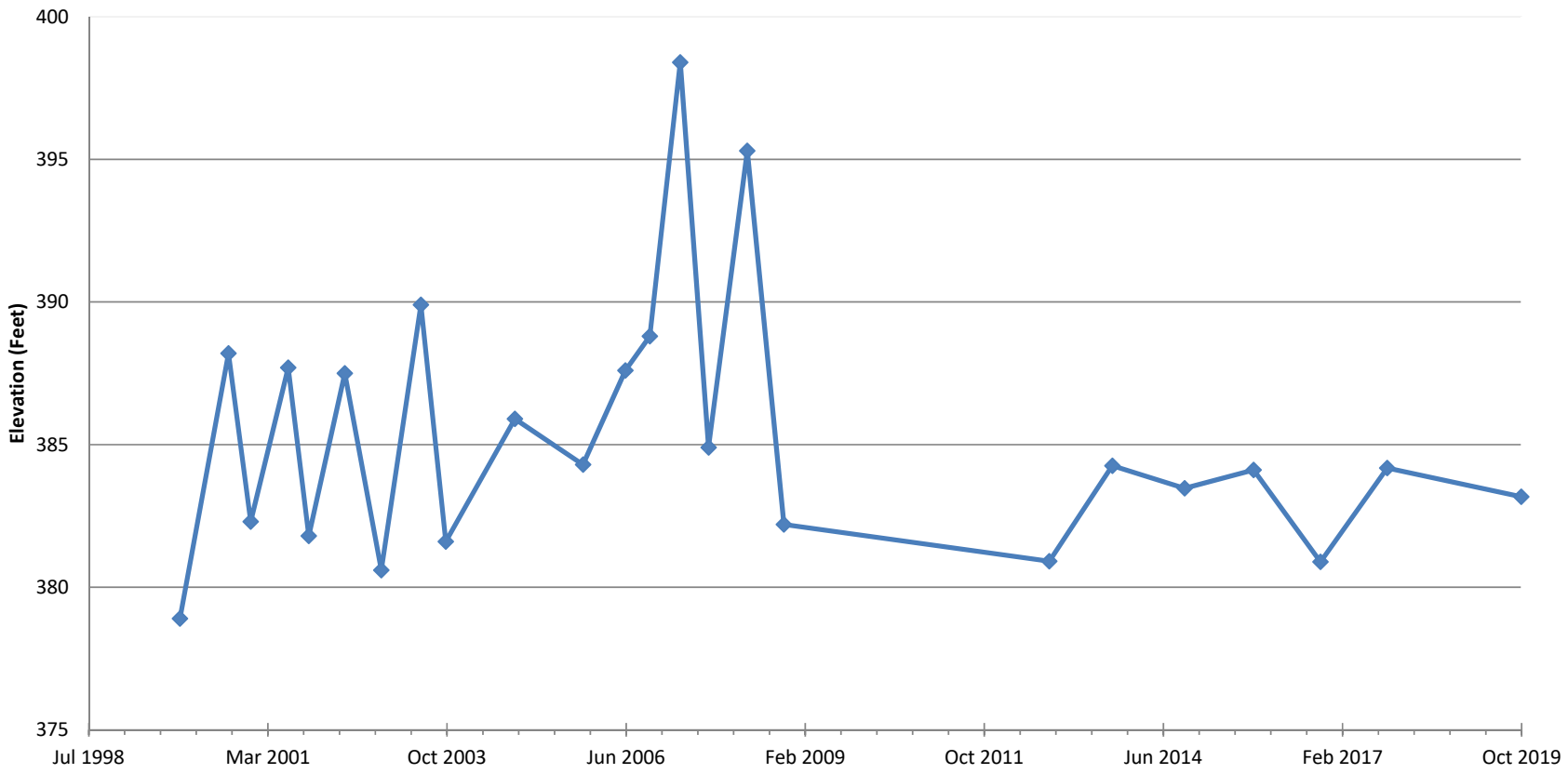
Appendix C

W-10 Cluster - Groundwater Elevation

Former Crucible Specialty Metals LF, Where([WL1_WaterLevels_AHD_Using_Timeseries_TOC].[LocCode] In('W10.1' , 'W10.2'))

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

GHD



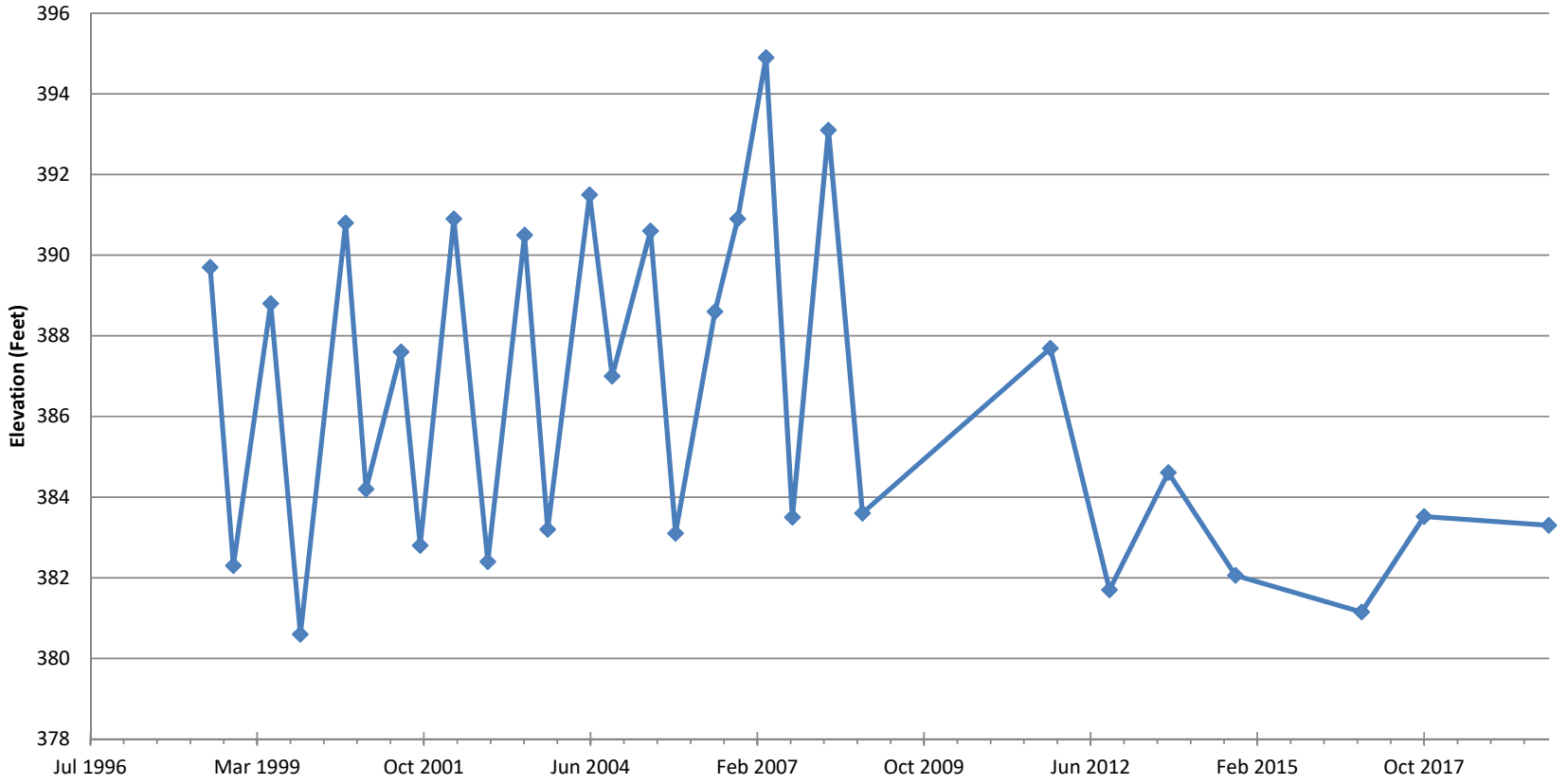
Appendix C

W-105R - Groundwater Elevation

Former Crucible Specialty Metals LF, Where([WL1_WaterLevels_AHD_Using_Timeseries_TOC].[LocCode] = 'W105R')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

GHD



Appendix C

W-201R - Groundwater Elevation

Former Crucible Specialty Metals LF, Where([WL1_WaterLevels_AHD_Using_Timeseries_TOC].[LocCode] = 'W201R')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

Appendix D
Groundwater Results Plots and Summary Data Tables

Appendix D
Summary of Field Parameter Results
October 2019 Biennial Monitoring Event

	Field Parameters	
	Specific Conductivity	pH
	mS/cm	pH_Units
UCL	47.52	12.56
LCL	26.30	11.44

Sample Date	Sample ID		
2/4/1987	MS104.3	-	11.9
5/19/1987	MS104.3	40	12.2
8/11/1987	MS104.3	46	11.9
11/17/1987	MS104.3	**52**	11.8
2/16/1988	MS104.3	**23**	**12.7**
5/24/1988	MS104.3	**16**	**12.6**
8/16/1988	MS104.3	44	12.1
11/16/1988	MS104.3	43	12.2
2/14/1989	MS104.3	43	12.3
5/9/1989	MS104.3	**16**	**10**
8/8/1989	MS104.3	29	12.3
6/26/1990	MS104.3	**>10**	**13.19**
12/19/1990	MS104.3	**20**	**12.68**
6/26/1991	MS104.3	26.8	**12.7**
11/20/1991	MS104.3	31.9	12.39
12/15/1992	MS104.3	46.3	12.18
8/24/1993	MS104.3	**26**	12.23
9/30/1993	MS104.3	**23.6**	12.46
6/27/1994	MS104.3	27.2	12.33
11/2/1994	MS104.3	**7.81**	**12.62**
5/4/1995	MS104.3	**7.24**	11.59
10/25/1995	MS104.3	**16.5**	12.07
5/24/1996	MS104.3	**24.87**	11.88
10/29/1996	MS104.3	**20.6**	11.51
7/1/1997	MS104.3	**17.5**	11.95
10/30/1997	MS104.3	**18.09**	11.44
6/29/1998	MS104.3	**18.09**	11.94
11/15/1998	MS104.3	**16.62**	**12.59**
5/27/1999	MS104.3	**15**	12.5
10/13/1999	MS104.3	**13.53**	11.8
6/30/2000	MS104.3	**21.44**	11.9
10/26/2000	MS104.3	**18**	12.1
6/20/2001	MS104.3	**13.6**	12.09
10/11/2001	MS104.3	**13.78**	12.15
4/24/2002	MS104.3	**17.07**	12.32
10/22/2002	MS104.3	**11.33**	12.29
6/17/2003	MS104.3	**14.1**	12.14
10/28/2003	MS104.3	**19.3**	12.3
5/25/2004	MS104.3	**16.7**	12.45
10/26/2004	MS104.3	**16**	**10.14**
5/4/2005	MS104.3	**15.4**	**13.15**
11/16/2005	MS104.3	**15.3**	12.25
4/25/2006	MS104.3	**14.1**	12.12
10/17/2006	MS104.3	**13.4**	12.43
5/8/2007	MS104.3	**8.2**	12.4
10/10/2007	MS104.3	**9.1**	12.3
6/3/2008	MS104.3	**11.4**	12.2
10/7/2008	MS104.3	**10.8**	12.4
11/8/2011	MS104.3	**11.1**	**14.67**
10/18/2012	MS104.3	**13.4**	12.26
9/25/2013	MS104.3	**12.2**	12.47
10/22/2014	MS104.3	**11.83**	**13.04**
10/29/2015	MS104.3	**12.5**	12.25
10/27/2016	MS104.3	**12.4**	**12.7**
10/25/2017	MS104.3	**11.47**	**13.09**
10/23/2019	MS104.3	**10.8**	**12.75**

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

		Field Parameters	
		Specific Conductivity	pH
		mS/cm	pH_Units
UCL		13.01	12.85
LCL		11.17	11.66
Sample Date	Sample ID		
2/4/1987	MS104.4	12.5	12.4
5/19/1987	MS104.4	11.5	12.2
8/11/1987	MS104.4	**13.5**	12.4
11/17/1987	MS104.4	12	12.3
2/16/1988	MS104.4	13	12.5
5/24/1988	MS104.4	**10**	12.6
8/16/1988	MS104.4	**14**	12.3
11/16/1988	MS104.4	**11**	12.8
2/14/1989	MS104.4	12	12.7
5/9/1989	MS104.4	**11**	**10**
8/8/1989	MS104.4	12.5	12.6
6/26/1990	MS104.4	**>10**	**13.1**
12/19/1990	MS104.4	**10**	**12.87**
6/26/1991	MS104.4	13	12.81
11/20/1991	MS104.4	12.8	12.77
12/15/1992	MS104.4	**10.75**	12.41
8/24/1993	MS104.4	**9.2**	12.76
9/30/1993	MS104.4	**9.7**	**12.86**
6/27/1994	MS104.4	11.19	12.59
11/2/1994	MS104.4	**5.49**	**12.86**
5/4/1995	MS104.4	**5.05**	11.92
10/25/1995	MS104.4	**9.8**	12.38
5/24/1996	MS104.4	**10.85**	12.21
10/29/1996	MS104.4	**11**	12.03
7/1/1997	MS104.4	**9.95**	12.23
10/30/1997	MS104.4	**10.17**	**11.44**
6/29/1998	MS104.4	**9.721**	12.43
11/15/1998	MS104.4	**9.495**	12.85
5/27/1999	MS104.4	**10**	12.8
10/13/1999	MS104.4	**13.41**	11.9
6/30/2000	MS104.4	**10.27**	11.8
10/26/2000	MS104.4	**10.63**	12.1
6/20/2001	MS104.4	**7.4**	12.04
10/11/2001	MS104.4	**9.891**	12.48
4/24/2002	MS104.4	**9.891**	**13.55**
10/22/2002	MS104.4	11.25	12.29
6/17/2003	MS104.4	**8.7**	12.22
10/28/2003	MS104.4	12.8	12.1
5/25/2004	MS104.4	12	12
10/26/2004	MS104.4	**11**	**10.7**
5/4/2005	MS104.4	**10.7**	**13.2**
11/16/2005	MS104.4	**13.9**	12.3
4/25/2006	MS104.4	11.3	12.6
10/17/2006	MS104.4	**10**	12.4
5/8/2007	MS104.4	**4.1**	12.5
10/10/2007	MS104.4	**7.8**	12.4
6/3/2008	MS104.4	**8.9**	12.4
10/7/2008	MS104.4	**8.5**	11.8
11/8/2011	MS104.4	**8.9**	**14.5**
10/18/2012	MS104.4	-	-
9/25/2013	MS104.4	**10.9**	12.46
10/22/2014	MS104.4	**10.3**	**13.12**
10/29/2015	MS104.4	**9.7**	12.25
10/27/2016	MS104.4	**10.7**	12.77
10/25/2017	MS104.4	**10.02**	**13.18**
10/23/2019	MS104.4	**9.32**	12.82

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

		Field Parameters	
		Specific Conductivity	pH
		mS/cm	pH_Units
UCL		10.17	12.94
LCL		9.00	11.61

Sample Date	Sample ID		
2/4/1987	MS104.5	9.2	12.5
5/19/1987	MS104.5	9.2	12
8/11/1987	MS104.5	**10.5**	12.5
11/17/1987	MS104.5	9.8	12.2
2/16/1988	MS104.5	10	12.7
5/24/1988	MS104.5	**8.4**	12.7
8/16/1988	MS104.5	9.2	12.4
11/16/1988	MS104.5	9.1	12.9
2/14/1989	MS104.5	10	12.7
5/9/1989	MS104.5	9	**9.8**
8/8/1989	MS104.5	**11**	12.6
6/26/1990	MS104.5	**>10**	**13.04**
12/19/1990	MS104.5	9.4	12.9
6/26/1991	MS104.5	**11**	12.8
11/20/1991	MS104.5	-	-
12/15/1992	MS104.5	9.37	12.79
8/24/1993	MS104.5	**8.8**	12.72
9/30/1993	MS104.5	**8.31**	12.8
6/27/1994	MS104.5	**10.32**	12.54
11/2/1994	MS104.5	**5.02**	12.84
5/4/1995	MS104.5	**4.74**	11.95
10/25/1995	MS104.5	**8.2**	11.92
5/24/1996	MS104.5	9.721	12.13
10/29/1996	MS104.5	9.73	12.18
7/1/1997	MS104.5	**8.48**	12.28
10/30/1997	MS104.5	9.269	**11.48**
6/29/1998	MS104.5	9.043	12.59
11/15/1998	MS104.5	10.09	**13.04**
5/27/1999	MS104.5	9.8	12.7
10/13/1999	MS104.5	-	-
6/30/2000	MS104.5	9.42	12
10/26/2000	MS104.5	9.782	12
6/20/2001	MS104.5	**7.2**	12.07
10/11/2001	MS104.5	**8.949**	12.59
4/24/2002	MS104.5	9.185	12.64
10/22/2002	MS104.5	**10.32**	12.56
6/17/2003	MS104.5	**8.2**	12.36
10/28/2003	MS104.5	**12.7**	12.52
5/25/2004	MS104.5	9.2	12.42
10/26/2004	MS104.5	**10.7**	**11.17**
5/4/2005	MS104.5	9.2	**13.65**
11/16/2005	MS104.5	**10.6**	12.49
4/25/2006	MS104.5	9.1	12.4
10/17/2006	MS104.5	**10.2**	12.54
5/8/2007	MS104.5	**0.5**	12.31
10/10/2007	MS104.5	**6.5**	12.1
6/3/2008	MS104.5	**8**	12.5
10/7/2008	MS104.5	**7.9**	12.4
11/8/2011	MS104.5	10	**14.73**
10/18/2012	MS104.5	-	-
9/25/2013	MS104.5	**10.5**	12.49
10/22/2014	MS104.5	9.6	**13.1**
10/29/2015	MS104.5	**10.6**	12.32
10/27/2016	MS104.5	**10.4**	12.8
10/25/2017	MS104.5	**10.48**	**13.03**
10/23/2019	MS104.5	9.27	12.86

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

	Field Parameters	
	Specific Conductivity	pH
	mS/cm	pH_Units
UCL	17.77	12.55
LCL	9.36	12.43

Sample Date	Sample ID		
6/26/1990	MS106.1	**>10**	12.54
12/19/1990	MS106.1	11	12.5
6/26/1991	MS106.1	13.1	12.5
11/20/1991	MS106.1	16.6	**12.42**
12/15/1992	MS106.1	11.18	**12.88**
8/24/1993	MS106.1	11	**12.33**
9/30/1993	MS106.1	11	**12.93**
6/27/1994	MS106.1	10.69	**12.63**
11/2/1994	MS106.1	**5.89**	12.53
5/4/1995	MS106.1	**5.5**	**11.83**
10/25/1995	MS106.1	16.4	**12.26**
5/24/1996	MS106.1	9.948	**12.58**
10/29/1996	MS106.1	13.2	**12.02**
7/1/1997	MS106.1	10.3	**12.13**
10/30/1997	MS106.1	13.9	**11.81**
6/29/1998	MS106.1	**8.139**	**12.42**
11/15/1998	MS106.1	13.06	**12.98**
5/27/1999	MS106.1	9.5	**12.6**
10/13/1999	MS106.1	13.53	**11.9**
6/30/2000	MS106.1	9.42	**12**
10/26/2000	MS106.1	11.72	**12**
6/20/2001	MS106.1	**7.9**	**12.23**
10/11/2001	MS106.1	12.36	**12.74**
4/24/2002	MS106.1	**9.067**	**13.08**
10/22/2002	MS106.1	12.15	**12.28**
6/17/2003	MS106.1	**8**	**11.89**
10/28/2003	MS106.1	13.9	**10.57**
5/25/2004	MS106.1	10.4	12.48
10/26/2004	MS106.1	11	**11.06**
5/4/2005	MS106.1	10.4	**13.33**
11/16/2005	MS106.1	14.2	12.52
4/25/2006	MS106.1	14	**12.25**
10/17/2006	MS106.1	10.2	**12.64**
5/8/2007	MS106.1	11.6	**12.24**
10/10/2007	MS106.1	**8.1**	**12.2**
6/3/2008	MS106.1	**8.1**	**12.3**
10/7/2008	MS106.1	**8.5**	**12.4**
11/8/2011	MS106.1	**9.1**	**14.5**
10/18/2012	MS106.1	11.7	**13.09**
9/25/2013	MS106.1	10.7	12.48
10/22/2014	MS106.1	**8.84**	**13.27**
10/30/2015	MS106.1	13.7	**12.76**
10/26/2016	MS106.1	9.7	**12.62**
10/25/2017	MS106.1	10.58	**13.19**
10/23/2019	MS106.1	9.67	**12.89**

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

	Field Parameters	
	Specific Conductivity	pH
	mS/cm	pH_Units
UCL	34.31	12.85
LCL	21.55	12.43

Sample Date	Sample ID		
6/26/1990	MS106.2	-	**12.18**
12/19/1990	MS106.2	23	12.71
6/26/1991	MS106.2	30	12.7
11/20/1991	MS106.2	30.8	**12.07**
12/15/1992	MS106.2	**44.8**	12.64
8/24/1993	MS106.2	22	**12.06**
9/30/1993	MS106.2	**42.1**	12.66
6/27/1994	MS106.2	22.3	**12.41**
11/2/1994	MS106.2	**7.27**	12.44
5/4/1995	MS106.2	**6.98**	**11.59**
10/25/1995	MS106.2	**19.5**	**12.15**
5/24/1996	MS106.2	23.23	**11.26**
10/29/1996	MS106.2	21.9	**11.82**
7/1/1997	MS106.2	**20.3**	**11.93**
10/30/1997	MS106.2	**21.48**	**11.77**
6/29/1998	MS106.2	**19.22**	**12.01**
11/15/1998	MS106.2	**19.58**	12.76
5/27/1999	MS106.2	**17**	**12.3**
10/13/1999	MS106.2	**10.87**	**11.9**
6/30/2000	MS106.2	**18**	**12**
10/26/2000	MS106.2	**19.02**	**11.9**
6/20/2001	MS106.2	**14**	**11.87**
10/11/2001	MS106.2	**17.19**	12.44
4/24/2002	MS106.2	**17.66**	**12.87**
10/22/2002	MS106.2	**18.79**	**11.97**
6/17/2003	MS106.2	**14.8**	**11.44**
10/28/2003	MS106.2	**19.8**	**10.66**
5/25/2004	MS106.2	**20**	**12.41**
10/26/2004	MS106.2	**17.6**	**10.7**
5/4/2005	MS106.2	**15**	**13.01**
11/16/2005	MS106.2	**17.7**	12.76
4/25/2006	MS106.2	**14.8**	**12.18**
10/17/2006	MS106.2	**15.2**	12.66
5/8/2007	MS106.2	**12.4**	**11.6**
10/10/2007	MS106.2	**8.2**	**12.1**
6/3/2008	MS106.2	**12.6**	**12**
10/7/2008	MS106.2	**9.9**	**12.4**
11/8/2011	MS106.2	**10.4**	**14.51**
10/18/2012	MS106.2	**14.2**	**12.94**
9/25/2013	MS106.2	**10.1**	**12.27**
10/22/2014	MS106.2	**11.1**	12.85
10/30/2015	MS106.2	**11.5**	**12.27**
10/26/2016	MS106.2	**12.5**	12.69
10/25/2017	MS106.2	**12.06**	**12.94**
10/23/2019	MS106.2	**11.4**	12.72

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

	Field Parameters	
	Specific Conductivity	pH
	mS/cm	pH_Units
UCL	17.22	12.96
LCL	10.12	12.27

Sample Date	Sample ID		
6/26/1990	MS106.3	**>10**	12.54
12/19/1990	MS106.3	11	**13.01**
6/26/1991	MS106.3	14.4	12.5
11/20/1991	MS106.3	15.6	12.41
12/15/1992	MS106.3	**28.1**	**11.95**
8/24/1993	MS106.3	11	12.39
9/30/1993	MS106.3	11.3	12.87
6/27/1994	MS106.3	10.73	12.73
11/2/1994	MS106.3	**5.68**	12.62
5/4/1995	MS106.3	**5.32**	**11.86**
10/25/1995	MS106.3	**10**	12.31
5/24/1996	MS106.3	**9.518**	**11.36**
10/29/1996	MS106.3	11.3	**12.1**
7/1/1997	MS106.3	10.6	**12.07**
10/30/1997	MS106.3	10.85	**11.52**
6/29/1998	MS106.3	**9.269**	12.41
11/15/1998	MS106.3	10.68	12.83
5/27/1999	MS106.3	**9.9**	12.5
10/13/1999	MS106.3	11.11	**12.2**
6/30/2000	MS106.3	**9.782**	**12**
10/26/2000	MS106.3	11.11	**12**
6/20/2001	MS106.3	**7.6**	**12.15**
10/11/2001	MS106.3	**10.01**	12.63
4/24/2002	MS106.3	**8.949**	12.91
10/22/2002	MS106.3	12.16	**12.18**
6/17/2003	MS106.3	**9.1**	**11.85**
10/28/2003	MS106.3	13.2	**10.98**
5/25/2004	MS106.3	**9.2**	12.6
10/26/2004	MS106.3	11.3	**11.3**
5/4/2005	MS106.3	**7.8**	**13.35**
11/16/2005	MS106.3	13.8	12.7
4/25/2006	MS106.3	13.2	**12**
10/17/2006	MS106.3	10.9	12.9
5/8/2007	MS106.3	**9.2**	12.8
10/10/2007	MS106.3	**7.5**	**12**
6/3/2008	MS106.3	**8.3**	**12.2**
10/7/2008	MS106.3	**9.3**	12.4
11/8/2011	MS106.3	10.5	**14.65**
10/18/2012	MS106.3	12.1	**13.02**
9/25/2013	MS106.3	11.3	12.51
10/22/2014	MS106.3	**9.03**	12.6
10/30/2015	MS106.3	11.5	12.33
10/26/2016	MS106.3	**9.6**	12.58
10/25/2017	MS106.3	10.89	**13.02**
10/23/2019	MS106.3	**9.98**	12.85

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

	Field Parameters	
	Specific Conductivity	pH
	mS/cm	pH Units
UCL	14.41	13.14
LCL	7.19	12.26

Sample Date	Sample ID		
6/26/1990	MS106.4	**>10**	12.47
12/19/1990	MS106.4	9.4	13.03
6/26/1991	MS106.4	12.2	12.6
11/20/1991	MS106.4	-	-
12/15/1992	MS106.4	10.61	**12.02**
8/24/1993	MS106.4	10	12.39
9/30/1993	MS106.4	9.8	**19.97**
6/27/1994	MS106.4	10.38	12.68
11/2/1994	MS106.4	-	-
5/4/1995	MS106.4	**4.85**	**11.96**
10/25/1995	MS106.4	-	-
5/24/1996	MS106.4	10.17	12.75
10/29/1996	MS106.4	-	-
7/1/1997	MS106.4	9.95	**12.06**
10/30/1997	MS106.4	-	-
6/29/1998	MS106.4	9.156	12.49
11/15/1998	MS106.4	-	-
5/27/1999	MS106.4	9.85	12.5
10/13/1999	MS106.4	-	-
6/30/2000	MS106.4	9.782	**12.1**
10/26/2000	MS106.4	10.27	**11.9**
6/20/2001	MS106.4	8	12.26
10/11/2001	MS106.4	-	-
4/24/2002	MS106.4	8.949	13
10/22/2002	MS106.4	-	-
6/17/2003	MS106.4	8	**11.94**
10/28/2003	MS106.4	-	-
5/25/2004	MS106.4	10.8	12.56
10/26/2004	MS106.4	11.1	**11.7**
5/4/2005	MS106.4	9.6	**13.17**
11/16/2005	MS106.4	-	-
4/25/2006	MS106.4	13.4	**12.14**
10/17/2006	MS106.4	11.8	12.83
5/8/2007	MS106.4	9.3	12.46
10/10/2007	MS106.4	-	-
6/3/2008	MS106.4	11.9	**12.1**
10/7/2008	MS106.4	8.7	12.5
11/8/2011	MS106.4	10.2	**14.48**
10/18/2012	MS106.4	-	-
9/25/2013	MS106.4	-	-
10/22/2014	MS106.4	-	-
10/30/2015	MS106.4	-	-
10/26/2016	MS106.4	-	-
10/25/2017	MS106.4	-	-
10/23/2019	MS106.4	-	-

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

	Field Parameters	
	Specific Conductivity	pH
	mS/cm	pH_Units
UCL	103.35	7.29
LCL	68.05	4.7

Sample Date	Sample ID		
6/26/1990	MS301.1	**>10**	6.97
12/19/1990	MS301.1	72	**4.58**
6/26/1991	MS301.1	92.3	6.2
11/20/1991	MS301.1	92.8	6.23
12/15/1992	MS301.1	**130.4**	7.06
8/24/1993	MS301.1	71	6.43
9/30/1993	MS301.1	71.5	7.26
6/27/1994	MS301.1	83.3	6.71
11/2/1994	MS301.1	**8.26**	6.64
5/4/1995	MS301.1	**6.69**	6.33
10/25/1995	MS301.1	**8.4**	6.69
5/24/1996	MS301.1	80.82	5.83
10/29/1996	MS301.1	85.9	6.33
7/1/1997	MS301.1	70.1	7.07
10/30/1997	MS301.1	82.52	6.44
6/29/1998	MS301.1	80.26	7.03
11/15/1998	MS301.1	85.46	**7.8**
5/27/1999	MS301.1	97.5	6.3
10/13/1999	MS301.1	79.71	6.8
6/30/2000	MS301.1	96.62	6.36
10/26/2000	MS301.1	94.2	5.57
6/20/2001	MS301.1	78	6.21
10/11/2001	MS301.1	84.87	6.56
4/24/2002	MS301.1	88.31	6.94
10/22/2002	MS301.1	**118.4**	6.75
6/17/2003	MS301.1	86.8	6.77
10/28/2003	MS301.1	**132.8**	6.8
5/25/2004	MS301.1	**126.4**	6.84
10/26/2004	MS301.1	**116.2**	5.36
5/4/2005	MS301.1	**107.5**	7.25
11/16/2005	MS301.1	**132.7**	7.1
4/25/2006	MS301.1	**117.8**	6.64
10/17/2006	MS301.1	**114.8**	6.33
5/8/2007	MS301.1	79.1	6.28
10/10/2007	MS301.1	80.6	6.6
6/3/2008	MS301.1	96.7	**8**
10/7/2008	MS301.1	99.7	6.3
11/8/2011	MS301.1	99.9	6.51
10/18/2012	MS301.1	99.9	**7.32**
9/25/2013	MS301.1	**11.8**	6.26
10/22/2014	MS301.1	**>10**	6.59
10/29/2015	MS301.1	**>100**	6.34
10/26/2016	MS301.1	**>100**	6.21
10/25/2017	MS301.1	**125.3**	6.43
10/23/2019	MS301.1	**>100**	6.35

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(-) - Indicates field parameter was not measured

	Field Parameters	
	Specific Conductivity	pH
	mS/cm	pH_Units
UCL	128.74	6.36
LCL	85.12	5.15

Sample Date	Sample ID		
6/26/1990	MS301.2	**>10**	6.2
12/19/1990	MS301.2	90	**5.1**
6/26/1991	MS301.2	115.5	5.9
11/20/1991	MS301.2	115.3	5.82
12/15/1992	MS301.2	**161.2**	**6.7**
8/24/1993	MS301.2	92	6.16
9/30/1993	MS301.2	**140**	**6.92**
6/27/1994	MS301.2	102.1	**6.44**
11/2/1994	MS301.2	**6.57**	6.11
5/4/1995	MS301.2	**7.85**	**6.49**
10/25/1995	MS301.2	102	**7.23**
5/24/1996	MS301.2	100.6	5.8
10/29/1996	MS301.2	110	6.25
7/1/1997	MS301.2	93.8	6.24
10/30/1997	MS301.2	106.8	6.1
6/29/1998	MS301.2	97.21	**7.08**
11/15/1998	MS301.2	104.4	**8.8**
5/27/1999	MS301.2	99	6.2
10/13/1999	MS301.2	108.7	**6.5**
6/30/2000	MS301.2	122	6.34
10/26/2000	MS301.2	119.6	5.85
6/20/2001	MS301.2	86	**6.44**
10/11/2001	MS301.2	**11.3**	6.33
4/24/2002	MS301.2	108.3	6.29
10/22/2002	MS301.2	**148.6**	6.27
6/17/2003	MS301.2	110.2	**6.77**
10/28/2003	MS301.2	**168.7**	**6.47**
5/25/2004	MS301.2	**158.9**	**6.77**
10/26/2004	MS301.2	**145.2**	6.13
5/4/2005	MS301.2	104.7	**7.11**
11/16/2005	MS301.2	**169.7**	**6.52**
4/25/2006	MS301.2	**144.4**	6.36
10/17/2006	MS301.2	**138.4**	**6.62**
5/8/2007	MS301.2	101.1	6.29
10/10/2007	MS301.2	101.3	**6.4**
6/3/2008	MS301.2	123.2	**7.7**
10/7/2008	MS301.2	122.2	6.14
11/8/2011	MS301.2	99.9	**6.55**
10/18/2012	MS301.2	99.9	**6.46**
9/25/2013	MS301.2	-	6.3
10/22/2014	MS301.2	**>10**	**6.48**
10/29/2015	MS301.2	**>100**	5.95
10/26/2016	MS301.2	**>100**	6.18
10/25/2017	MS301.2	**142**	**6.55**
10/23/2019	MS301.2	**>100**	**6.41**

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

	Field Parameters	
	Specific Conductivity	pH
	mS/cm	pH_Units
UCL	112.09	6.53
LCL	76.98	5.2

Sample Date	Sample ID		
6/26/1990	MS301.3	**>10**	6.24
12/19/1990	MS301.3	81	**5.1**
6/26/1991	MS301.3	102.7	6.1
11/20/1991	MS301.3	99.9	6.02
12/15/1992	MS301.3	**122.4**	6.52
8/24/1993	MS301.3	**76**	6.04
9/30/1993	MS301.3	**72.1**	**6.56**
6/27/1994	MS301.3	84.1	6.45
11/2/1994	MS301.3	**6.06**	6.21
5/4/1995	MS301.3	**7.11**	6.51
10/25/1995	MS301.3	86	**6.94**
5/24/1996	MS301.3	84.22	5.98
10/29/1996	MS301.3	91.6	6.52
7/1/1997	MS301.3	78	**6.67**
10/30/1997	MS301.3	83.65	6.35
6/29/1998	MS301.3	85.91	**6.79**
11/15/1998	MS301.3	85.46	**7.2**
5/27/1999	MS301.3	97	**7.5**
10/13/1999	MS301.3	94.2	**7.1**
6/30/2000	MS301.3	92.99	6.48
10/26/2000	MS301.3	94.2	6.36
6/20/2001	MS301.3	**70**	6.15
10/11/2001	MS301.3	90.69	6.42
4/24/2002	MS301.3	88.31	6.25
10/22/2002	MS301.3	**115.5**	6.19
6/17/2003	MS301.3	88.2	6.46
10/28/2003	MS301.3	**132.3**	**6.56**
5/25/2004	MS301.3	**128.5**	**6.83**
10/26/2004	MS301.3	111.6	6.18
5/4/2005	MS301.3	110.1	**7.09**
11/16/2005	MS301.3	**115.6**	**6.96**
4/25/2006	MS301.3	109.3	**6.56**
10/17/2006	MS301.3	104.8	**6.65**
5/8/2007	MS301.3	**63.1**	6.52
10/10/2007	MS301.3	**72.9**	6.4
6/3/2008	MS301.3	89.2	**8**
10/7/2008	MS301.3	91.6	**6.7**
11/8/2011	MS301.3	99	**6.67**
10/18/2012	MS301.3	78.2	**6.65**
9/25/2013	MS301.3	-	**6.56**
10/22/2014	MS301.3	96.6	**6.59**
10/29/2015	MS301.3	91.6	6.44
10/26/2016	MS301.3	96.9	**6.57**
10/25/2017	MS301.3	100.6	**6.66**
10/23/2019	MS301.3	95	**6.6**

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

	Field Parameters	
	Specific Conductivity	pH
	mS/cm	pH_Units
UCL	95.03	11.2
LCL	66.5	9.62

Sample Date	Sample ID		
6/26/1990	MS301.4	**>10**	9.62
12/19/1990	MS301.4	70	10.36
6/26/1991	MS301.4	88.4	11.1
11/20/1991	MS301.4	83.9	10.55
12/15/1992	MS301.4	**108.9**	11.03
8/24/1993	MS301.4	**66**	11.14
9/30/1993	MS301.4	**62**	10.24
6/27/1994	MS301.4	68	10.28
11/2/1994	MS301.4	**8.97**	10.84
5/4/1995	MS301.4	**7.76**	10.53
10/25/1995	MS301.4	**64**	10.39
5/24/1996	MS301.4	67.82	**9.27**
10/29/1996	MS301.4	70.3	10.53
7/1/1997	MS301.4	**62.2**	9.74
10/30/1997	MS301.4	**61.04**	10.56
6/29/1998	MS301.4	**57.65**	10.41
11/15/1998	MS301.4	**64.09**	**11.44**
5/27/1999	MS301.4	**96**	10.8
10/13/1999	MS301.4	**54.35**	10.2
6/30/2000	MS301.4	**66.42**	10.1
10/26/2000	MS301.4	**66.42**	10.1
6/20/2001	MS301.4	**45**	9.95
10/11/2001	MS301.4	**57.7**	10.75
4/24/2002	MS301.4	**56.52**	**11.61**
10/22/2002	MS301.4	71.7	**11.78**
6/17/2003	MS301.4	**54.5**	10.71
10/28/2003	MS301.4	79.3	9.62
5/25/2004	MS301.4	74.5	10.68
10/26/2004	MS301.4	**65.1**	10.2
5/4/2005	MS301.4	**63.5**	**12.21**
11/16/2005	MS301.4	**66.1**	**11.32**
4/25/2006	MS301.4	**61.4**	10.95
10/17/2006	MS301.4	**60.1**	11
5/8/2007	MS301.4	**44.1**	10.98
10/10/2007	MS301.4	**36.7**	11.2
6/3/2008	MS301.4	**47.5**	10.7
10/7/2008	MS301.4	**47.4**	**11.55**
11/8/2011	MS301.4	**45.9**	**12.99**
10/18/2012	MS301.4	**45.7**	**11.38**
9/25/2013	MS301.4	**42.4**	**11.92**
10/22/2014	MS301.4	**3.5**	**11.97**
10/29/2015	MS301.4	**38.3**	**11.28**
10/26/2016	MS301.4	**36.8**	**11.64**
10/25/2017	MS301.4	**34.55**	**12.13**
10/23/2019	MS301.4	**28.7**	**11.99**

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

	Field Parameters	
	Specific Conductivity	pH
	mS/cm	pH_Units
UCL	34.74	12.59
LCL	28.39	12.15

Sample Date	Sample ID		
6/26/1990	MS301.5	**>10**	12.33
12/19/1990	MS301.5	30	**12.61**
6/26/1991	MS301.5	34	12.2
11/20/1991	MS301.5	30.7	12.35
12/15/1992	MS301.5	**37.1**	12.49
8/24/1993	MS301.5	**21**	**12.64**
9/30/1993	MS301.5	**21**	**12.1**
6/27/1994	MS301.5	**23.5**	12.41
11/2/1994	MS301.5	**7.46**	12.47
5/4/1995	MS301.5	**6.71**	12.59
10/25/1995	MS301.5	**19.5**	12.44
5/24/1996	MS301.5	**23.74**	12.41
10/29/1996	MS301.5	**16.1**	**11.86**
7/1/1997	MS301.5	**17**	**11.75**
10/30/1997	MS301.5	**19.44**	**11.88**
6/29/1998	MS301.5	**17.25**	12.16
11/15/1998	MS301.5	**17.8**	**9.63**
5/27/1999	MS301.5	**15**	**12.7**
10/13/1999	MS301.5	**13.65**	**11.9**
6/30/2000	MS301.5	**18**	**11.8**
10/26/2000	MS301.5	**15.94**	**12**
6/20/2001	MS301.5	**13.5**	**11.82**
10/11/2001	MS301.5	**14.72**	12.18
4/24/2002	MS301.5	**16.6**	12.29
10/22/2002	MS301.5	**17.1**	12.33
6/17/2003	MS301.5	**12.6**	**11.41**
10/28/2003	MS301.5	**19.3**	**10.55**
5/25/2004	MS301.5	**16.5**	12.3
10/26/2004	MS301.5	**15.8**	**12.03**
5/4/2005	MS301.5	**15.1**	**12.79**
11/16/2005	MS301.5	**15.5**	12.54
4/25/2006	MS301.5	**17.6**	12.44
10/17/2006	MS301.5	**17**	**12.68**
5/8/2007	MS301.5	**11.7**	12.28
10/10/2007	MS301.5	**9.6**	**12.6**
6/3/2008	MS301.5	**12.1**	12.4
10/7/2008	MS301.5	**11.7**	12.3
11/8/2011	MS301.5	**14.7**	**14.13**
10/18/2012	MS301.5	**15.6**	**12.03**
9/25/2013	MS301.5	**13.9**	12.48
10/22/2014	MS301.5	**10.8**	**10.48**
10/29/2015	MS301.5	**12.2**	**12.74**
10/26/2016	MS301.5	**11.5**	**12.66**
10/25/2017	MS301.5	**12.78**	**13.13**
10/23/2019	MS301.5	**11.8**	12.57

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

	Field Parameters	
	Specific Conductivity	pH
	mS/cm	pH_Units
UCL	20.12	12.79
LCL	3.37	11.74

Sample Date	Sample ID		
6/27/1994	W201R	18.43	12.57
11/2/1994	W201R	6.61	12.62
5/4/1995	W201R	5.75	11.75
10/25/1995	W201R	16.2	12.12
5/24/1996	W201R	16.73	12.49
10/29/1996	W201R	**21.5**	11.97
7/1/1997	W201R	14.2	11.92
10/30/1997	W201R	17.07	**11.67**
6/29/1998	W201R	11.76	12.59
11/15/1998	W201R	15.43	**12.95**
5/27/1999	W201R	10	12.6
10/13/1999	W201R	**23.67**	**11.5**
6/30/2000	W201R	12.32	12.2
10/26/2000	W201R	12.32	11.9
6/20/2001	W201R	10	12.17
10/11/2001	W201R	13.19	12.61
4/24/2002	W201R	11.42	**12.92**
10/22/2002	W201R	15.87	12.28
6/17/2003	W201R	10.4	12.49
10/28/2003	W201R	17	12.3
5/25/2004	W201R	14.9	12.48
10/26/2004	W201R	13.1	**11.3**
5/4/2005	W201R	15	**13.27**
11/16/2005	W201R	18	**13.21**
4/25/2006	W201R	12.5	12.09
10/17/2006	W201R	12.3	12.61
5/8/2007	W201R	9.8	12.3
10/10/2007	W201R	9.4	12.3
6/3/2008	W201R	10.3	12.2
10/7/2008	W201R	10.4	11.8
11/8/2011	W201R	12.4	**14.68**
10/18/2012	W201R	15.8	**12.91**
9/25/2013	W201R	13.1	12.54
10/22/2014	W201R	12.6	**13.09**
10/29/2015	W201R	-	-
10/26/2016	W201R	12.9	12.74
10/25/2017	W201R	11.46	**13.4**
10/23/2019	W201R	12.1	**12.81**

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

	Field Parameters	
	Specific Conductivity	pH
	mS/cm	pH_Units
UCL	18.35	12.79
LCL	7.98	12.19

Sample Date	Sample ID		
6/26/1990	W5.6	**>10**	12.46
12/19/1990	W5.6	10	**12.82**
6/26/1991	W5.6	12.6	12.3
11/20/1991	W5.6	16.9	12.38
12/15/1992	W5.6	13.05	12.57
8/24/1993	W5.6	16	12.42
9/30/1993	W5.6	17.8	12.26
6/27/1994	W5.6	16.3	12.56
11/2/1994	W5.6	**7.61**	12.5
5/4/1995	W5.6	**5.86**	**11.74**
10/25/1995	W5.6	**24.4**	**12.06**
5/24/1996	W5.6	14.24	12.53
10/29/1996	W5.6	**25.4**	**11.81**
7/1/1997	W5.6	**19.5**	**11.84**
10/30/1997	W5.6	**26**	**11.72**
6/29/1998	W5.6	11.64	12.36
11/15/1998	W5.6	**21.72**	**12.81**
5/27/1999	W5.6	10.15	12.4
10/13/1999	W5.6	14.25	**11.7**
6/30/2000	W5.6	10.63	**11.8**
10/26/2000	W5.6	**21.74**	**11.8**
6/20/2001	W5.6	15	**12.08**
10/11/2001	W5.6	**23.26**	12.74
4/24/2002	W5.6	9.42	**12.84**
10/22/2002	W5.6	17.78	12.38
6/17/2003	W5.6	9.3	**12.11**
10/28/2003	W5.6	**22.4**	**12.17**
5/25/2004	W5.6	10.8	12.55
10/26/2004	W5.6	16.4	**11.38**
5/4/2005	W5.6	9.6	**13.52**
11/16/2005	W5.6	15.3	12.6
4/25/2006	W5.6	10.4	**12.1**
10/17/2006	W5.6	15.3	12.43
5/8/2007	W5.6	**7.4**	12.38
10/10/2007	W5.6	11.4	**11.9**
6/3/2008	W5.6	10.5	**12.1**
10/7/2008	W5.6	15.2	**11.7**
11/8/2011	W5.6	9.9	**14.7**
10/18/2012	W5.6	14.1	**12.86**
9/25/2013	W5.6	**4.93**	**13.5**
10/22/2014	W5.6	12.2	**13.07**
10/29/2015	W5.6	13.5	12.39
10/26/2016	W5.6	13.1	12.68
10/25/2017	W5.6	12.3	**12.96**
10/23/2019	W5.6	10.2	12.76

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

Bold and orange highlighted cells indicate an exceedance of Well Specific Lower Confidence Limit

(-) - Indicates field parameter was not measured

		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**0.646**	**0.05**	**0.053**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
MS104.3	2/4/1987	1,530	24,800	**0.74**	<0.05U	<0.05U
MS104.3	5/19/1987	1,660	25,800	0.61	<0.05U	0.05
MS104.3	8/11/1987	1,100	22,200	0.55	<0.05U	**0.06**
MS104.3	11/17/1987	2,540	25,700	**0.74**	<0.05U	<0.05U
MS104.3	2/16/1988	1,650	10,000	0.095	<0.05U	<0.05U
MS104.3	5/24/1988	1,900	9,000	0.13	<0.05U	<0.05U
MS104.3	8/16/1988	1,200	21,000	0.56	<0.05U	<0.05U
MS104.3	11/16/1988	1,800	31,000	**0.65**	<0.05U	<0.05U
MS104.3	2/14/1989	1,840	20,000	0.497	<0.05U	<0.05U
MS104.3	5/9/1989	1,740	8,000	0.145	<0.05U	<0.05U
MS104.3	8/8/1989	970	22,000	0.273	<0.05U	<0.05U
MS104.3	6/26/1990	2,188	1,350	0.278	<0.05U	<0.05U
MS104.3	12/19/1990	1,740	7,340	0.153	<0.05U	<0.05U
MS104.3	6/26/1991	1,740	8,740	0.252	<0.05U	<0.05U
MS104.3	11/20/1991	1,580	13,750	0.232	<0.05U	**0.056**
MS104.3	12/15/1992	1,690	16,500	0.425	<0.05U	**0.08**
MS104.3	8/24/1993	1,600	11,600	0.315	<0.05U	**0.079**
MS104.3	9/30/1993	1,636	11,500	0.344	<0.05U	0.05
MS104.3	6/27/1994	1,540	9,497	0.24	<0.05U	**0.146**
MS104.3	11/2/1994	1,724	6,498	0.19	<0.05U	<0.05U
MS104.3	5/4/1995	1,732	7,000	0.25	<0.05U	0.052
MS104.3	10/25/1995	1,647	4,300	0.211	<0.05U	**0.81**
MS104.3	5/24/1996	1,620	13,000	0.222	<0.05U	**0.059**
MS104.3	10/29/1996	1,700	6,700	0.17	<0.05U	<0.05U
MS104.3	7/1/1997	1,825	6,198	0.146	<0.05U	**0.23**
MS104.3	10/30/1997	1,607	6,398	0.144	<0.05U	<0.05
MS104.3	6/29/1998	1,557	6,198	0.158	<0.05U	<0.05
MS104.3	11/15/1998	1,696	4,499	0.105	<0.05U	**0.96**
MS104.3	5/27/1999	1,740	5,400	0.139	<0.05U	<0.05
MS104.3	10/13/1999	1,730	4,150	0.089	<0.05U	<0.05
MS104.3	6/30/2000	1,475	7,450	0.166	<0.05U	<0.05
MS104.3	10/26/2000	1,593	4,399	0.138	<0.05U	**0.099**
MS104.3	6/20/2001	1,590	4,898	0.099	<0.05U	<0.05U
MS104.3	10/11/2001	1,640	3,522	0.074	<0.05U	<0.05U
MS104.3	4/24/2002	1,690	4,901	0.112	<0.05U	**0.093**
MS104.3	10/22/2002	2,120	1,799	0.098	<0.05U	**0.086**
MS104.3	6/17/2003	1,770	4,249	0.083	<0.05U	**0.132**
MS104.3	10/28/2003	1,720	3,921	0.085	<0.05U	**0.104**
MS104.3	5/25/2004	1,670	3,399	0.075	<0.05U	<0.05U
MS104.3	10/26/2004	1,753	3,375	0.043	<0.05U	<0.05U
MS104.3	5/4/2005	1,765	3,497	0.062	<0.05U	<0.05U
MS104.3	11/16/2005	1,810	2,978	0.069	<0.05U	<0.05U
MS104.3	4/25/2006	1,840	2,999	0.063	<0.05U	<0.05U
MS104.3	10/17/2006	1,820	2,878	0.059	<0.05U	<0.05U
MS104.3	5/8/2007	1,890	2,869	0.056	<0.05U	<0.02U
MS104.3	10/10/2007	1,910	2,350	0.051	<0.05U	<0.02U
MS104.3	6/3/2008	1,880	2,316	0.066	<0.05U	<0.05U
MS104.3	10/7/2008	2,060	2,428	0.036	<0.05U	<0.05U
MS104.3	11/8/2011	-	-	0.074	<0.00556U	<0.0556U
MS104.3	10/18/2012	-	-	0.089	<0.005U	**0.0982**
MS104.3	9/25/2013	-	-	0.09	<0.05U	<0.5U
MS104.3	10/22/2014	-	-	<0.005U	<0.01U	**0.15**
MS104.3	10/29/2015	-	-	0.062	0.0082J	0.046J
MS104.3	10/27/2016	-	-	<0.03U	<0.01J	0.029J
MS104.3	10/25/2017	-	-	0.037	0.006J	**0.066**
MS104.3	10/23/2019	-	-	0.036	0.002J	**0.077**

Regulatory Standard - Class GA Groundwater Quality Standard or Guidance Value from NYSDEC Division of Water TOGS 1.1.1 (June 1998)

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J - Indicates an estimated value

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**0.045**	**0.05**	**0.05**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
MS104.4	2/4/1987	1,150	2,750	0.039	<0.05U	<0.05U
MS104.4	5/19/1987	1,750	5,100	0.038	<0.05U	<0.05U
MS104.4	8/11/1987	1,100	2,780	0.038	<0.05U	<0.05U
MS104.4	11/17/1987	2,060	2,250	**0.055**	<0.05U	<0.05U
MS104.4	2/16/1988	1,570	2,100	0.041	<0.05U	<0.05U
MS104.4	5/24/1988	2,300	3,700	**0.049**	<0.05U	<0.05U
MS104.4	8/16/1988	1,400	2,000	0.039	<0.05U	<0.05U
MS104.4	11/16/1988	1,900	2,100	0.018	<0.05U	<0.05U
MS104.4	2/14/1989	2,080	2,300	0.036	<0.05U	<0.05U
MS104.4	5/9/1989	1,360	4,000	0.025	<0.05U	<0.05U
MS104.4	8/8/1989	1,040	7,000	0.025	<0.05U	<0.05U
MS104.4	6/26/1990	2,013	3,150	0.034	<0.05U	<0.05U
MS104.4	12/19/1990	2,000	1,760	**0.045**	<0.05U	<0.05U
MS104.4	6/26/1991	1,740	2,250	**0.062**	<0.05U	<0.05U
MS104.4	11/20/1991	1,940	2,499	0.032	<0.05U	<0.05U
MS104.4	12/15/1992	1,880	1,650	**0.056**	<0.05U	0.049
MS104.4	8/24/1993	1,928	1,475	**0.047**	<0.05U	<0.05U
MS104.4	9/30/1993	1,904	1,500	**0.05**	<0.05U	**0.05**
MS104.4	6/27/1994	1,916	1,263	0.029	<0.05U	**0.2**
MS104.4	11/2/1994	2,015	1,000	0.035	<0.05U	<0.05U
MS104.4	5/4/1995	2,132	1,300	**0.053**	<0.05U	**0.05**
MS104.4	10/25/1995	2,032	1,700	**0.063**	<0.05U	**0.073**
MS104.4	5/24/1996	1,960	2,000	0.04	<0.05U	<0.05U
MS104.4	10/29/1996	2,100	1,300	0.036	<0.05U	**0.058**
MS104.4	7/1/1997	2,103	1,600	**0.055**	<0.05U	<0.05U
MS104.4	10/30/1997	1,934	1,500	0.023	<0.05U	<0.05U
MS104.4	6/29/1998	2,083	1,050	0.038	<0.05U	**0.488**
MS104.4	11/15/1998	2,034	1,150	0.036	<0.05U	**0.45**
MS104.4	5/27/1999	2,010	1,050	**0.064**	<0.05U	<0.05U
MS104.4	10/13/1999	2,120	1,450	0.032	<0.05U	<0.05U
MS104.4	6/30/2000	1,725	1,400	0.043	<0.05U	<0.05U
MS104.4	10/26/2000	1,940	1,075	**0.068**	<0.05U	**0.071**
MS104.4	6/20/2001	2,090	1,225	0.022	<0.05U	<0.05U
MS104.4	10/11/2001	2,040	817	0.039	<0.05U	<0.05U
MS104.4	4/24/2002	2,090	970	0.043	<0.05U	**0.05**
MS104.4	10/22/2002	2,090	1,150	0.038	<0.05U	<0.05U
MS104.4	6/17/2003	2,010	1,075	0.038	<0.05U	<0.05U
MS104.4	10/28/2003	2,030	1,042	0.043	<0.05U	<0.05U
MS104.4	5/25/2004	2,020	900	0.042	<0.05U	<0.05U
MS104.4	10/26/2004	2,073	1,012	0.01	<0.05U	<0.05U
MS104.4	5/4/2005	2,070	996	0.031	<0.05U	<0.05U
MS104.4	11/16/2005	2,090	1,092	**0.045**	<0.05U	<0.05U
MS104.4	4/25/2006	2,200	1,250	0.036	<0.05U	<0.05U
MS104.4	10/17/2006	2,170	1,340	0.032	<0.05U	<0.05U
MS104.4	5/8/2007	2,170	982	0.022	<0.05U	<0.002U
MS104.4	10/10/2007	2,210	925	0.026	<0.05U	<0.002U
MS104.4	6/3/2008	2,250	956	**0.059**	<0.05U	<0.05U
MS104.4	10/7/2008	2,329	947	0.025	<0.05U	<0.05U
MS104.4	11/8/2011	-	-	<0.05U	<0.00556U	**0.137**
MS104.4	10/18/2012	-	-	-	-	-
MS104.4	9/25/2013	-	-	**0.11**	<0.05U	<0.5U
MS104.4	10/22/2014	-	-	0.0249	0.013	**0.29**
MS104.4	10/29/2015	-	-	**0.084**	0.0036J	**0.09**
MS104.4	10/27/2016	-	-	<0.03U	<0.01U	<0.05U
MS104.4	10/25/2017	-	-	0.031	<0.002U	0.015J
MS104.4	10/23/2019	-	-	0.035	<0.002U	0.011J

Regulatory Standard - Class GA Groundwater Quality Standard or Guidance Value from NYSDEC Division of Water TOGS 1.1.1 (June 1998)
(-) - Indicates analyte was not analyzed for during this monitoring round
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J - Indicates an estimated value

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**0.045**	**0.05**	**0.05**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
MS104.5	2/4/1987	1,100	1,130	0.013	<0.05U	<0.05U
MS104.5	5/19/1987	1,940	1,250	**0.105**	<0.05U	<0.05U
MS104.5	8/11/1987	1,140	1,400	0.012	<0.05U	<0.05U
MS104.5	11/17/1987	2,030	1,050	0.02	<0.05U	<0.05U
MS104.5	2/16/1988	1,770	1,250	0.016	<0.05U	<0.05U
MS104.5	5/24/1988	2,200	1,800	0.015	<0.05U	<0.05U
MS104.5	8/16/1988	1,500	1,000	<0.02U	<0.05U	<0.05U
MS104.5	11/16/1988	2,050	1,150	0.02	<0.05U	<0.05U
MS104.5	2/14/1989	1,800	1,400	0.013	<0.05U	<0.05U
MS104.5	5/9/1989	1,920	1,600	0.014	<0.05U	<0.05U
MS104.5	8/8/1989	1,180	1,100	0.012	<0.05U	<0.05U
MS104.5	6/26/1990	2,061	950	0.015	<0.05U	<0.05U
MS104.5	12/19/1990	1,985	1,080	0.013	<0.05U	<0.05U
MS104.5	6/26/1991	1,880	993	**0.086**	<0.05U	<0.05U
MS104.5	11/20/1991	-	-	-	-	-
MS104.5	12/15/1992	1,960	1,100	0.02	<0.05U	**0.089**
MS104.5	8/24/1993	2,045	925	0.035	<0.05U	<0.05U
MS104.5	9/30/1993	2,048	975	**0.046**	<0.05U	**0.05**
MS104.5	6/27/1994	1,980	775	0.041	<0.05U	<0.05U
MS104.5	11/2/1994	2,047	750	0.039	<0.05U	<0.05U
MS104.5	5/4/1995	2,205	550	**0.048**	<0.05U	<0.05U
MS104.5	10/25/1995	1,972	1,050	**0.046**	<0.05U	**0.12**
MS104.5	5/24/1996	2,360	1,100	0.033	<0.05U	**0.055**
MS104.5	10/29/1996	2,000	950	**0.105**	<0.05U	<0.05U
MS104.5	7/1/1997	2,103	750	0.035	<0.05U	**0.14**
MS104.5	10/30/1997	1,999	1,050	0.033	<0.05U	<0.05U
MS104.5	6/29/1998	2,093	675	0.031	<0.05U	<0.05U
MS104.5	11/15/1998	1,924	1,100	0.033	<0.05U	**0.36**
MS104.5	5/27/1999	2,030	1,130	0.032	<0.05U	<0.05U
MS104.5	10/13/1999	-	-	-	-	-
MS104.5	6/30/2000	2,185	1,910	0.025	<0.05U	<0.05U
MS104.5	10/26/2000	1,933	800	**0.065**	<0.05U	**0.084**
MS104.5	6/20/2001	2,030	1,050	0.022	<0.05U	<0.05U
MS104.5	10/11/2001	1,950	893	0.039	<0.05U	<0.05U
MS104.5	4/24/2002	2,030	642	0.039	<0.05U	<0.05U
MS104.5	10/22/2002	2,070	1,025	0.031	<0.05U	<0.05U
MS104.5	6/17/2003	2,060	675	<0.01U	<0.05U	**0.052**
MS104.5	10/28/2003	2,040	946	0.032	<0.05U	**0.53**
MS104.5	5/25/2004	1,000	1,562	0.032	<0.05U	**0.342**
MS104.5	10/26/2004	2,047	699	0.012	<0.05U	<0.05U
MS104.5	5/4/2005	1,940	607	0.01	<0.05U	**0.11**
MS104.5	11/16/2005	2,130	794	**0.051**	<0.05U	<0.05U
MS104.5	4/25/2006	1,990	500	0.026	<0.05U	<0.05U
MS104.5	10/17/2006	2,220	1,224	0.028	<0.05U	<0.05U
MS104.5	5/8/2007	2,130	638	0.018	<0.05U	<0.02U
MS104.5	10/10/2007	2,230	900	0.023	<0.05U	<0.02U
MS104.5	6/3/2008	2,210	654	**0.053**	<0.05U	<0.05U
MS104.5	10/7/2008	2,300	680	<0.01U	<0.05U	<0.05U
MS104.5	11/8/2011	-	-	<0.05U	<0.00556U	<0.0556U
MS104.5	10/18/2012	-	-	-	-	-
MS104.5	9/25/2013	-	-	**0.07**	<0.05U	<0.5U
MS104.5	10/22/2014	-	-	0.025	<0.01U	<0.1U
MS104.5	10/29/2015	-	-	0.02J	0.0046J	0.03J
MS104.5	10/27/2016	-	-	<0.03U	0.005J	0.039J
MS104.5	10/25/2017	-	-	0.02J	0.003J	0.031J
MS104.5	10/23/2019	-	-	0.026J	0.006J	0.027J

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Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**0.101**	**0.05**	**0.05**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
MS106.1	6/26/1990	1,870	1,100	0.025	<0.05U	<0.05U
MS106.1	12/19/1990	1,930	1,090	0.02	<0.05U	<0.05U
MS106.1	6/26/1991	1,820	2,280	-	<0.05U	<0.05U
MS106.1	11/20/1991	1,810	3,099	0.088	<0.05U	<0.05U
MS106.1	12/15/1992	1,720	1,200	0.02	<0.05U	**0.067**
MS106.1	8/24/1993	1,902	2,349	0.016	<0.05U	<0.05U
MS106.1	9/30/1993	1,792	2,399	0.011	<0.05U	**0.286**
MS106.1	6/27/1994	1,872	1,250	0.041	<0.05U	**0.228**
MS106.1	11/2/1994	2,035	2,949	0.097	<0.05U	<0.05U
MS106.1	5/4/1995	1,983	2,400	**0.11**	<0.05U	<0.05U
MS106.1	10/25/1995	1,972	5,500	**0.156**	<0.05U	<0.05U
MS106.1	5/24/1996	2,140	1,100	0.022	<0.05U	<0.05U
MS106.1	10/29/1996	1,900	3,000	0.078	<0.05U	<0.05U
MS106.1	7/1/1997	2,301	1,600	0.038	<0.05U	**0.19**
MS106.1	10/30/1997	1,880	3,349	0.075	<0.05U	**0.074**
MS106.1	6/29/1998	2,083	900	0.01	<0.05U	<0.05U
MS106.1	11/15/1998	1,895	2,449	**0.191**	<0.05U	**0.13**
MS106.1	5/27/1999	1,880	1,320	0.05	<0.05U	<0.05U
MS106.1	10/13/1999	2,030	3,700	**0.103**	<0.05U	<0.05U
MS106.1	6/30/2000	1,940	2,020	<0.01U	<0.05U	<0.05U
MS106.1	10/26/2000	1,873	1,550	<0.068U	<0.05U	**0.094**
MS106.1	6/20/2001	1,940	1,150	0.025	<0.05U	<0.05U
MS106.1	10/11/2001	2,010	2,629	0.074	<0.05U	<0.05U
MS106.1	4/24/2002	2,180	779	0.011	<0.05U	**0.052**
MS106.1	10/22/2002	2,060	1,749	0.042	<0.05U	<0.05U
MS106.1	6/17/2003	2,040	875	0.035	<0.05U	<0.05U
MS106.1	10/28/2003	1,930	1,936	0.043	<0.05U	**0.12**
MS106.1	5/25/2004	2,055	650	<0.01U	<0.05U	<0.05U
MS106.1	10/26/2004	1,960	964	0.025	<0.05U	<0.05U
MS106.1	5/4/2005	2,190	583	<0.01U	<0.05U	<0.05U
MS106.1	11/16/2005	2,020	1,340	0.045	<0.05U	**0.08**
MS106.1	4/25/2006	2,190	500	<0.01U	<0.05U	<0.05U
MS106.1	10/17/2006	2,140	968	0.018	<0.05U	**0.32**
MS106.1	5/8/2007	1,810	671	<0.01	<0.05U	<0.02U
MS106.1	10/10/2007	2,210	800	0.012	<0.05U	<0.02U
MS106.1	6/3/2008	2,150	654	0.018	<0.05U	<0.05U
MS106.1	10/7/2008	2,410	874	<0.01U	<0.05U	<0.05U
MS106.1	11/8/2011	-	-	<0.05U	<0.005U	<0.05U
MS106.1	10/18/2012	-	-	<0.05U	<0.005U	**0.0939**
MS106.1	9/25/2013	-	-	<0.5U	<0.05U	<0.5U
MS106.1	10/22/2014	-	-	<0.005U	<0.01U	<0.1U
MS106.1	10/30/2015	-	-	0.01J	0.01	**0.27**
MS106.1	10/26/2016	-	-	<0.03U	<0.01U	0.034J
MS106.1	10/25/2017	-	-	0.019J	<0.002U	0.018J
MS106.1	10/23/2019	-	-	0.019J	0.002J	**0.615**

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		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**0.363**	**0.05**	**0.05**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
MS106.2	6/26/1990	1,490	11,000	0.275	<0.05U	<0.05U
MS106.2	12/19/1990	1,690	9,380	0.255	<0.05U	<0.05U
MS106.2	6/26/1991	1,630	10,650	-	<0.05U	<0.05U
MS106.2	11/20/1991	2,080	11,250	0.346	<0.05U	<0.05U
MS106.2	12/15/1992	1,660	8,400	**0.4**	<0.05U	**0.085**
MS106.2	8/24/1993	1,720	9,047	0.231	<0.05U	<0.05U
MS106.2	9/30/1993	1,572	9,397	0.248	<0.05U	**0.25**
MS106.2	6/27/1994	1,520	6,348	0.208	<0.05U	**0.24**
MS106.2	11/2/1994	1,740	6,748	0.224	<0.05U	**0.051**
MS106.2	5/4/1995	1,773	7,300	0.24	<0.05U	<0.05U
MS106.2	10/25/1995	1,762	6,500	0.227	<0.05U	<0.05U
MS106.2	5/24/1996	1,800	12,000	0.239	<0.05U	<0.05U
MS106.2	10/29/1996	1,800	8,100	0.19	<0.05U	<0.05U
MS106.2	7/1/1997	1,825	7,298	0.181	<0.05U	**0.1**
MS106.2	10/30/1997	1,672	7,198	0.178	<0.05U	<0.05U
MS106.2	6/29/1998	1,905	5,998	0.147	<0.05U	**0.405**
MS106.2	11/15/1998	1,468	5,998	0.143	<0.05U	**0.12**
MS106.2	5/27/1999	1,660	6,800	0.139	<0.05U	<0.05U
MS106.2	10/13/1999	1,740	6,050	0.134	<0.05U	<0.05U
MS106.2	6/30/2000	1,900	5,400	0.103	<0.05U	<0.05U
MS106.2	10/26/2000	1,653	5,098	0.169	<0.05U	**0.2**
MS106.2	6/20/2001	1,820	5,498	0.136	<0.05U	<0.05U
MS106.2	10/11/2001	1,790	5,003	0.127	<0.05U	<0.05U
MS106.2	4/24/2002	1,990	5,513	0.133	<0.05U	**0.12**
MS106.2	10/22/2002	1,860	5,098	0.126	<0.05U	**0.065**
MS106.2	6/17/2003	1,790	4,799	0.087	<0.05U	**0.117**
MS106.2	10/28/2003	1,750	4,467	0.102	<0.05U	**0.31**
MS106.2	5/25/2004	1,770	3,999	0.092	<0.05U	<0.05U
MS106.2	10/26/2004	1,773	376	0.107	<0.05U	**0.12**
MS106.2	5/4/2005	1,880	3,982	0.073	<0.05U	<0.05U
MS106.2	11/16/2005	1,850	4,268	0.086	<0.05U	<0.05U
MS106.2	4/25/2006	1,860	3,599	0.069	<0.05U	<0.05U
MS106.2	10/17/2006	1,940	3,722	0.066	<0.05U	<0.05U
MS106.2	5/8/2007	1,930	2,769	0.048	<0.05U	<0.02U
MS106.2	10/10/2007	1,920	3,500	0.061	<0.05U	<0.02U
MS106.2	6/3/2008	1,970	3,171	0.059	<0.05U	<0.05U
MS106.2	10/7/2008	2,080	2,283	0.036	<0.05U	<0.05U
MS106.2	11/8/2011	-	-	0.095	<0.005U	**0.127**
MS106.2	10/18/2012	-	-	<0.05U	<0.005U	<0.05U
MS106.2	9/25/2013	-	-	<0.05U	<0.05U	<0.5U
MS106.2	10/22/2014	-	-	0.055	<0.01U	**0.13**
MS106.2	10/30/2015	-	-	0.035	0.0043J	**0.05**
MS106.2	10/26/2016	-	-	0.029J	0.002J	0.04J
MS106.2	10/25/2017	-	-	0.017J	0.003J	0.043J
MS106.2	10/23/2019	-	-	0.035	0.004J	**0.098**

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		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**0.086**	**0.05**	**0.05**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
MS106.3	6/26/1990	1,980	1,350	0.02	<0.05U	<0.05U
MS106.3	12/19/1990	1,840	2,280	0.024	<0.05U	<0.05U
MS106.3	6/26/1991	1,740	2,880	-	<0.05U	<0.05U
MS106.3	11/20/1991	1,850	2,949	0.076	<0.05U	<0.05U
MS106.3	12/15/1992	1,990	2,150	0.056	<0.05U	**0.094**
MS106.3	8/24/1993	1,860	2,699	**0.16**	<0.05U	**0.164**
MS106.3	9/30/1993	1,768	2,349	0.059	<0.05U	**0.05**
MS106.3	6/27/1994	1,808	1,300	0.009	<0.05U	**0.054**
MS106.3	11/2/1994	1,995	1,500	0.076	<0.05U	<0.05U
MS106.3	5/4/1995	1,999	1,800	0.072	<0.05U	<0.05U
MS106.3	10/25/1995	2,040	1,900	0.063	<0.05U	**0.055**
MS106.3	5/24/1996	2,130	1,300	0.037	<0.05U	<0.05U
MS106.3	10/29/1996	2,000	1,900	0.04	<0.05U	<0.05U
MS106.3	7/1/1997	2,063	1,999	0.038	<0.05U	**0.15**
MS106.3	10/30/1997	1,929	1,550	0.016	<0.05U	<0.05U
MS106.3	6/29/1998	2,044	1,055	<0.01U	<0.05U	<0.05U
MS106.3	11/15/1998	1,944	1,649	0.035	<0.05U	**1.6**
MS106.3	5/27/1999	1,900	1,300	0.061	<0.05U	<0.05U
MS106.3	10/13/1999	2,220	1,350	0.023	<0.05U	<0.05U
MS106.3	6/30/2000	1,115	1,200	<0.01U	<0.05U	<0.05U
MS106.3	10/26/2000	1,927	1,450	<0.065U	<0.05U	**0.15**
MS106.3	6/20/2001	2,000	1,200	0.025	<0.05U	<0.05U
MS106.3	10/11/2001	2,060	1,404	0.039	<0.05U	<0.05U
MS106.3	4/24/2002	1,930	855	0.015	<0.05U	<0.05U
MS106.3	10/22/2002	2,130	1,150	0.021	<0.05U	<0.05U
MS106.3	6/17/2003	2,005	950	0.028	<0.05U	<0.05U
MS106.3	10/28/2003	1,970	1,241	0.025	<0.05U	<0.05U
MS106.3	5/25/2004	2,020	725	0.012	<0.05U	**0.204**
MS106.3	10/26/2004	1,947	1,157	0.015	<0.05U	<0.05U
MS106.3	5/4/2005	2,190	631	<0.01U	<0.05U	<0.05U
MS106.3	11/16/2005	2,085	1,042	0.031	<0.05U	<0.05U
MS106.3	4/25/2006	2,110	600	<0.01U	<0.05U	<0.05U
MS106.3	10/17/2006	2,090	1,166	0.018	<0.05U	<0.5U
MS106.3	5/8/2007	2,280	579	<0.01U	<0.05U	<0.02U
MS106.3	10/10/2007	2,250	1,000	<0.01U	<0.05U	<0.02U
MS106.3	6/3/2008	2,230	755	<0.01U	<0.05U	<0.05U
MS106.3	10/7/2008	2,360	996	<0.01U	<0.05U	<0.05U
MS106.3	11/8/2011	-	-	<0.05U	<0.005U	<0.0524U
MS106.3	10/18/2012	-	-	<0.05U	<0.005U	**0.179**
MS106.3	9/25/2013	-	-	<0.5U	<0.05U	<0.5U
MS106.3	10/22/2014	-	-	0.0076	<0.01U	**0.19**
MS106.3	10/30/2015	-	-	0.007J	<0.002	<0.02
MS106.3	10/26/2016	-	-	<0.03U	0.007J	**0.683**
MS106.3	10/25/2017	-	-	0.008J	<0.002U	0.018J
MS106.3	10/23/2019	-	-	0.023J	<0.002U	**0.052**

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		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**0.015**	**0.05**	**0.05**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
MS106.4	6/26/1990	1,960	1,250	**0.015**	<0.05U	<0.05U
MS106.4	12/19/1990	1,950	1,140	**0.015**	<0.05U	<0.05U
MS106.4	6/26/1991	1,840	1,730	-	<0.05U	<0.05U
MS106.4	11/20/1991	-	-	-	-	-
MS106.4	12/15/1992	1,830	950	**0.02**	<0.05U	0.006
MS106.4	8/24/1993	2,033	1,600	**0.16**	<0.05U	<0.05U
MS106.4	9/30/1993	1,848	1,425	**0.078**	<0.05U	**0.05**
MS106.4	6/27/1994	1,944	1,450	**0.041**	<0.05U	**0.072**
MS106.4	11/2/1994	-	-	-	-	-
MS106.4	5/4/1995	2,063	950	**0.039**	<0.05U	<0.05U
MS106.4	10/25/1995	-	-	-	-	-
MS106.4	5/24/1996	2,170	1,200	**0.019**	<0.05U	**0.16**
MS106.4	10/29/1996	-	-	-	-	-
MS106.4	7/1/1997	2,103	1,499	**0.194**	<0.05U	<0.05U
MS106.4	10/30/1997	-	-	-	-	-
MS106.4	6/29/1998	2,044	850	0.013	<0.05U	<0.05U
MS106.4	11/15/1998	-	-	-	-	-
MS106.4	5/27/1999	1,960	1,120	**0.032**	<0.05U	<0.05U
MS106.4	10/13/1999	-	-	-	-	-
MS106.4	6/30/2000	1,945	1,350	0.01	<0.05U	**0.11**
MS106.4	10/26/2000	1,913	1,025	**0.051**	<0.05U	<0.05U
MS106.4	6/20/2001	1,900	1,125	**0.025**	<0.05U	<0.05U
MS106.4	10/11/2001	-	-	-	-	-
MS106.4	4/24/2002	2,200	842	**0.015**	<0.05U	<0.05U
MS106.4	10/22/2002	-	-	-	-	-
MS106.4	6/17/2003	2,020	925	<0.01U	<0.05U	<0.05U
MS106.4	10/28/2003	-	-	-	-	-
MS106.4	5/25/2004	2,025	625	<0.01U	<0.05U	<0.05U
MS106.4	10/26/2004	2,047	1,036	**0.018**	<0.05U	<0.05U
MS106.4	5/4/2005	2,150	728	<0.01U	<0.05U	<0.05U
MS106.4	11/16/2005	-	-	-	-	-
MS106.4	4/25/2006	2,080	600	<0.01U	<0.05U	<0.05U
MS106.4	10/17/2006	2,140	1,067	<0.01U	<0.05U	**0.1**
MS106.4	5/8/2007	2,330	629	**0.025**	<0.05U	<0.02U
MS106.4	10/10/2007	-	-	-	-	-
MS106.4	6/3/2008	2,220	680	**0.015**	<0.05U	<0.05U
MS106.4	10/7/2008	2,230	1,068	<0.01U	<0.05U	<0.05U
MS106.4	11/8/2011	-	-	<0.05U	<0.005U	**0.0688**
MS106.4	10/18/2012	-	-	-	-	-
MS106.4	9/25/2013	-	-	-	-	-
MS106.4	10/22/2014	-	-	-	-	-
MS106.4	10/30/2015	-	-	-	-	-
MS106.4	10/26/2016	-	-	-	-	-
MS106.4	10/25/2017	-	-	-	-	-
MS106.4	10/23/2019	-	-	-	-	-

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		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**0.01**	**0.05**	**113.258**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
MS301.1	6/26/1990	23	45,000	<0.01U	<0.05U	80
MS301.1	12/19/1990	23	28,300	**0.01**	<0.05U	84
MS301.1	6/26/1991	22	54,800	-	<0.05U	79.2
MS301.1	11/20/1991	20	64,480	<0.01U	<0.05U	**116.9**
MS301.1	12/15/1992	128	1,900	<0.01U	<0.05U	**114**
MS301.1	8/24/1993	3	51,860	**0.17**	<0.05U	**192**
MS301.1	9/30/1993	10	55,360	**0.545**	<0.05U	**115**
MS301.1	6/27/1994	12	46,790	**1.19**	<0.05U	**142**
MS301.1	11/2/1994	21	53,000	**0.025**	<0.05U	72
MS301.1	5/4/1995	29	37,500	<0.02U	<0.05U	47
MS301.1	10/25/1995	25	53,000	**0.068**	<0.05U	110
MS301.1	5/24/1996	26	60,000	**0.015**	<0.05U	**134**
MS301.1	10/29/1996	18	60,000	**0.016**	<0.05U	99
MS301.1	7/1/1997	18	54,000	<0.01U	<0.05U	**158**
MS301.1	10/30/1997	26	61,980	**0.01**	<0.05U	105.5
MS301.1	6/29/1998	32	48,990	<0.01U	<0.05U	73.6
MS301.1	11/15/1998	30	54,980	**0.029**	<0.05U	**130**
MS301.1	5/27/1999	38	58,980	**0.032**	<0.05U	101
MS301.1	10/13/1999	50	55,480	**0.015**	<0.05U	97
MS301.1	6/30/2000	35	60,980	**0.01**	<0.05U	16
MS301.1	10/26/2000	29	53,000	**0.04**	<0.05U	66.7
MS301.1	6/20/2001	24	51,980	**0.029**	<0.05U	53.2
MS301.1	10/11/2001	33	50,030	**0.039**	<0.05U	69.6
MS301.1	4/24/2002	32	58,200	**0.015**	<0.05U	105
MS301.1	10/22/2002	29	57,480	**0.014**	<0.05U	99
MS301.1	6/17/2003	37	47,990	**0.015**	<0.05U	**136**
MS301.1	10/28/2003	46	54,590	**0.025**	<0.05U	106
MS301.1	5/25/2004	19	51,650	**0.012**	<0.05U	**209**
MS301.1	10/26/2004	44	48,210	**0.012**	<0.05U	89.5
MS301.1	5/4/2005	45	53,430	<0.01U	<0.05U	**120**
MS301.1	11/16/2005	35	53,600	**0.014**	<0.05U	94.8
MS301.1	4/25/2006	40	57,980	<0.01U	<0.05U	95.9
MS301.1	10/17/2006	37	53,600	**0.011**	<0.05U	104
MS301.1	5/8/2007	36	54,370	<0.01U	<0.05U	99.4
MS301.1	10/10/2007	41	70,000	<0.01U	<0.05U	86.6
MS301.1	6/3/2008	45	55,370	**0.023**	<0.05U	83.1
MS301.1	10/7/2008	37	51,000	<0.01U	<0.05U	94
MS301.1	11/8/2011	-	-	<0.05U	<0.00556U	**127**
MS301.1	10/18/2012	-	-	<0.05U	0.00822	87.9
MS301.1	9/25/2013	-	-	<0.05U	<0.1U	103
MS301.1	10/22/2014	-	-	**0.0212**	<0.01U	98
MS301.1	10/29/2015	-	-	<0.004	0.01	77
MS301.1	10/26/2016	-	-	**0.02J**	0.013	70.1
MS301.1	10/25/2017	-	-	**0.011J**	<0.002U	81.8
MS301.1	10/23/2019	-	-	<0.01J	<0.002U	84.4

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		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**5.846**	**0.05**	**89.551**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
MS301.2	6/26/1990	102	69,000	3.3	<0.05U	77
MS301.2	12/19/1990	98	71,950	4	<0.05U	48
MS301.2	6/26/1991	102	80,000	-	<0.05U	47.3
MS301.2	11/20/1991	136	90,970	5.42	<0.05U	85.1
MS301.2	12/15/1992	148	73,000	5.29	<0.05U	77.8
MS301.2	8/24/1993	71	82,730	5.11	<0.05U	63.9
MS301.2	9/30/1993	88	86,470	**7.98**	<0.05U	**91.1**
MS301.2	6/27/1994	90	70,880	**7.38**	<0.05U	**100**
MS301.2	11/2/1994	127	65,000	4.35	<0.05U	42.4
MS301.2	5/4/1995	133	77,000	4.71	<0.05U	33.2
MS301.2	10/25/1995	162	82,000	4.34	<0.05U	83
MS301.2	5/24/1996	94	88,000	3.92	<0.05U	88.6
MS301.2	10/29/1996	127	300,000	4.18	<0.05U	58.2
MS301.2	7/1/1997	125	80,000	3.86	<0.05U	68
MS301.2	10/30/1997	123	80,980	3.82	<0.05U	88.8
MS301.2	6/29/1998	-	-	4.04	<0.05U	44.8
MS301.2	11/15/1998	143	79,980	4.07	<0.05U	64
MS301.2	5/27/1999	118	77,000	4.29	<0.05U	74.3
MS301.2	10/13/1999	164	55,980	3.8	<0.05U	66
MS301.2	6/30/2000	140	97,970	3.89	<0.05U	33.6
MS301.2	10/26/2000	136	76,000	4.13	<0.05U	60.1
MS301.2	6/20/2001	150	73,980	3.8	<0.05U	41.6
MS301.2	10/11/2001	144	80,150	3.91	<0.05U	71.6
MS301.2	4/24/2002	126	86,780	3.77	<0.05U	84
MS301.2	10/22/2002	118	82,470	3.79	<0.05U	74.4
MS301.2	6/17/2003	130	77,480	3.89	<0.05U	**107**
MS301.2	10/28/2003	146	72,790	4.05	<0.05U	80.5
MS301.2	5/25/2004	123	68,310	3.77	<0.05U	**179**
MS301.2	10/26/2004	144	64,120	1.51	<0.05U	76.5
MS301.2	5/4/2005	147	74,790	3.55	<0.05U	**89.8**
MS301.2	11/16/2005	130	73,540	3.88	<0.05U	71.6
MS301.2	4/25/2006	145	78,980	3.67	<0.05U	88.9
MS301.2	10/17/2006	137	68,490	3.72	<0.05U	**93.4**
MS301.2	5/8/2007	133	72,150	3.78	<0.05U	74.8
MS301.2	10/10/2007	140	75,000	3.77	<0.05U	74.8
MS301.2	6/3/2008	140	80,540	3.83	<0.05U	86
MS301.2	10/7/2008	112	75,280	3.76	<0.05U	80
MS301.2	11/8/2011	-	-	-	<0.00556U	**113**
MS301.2	10/18/2012	-	-	<0.05U	0.00609	84.4
MS301.2	9/25/2013	-	-	4.9	<0.25U	**97.4**
MS301.2	10/22/2014	-	-	2.32	<0.01U	77
MS301.2	10/29/2015	-	-	3.9	0.01	88
MS301.2	10/26/2016	-	-	0.047	0.014	76.4
MS301.2	10/25/2017	-	-	0.006J	0.007J	80.3
MS301.2	10/23/2019	-	-	<0.01U	0.021	**96.3**

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		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**5.336**	**0.05**	**38.177**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
MS301.3	6/26/1990	127	59,000	4.39	<0.05U	23
MS301.3	12/19/1990	155	35,200	3.46	<0.05U	25
MS301.3	6/26/1991	134	65,800	-	<0.05U	25.4
MS301.3	11/20/1991	162	86,470	4.9	<0.05U	**39.7**
MS301.3	12/15/1992	152	13,000	4.43	<0.05U	**41.1**
MS301.3	8/24/1993	124	56,730	2.65	<0.05U	**52.3**
MS301.3	9/30/1993	172	66,850	3.61	<0.05U	36
MS301.3	6/27/1994	176	66,380	2.34	<0.05U	**49**
MS301.3	11/2/1994	222	47,500	2.63	<0.05U	35.4
MS301.3	5/4/1995	180	59,000	2.89	<0.05U	17.6
MS301.3	10/25/1995	202	61,000	2.63	<0.05U	35.4
MS301.3	5/24/1996	218	67,000	2.57	<0.05U	29.7
MS301.3	10/29/1996	202	65,000	2.16	<0.05U	28.7
MS301.3	7/1/1997	214	64,000	2.88	<0.05U	**102**
MS301.3	10/30/1997	169	68,980	3.33	<0.05U	36.2
MS301.3	6/29/1998	210	55,980	3.13	<0.05U	19
MS301.3	11/15/1998	230	56,980	4.14	<0.05U	**48.6**
MS301.3	5/27/1999	180	63,980	3.58	<0.05U	31
MS301.3	10/13/1999	200	59,480	3.28	<0.05U	26
MS301.3	6/30/2000	195	74,980	3.89	<0.05U	1.36
MS301.3	10/26/2000	189	55,000	3.4	<0.05U	26.6
MS301.3	6/20/2001	194	54,980	3.24	<0.05U	11.6
MS301.3	10/11/2001	196	56,150	3.56	<0.05U	36.4
MS301.3	4/24/2002	174	53,150	3.77	<0.05U	32
MS301.3	10/22/2002	168	55,980	3.47	<0.05U	23.9
MS301.3	6/17/2003	175	53,320	3.93	<0.05U	**38.6**
MS301.3	10/28/2003	190	54,590	3.53	<0.05U	**44.8**
MS301.3	5/25/2004	148	48,320	3.64	<0.05U	**41.9**
MS301.3	10/26/2004	186	50,140	3.37	<0.05U	30.3
MS301.3	5/4/2005	160	45,650	3.5	<0.05U	30
MS301.3	11/16/2005	175	54,590	3.47	<0.05U	34.9
MS301.3	4/25/2006	172	26,660	3.27	<0.05U	28.9
MS301.3	10/17/2006	180	50,620	3.38	<0.05U	34.6
MS301.3	5/8/2007	170	47,320	3.13	<0.05U	**39.3**
MS301.3	10/10/2007	174	42,200	3.24	<0.05U	30.2
MS301.3	6/3/2008	172	54,120	3.46	<0.05U	29.7
MS301.3	10/7/2008	156	55,370	3.08	<0.05U	30
MS301.3	11/8/2011	-	-	3.9	<0.00556U	**41.7**
MS301.3	10/18/2012	-	-	<5U	0.00506	21.1
MS301.3	9/25/2013	-	-	**5.4**	<0.1U	29.5
MS301.3	10/22/2014	-	-	2.06	<0.01U	31
MS301.3	10/29/2015	-	-	4	0.0083J	29
MS301.3	10/26/2016	-	-	<0.03U	0.015	18.8
MS301.3	10/25/2017	-	-	4	0.004J	19.6
MS301.3	10/23/2019	-	-	<0.01U	<0.002U	14.9

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		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**3.849**	**0.05**	**0.204**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
MS301.4	6/26/1990	150	48,500	3.68	<0.05U	0.16
MS301.4	12/19/1990	209	50,100	3.12	<0.05U	<0.05U
MS301.4	6/26/1991	412	52,200	-	<0.05U	<0.05U
MS301.4	11/20/1991	262	60,480	3.48	<0.05U	0.186
MS301.4	12/15/1992	393	50,000	**4**	<0.05U	0.105
MS301.4	8/24/1993	408	53,360	2.03	<0.05U	0.161
MS301.4	9/30/1993	204	49,360	2.98	<0.05U	**0.261**
MS301.4	6/27/1994	184	44,090	2.66	<0.05U	0.105
MS301.4	11/2/1994	262	32,500	2.67	<0.05U	<0.05U
MS301.4	5/4/1995	232	46,000	3.33	<0.05U	0.14
MS301.4	10/25/1995	254	40,000	2.67	<0.05U	0.14
MS301.4	5/24/1996	158	50,000	2.98	<0.05U	**0.27**
MS301.4	10/29/1996	377	43,000	2.43	<0.05U	0.066
MS301.4	7/1/1997	218	40,000	2.62	<0.05U	**51.5**
MS301.4	10/30/1997	262	50,480	2.51	<0.05U	0.064
MS301.4	6/29/1998	274	34,990	2.14	<0.05U	0.057
MS301.4	11/15/1998	341	37,990	2.29	<0.05U	0.12
MS301.4	5/27/1999	260	40,990	2.43	<0.05U	0.097
MS301.4	10/13/1999	235	36,990	2.3	<0.05U	<0.05U
MS301.4	6/30/2000	185	39,490	2.26	<0.05U	<0.05U
MS301.4	10/26/2000	216	32,000	2.35	<0.05U	**17.5**
MS301.4	6/20/2001	226	32,990	2.21	<0.05U	**0.27**
MS301.4	10/11/2001	323	22,460	1.87	<0.05U	0.062
MS301.4	4/24/2002	340	33,690	1.72	<0.05U	**0.47**
MS301.4	10/22/2002	342	31,990	1.79	<0.05U	**0.313**
MS301.4	6/17/2003	246	28,990	1.91	<0.05U	**0.538**
MS301.4	10/28/2003	310	30,770	1.75	<0.05U	<0.05U
MS301.4	5/25/2004	240	32,490	1.59	<0.05U	0.105
MS301.4	10/26/2004	298	26,030	1.49	<0.05U	0.05
MS301.4	5/4/2005	312	27,200	1.39	<0.05U	<0.05U
MS301.4	11/16/2005	200	25,810	1.65	<0.05U	<0.05U
MS301.4	4/25/2006	294	24,990	1.25	<0.05U	<0.05U
MS301.4	10/17/2006	268	25,310	2.07	<0.05U	<0.05U
MS301.4	5/8/2007	384	22,650	0.998	<0.05U	<0.02U
MS301.4	10/10/2007	283	21,100	0.9	<0.05U	<0.02U
MS301.4	6/3/2008	250	23,160	1.22	<0.05U	<0.05U
MS301.4	10/7/2008	280	23,310	0.98	<0.05U	<0.05U
MS301.4	11/8/2011	-	-	0.67	<0.00556U	0.19
MS301.4	10/18/2012	-	-	<0.05U	0.0115	**23.6**
MS301.4	9/25/2013	-	-	0.8	<1.1U	**3.11**
MS301.4	10/22/2014	-	-	0.79	0.034	**1.8**
MS301.4	10/29/2015	-	-	0.56	0.006J	**2.7**
MS301.4	10/26/2016	-	-	0.44	0.02	**4.66**
MS301.4	10/25/2017	-	-	0.5	0.003J	**2.68**
MS301.4	10/23/2019	-	-	0.23	0.013	**7.01**

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		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**0.435**	**0.05**	**0.114**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
MS301.5	6/26/1990	1,790	11,500	0.38	<0.05U	0.05
MS301.5	12/19/1990	1,650	13,400	0.34	<0.05U	0.05
MS301.5	6/26/1991	1,630	12,900	-	<0.05U	<0.05U
MS301.5	11/20/1991	2,056	11,200	0.225	<0.05U	**0.122**
MS301.5	12/15/1992	1,730	8,450	0.314	<0.05U	**0.249**
MS301.5	8/24/1993	1,673	9,747	0.231	<0.05U	0.106
MS301.5	9/30/1993	1,652	9,272	0.304	<0.05U	0.059
MS301.5	6/27/1994	1,644	8,739	0.234	<0.05U	0.063
MS301.5	11/2/1994	1,789	6,748	0.264	<0.05U	<0.05U
MS301.5	5/4/1995	1,890	9,000	0.24	<0.05U	0.079
MS301.5	10/25/1995	1,809	3,900	0.186	<0.05U	<0.05U
MS301.5	5/24/1996	1,930	5,000	0.193	<0.05U	<0.05U
MS301.5	10/29/1996	1,800	6,900	0.163	<0.05U	<0.05U
MS301.5	7/1/1997	2,262	6,198	0.146	<0.05U	<0.05U
MS301.5	10/30/1997	1,721	5,598	0.12	<0.05U	<0.05U
MS301.5	6/29/1998	1,716	5,698	0.108	<0.05U	<0.05U
MS301.5	11/15/1998	1,796	5,498	0.112	<0.05U	<0.05U
MS301.5	5/27/1999	1,710	5,300	0.132	<0.05U	<0.05U
MS301.5	10/13/1999	1,800	5,100	0.105	<0.05U	<0.05U
MS301.5	6/30/2000	1,740	5,300	0.11	<0.05U	<0.05U
MS301.5	10/26/2000	1,787	4,097	0.11	<0.05U	<0.05U
MS301.5	6/20/2001	1,790	4,199	**0.995**	<0.05U	0.077
MS301.5	10/11/2001	1,740	3,931	0.193	<0.05U	<0.05U
MS301.5	4/24/2002	1,750	4,799	0.106	<0.05U	**0.13**
MS301.5	10/22/2002	1,835	3,499	0.091	<0.05U	0.059
MS301.5	6/17/2003	1,825	3,849	0.087	<0.05U	**0.118**
MS301.5	10/28/2003	1,750	3,573	0.078	<0.05U	**0.641**
MS301.5	5/25/2004	1,785	3,349	0.075	<0.05U	<0.05U
MS301.5	10/26/2004	1,860	3,471	0.076	<0.05U	<0.05U
MS301.5	5/4/2005	1,900	3,400	0.048	<0.05U	<0.05U
MS301.5	11/16/2005	1,840	2,978	0.065	<0.05U	**0.2**
MS301.5	4/25/2006	1,855	3,199	0.069	<0.05U	<0.05U
MS301.5	10/17/2006	1,960	2,630	0.055	<0.05U	<0.05U
MS301.5	5/8/2007	1,980	3,524	0.049	<0.05U	<0.02U
MS301.5	10/10/2007	2,020	2,581	0.038	<0.05U	<0.02U
MS301.5	6/3/2008	2,030	2,718	0.056	<0.05U	<0.05U
MS301.5	10/7/2008	2,160	2,720	0.032	<0.05U	<0.05U
MS301.5	11/8/2011	-	-	<0.05U	<0.00556U	**0.159**
MS301.5	10/18/2012	-	-	0.054	<0.005U	<0.05U
MS301.5	9/25/2013	-	-	0.086	<0.1U	<1U
MS301.5	10/22/2014	-	-	0.094	<0.01U	**0.2**
MS301.5	10/29/2015	-	-	0.031	0.01	**0.61**
MS301.5	10/26/2016	-	-	0.011J	0.003J	0.064
MS301.5	10/25/2017	-	-	0.033	<0.002U	**0.186**
MS301.5	10/23/2019	-	-	0.044	0.004J	**0.565**

Regulatory Standard - Class GA Groundwater Quality Standard or Guidance Value from NYSDEC Division of Water TOGS 1.1.1 (June 1998)
(-) - Indicates analyte was not analyzed for during this monitoring round
U - Analyzed for but not detected above laboratory detection limit identified
J - Indicates an estimated value

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**0.161**	**0.05**	**0.213**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
W201R	6/27/1994	1,652	4,549	0.119	<0.05U	**0.231**
W201R	11/2/1994	1,845	3,749	0.149	<0.05U	<0.05U
W201R	5/4/1995	1,821	3,700	0.12	<0.05U	0.064
W201R	10/25/1995	1,897	5,500	0.156	<0.05U	0.06
W201R	5/24/1996	1,940	4,700	0.108	<0.05U	<0.05U
W201R	10/29/1996	1,900	4,200	0.081	<0.05U	<0.05U
W201R	7/1/1997	1,984	3,799	0.076	<0.05U	0.1
W201R	10/30/1997	1,771	4,499	0.082	<0.05U	<0.05U
W201R	6/29/1998	1,835	2,399	0.041	<0.05U	<0.05U
W201R	11/15/1998	1,875	3,899	0.108	<0.05U	**1**
W201R	5/27/1999	1,710	2,900	0.057	<0.05U	<0.05U
W201R	10/13/1999	1,800	4,000	0.081	<0.05U	<0.05U
W201R	6/30/2000	1,845	3,450	0.064	<0.05U	<0.05U
W201R	10/26/2000	1,847	2,349	0.085	<0.05U	<0.05U
W201R	6/20/2001	1,880	2,249	0.062	<0.05U	<0.05U
W201R	10/11/2001	1,960	2,910	0.074	<0.05U	<0.05U
W201R	4/24/2002	1,950	2,297	0.043	<0.05U	0.058
W201R	10/22/2002	1,960	3,049	0.059	<0.05U	<0.05U
W201R	6/17/2003	1,925	2,149	0.035	<0.05U	0.078
W201R	10/28/2003	1,910	3,077	0.064	<0.05U	<0.05U
W201R	5/25/2004	1,615	2,299	0.022	<0.05U	0.107
W201R	10/26/2004	1,947	1,736	0.029	<0.05U	0.09
W201R	5/4/2005	2,010	2,088	0.021	<0.05U	0.05
W201R	11/16/2005	1,930	2,730	0.051	<0.05U	0.05
W201R	4/25/2006	1,960	2,049	0.036	<0.05U	<0.05U
W201R	10/17/2006	1,990	2,035	0.035	<0.05U	<0.05U
W201R	5/8/2007	2,100	1,762	0.025	<0.05U	<0.02U
W201R	10/10/2007	2,090	2,900	0.04	<0.05U	<0.02U
W201R	6/3/2008	2,070	1,863	0.029	<0.05U	<0.05U
W201R	10/7/2008	2,270	1,651	0.029	<0.05U	<0.05U
W201R	11/8/2011	-	-	<0.05U	<0.005U	<0.05U
W201R	10/18/2012	-	-	<0.05U	<0.005U	<0.05U
W201R	9/25/2013	-	-	<0.05U	<0.05U	<0.5U
W201R	10/22/2014	-	-	0.0217	<0.01U	<0.1U
W201R	10/29/2015	-	-	-	-	-
W201R	10/26/2016	-	-	0.023J	<0.01U	0.028J
W201R	10/25/2017	-	-	0.029J	<0.002U	0.018J
W201R	10/23/2019	-	-	0.042	0.003J	0.046J

Regulatory Standard - Class GA Groundwater Quality Standard or Guidance Value from NYSDEC Division of Water TOGS 1.1.1 (June 1998)
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J - Indicates an estimated value

Bold and yellow highlighted cells indicate an exceedance of Well Specific Upper Confidence Limit

		Alkalinity	Chloride	Phenols	Total Metals	
		Alkalinity (total)	Chloride	Phenols	Chromium (III+VI)	Iron
		mg/L	mg/L	mg/L	mg/L	mg/L
UCL				**0.11**	**0.05**	**0.05**
Regulatory Standard			250	0.001	0.05	0.3
Sample ID	**Sample Date**					
W5.6	6/26/1990	1,940	1,600	0.013	<0.05U	<0.05U
W5.6	12/19/1990	1,830	1,490	<0.01U	<0.05U	<0.05U
W5.6	6/26/1991	1,590	2,360	-	<0.05U	<0.05U
W5.6	11/20/1991	1,520	3,699	0.094	<0.05U	<0.05U
W5.6	12/15/1992	1,590	2,600	0.049	<0.05U	**0.076**
W5.6	8/24/1993	1,620	5,673	**0.114**	<0.05U	<0.05U
W5.6	9/30/1993	1,732	6,373	**0.178**	<0.05U	**0.099**
W5.6	6/27/1994	1,584	4,062	0.093	<0.05U	<0.05U
W5.6	11/2/1994	1,809	6,248	**0.207**	<0.05U	<0.05U
W5.6	5/4/1995	1,942	3,900	**0.11**	<0.05U	<0.05U
W5.6	10/25/1995	1,829	9,900	**0.227**	<0.05U	**0.074**
W5.6	5/24/1996	1,870	3,700	0.079	<0.05U	<0.05U
W5.6	10/29/1996	1,800	9,500	**0.185**	<0.05U	<0.05U
W5.6	7/1/1997	1,825	6,998	**0.153**	<0.05U	**0.12**
W5.6	10/30/1997	1,721	10,200	**0.223**	<0.05U	<0.05U
W5.6	6/29/1998	1,944	2,399	0.045	<0.05U	<0.05U
W5.6	11/15/1998	1,538	8,497	**0.163**	<0.05U	**0.62**
W5.6	5/27/1999	1,860	2,700	0.05	<0.05U	<0.05U
W5.6	10/13/1999	1,720	7,200	**0.149**	<0.05U	<0.05U
W5.6	6/30/2000	1,620	1,320	0.014	<0.05U	<0.05U
W5.6	10/26/2000	1,640	7,000	**0.186**	<0.05U	<0.05U
W5.6	6/20/2001	1,580	4,599	0.099	<0.05U	<0.05U
W5.6	10/11/2001	1,760	7,963	**0.176**	<0.05U	<0.05U
W5.6	4/24/2002	1,880	970	0.015	<0.05U	**0.052**
W5.6	10/22/2002	1,650	5,198	0.102	<0.05U	**0.068**
W5.6	6/17/2003	1,900	1,649	0.017	<0.05U	<0.05U
W5.6	10/28/2003	1,670	5,360	**0.112**	<0.05U	<0.05U
W5.6	5/25/2004	1,605	925	0.012	<0.05U	**0.219**
W5.6	10/26/2004	1,633	3,519	0.086	<0.05U	<0.05U
W5.6	5/4/2005	2,130	935	<0.01U	<0.05U	**0.05**
W5.6	11/16/2005	1,680	3,176	0.069	<0.05U	**0.13**
W5.6	4/25/2006	2,070	1,150	0.017	<0.05U	<0.05U
W5.6	10/17/2006	1,760	4,020	0.055	<0.05U	**0.27**
W5.6	5/8/2007	2,210	856	<0.01U	<0.05U	<0.02U
W5.6	10/10/2007	1,830	3,900	0.061	<0.05U	<0.02U
W5.6	6/3/2008	1,990	2,014	0.032	<0.05U	<0.05U
W5.6	10/7/2008	2,090	4,371	0.06	<0.05U	**0.23**
W5.6	11/8/2011	-	-	<0.05U	<0.005U	<0.106U
W5.6	10/18/2012	-	-	0.051	<0.005U	<0.05U
W5.6	9/25/2013	-	-	<0.5U	<0.05U	<0.5U
W5.6	10/22/2014	-	-	0.0604	<0.01U	<0.1U
W5.6	10/29/2015	-	-	0.016J	0.0068J	**0.99**
W5.6	10/26/2016	-	-	0.023J	<0.01U	0.013J
W5.6	10/25/2017	-	-	0.04	<0.002U	0.022J
W5.6	10/23/2019	-	-	0.037	<0.002U	0.038J

Regulatory Standard - Class GA Groundwater Quality Standard or Guidance Value from NYSDEC Division of Water TOGS 1.1.1 (June 1998)
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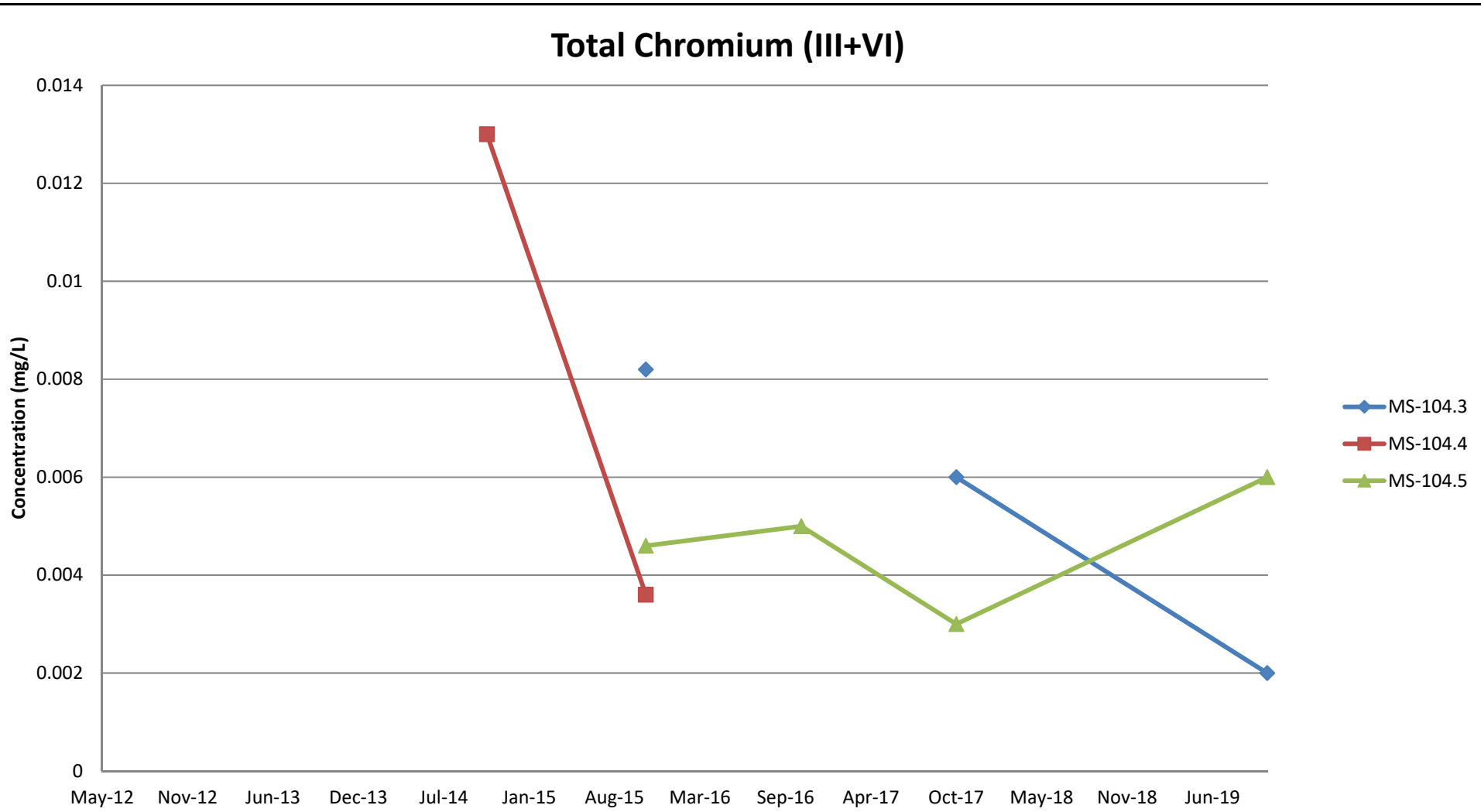
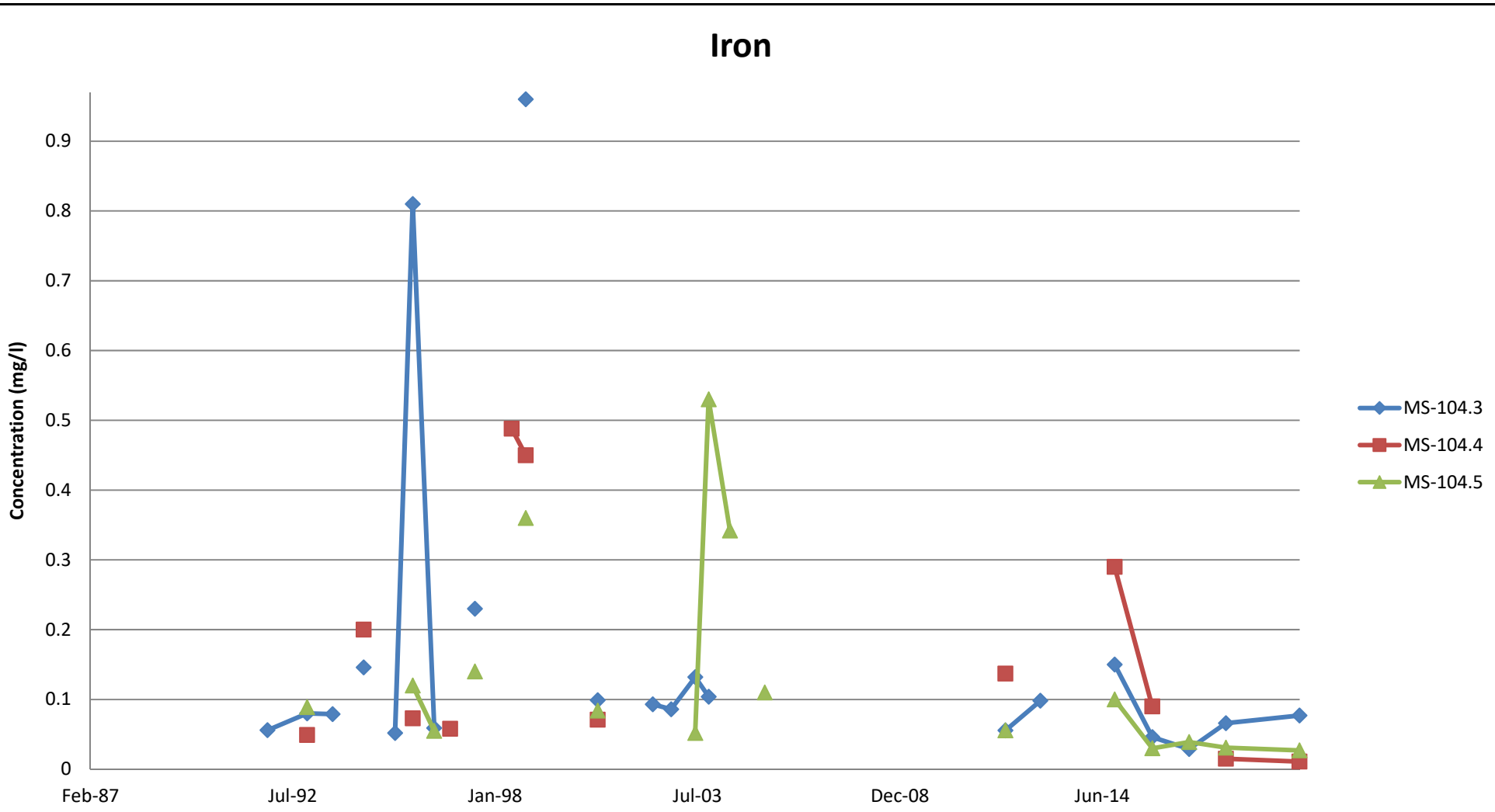


Appendix D

MS-104 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where(Field_ID In('MS104.3' , 'MS104.4' , 'MS104.5') AND ChemName = 'Chromium (III+VI)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

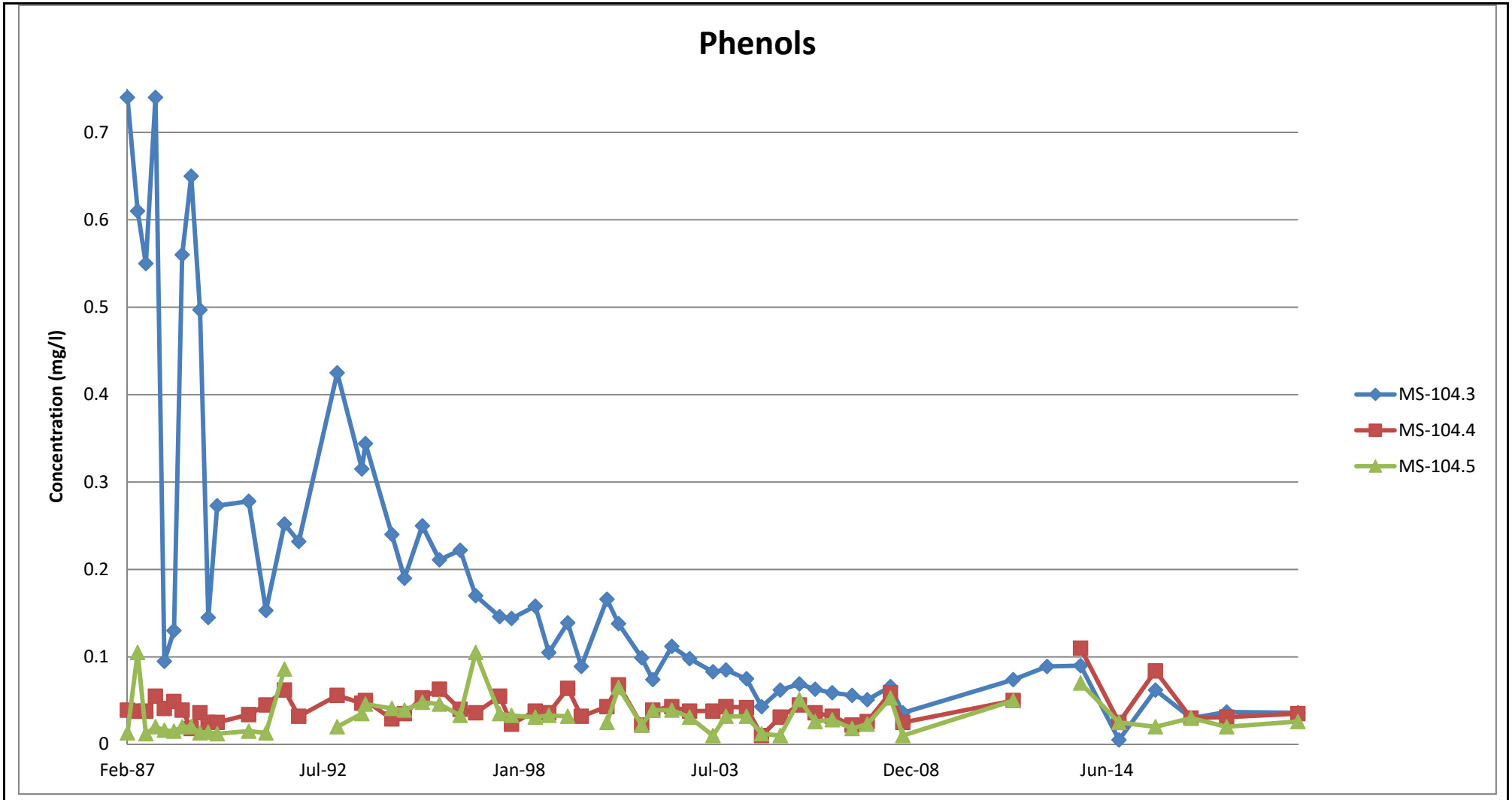


Appendix D

MS-104 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where([ChemQA2_Chemistry_Samples_with_Raw_Results].[LocCode] In('MS104.3' , 'MS104.4' , 'MS104.5') AND WellCode Is Null AND ChemName = 'Iron')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	



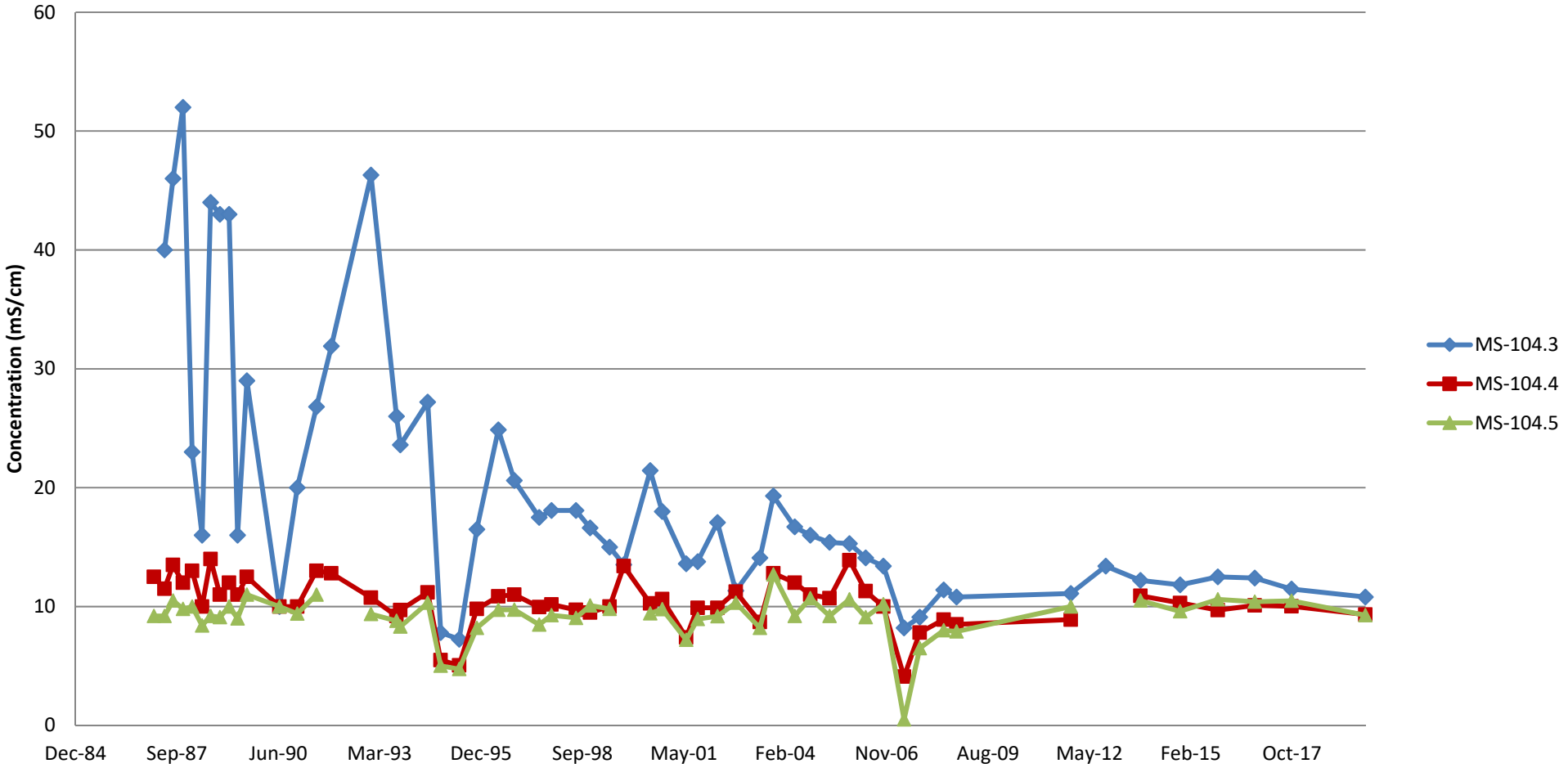
Appendix D

MS-104 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where([ChemQA2_Chemistry_Samples_with_Raw_Results].[LocCode] In('MS104.3' , 'MS104.4' , 'MS104.5') AND WellCode Is Null AND ChemName = 'Phenols')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

Conductivity (field)

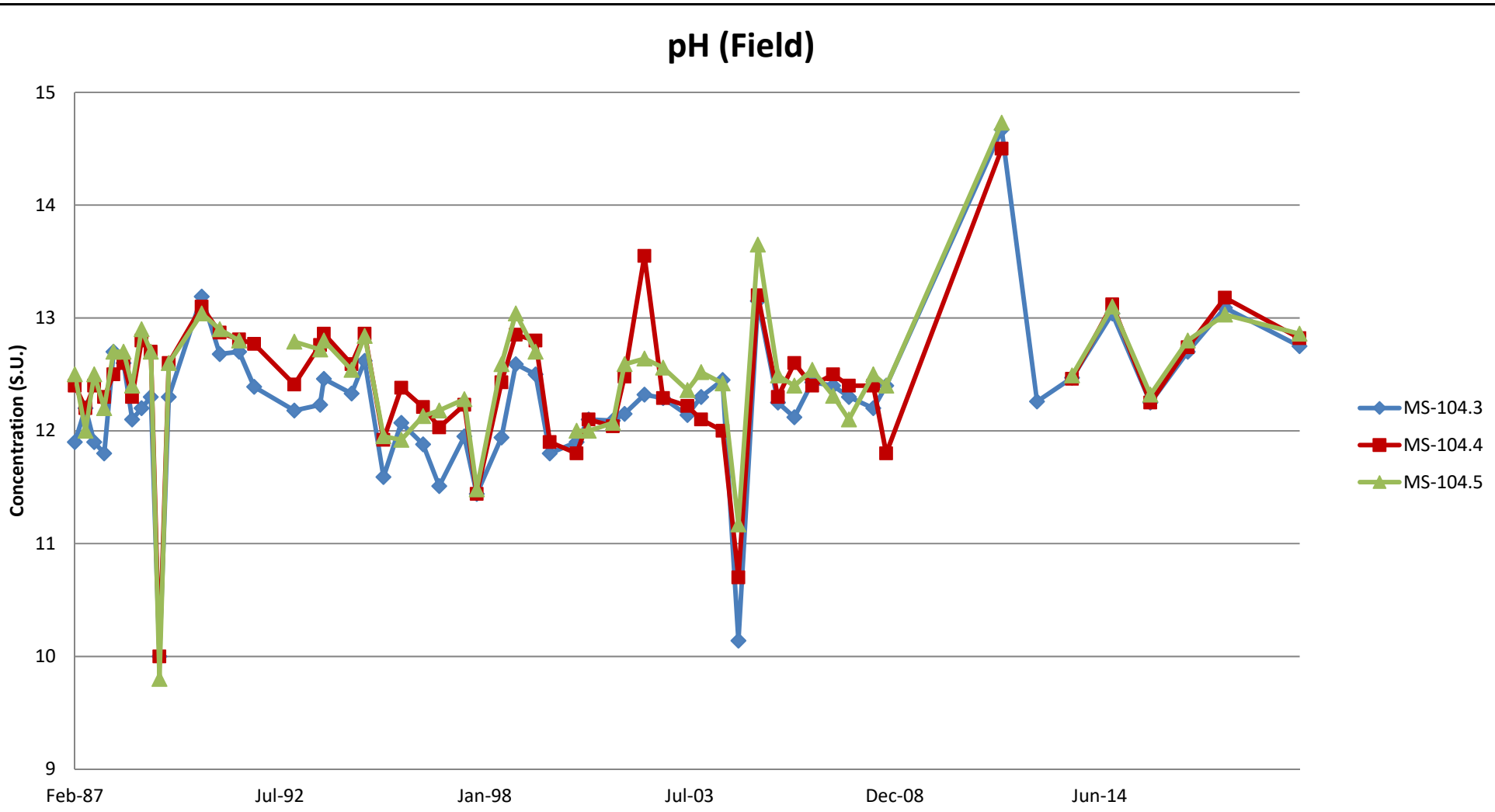


Appendix D

MS-104 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where(ChemName = 'EC (field)' AND [ChemQA2_Chemistry_Samples_with_Raw_Results].[LocCode] In('MS104.3' , 'MS104.4' , 'MS104.5'))

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

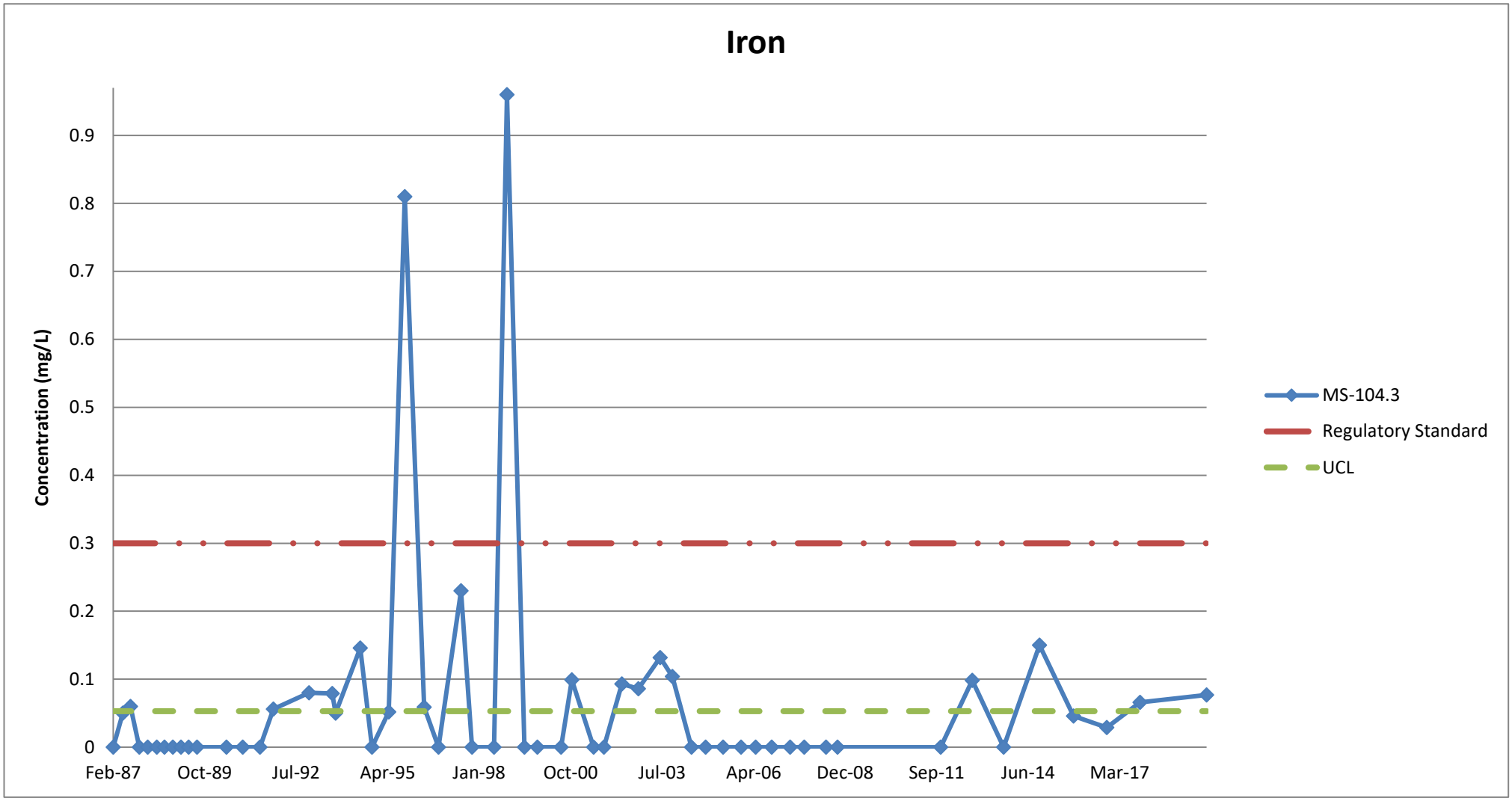


Appendix D

MS-104 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where([ChemQA2_Chemistry_Samples_with_Raw_Results].[LocCode] In('MS104.3' , 'MS104.4' , 'MS104.5') AND ChemName = 'pH (Field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

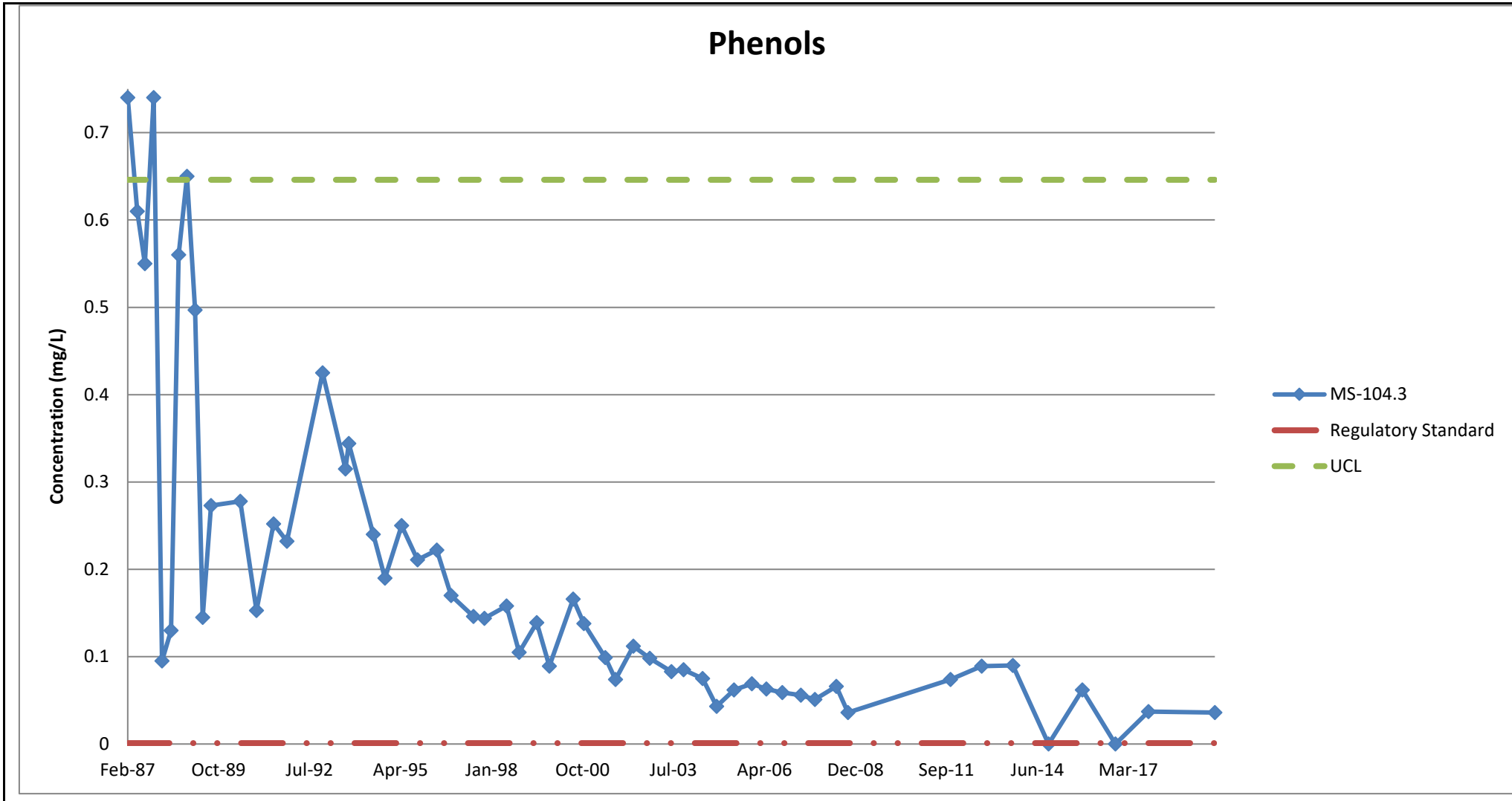


Appendix D

MS-104.3 - Iron Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS104.3' AND ChemName = 'Iron')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

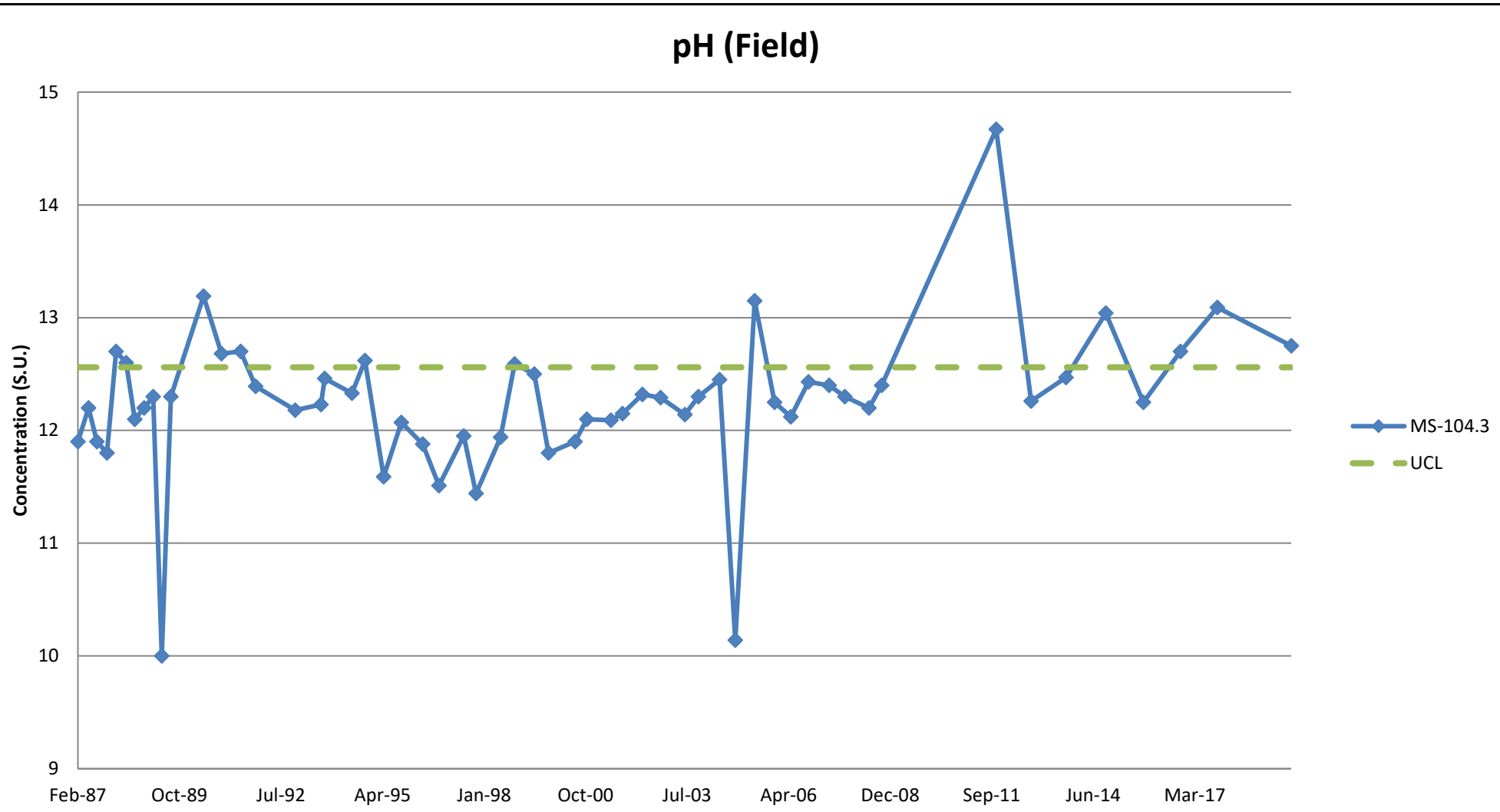


Appendix D

MS-104.3 - Phenols Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS104.3' AND ChemName = 'Iron')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

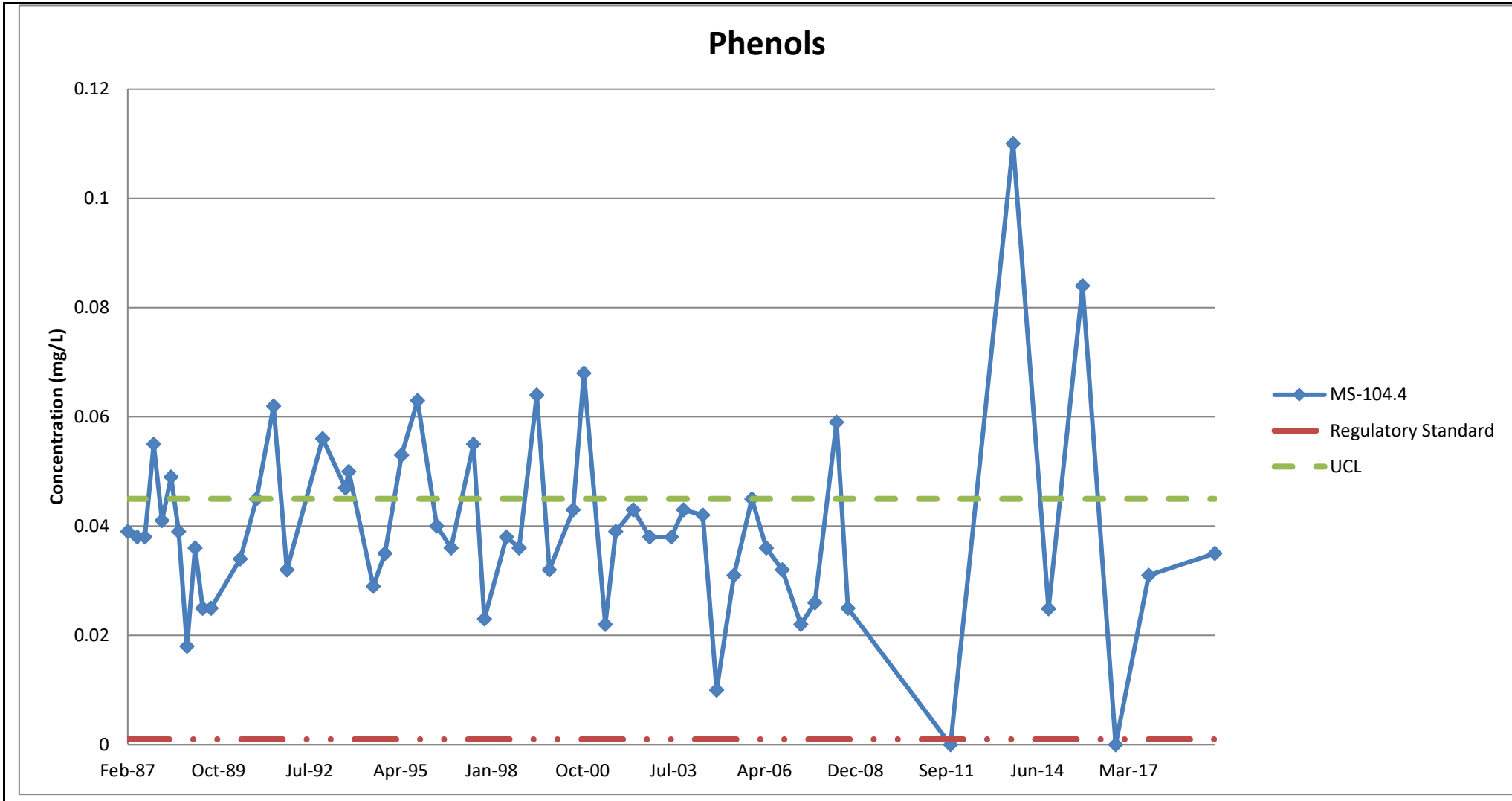


Appendix D

MS-104.3 - pH Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS104.3' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

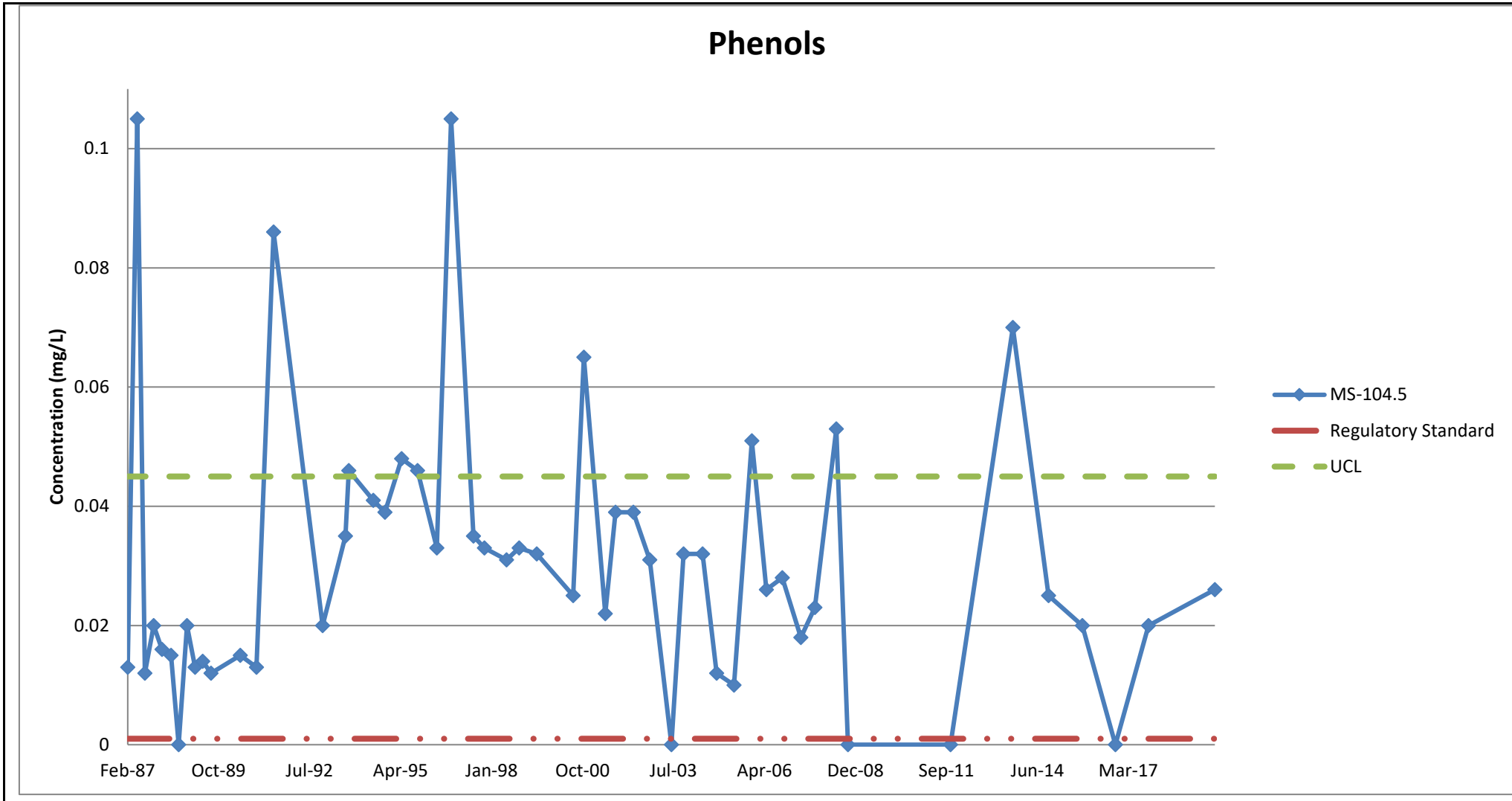


Appendix D

MS-104.4 - Phenols Time Series Plot

Former Crucible Specialty Metals LF, Where([LChem2_Environmental_Standards].[LocCode] = 'MS104.4' AND ChemName = 'Phenols')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

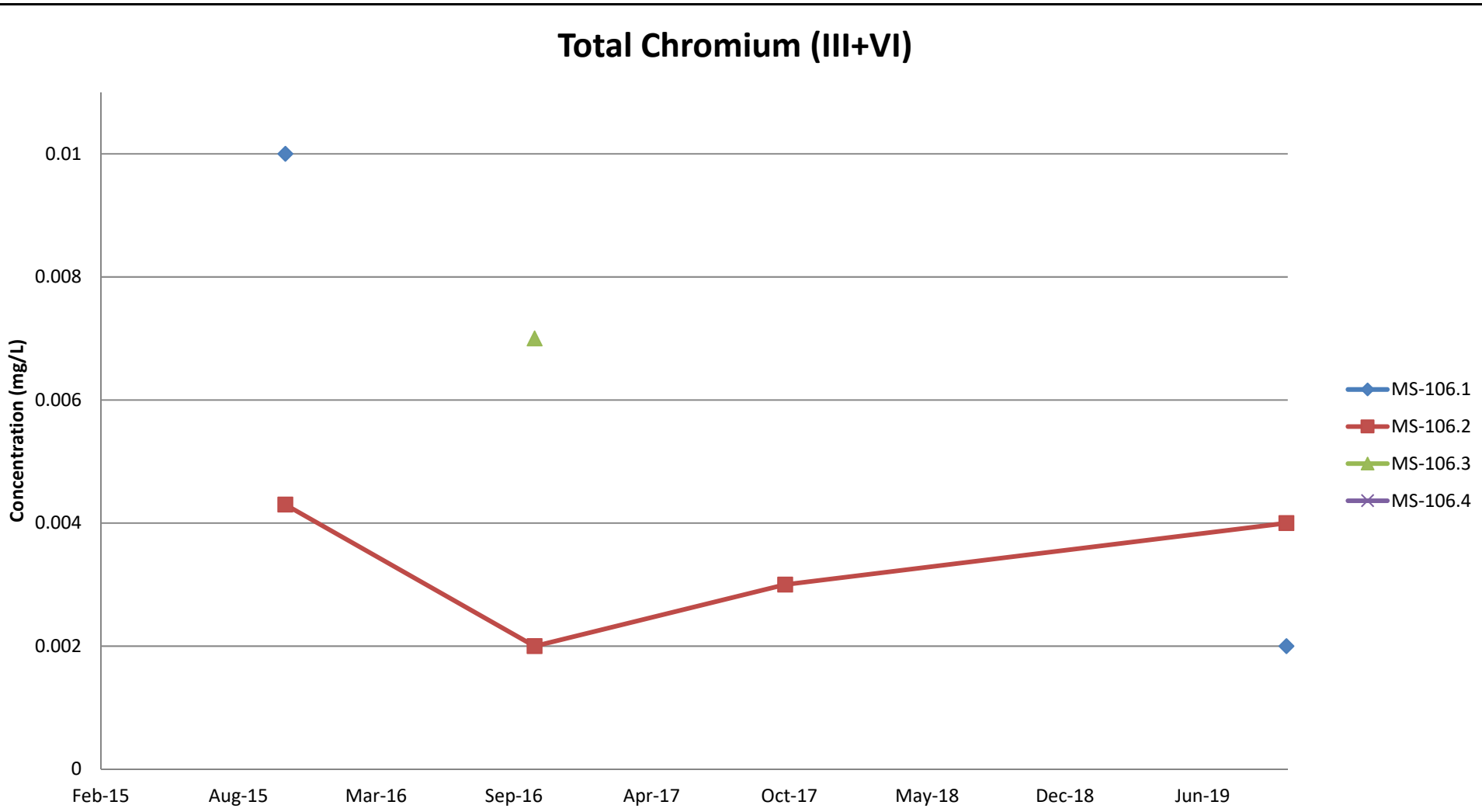


Appendix D

MS-104.5 - Phenols Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS104.5' AND ChemName = 'EC (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	



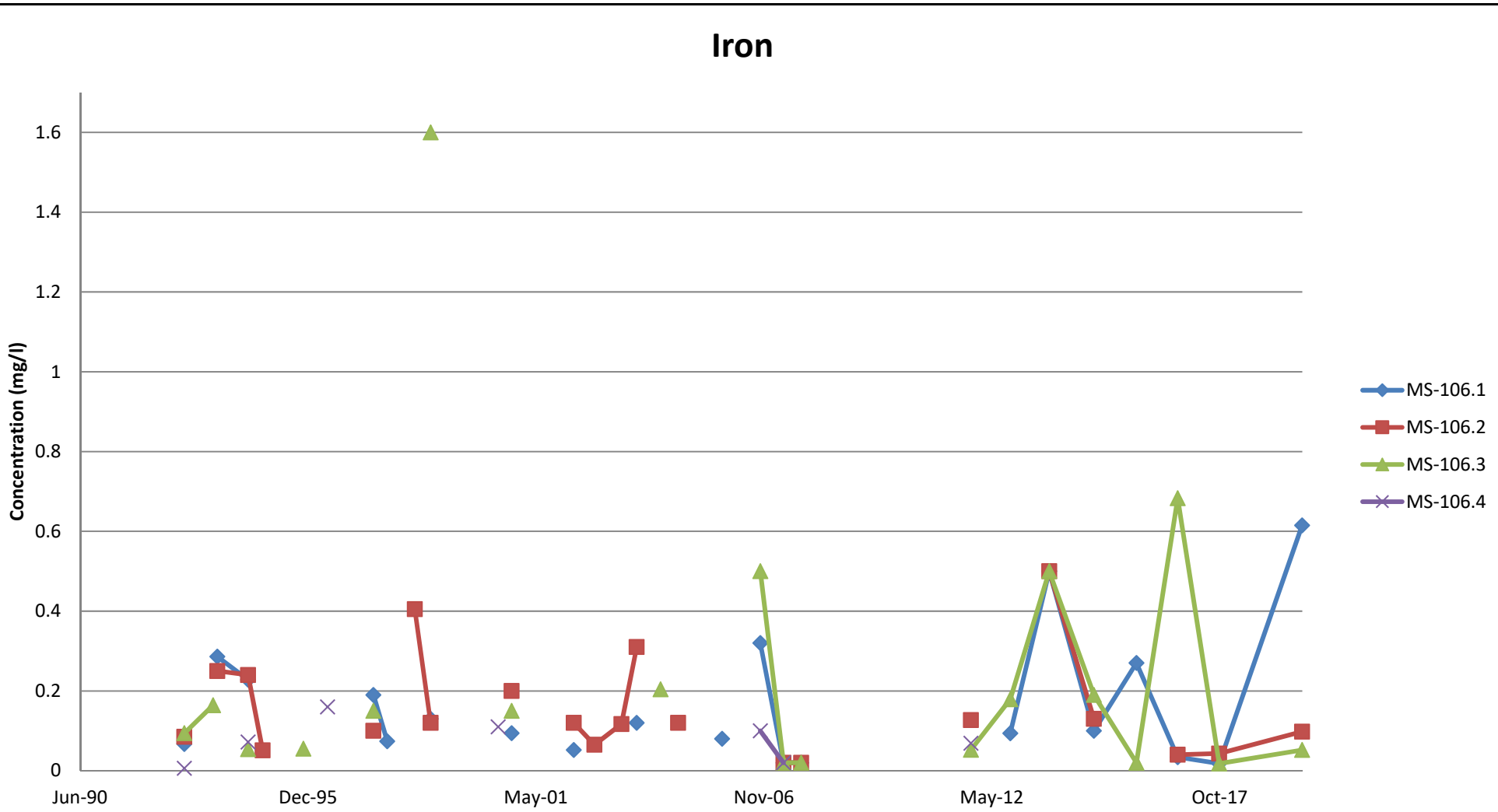
Appendix D

MS-106 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where(Field_ID In('MS106.1' , 'MS106.2' , 'MS106.3' , 'MS106.4' , 'MS106.5') AND ChemName = 'Chromium (III+VI)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

GHD

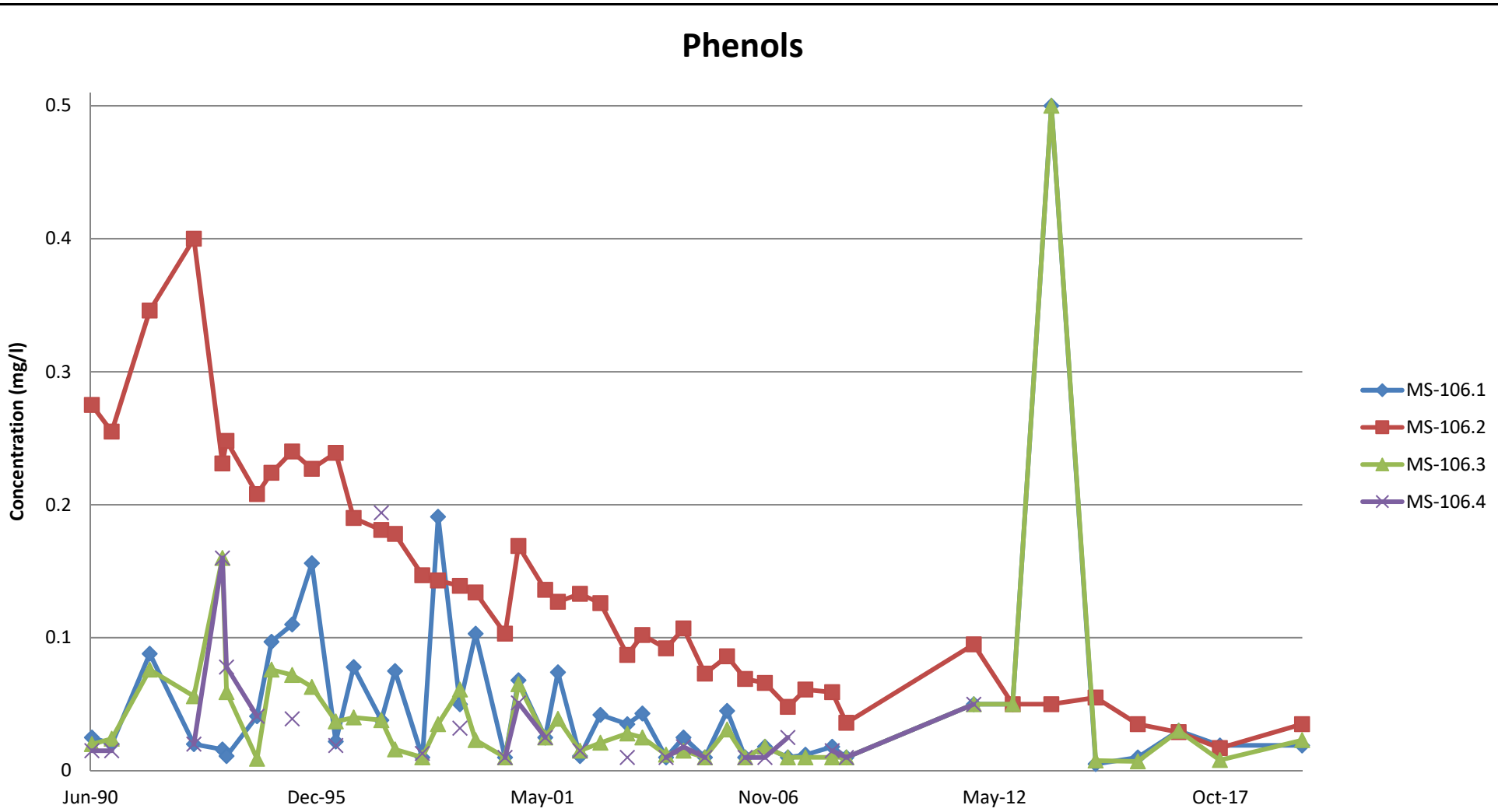


Appendix D

MS-106 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where([ChemQA2_Chemistry_Samples_with_Raw_Results].[LocCode] In('MS106.1' , 'MS106.2' , 'MS106.3' , 'MS106.4' , 'MS106.5') AND WellCode Is Null AND ChemName = 'Iron')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	



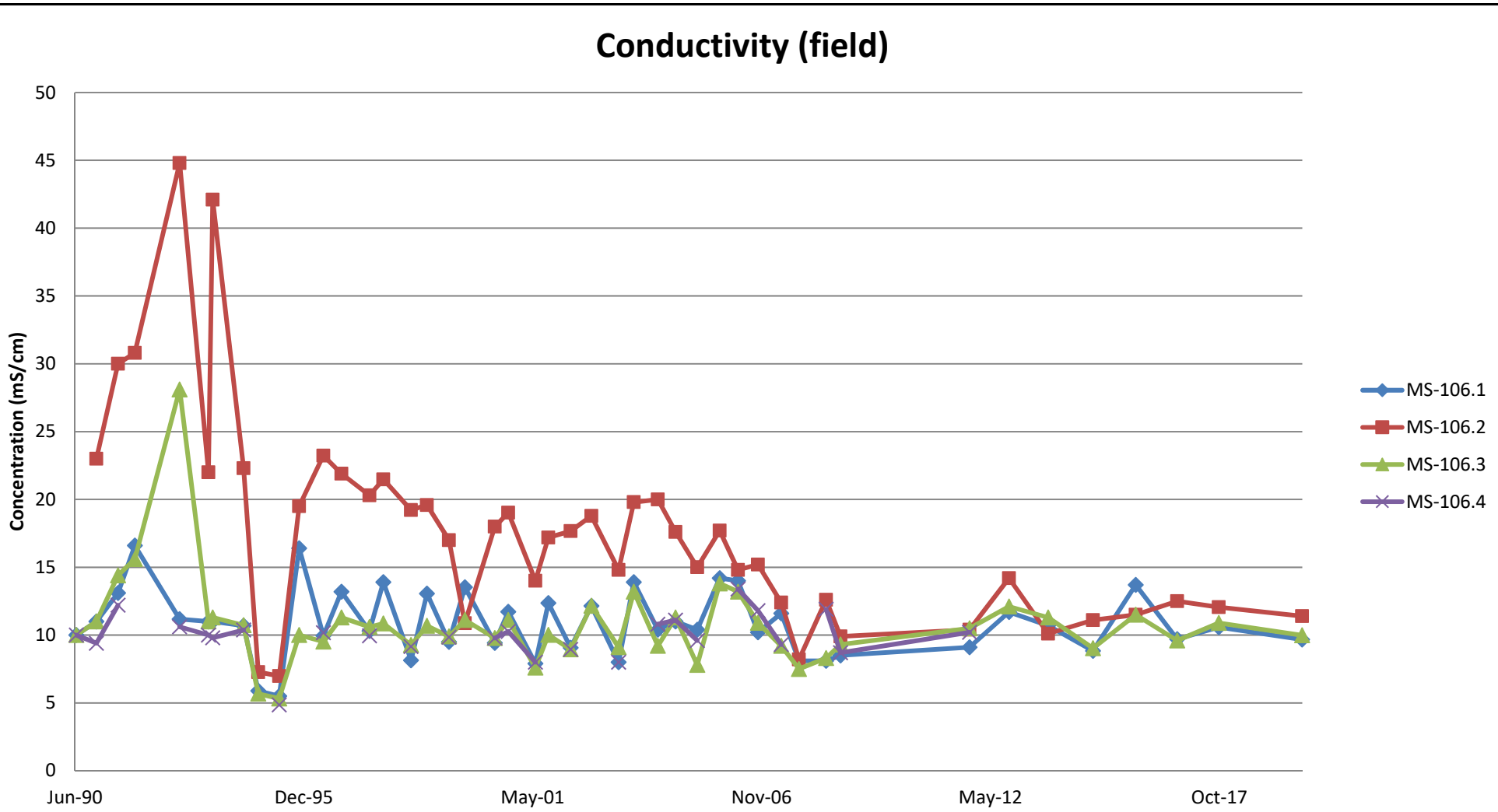
Appendix D

MS-106 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where([ChemQA2_Chemistry_Samples_with_Raw_Results].[LocCode] In('MS106.1' , 'MS106.2' , 'MS106.3' , 'MS106.4' , 'MS106.5') AND WellCode Is Null AND ChemName = 'Phenols')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

GHD

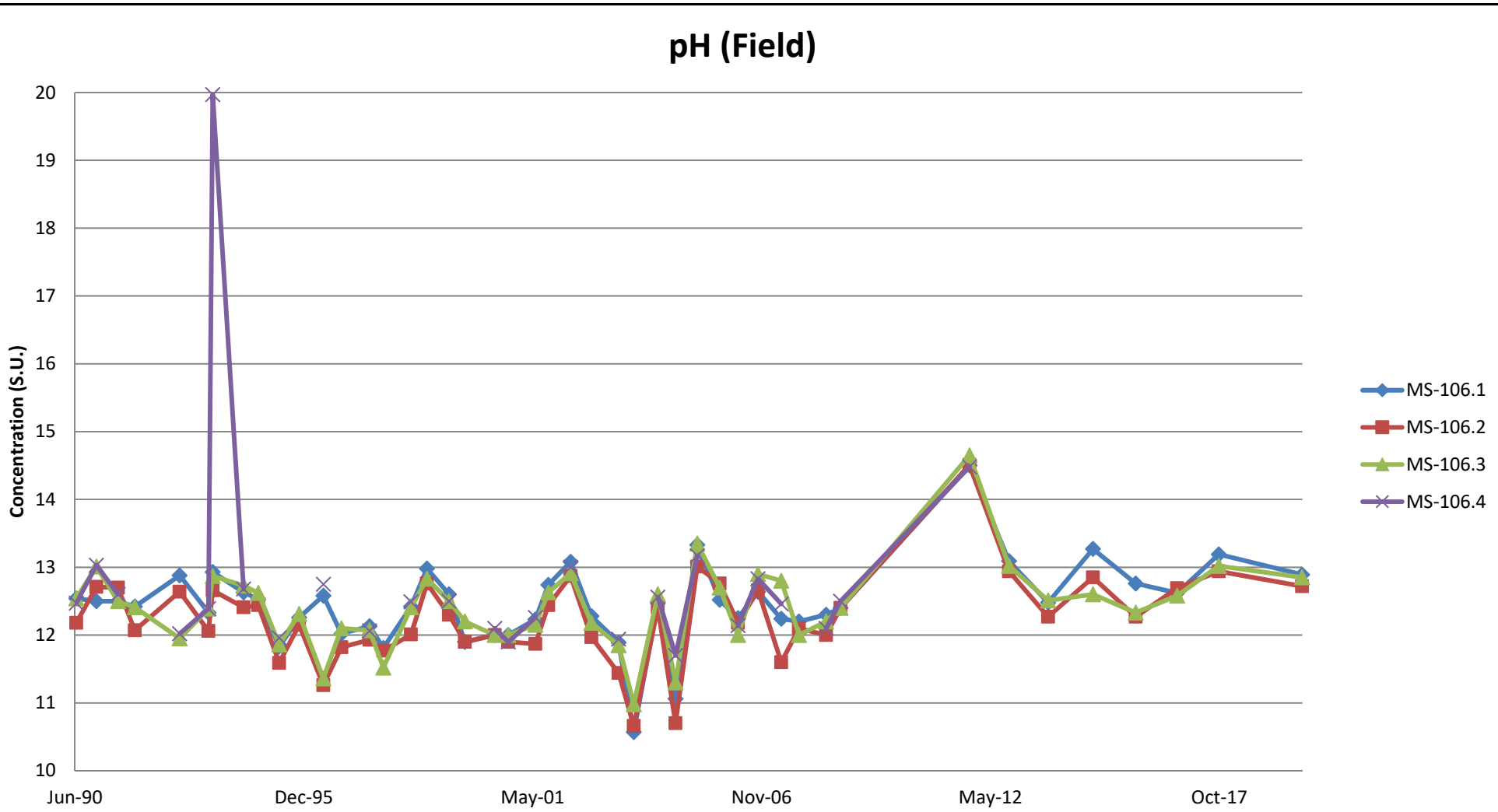


Appendix D

MS-106 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where(ChemName = 'EC (field)' AND [ChemQA2_Chemistry_Samples_with_Raw_Results].[LocCode] In('MS106.1' , 'MS106.2' , 'MS106.3' , 'MS106.4' , 'MS106.5'))

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	



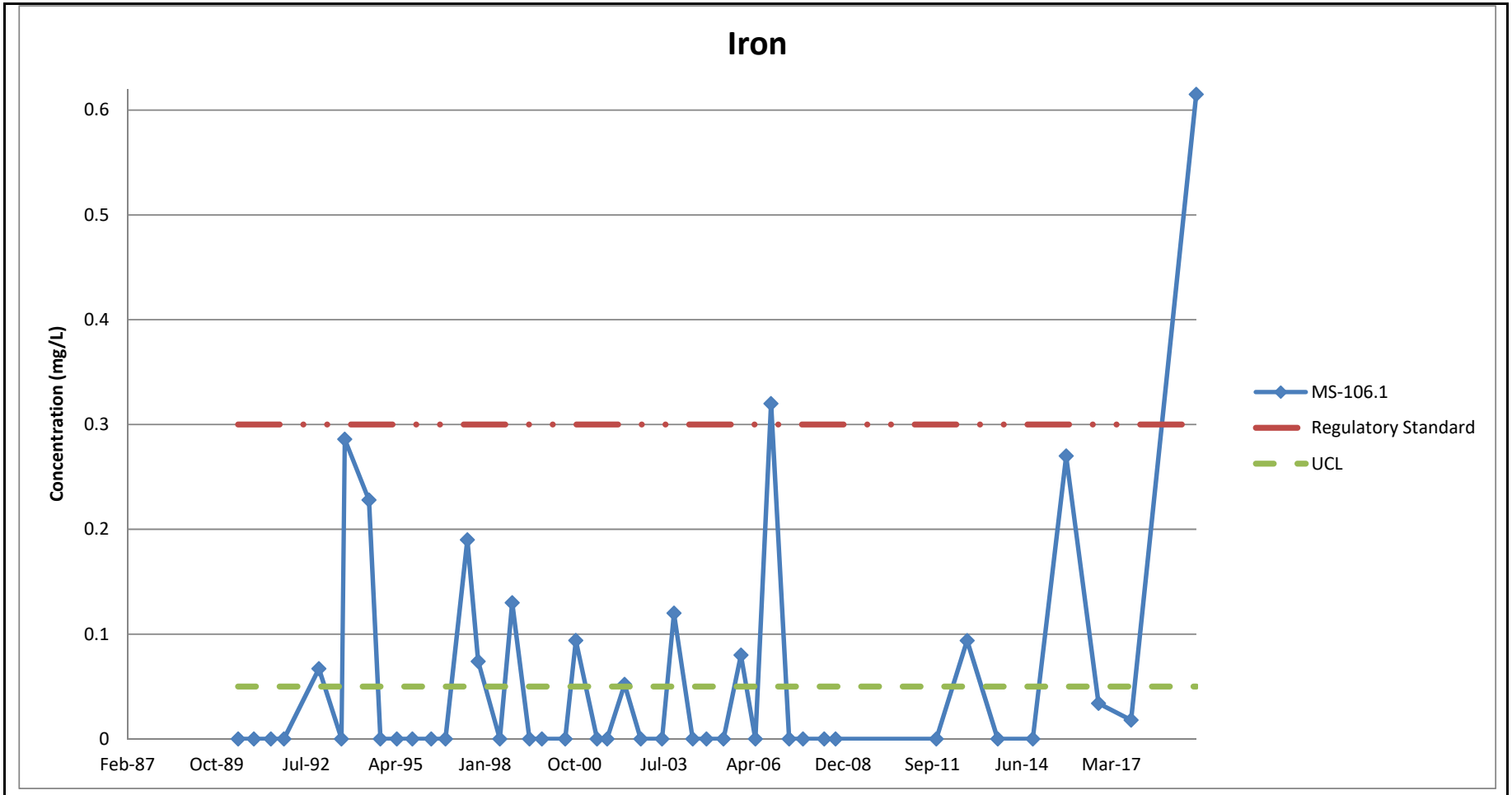
Appendix D

MS-106 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where([ChemQA2_Chemistry_Samples_with_Raw_Results].[LocCode] In('MS106.1' , 'MS106.2' , 'MS106.3' , 'MS106.4' , 'MS106.5') AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

GHD



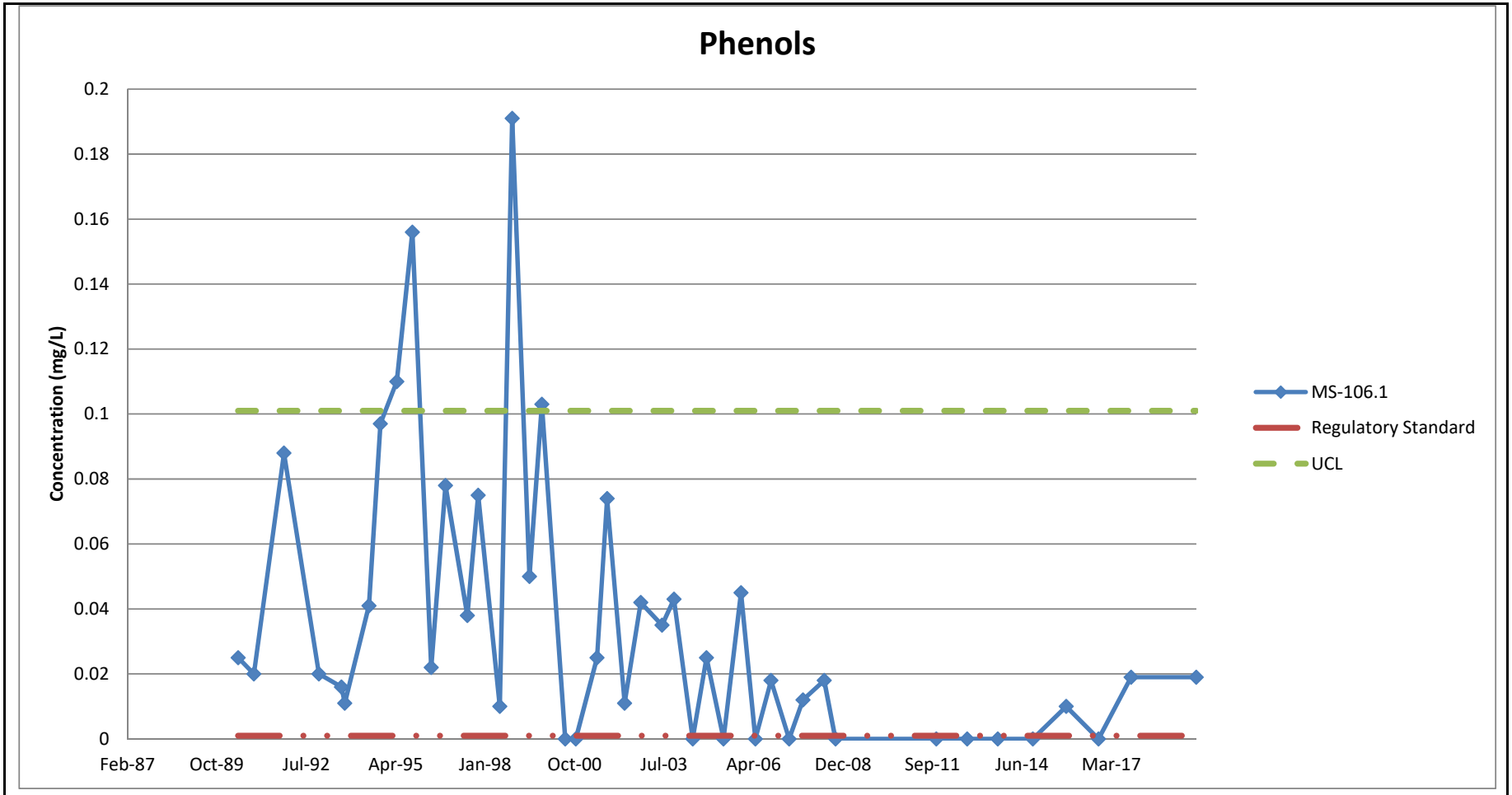
Appendix D

MS-106.1 - Iron Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS106.1' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

GHD

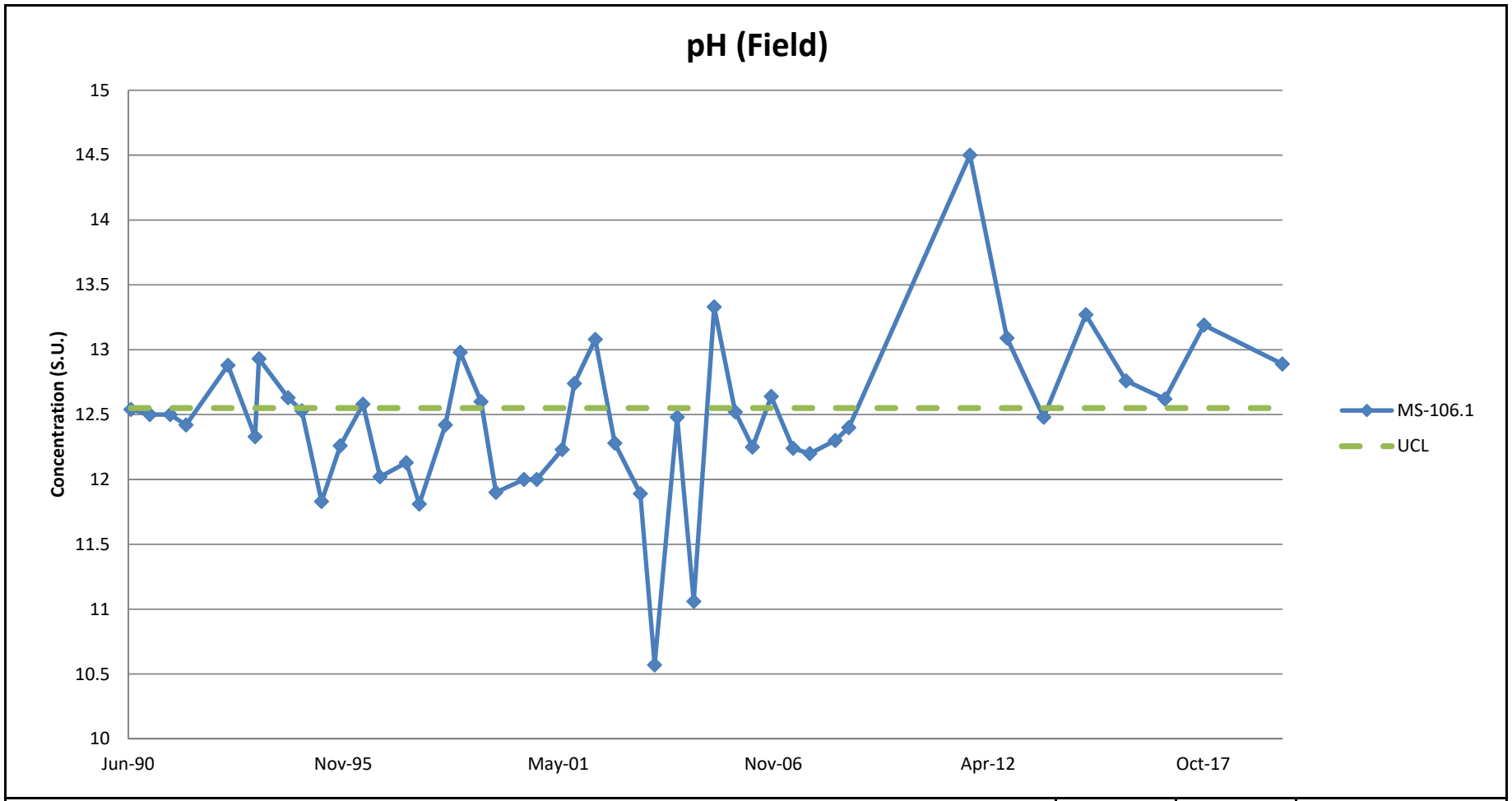


Appendix D

MS-106.1 - Phenols Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS106.1' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	



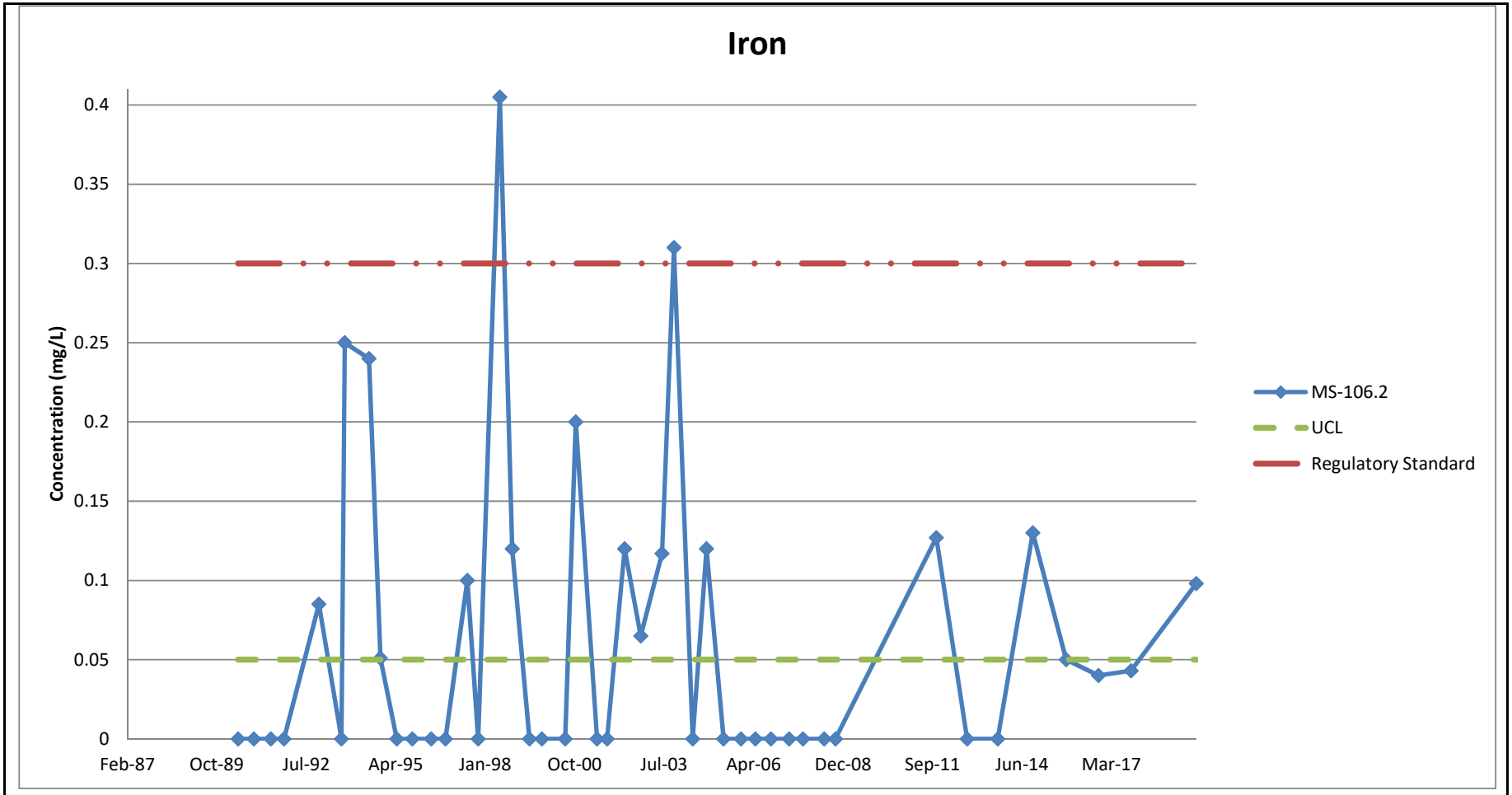
Appendix D

MS-106.1 - pH Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS106.1' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

GHD

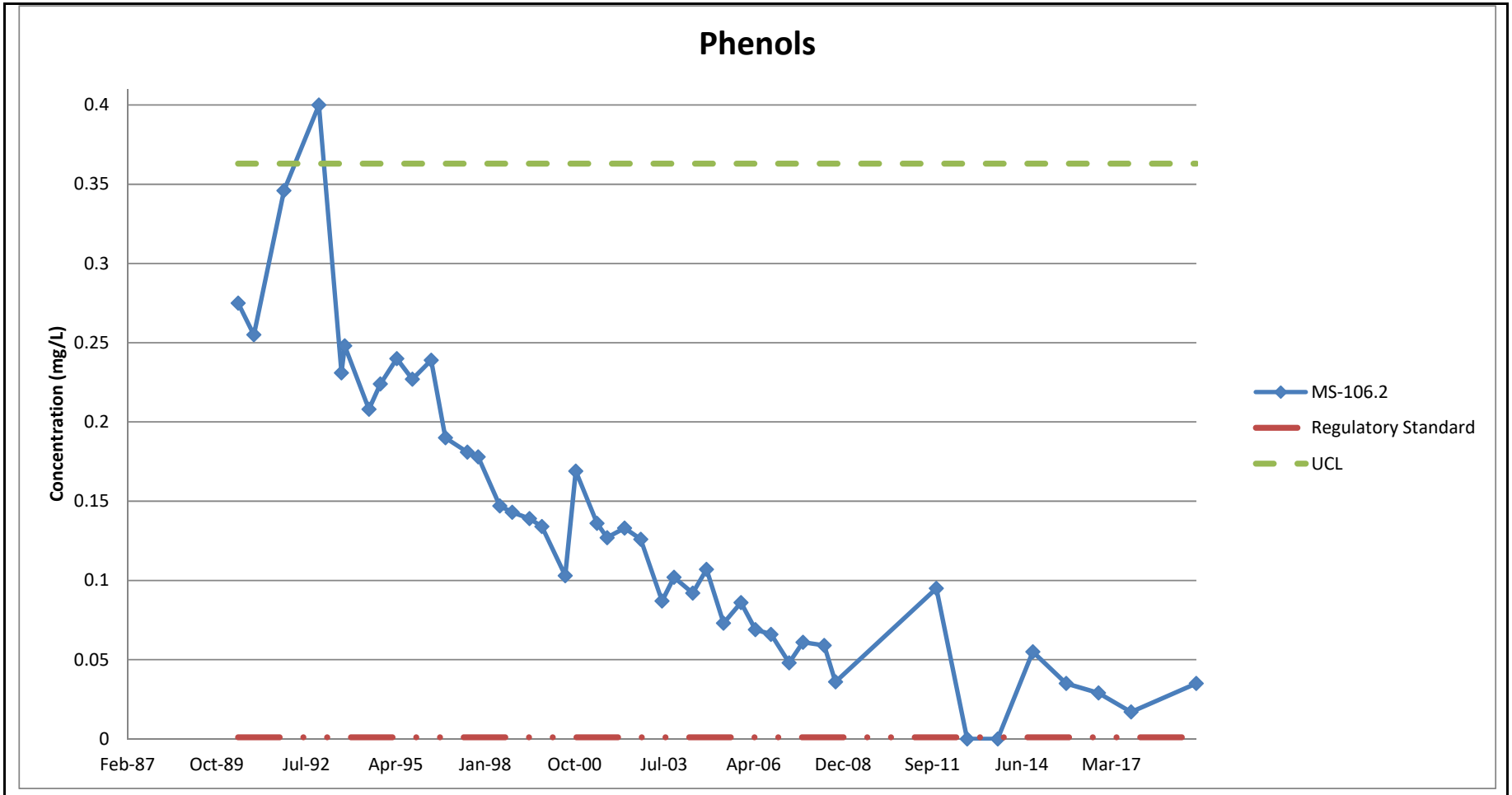


Appendix D

MS-106.2 - Iron Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS106.2' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

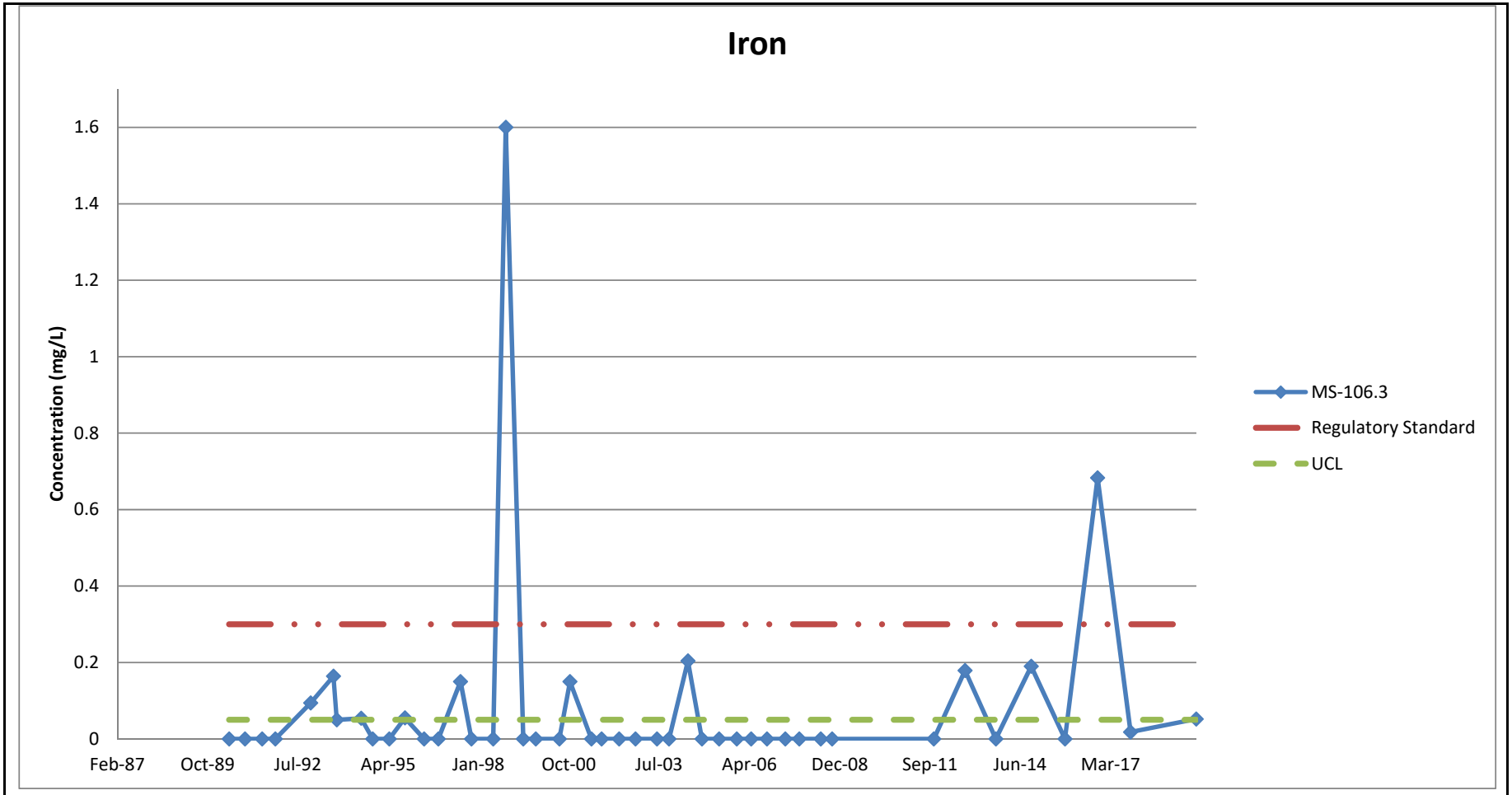


Appendix D

MS-106.2 - Phenols Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS106.2' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

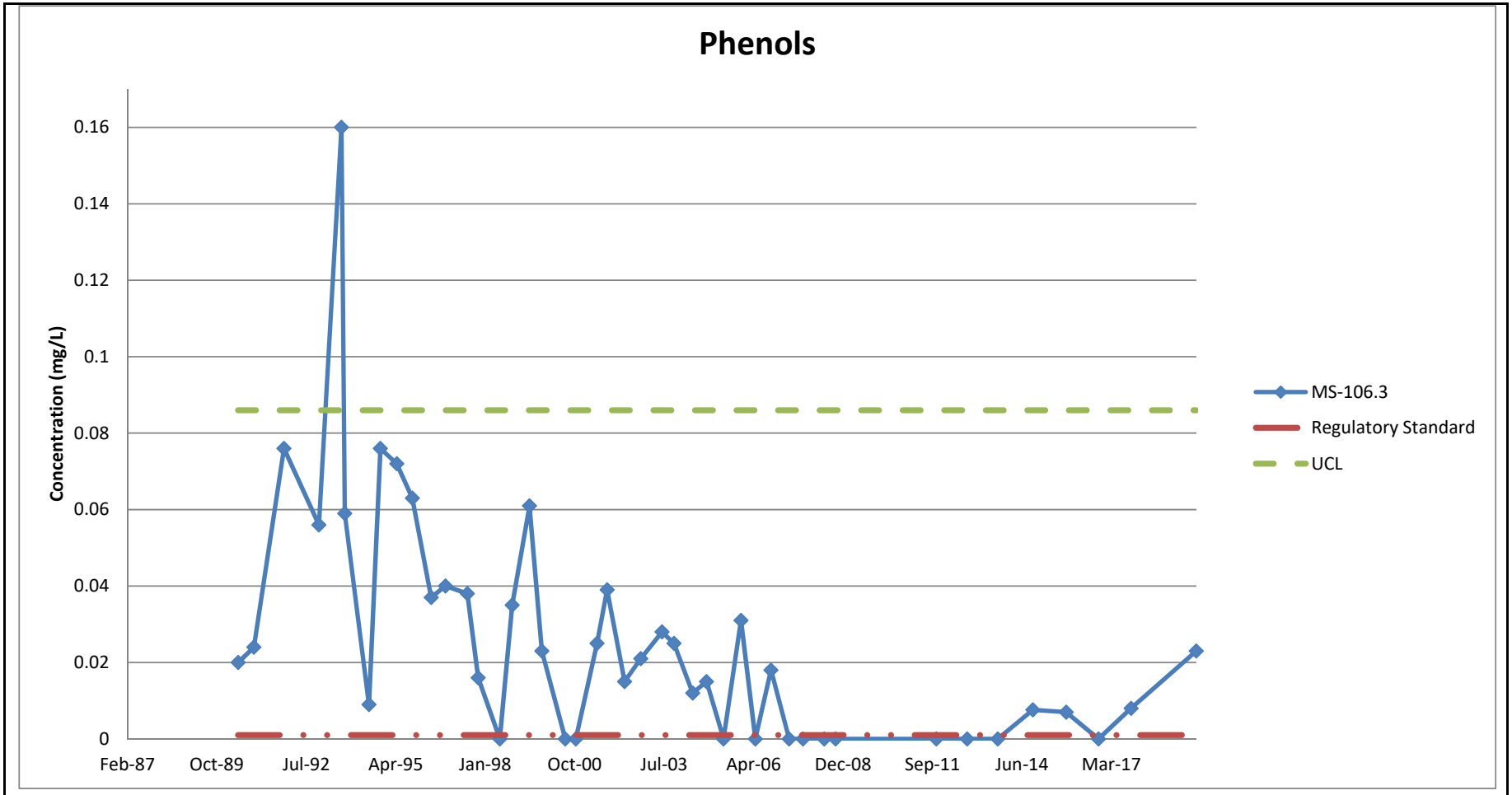


Appendix D

MS-106.3 - Iron Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS106.3' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

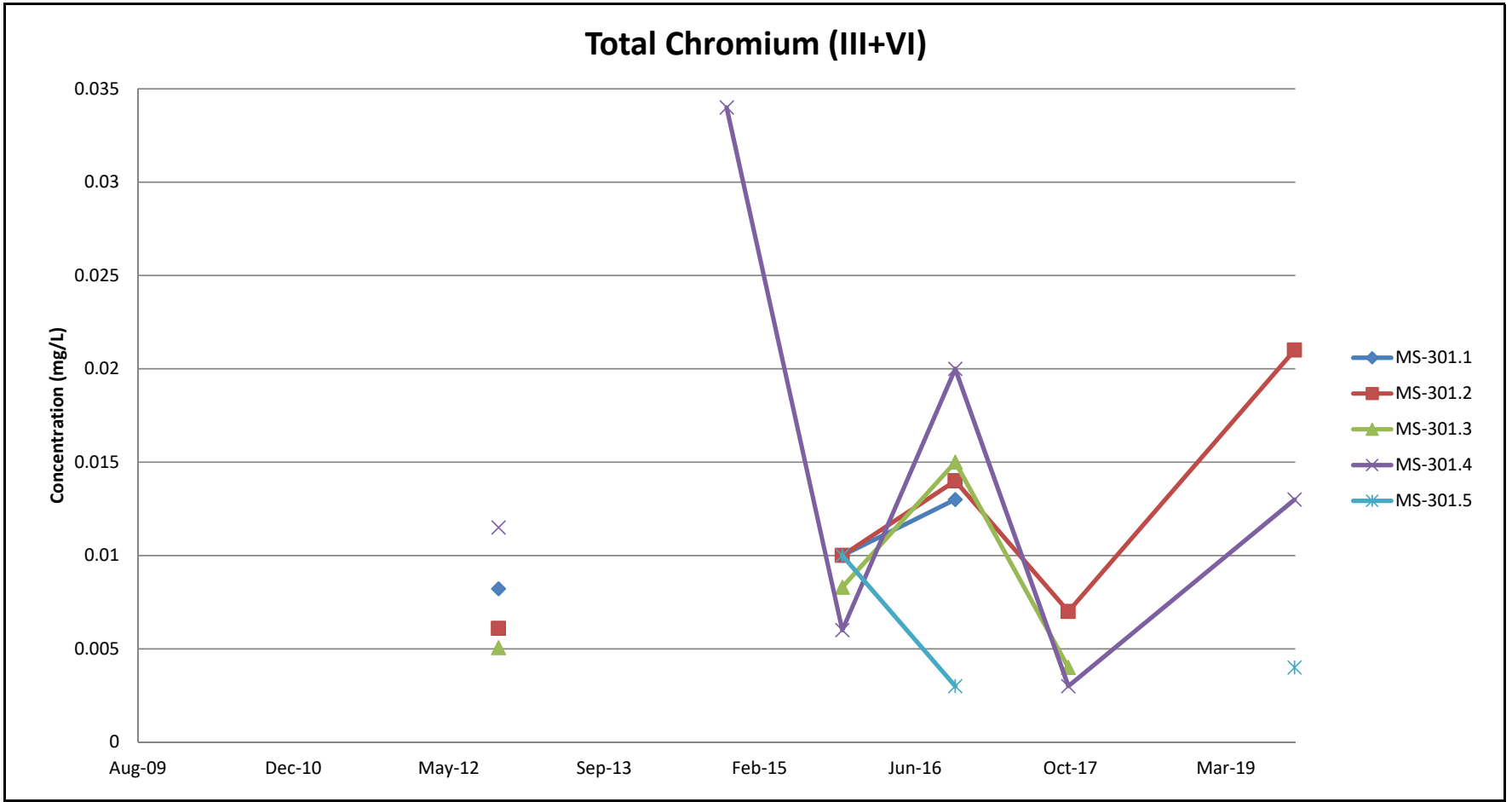


Appendix D

MS-106.3 - Phenols Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS106.3' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

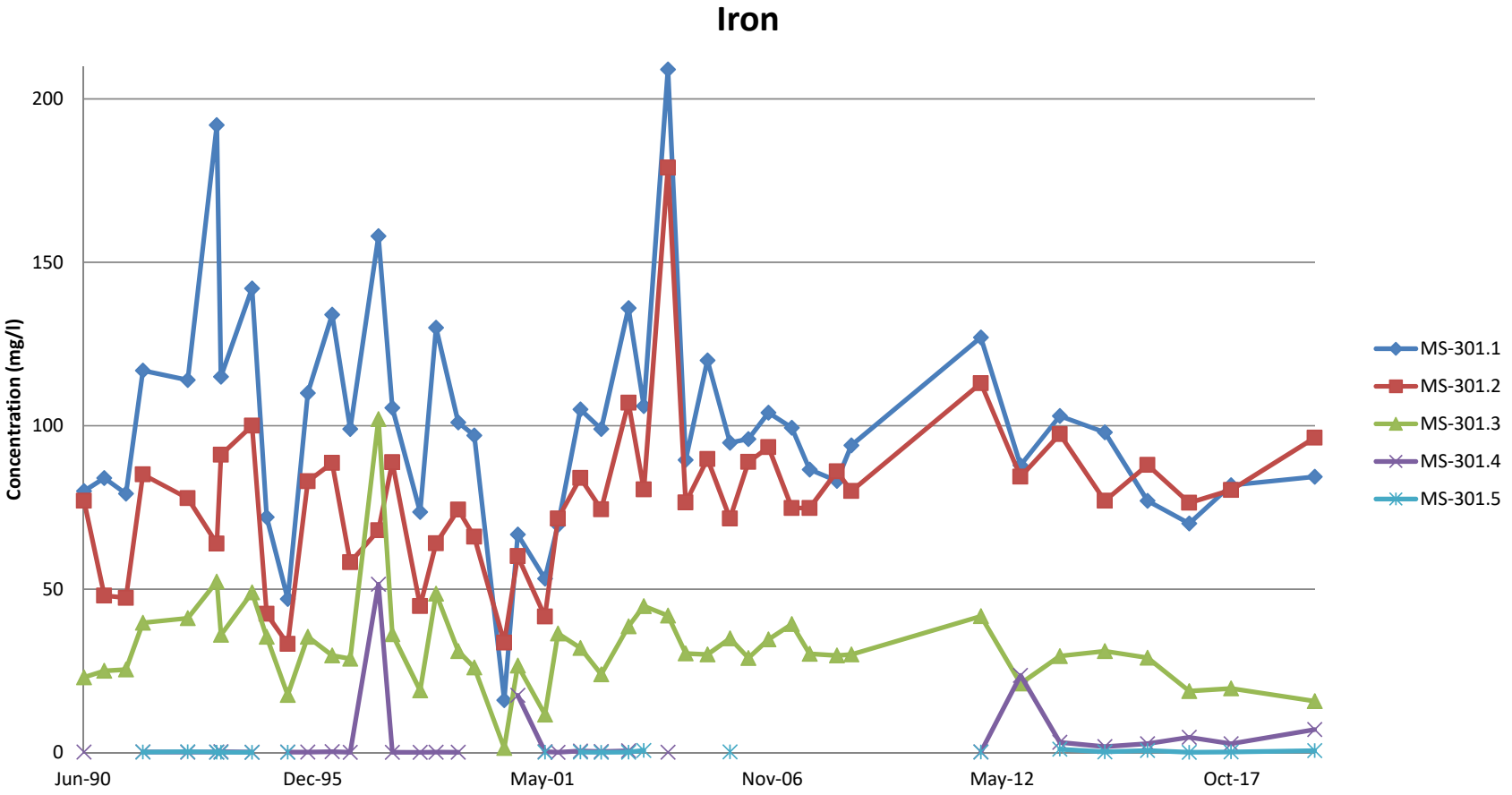


Appendix D

MS-301 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where(Field_ID In('MS301.1' , 'MS301.2' , 'MS301.3' , 'MS301.4' , 'MS301.5') AND ChemName = 'Chromium (III+VI)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

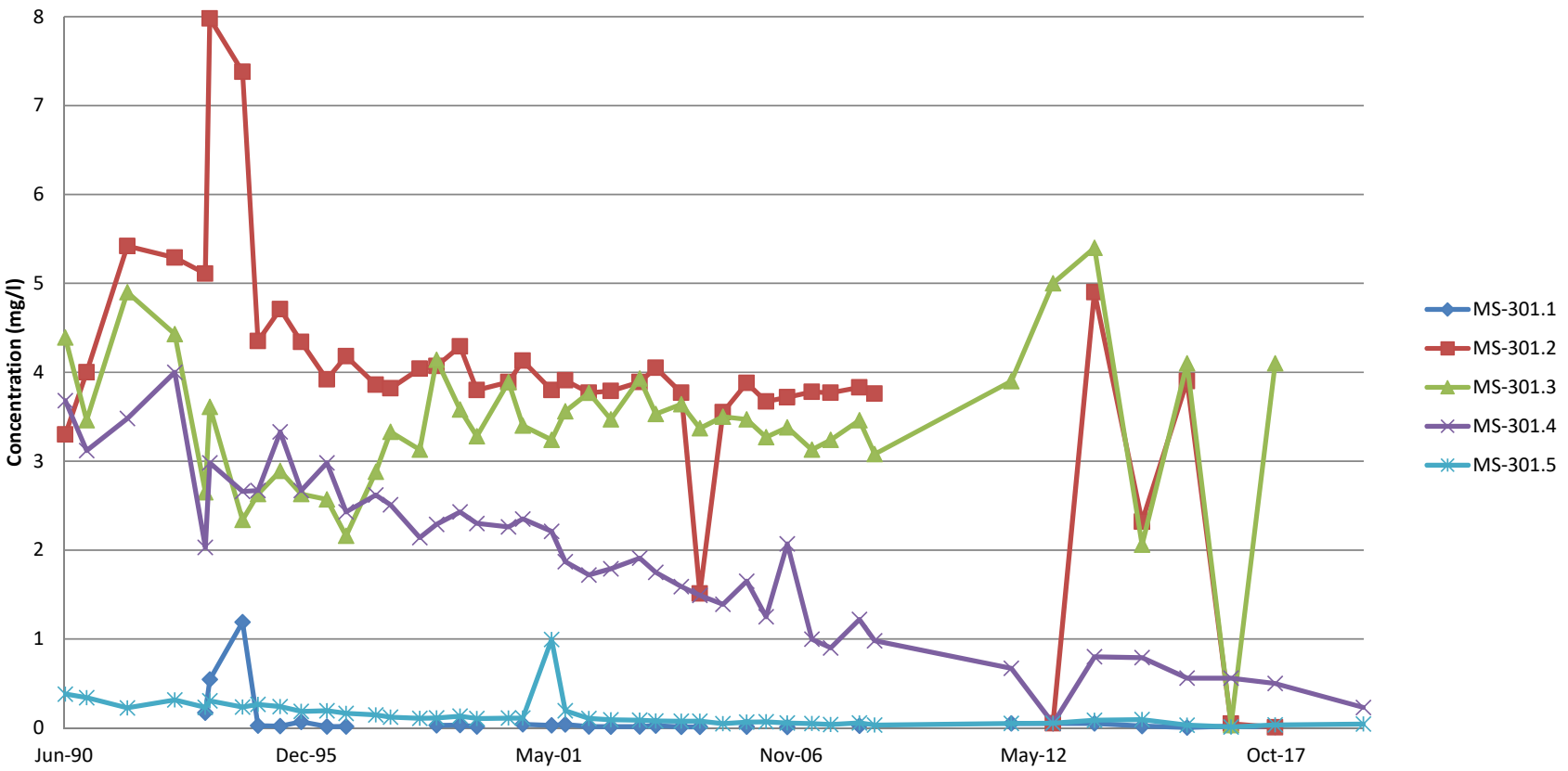


Appendix D

MS-301 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where([ChemQA2_Chemistry_Samples_with_Raw_Results].[LocCode] In('MS301.1' , 'MS301.2' , 'MS301.3' , 'MS301.4' , 'MS301.5') AND WellCode Is Null AND ChemName = 'Iron')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

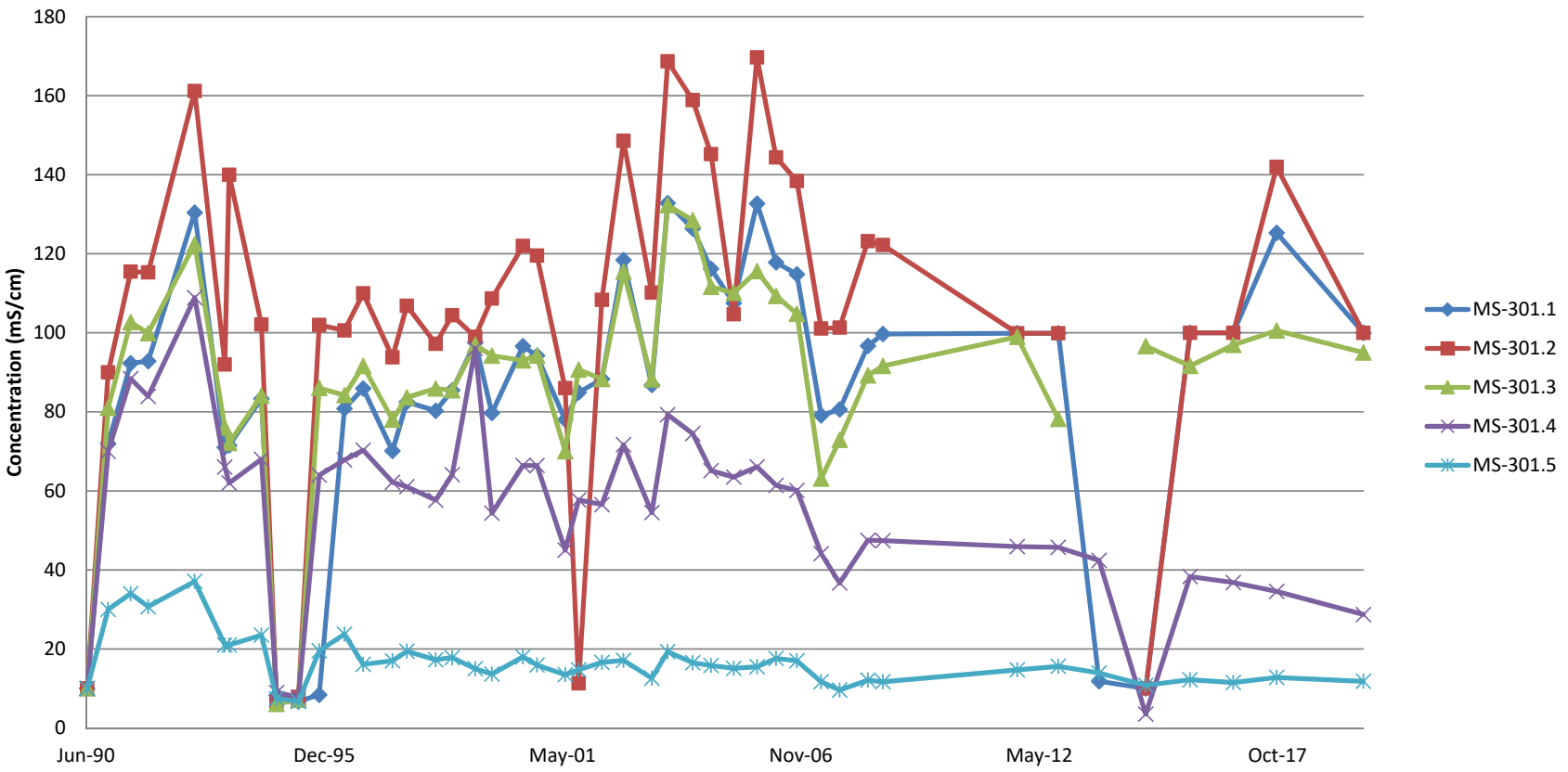


Appendix D

MS-301 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where([ChemQA2_Chemistry_Samples_with_Raw_Results].[LocCode] In('MS301.1' , 'MS301.2' , 'MS301.3' , 'MS301.4' , 'MS301.5') AND WellCode Is Null AND ChemName = 'Phenols')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

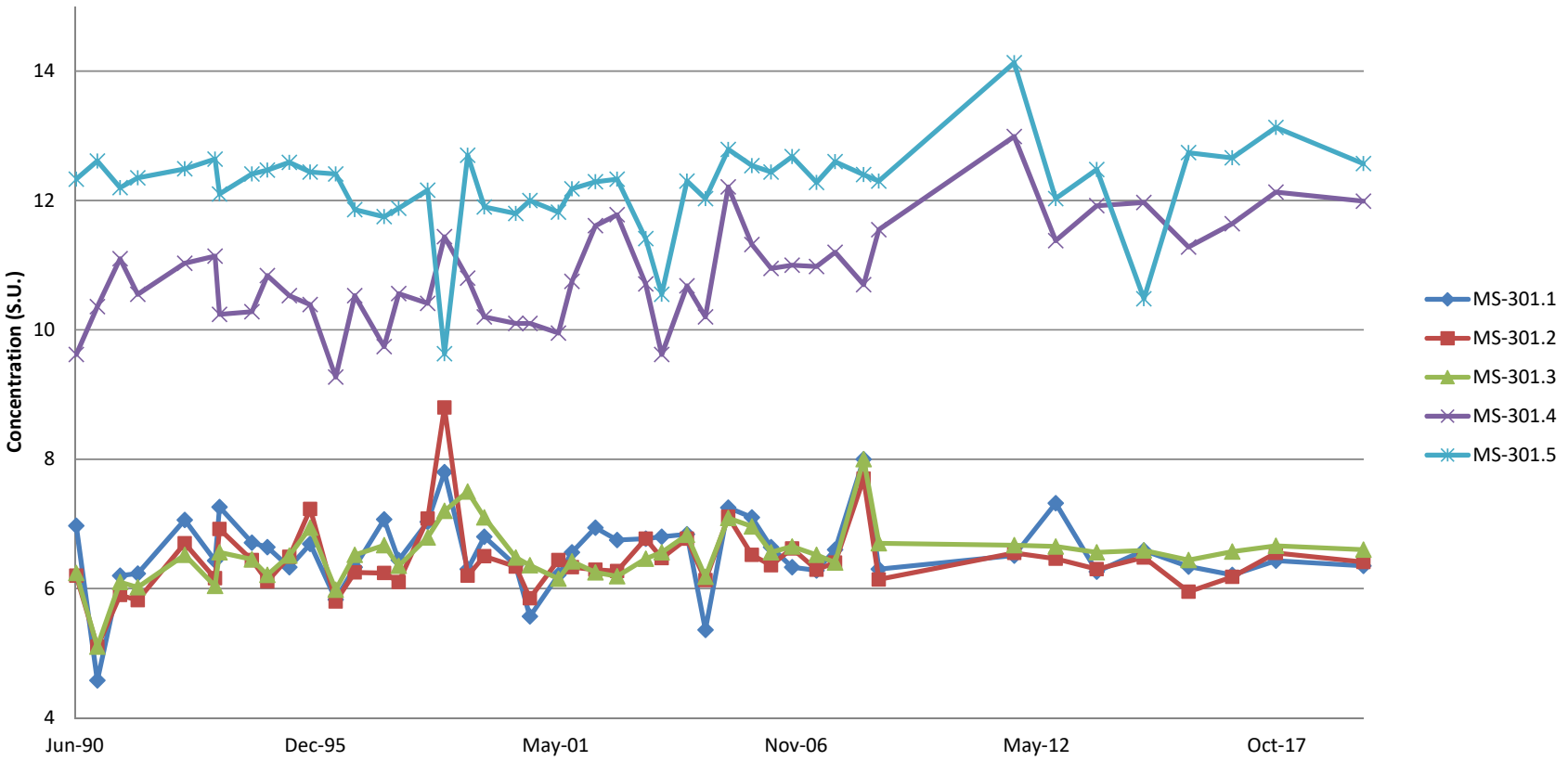


Appendix D

MS-301 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where(ChemName = 'EC (field)' AND [ChemQA2_Chemistry_Samples_with_Raw_Results].[LocCode] In('MS301.1' , 'MS301.2' , 'MS301.3' , 'MS301.4' , 'MS301.5'))

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

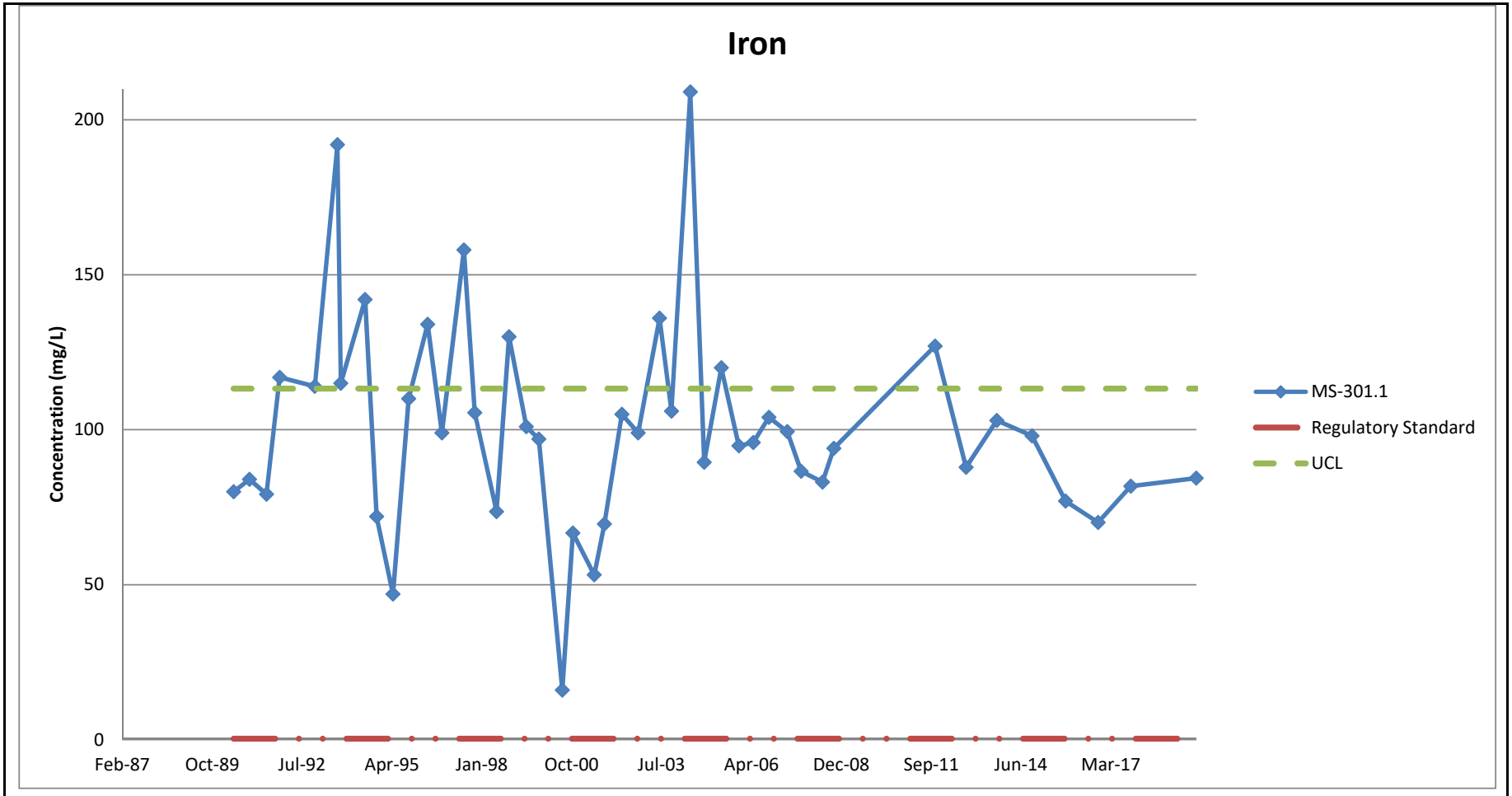


Appendix D

MS-301 Cluster - Time Series Plots

Former Crucible Specialty Metals LF, Where([ChemQA2_Chemistry_Samples_with_Raw_Results].[LocCode] In('MS301.1' , 'MS301.2' , 'MS301.3' , 'MS301.4' , 'MS301.5') AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

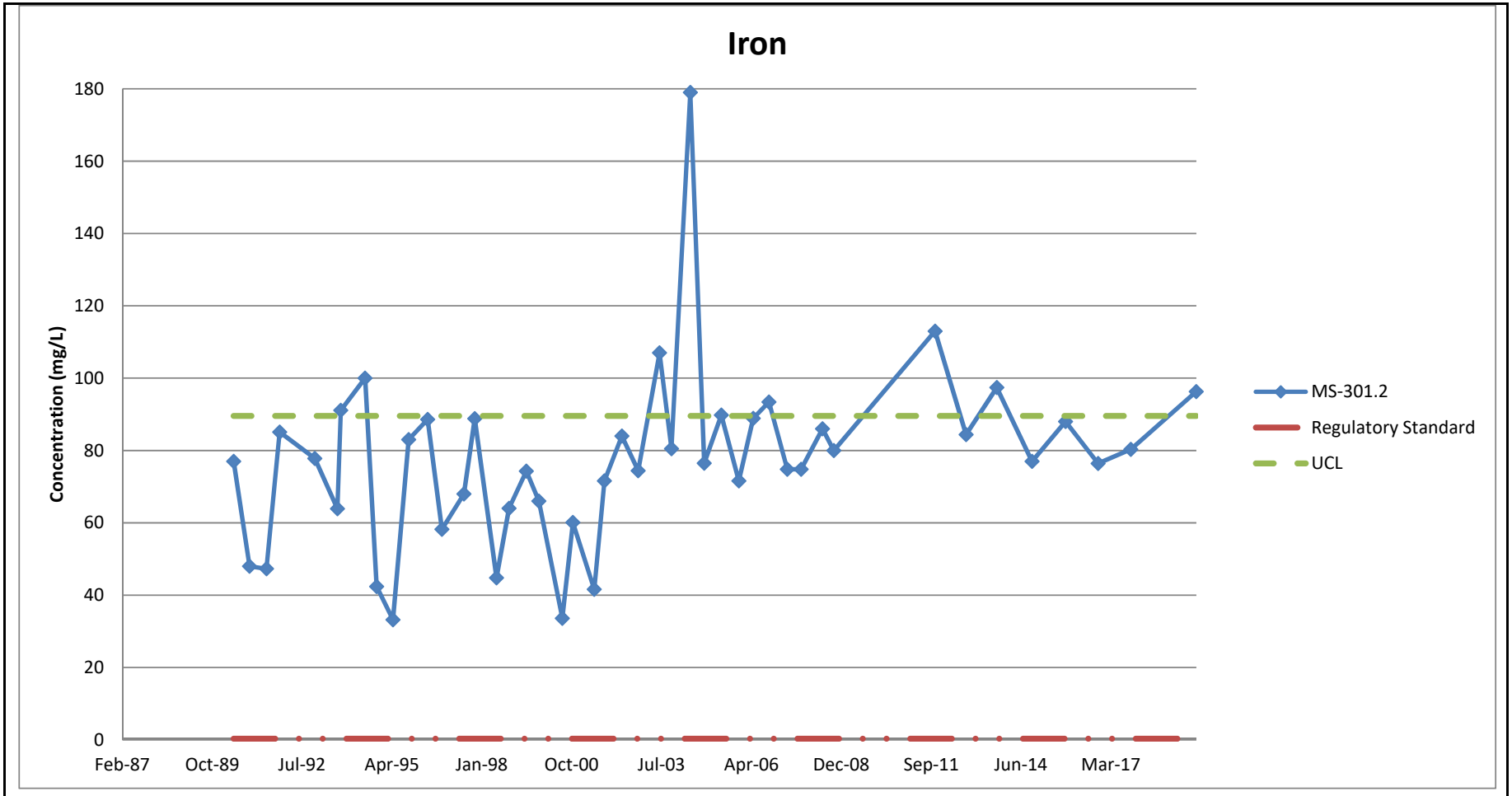


Appendix D

MS-301.1 - Iron Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS301.1' AND ChemName = 'Phenols')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

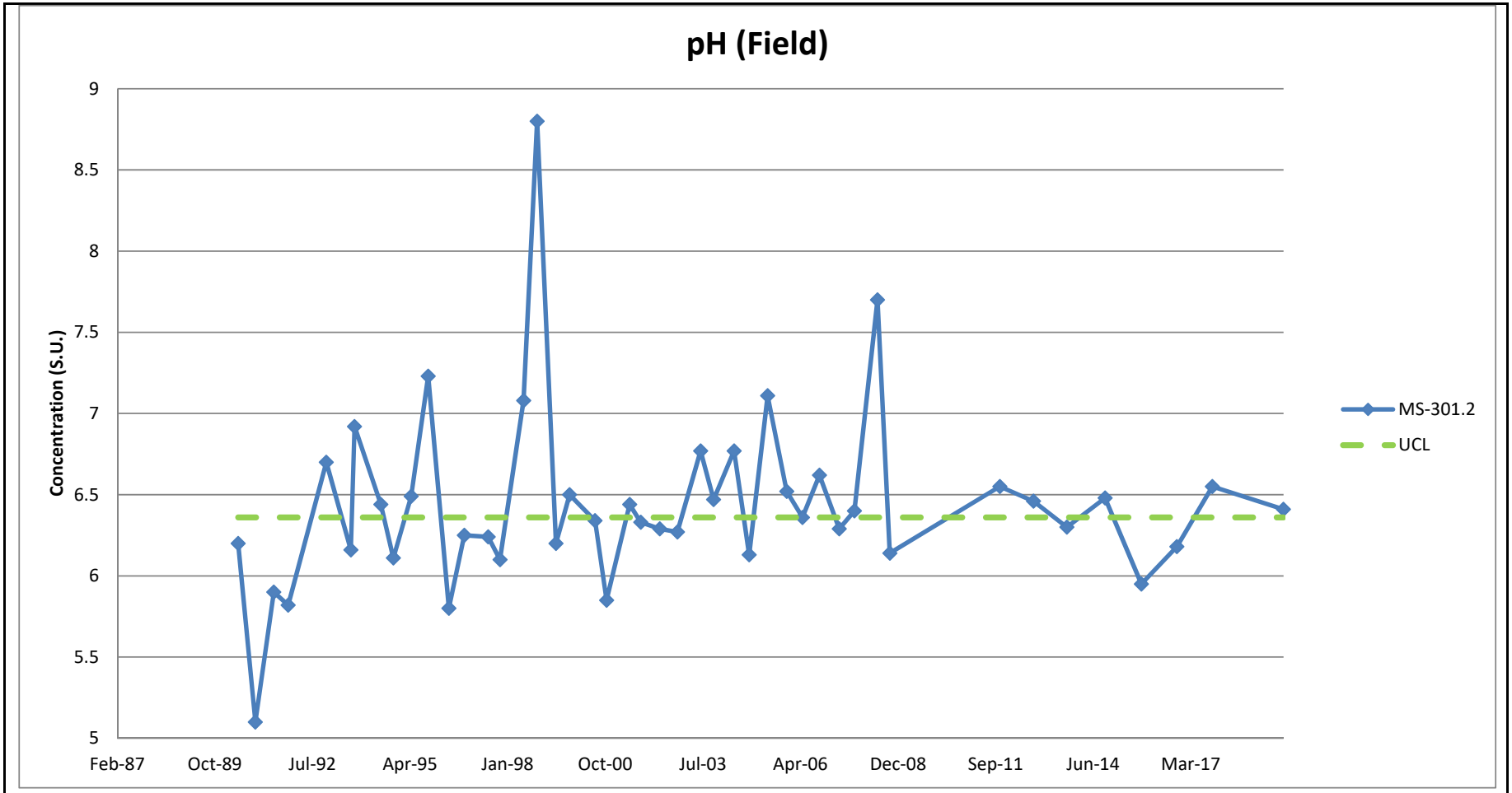


Appendix D

MS-301.2 - Iron Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS301.2' AND ChemName = 'EC (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

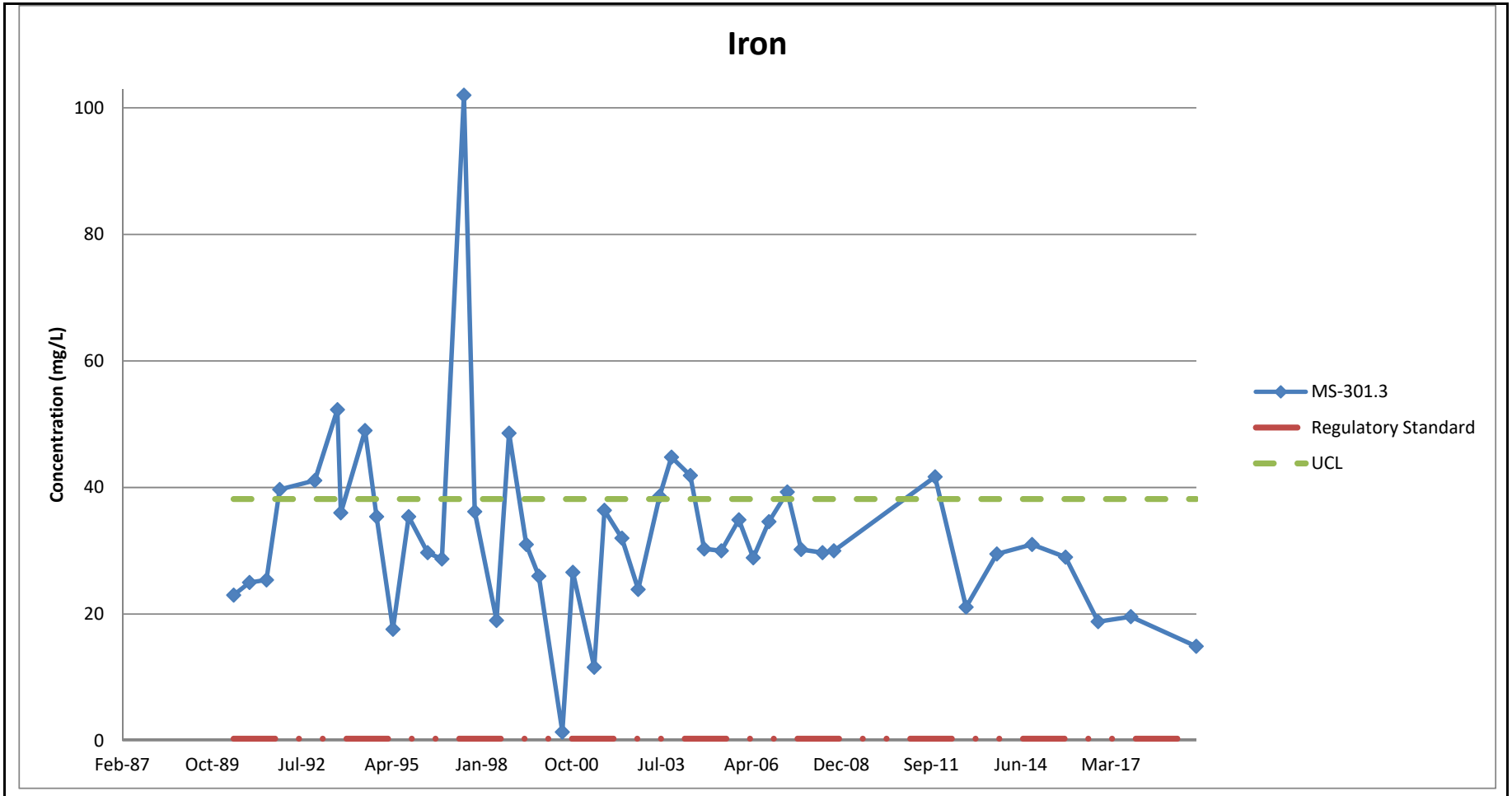


Appendix D

MS-301.2 - pH Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS301.2' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

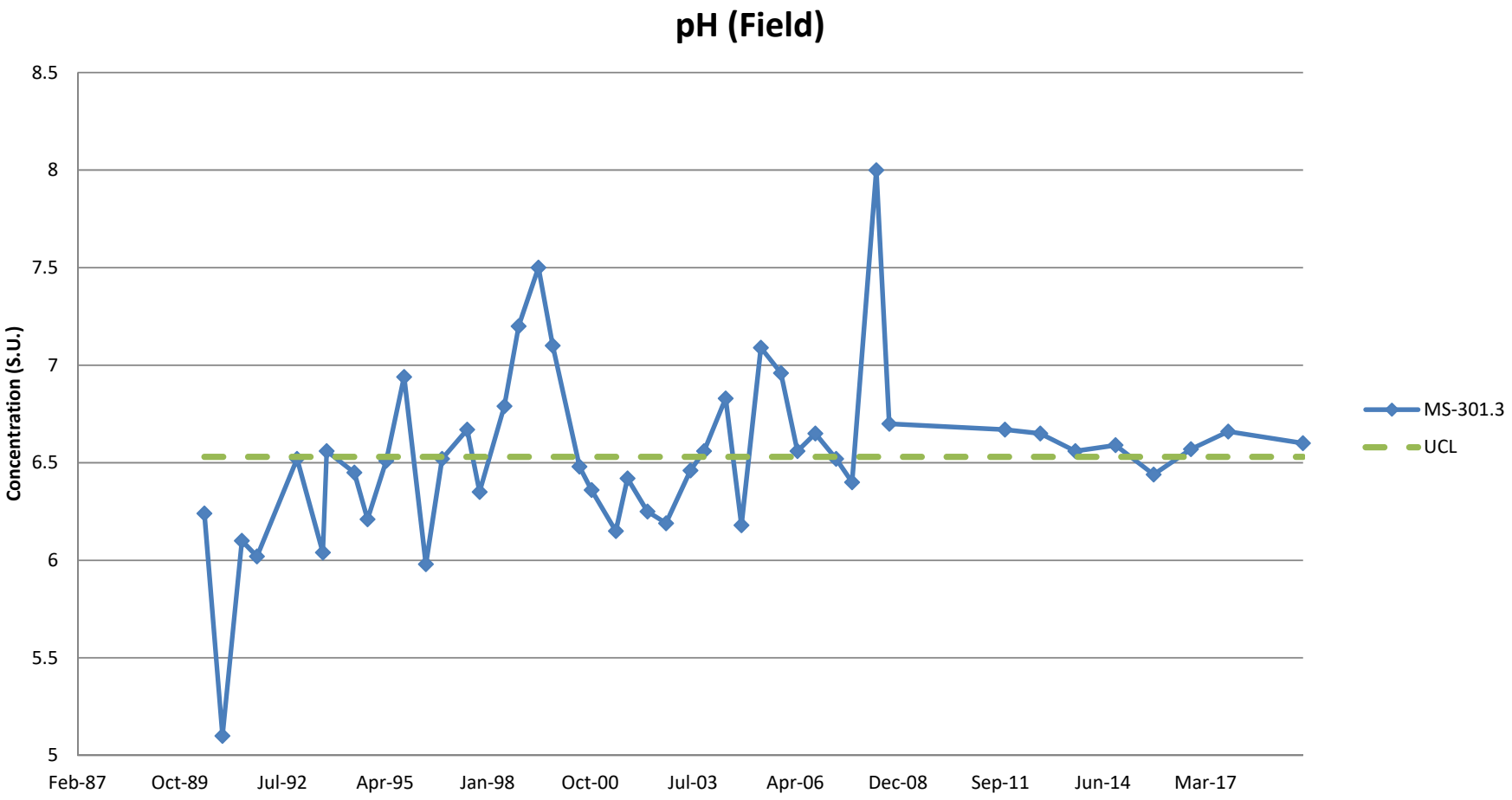


Appendix D

MS-301.3 - Iron Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS301.3' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

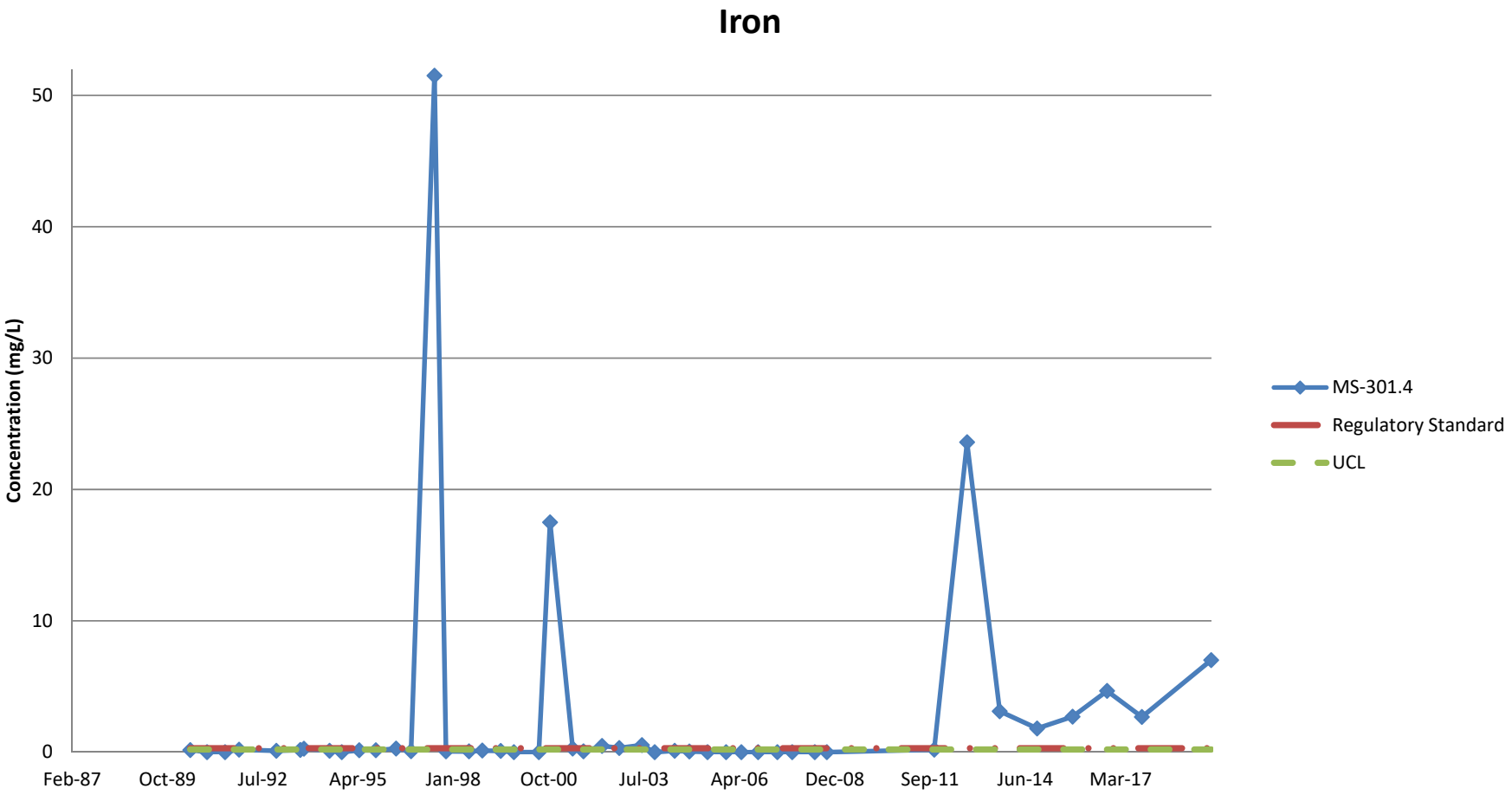


Appendix D

MS-301.3 - pH Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS301.3' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	



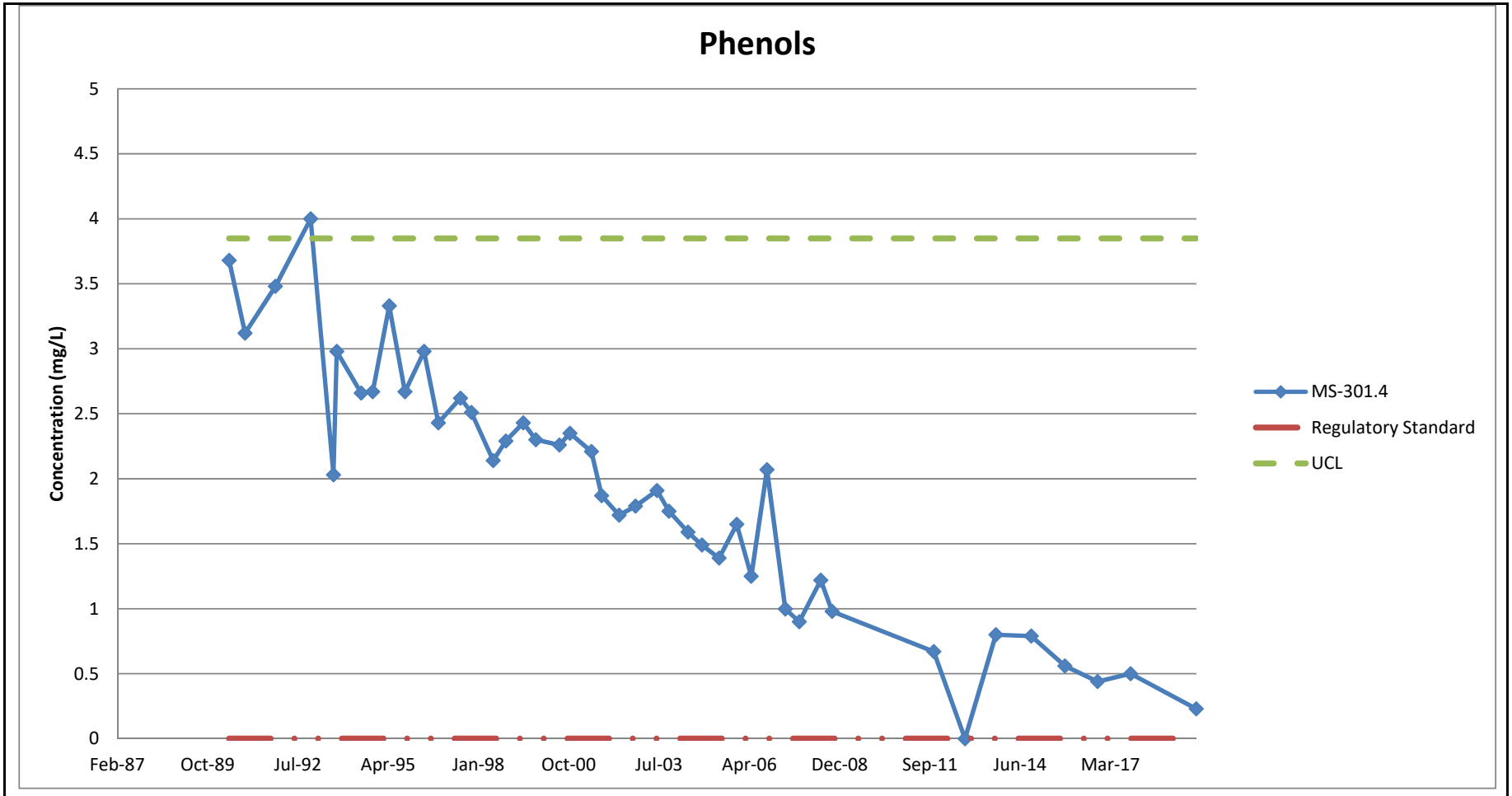
Appendix D

MS-301.4 - Iron Time Series Plot

Former Crucible Specialty Metals LF, Where([LChem2_Environmental_Standards].[LocCode] = 'MS301.4' AND ChemName = 'Iron')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

GHD



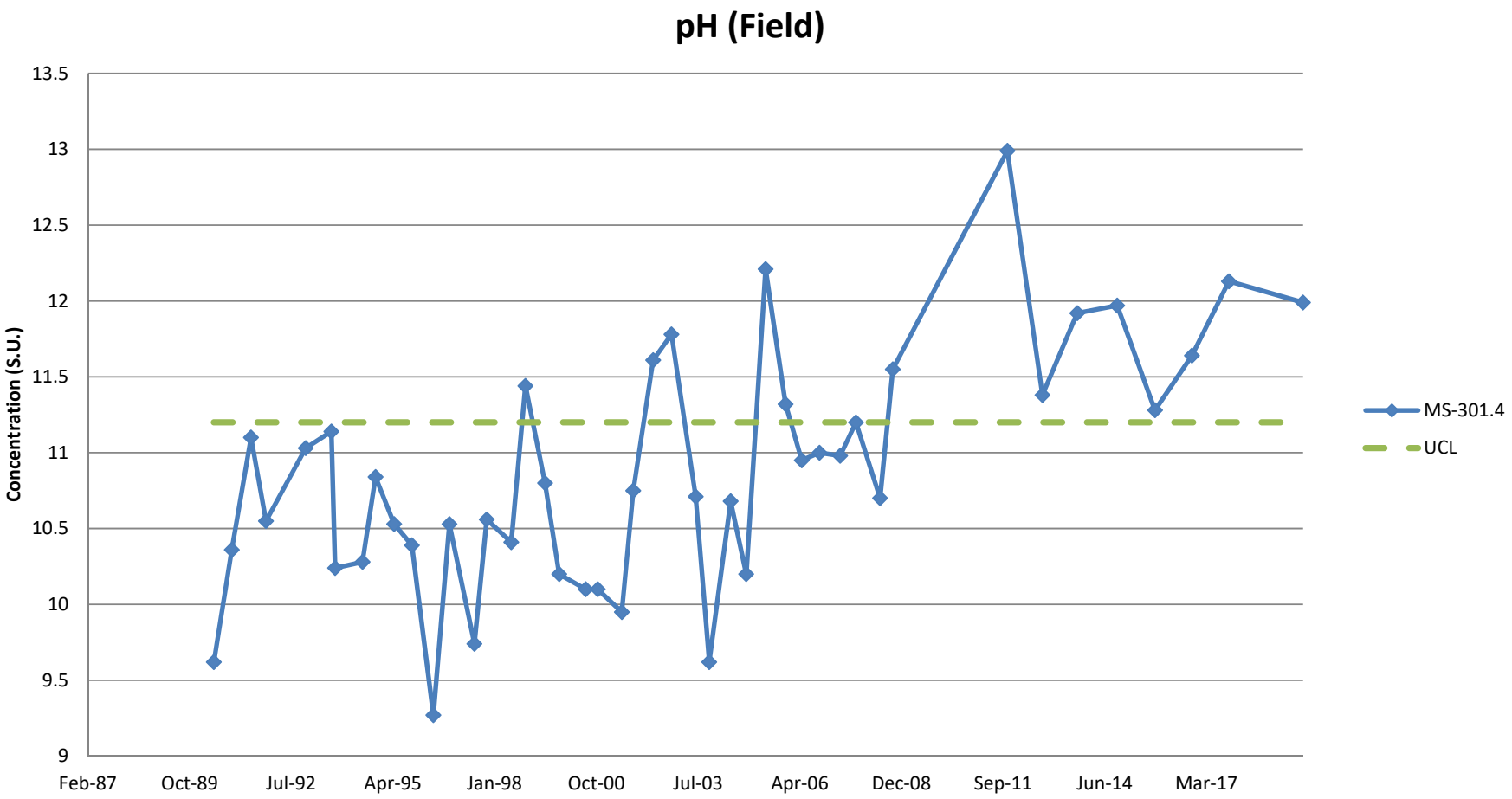
Appendix D

MS-301.4 - Phenols Time Series Plot

Former Crucible Specialty Metals LF, Where([LChem2_Environmental_Standards].[LocCode] = 'MS301.4' AND ChemName = 'Iron')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

GHD

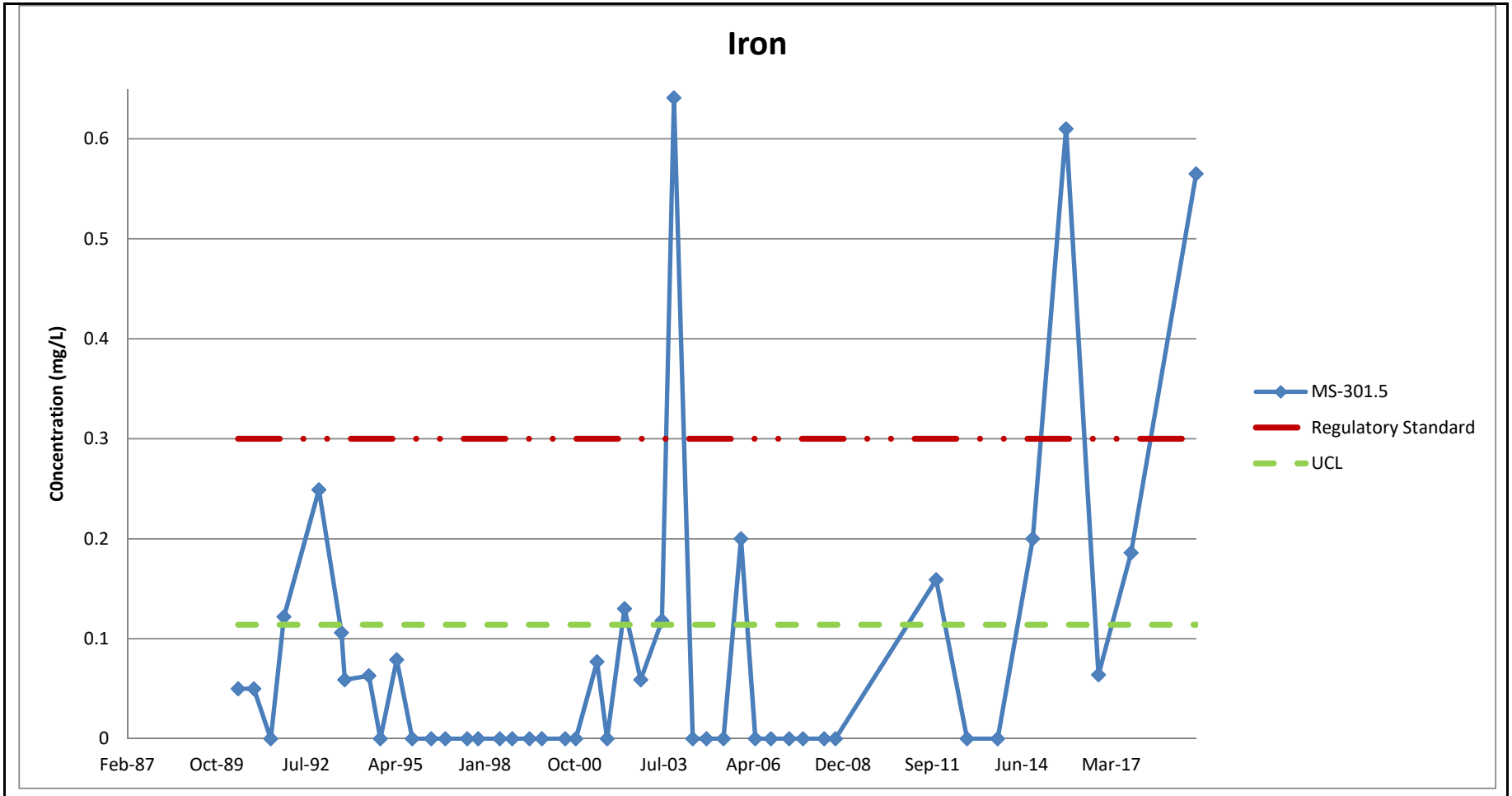


Appendix D

MS-301.4 - pH Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS301.4' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

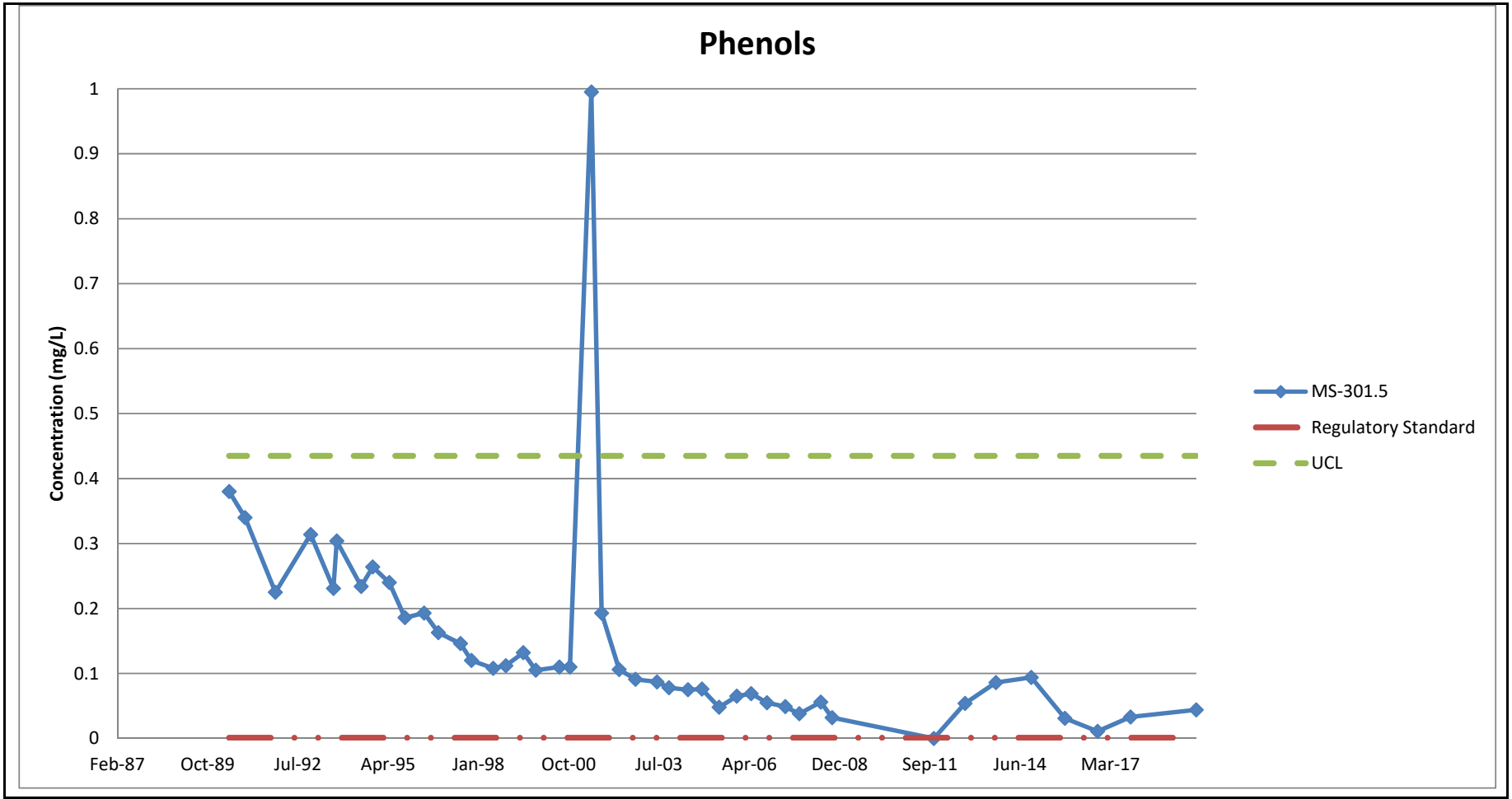


Appendix D

MS-301.5 - Iron Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS301.5' AND ChemName = 'Iron')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

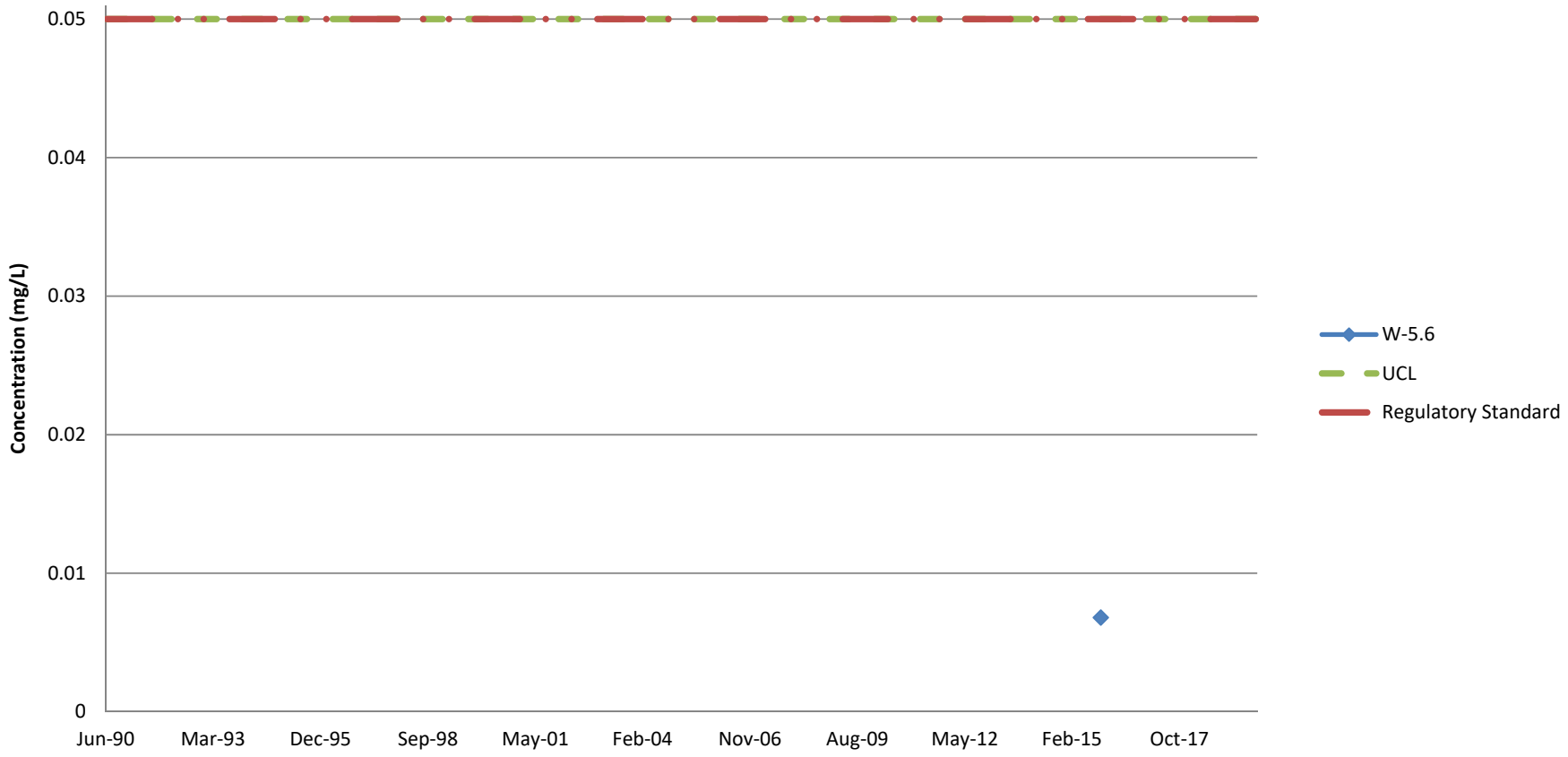


Appendix D

MS-301.5 - Phenols Time Series Plot

Former Crucible Specialty Metals LF, Where(Field_ID = 'MS301.5' AND ChemName = 'Iron')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

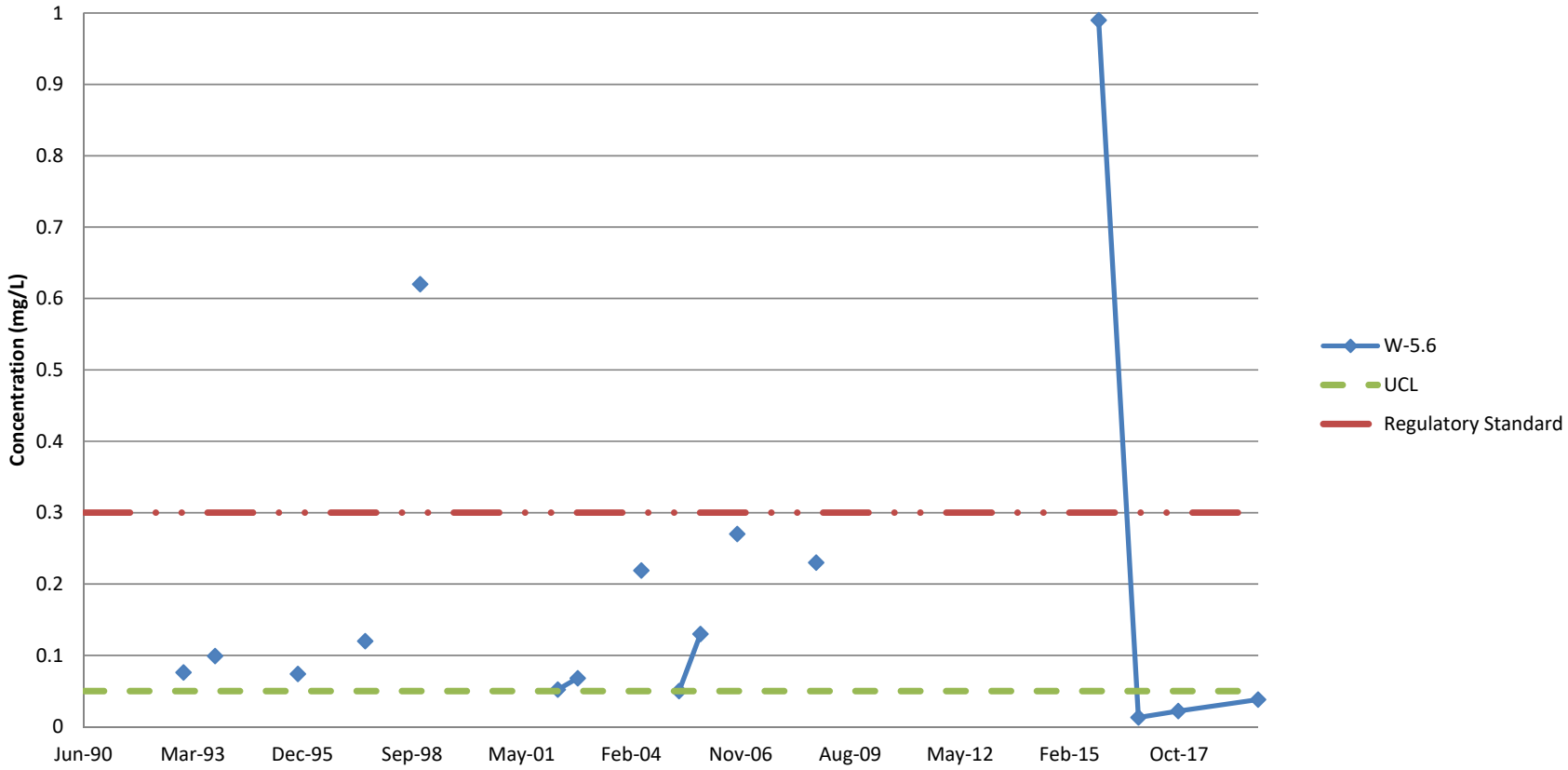


Appendix D

W-5.6 - Time Series Plots

Former Crucible Specialty Metals LF, Where(Field_ID = 'W5.6' AND ChemName = 'Chromium (III+VI)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

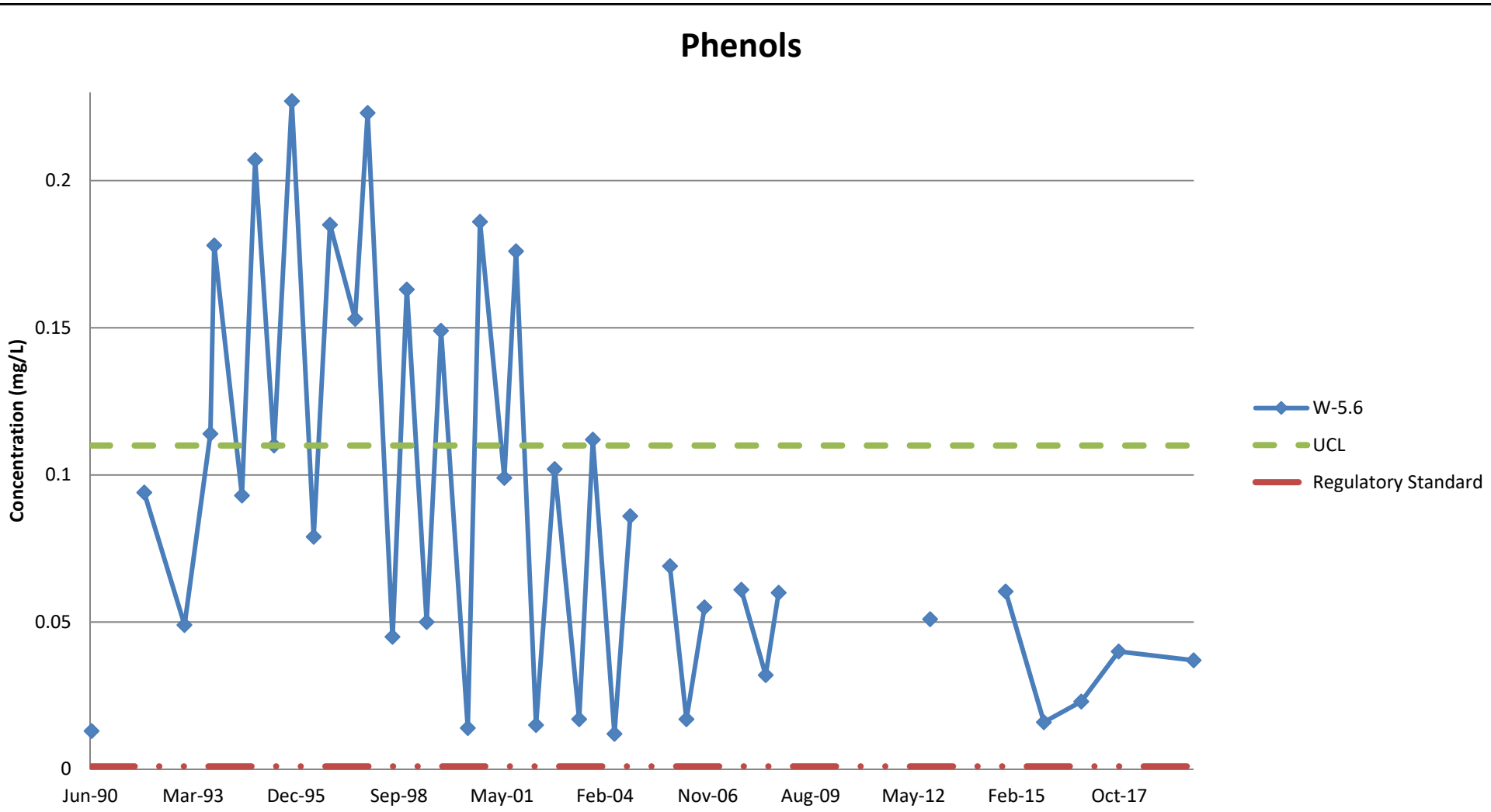


Appendix D

W-5.6 - Time Series Plots

Former Crucible Specialty Metals LF, Where([LChem2_Environmental_Standards].[LocCode] = 'W5.6' AND ChemName = 'Iron')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

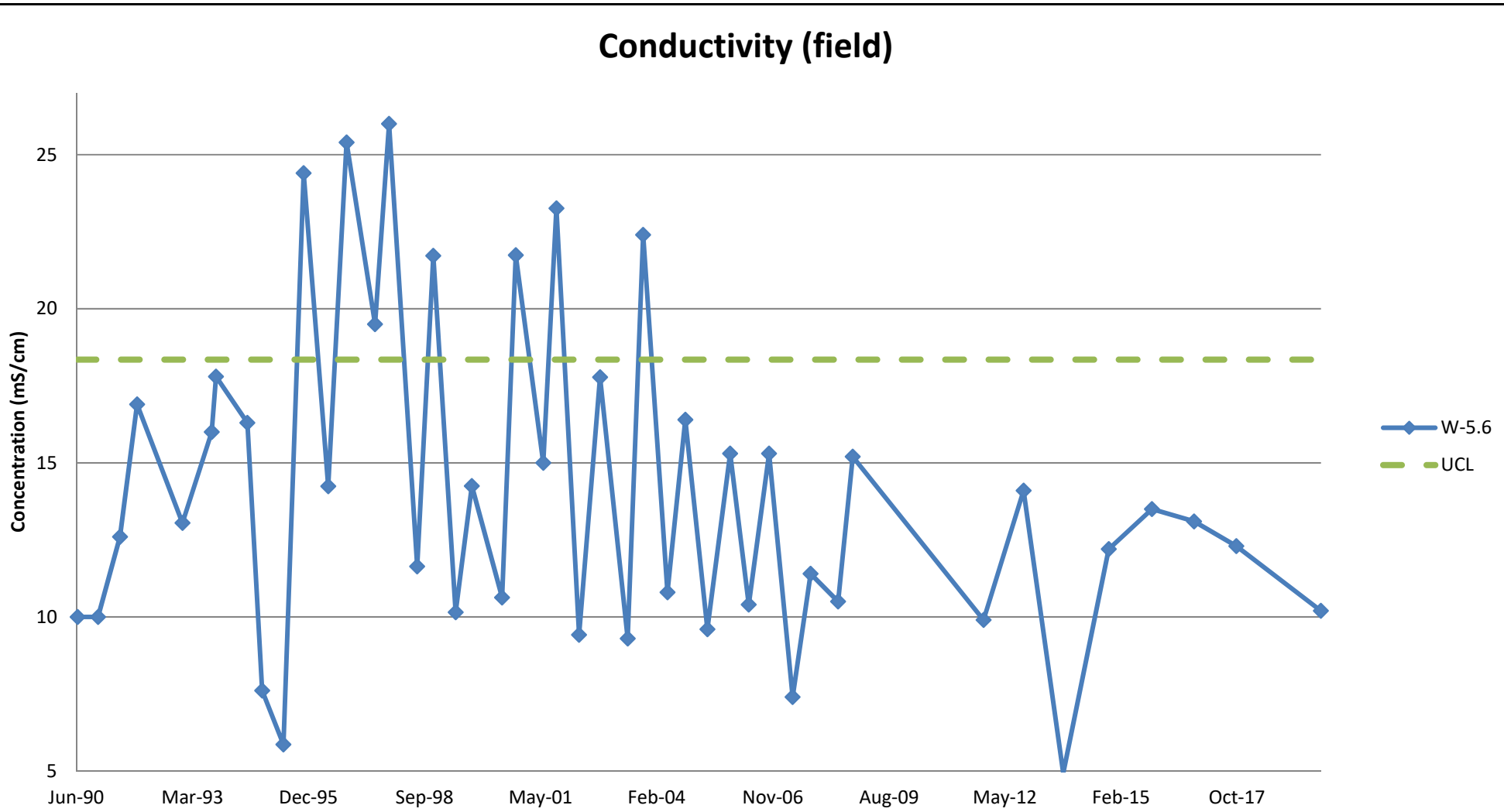


Appendix D

W-5.6 - Time Series Plots

Former Crucible Specialty Metals LF, Where(Field_ID = 'W5.6' AND ChemName = 'Phenols')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	



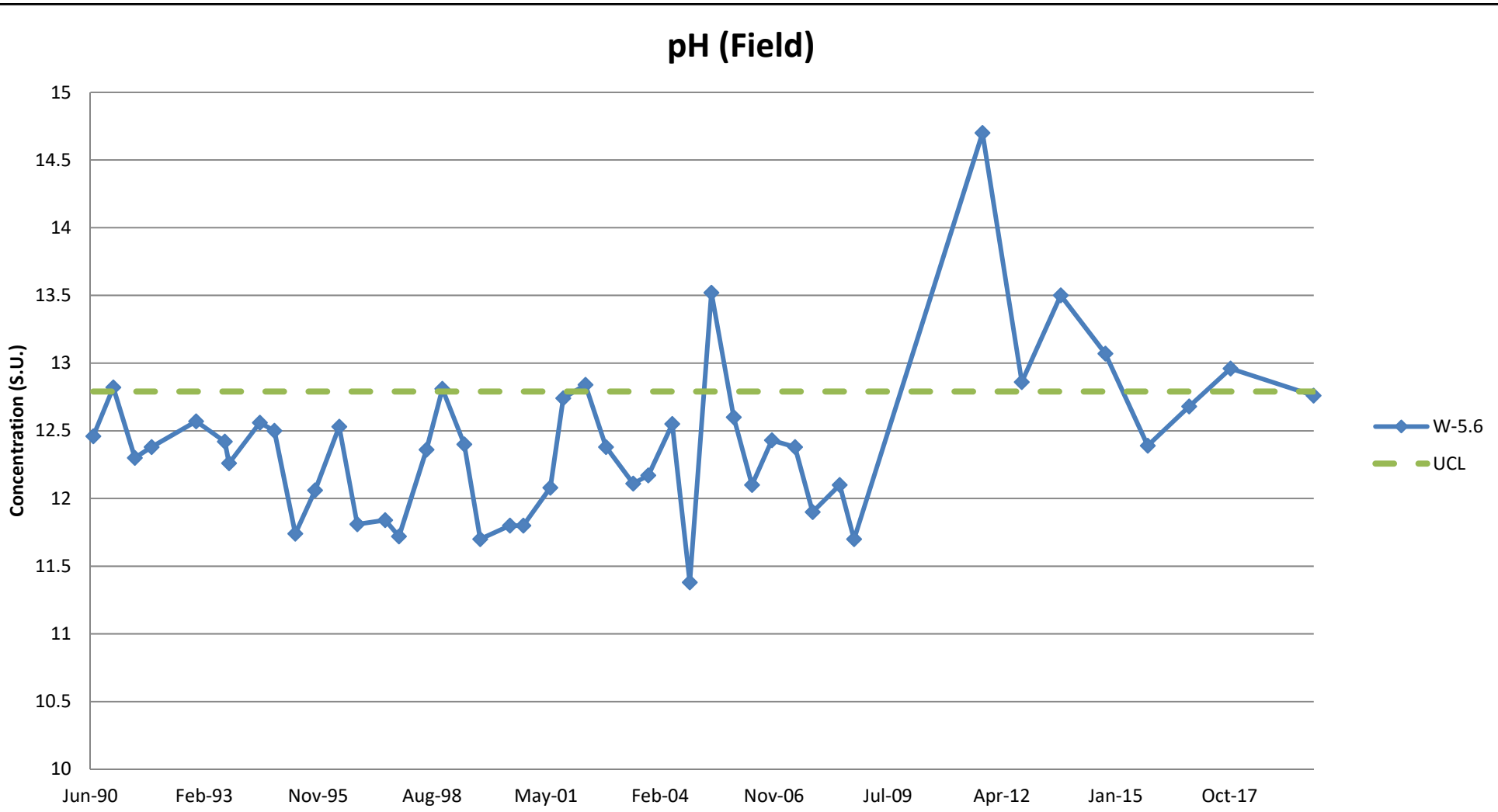
Appendix D

W-5.6 - Time Series Plots

Former Crucible Specialty Metals LF, Where(Field_ID = 'W5.6' AND ChemName = 'EC (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

GHD

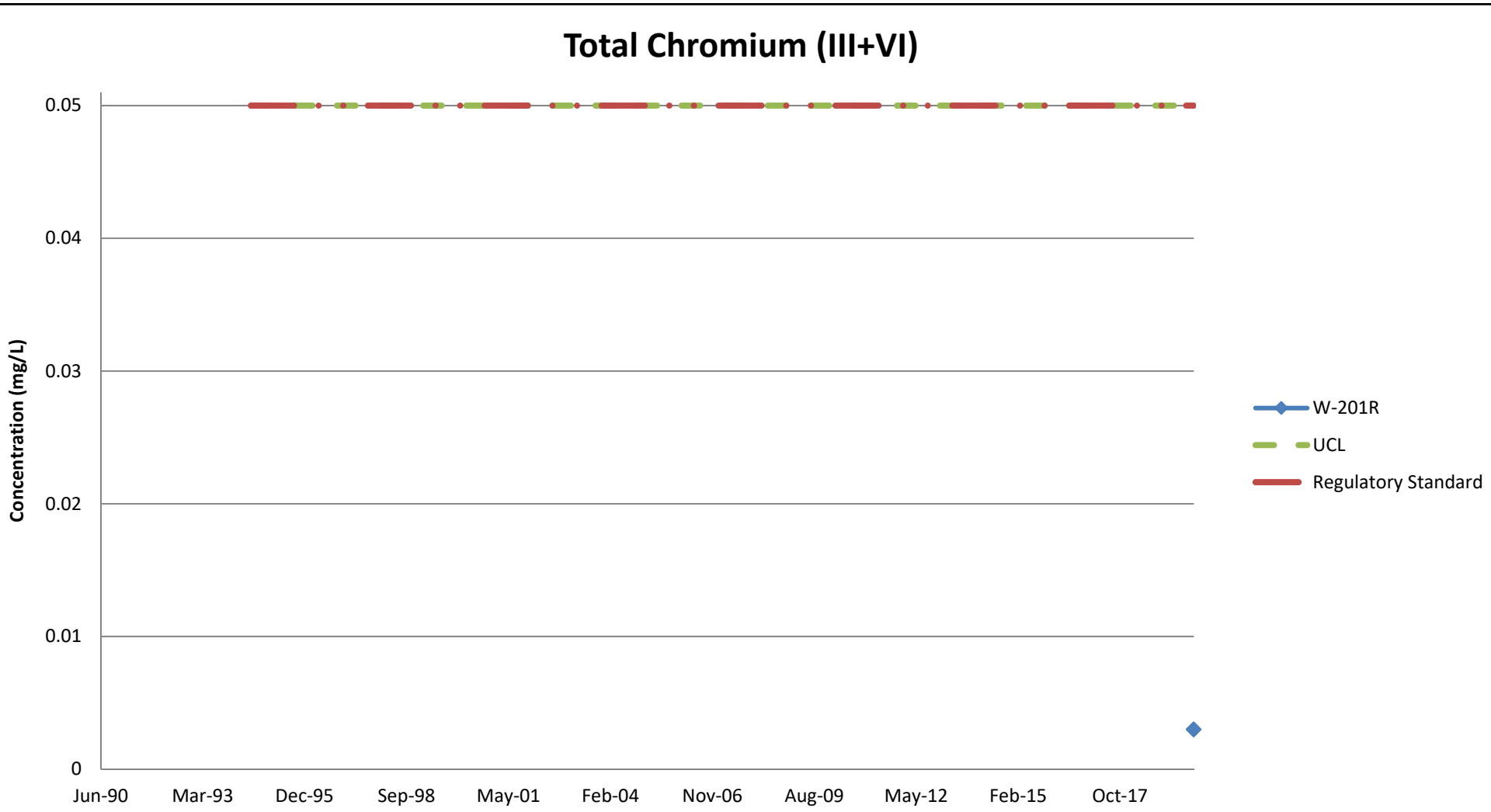


Appendix D

W-5.6 - Time Series Plots

Former Crucible Specialty Metals LF, Where(Field_ID = 'W5.6' AND ChemName = 'pH (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

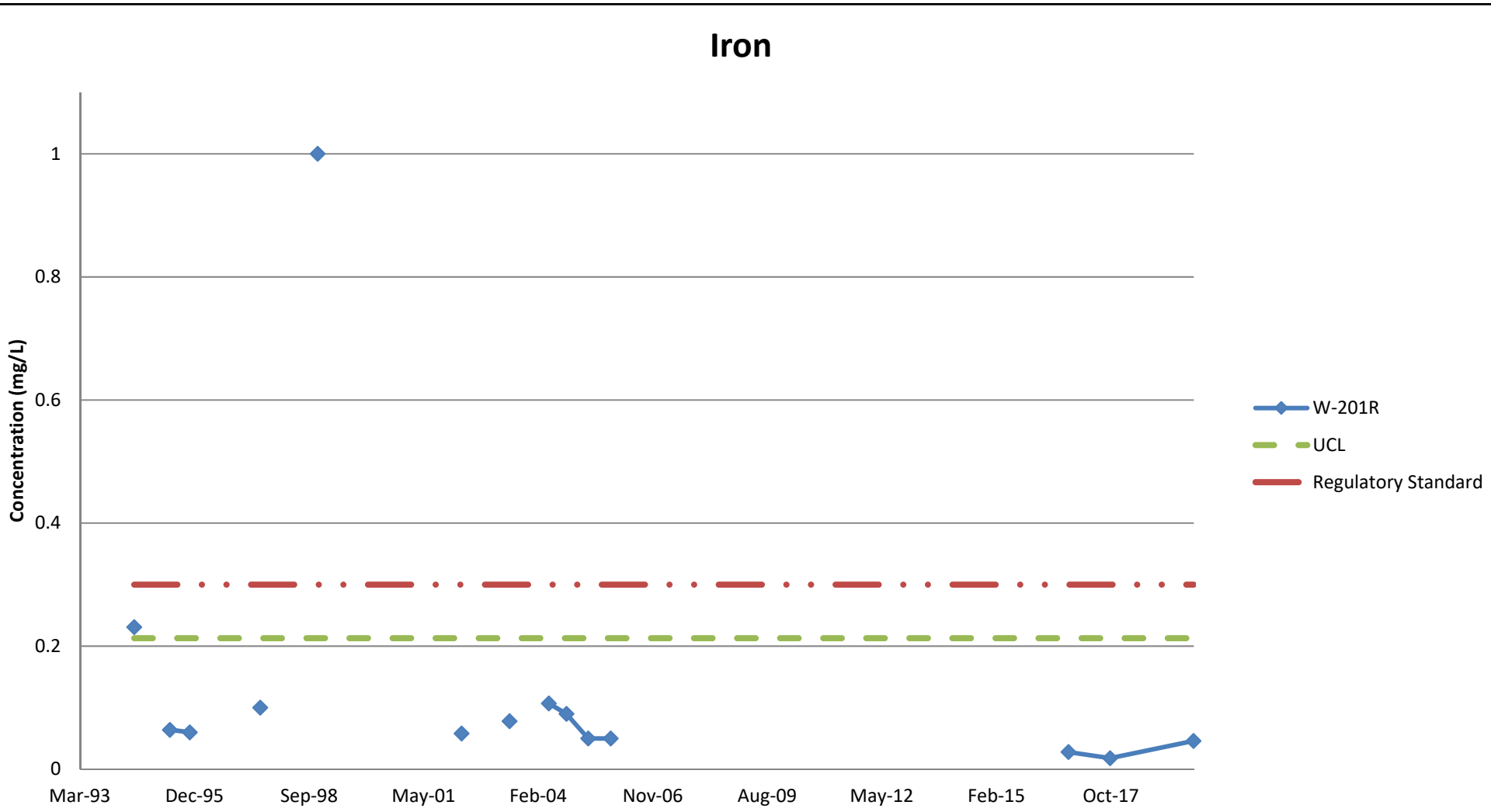


Appendix D

W-201R - Time Series Plots

Former Crucible Specialty Metals LF, Where(Field_ID = 'W201R' AND ChemName = 'Chromium (III+VI)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

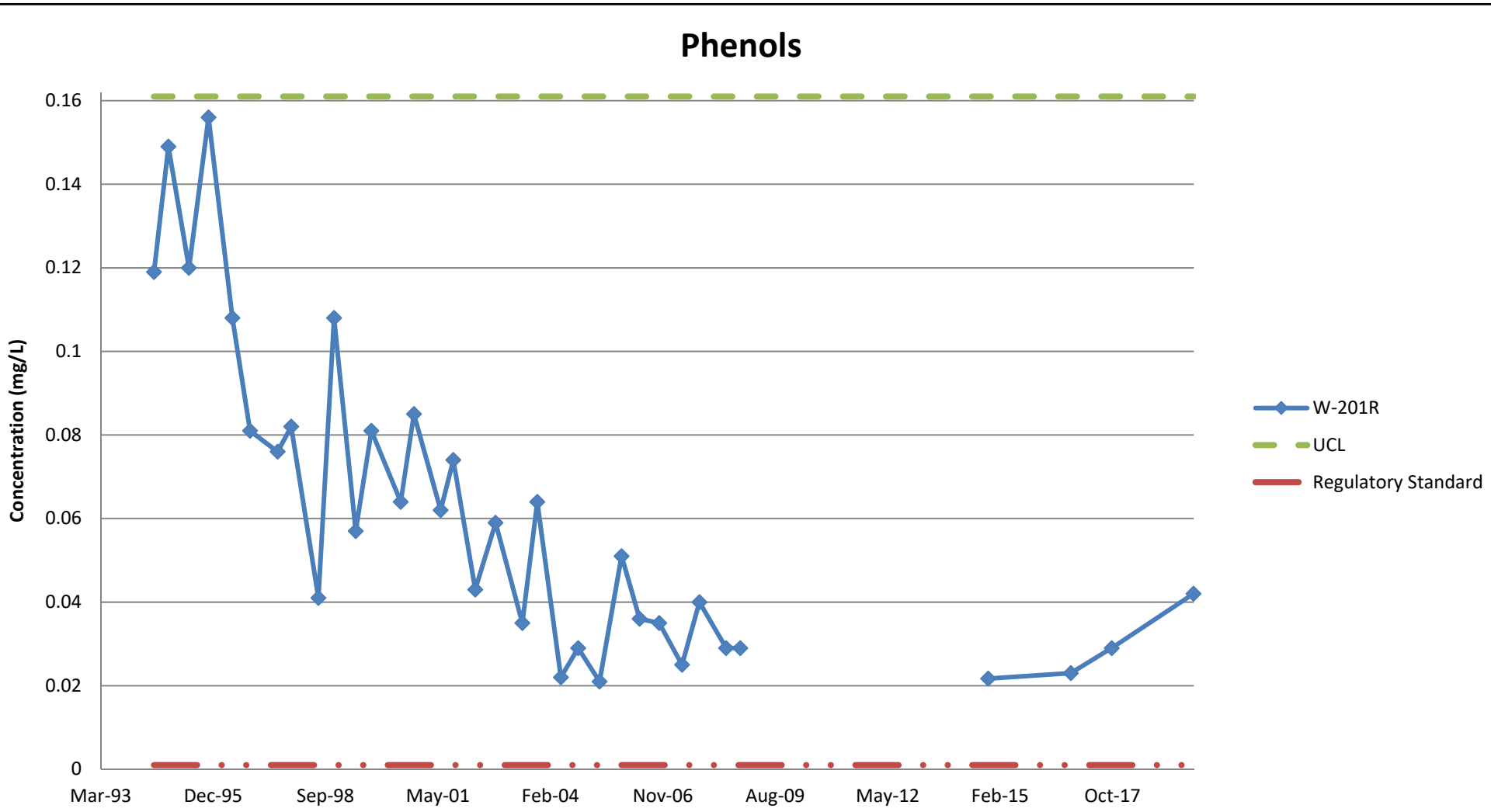


Appendix D

W-201R - Time Series Plots

Former Crucible Specialty Metals LF, Where(Field_ID = 'W201R' AND ChemName = 'Iron')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

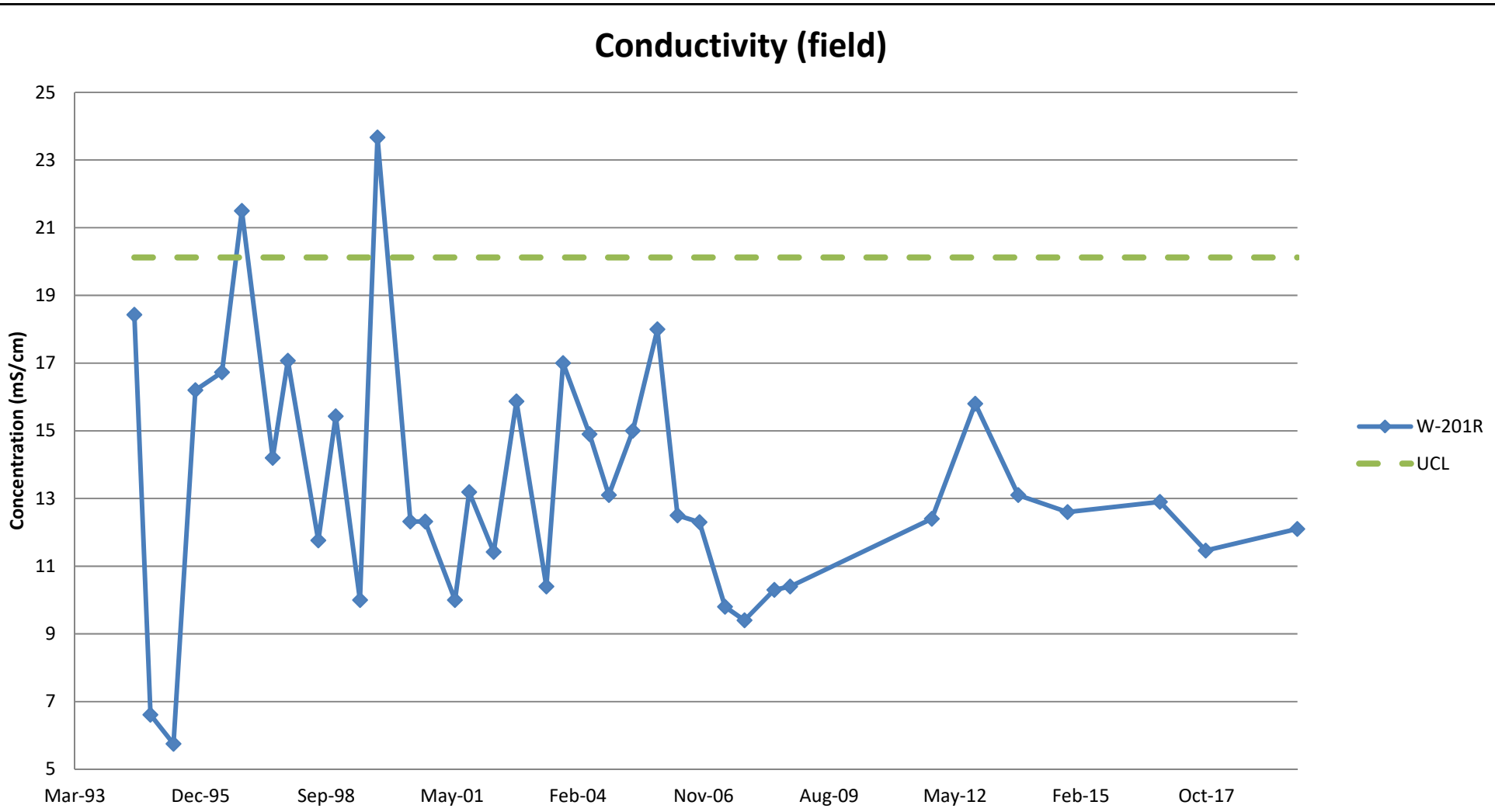


Appendix D

W-201R - Time Series Plots

Former Crucible Specialty Metals LF, Where(Field_ID = 'W201R' AND ChemName = 'Phenols')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

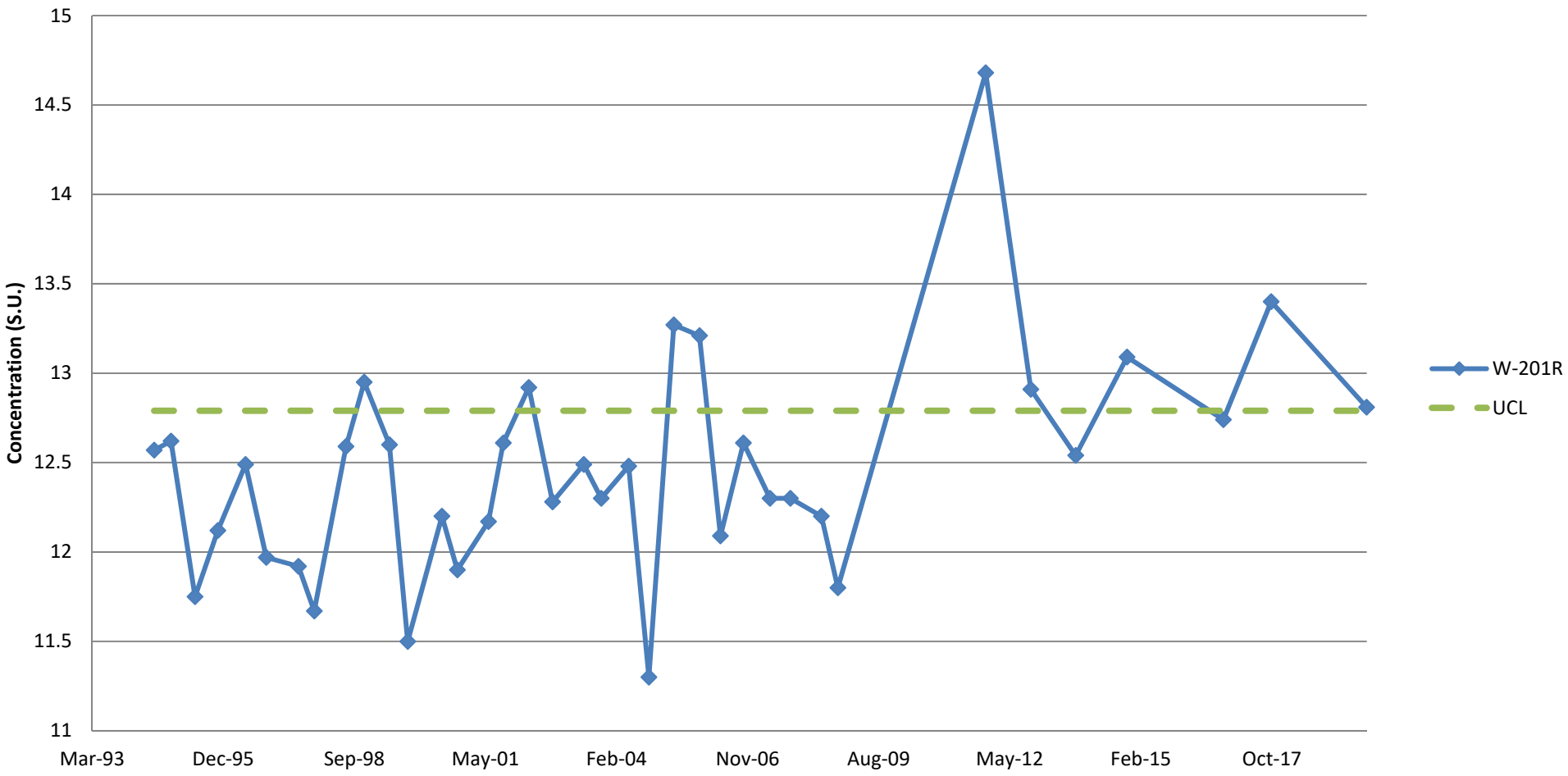


Appendix D

W-201R - Time Series Plots

Former Crucible Specialty Metals LF, Where(Field_ID = 'W201R' AND ChemName = 'EC (field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	



Appendix D

W-201R - Time Series Plots

Former Crucible Specialty Metals LF, Where(Field_ID = 'W201R' AND ChemName = 'pH (Field)')

Date: Oct 19	Drawn:
Scale: nts	Chk'd:
Original:	Rev:
File Reference:	

Appendix E
Laboratory Analytical Report

ANALYTICAL REPORT

Lab Number:	L1950049
Client:	GHD, Inc. One Remington Park Drive Cazenovia, NY 13035
ATTN:	Ian McNamara
Phone:	(315) 679-5800
Project Name:	GEDDES LANDFILL
Project Number:	8618809
Report Date:	10/30/19

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1950049-01	M5-301.1	WATER	GEDDES. NY	10/23/19 10:15	10/23/19
L1950049-02	M5-301.2	WATER	GEDDES. NY	10/23/19 10:50	10/23/19
L1950049-03	M5-301.3	WATER	GEDDES. NY	10/23/19 11:40	10/23/19
L1950049-04	M5-301.4	WATER	GEDDES. NY	10/23/19 12:00	10/23/19
L1950049-05	M5-301.5	WATER	GEDDES. NY	10/23/19 12:35	10/23/19
L1950049-06	W-201R	WATER	GEDDES. NY	10/23/19 13:20	10/23/19
L1950049-07	M5-106.3	WATER	GEDDES. NY	10/23/19 14:25	10/23/19
L1950049-08	M5-106.1	WATER	GEDDES. NY	10/23/19 14:25	10/23/19
L1950049-09	M5-106.2	WATER	GEDDES. NY	10/23/19 15:55	10/23/19
L1950049-10	DUP	WATER	GEDDES. NY	10/23/19 11:40	10/23/19
L1950049-11	TRIP BLANK	WATER	GEDDES. NY	10/23/19 00:00	10/23/19
L1950049-12	M5-104.3	WATER	GEDDES. NY	10/23/19 17:00	10/23/19
L1950049-13	M5-104.5	WATER	GEDDES. NY	10/23/19 17:25	10/23/19
L1950049-14	M5-104.4	WATER	GEDDES. NY	10/23/19 17:25	10/23/19
L1950049-15	RINSE BLANK-1	WATER	GEDDES. NY	10/23/19 10:45	10/23/19
L1950049-16	W-5.6	WATER	GEDDES. NY	10/23/19 16:15	10/23/19

Project Name:	GEDDES LANDFILL	**Lab Number:**	L1950049
Project Number:	8618809	**Report Date:**	10/30/19

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 NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. 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. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. 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. 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 Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data 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.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	GEDDES LANDFILL	**Lab Number:**	L1950049
Project Number:	8618809	**Report Date:**	10/30/19

Case Narrative (continued)

Report Submission

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

Sample Receipt

L1950049-06 and -12: The sample was received above the appropriate pH for the Total Metals analysis. The laboratory added additional HNO3 to a pH <2.

L1950049-15: The collection date and time on the chain of custody was 23-OCT-19 10:50; however, the collection date and time on the container label was 23-OCT-19 10:45. At the client's request, the collection date and time is reported as 23-OCT-19 10:45.

Phenolics, Total

The WG1300502-4 MS recovery (136%), performed on L1950049-12, is outside the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

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: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 10/30/19

METALS

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-01
Client ID: M5-301.1
Sample Location: GEDDES. NY
Date Collected: 10/23/19 10:15
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	ND		mg/l	0.010	0.002	1	10/25/19 20:41	10/29/19 11:08	EPA 3005A	19,200.7	PE
Iron, Total	84.4		mg/l	0.050	0.009	1	10/25/19 20:41	10/29/19 11:08	EPA 3005A	19,200.7	PE

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-02
Client ID: M5-301.2
Sample Location: GEDDES. NY
Date Collected: 10/23/19 10:50
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	0.021		mg/l	0.010	0.002	1	10/25/19 20:41	10/29/19 11:12	EPA 3005A	19,200.7	PE
Iron, Total	96.3		mg/l	0.050	0.009	1	10/25/19 20:41	10/29/19 11:12	EPA 3005A	19,200.7	PE

Project Name: GEDDES LANDFILL
Project Number: 8618809
Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-03
Client ID: M5-301.3
Sample Location: GEDDES. NY
Sample Depth:
Matrix: Water

Date Collected: 10/23/19 11:40
Date Received: 10/23/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	ND		mg/l	0.010	0.002	1	10/25/19 20:41	10/29/19 11:17	EPA 3005A	19,200.7	PE
Iron, Total	14.9		mg/l	0.050	0.009	1	10/25/19 20:41	10/29/19 11:17	EPA 3005A	19,200.7	PE

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-04
Client ID: M5-301.4
Sample Location: GEDDES. NY
Date Collected: 10/23/19 12:00
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	0.013		mg/l	0.010	0.002	1	10/25/19 20:41	10/29/19 12:15	EPA 3005A	19,200.7	PE
Iron, Total	7.01		mg/l	0.050	0.009	1	10/25/19 20:41	10/29/19 12:15	EPA 3005A	19,200.7	PE

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-05
Client ID: M5-301.5
Sample Location: GEDDES. NY
Date Collected: 10/23/19 12:35
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	0.004	J	mg/l	0.010	0.002	1	10/25/19 20:41	10/29/19 12:20	EPA 3005A	19,200.7	PE
Iron, Total	0.565		mg/l	0.050	0.009	1	10/25/19 20:41	10/29/19 12:20	EPA 3005A	19,200.7	PE

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-06
Client ID: W-201R
Sample Location: GEDDES. NY
Date Collected: 10/23/19 13:20
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	0.003	J	mg/l	0.010	0.002	1	10/25/19 20:41	10/29/19 12:25	EPA 3005A	19,200.7	PE
Iron, Total	0.046	J	mg/l	0.050	0.009	1	10/25/19 20:41	10/29/19 12:25	EPA 3005A	19,200.7	PE

Project Name: GEDDES LANDFILL
Project Number: 8618809
Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-07
Client ID: M5-106.3
Sample Location: GEDDES. NY
Sample Depth:
Matrix: Water

Date Collected: 10/23/19 14:25
Date Received: 10/23/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	ND		mg/l	0.010	0.002	1	10/25/19 20:41	10/29/19 12:33	EPA 3005A	19,200.7	PE
Iron, Total	0.052		mg/l	0.050	0.009	1	10/25/19 20:41	10/29/19 12:33	EPA 3005A	19,200.7	PE

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-08
Client ID: M5-106.1
Sample Location: GEDDES. NY
Date Collected: 10/23/19 14:25
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	0.002	J	mg/l	0.010	0.002	1	10/29/19 17:13	10/29/19 22:21	EPA 3005A	19,200.7	MC
Iron, Total	0.615		mg/l	0.050	0.009	1	10/29/19 17:13	10/29/19 22:21	EPA 3005A	19,200.7	MC

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-09
Client ID: M5-106.2
Sample Location: GEDDES. NY
Date Collected: 10/23/19 15:55
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	0.004	J	mg/l	0.010	0.002	1	10/29/19 17:13	10/29/19 22:26	EPA 3005A	19,200.7	MC
Iron, Total	0.098		mg/l	0.050	0.009	1	10/29/19 17:13	10/29/19 22:26	EPA 3005A	19,200.7	MC

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-10
Client ID: DUP
Sample Location: GEDDES. NY
Date Collected: 10/23/19 11:40
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	ND		mg/l	0.010	0.002	1	10/29/19 17:13	10/29/19 22:30	EPA 3005A	19,200.7	MC
Iron, Total	15.7		mg/l	0.050	0.009	1	10/29/19 17:13	10/29/19 22:30	EPA 3005A	19,200.7	MC

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-11
Client ID: TRIP BLANK
Sample Location: GEDDES. NY
Date Collected: 10/23/19 00:00
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	ND		mg/l	0.010	0.002	1	10/29/19 17:13	10/29/19 22:35	EPA 3005A	19,200.7	MC
Iron, Total	0.016	J	mg/l	0.050	0.009	1	10/29/19 17:13	10/29/19 22:35	EPA 3005A	19,200.7	MC

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-12
Client ID: M5-104.3
Sample Location: GEDDES. NY
Date Collected: 10/23/19 17:00
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	0.002	J	mg/l	0.010	0.002	1	10/25/19 20:41	10/29/19 10:45	EPA 3005A	19,200.7	PE
Iron, Total	0.077		mg/l	0.050	0.009	1	10/25/19 20:41	10/29/19 10:45	EPA 3005A	19,200.7	PE

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-13
Client ID: M5-104.5
Sample Location: GEDDES. NY
Date Collected: 10/23/19 17:25
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	0.006	J	mg/l	0.010	0.002	1	10/29/19 17:13	10/29/19 22:40	EPA 3005A	19,200.7	MC
Iron, Total	0.027	J	mg/l	0.050	0.009	1	10/29/19 17:13	10/29/19 22:40	EPA 3005A	19,200.7	MC

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-14
Client ID: M5-104.4
Sample Location: GEDDES. NY
Date Collected: 10/23/19 17:25
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	ND		mg/l	0.010	0.002	1	10/29/19 17:13	10/29/19 22:44	EPA 3005A	19,200.7	MC
Iron, Total	0.011	J	mg/l	0.050	0.009	1	10/29/19 17:13	10/29/19 22:44	EPA 3005A	19,200.7	MC

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-15
Client ID: RINSE BLANK-1
Sample Location: GEDDES. NY
Date Collected: 10/23/19 10:45
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	ND		mg/l	0.010	0.002	1	10/29/19 17:13	10/29/19 22:49	EPA 3005A	19,200.7	MC
Iron, Total	0.017	J	mg/l	0.050	0.009	1	10/29/19 17:13	10/29/19 22:49	EPA 3005A	19,200.7	MC

Project Name: GEDDES LANDFILL
Lab Number: L1950049
Project Number: 8618809
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-16
Client ID: W-5.6
Sample Location: GEDDES. NY
Date Collected: 10/23/19 16:15
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Chromium, Total	ND		mg/l	0.010	0.002	1	10/29/19 17:13	10/29/19 22:53	EPA 3005A	19,200.7	MC
Iron, Total	0.038	J	mg/l	0.050	0.009	1	10/29/19 17:13	10/29/19 22:53	EPA 3005A	19,200.7	MC

Project Name: GEDDES LANDFILL
Project Number: 8618809
Lab Number: L1950049
Report Date: 10/30/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-07,12 Batch: WG1300867-1										
Chromium, Total	ND		mg/l	0.010	0.002	1	10/25/19 20:41	10/29/19 10:36	19,200.7	PE
Iron, Total	ND		mg/l	0.050	0.009	1	10/25/19 20:41	10/29/19 10:36	19,200.7	PE

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 08-11,13-16 Batch: WG1302064-1										
Chromium, Total	ND		mg/l	0.010	0.002	1	10/29/19 17:13	10/29/19 21:24	19,200.7	MC
Iron, Total	ND		mg/l	0.050	0.009	1	10/29/19 17:13	10/29/19 21:24	19,200.7	MC

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07,12 Batch: WG1300867-2								
Chromium, Total	96		-		85-115	-		
Iron, Total	107		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 08-11,13-16 Batch: WG1302064-2								
Chromium, Total	98		-		85-115	-		
Iron, Total	106		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07,12 QC Batch ID: WG1300867-3 WG1300867-4 QC Sample: L1950049-12 Client ID: M5-104.3												
Chromium, Total	0.002J	0.2	0.187	94		0.187	94		75-125	0		20
Iron, Total	0.077	1	1.11	103		1.10	102		75-125	1		20
Total Metals - Mansfield Lab Associated sample(s): 08-11,13-16 QC Batch ID: WG1302064-3 QC Sample: L1950600-01 Client ID: MS Sample												
Chromium, Total	ND	0.2	0.198	99		-	-		75-125	-		20
Iron, Total	0.145	1	1.21	106		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 08-11,13-16 QC Batch ID: WG1302064-7 QC Sample: L1950600-02 Client ID: MS Sample												
Chromium, Total	ND	0.2	0.192	96		-	-		75-125	-		20
Iron, Total	0.060	1	1.10	104		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: GEDDES LANDFILL

Project Number: 8618809

Lab Number: L1950049

Report Date: 10/30/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08-11,13-16 QC Batch ID: WG1302064-4 QC Sample: L1950600-01 Client ID: DUP Sample						
Iron, Total	0.145	0.143	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 08-11,13-16 QC Batch ID: WG1302064-8 QC Sample: L1950600-02 Client ID: DUP Sample						
Iron, Total	0.060	0.059	mg/l	1		20

INORGANICS
&
MISCELLANEOUS

Project Name: GEDDES LANDFILL
Project Number: 8618809
Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-01
Client ID: M5-301.1
Sample Location: GEDDES. NY
Sample Depth:
Matrix: Water

Date Collected: 10/23/19 10:15
Date Received: 10/23/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	ND		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 08:12	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-02
Client ID: M5-301.2
Sample Location: GEDDES. NY

Date Collected: 10/23/19 10:50
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	ND		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 08:13	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-03
Client ID: M5-301.3
Sample Location: GEDDES. NY

Date Collected: 10/23/19 11:40
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	ND		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 08:14	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-04
Client ID: M5-301.4
Sample Location: GEDDES. NY

Date Collected: 10/23/19 12:00
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.23		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 09:19	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-05
Client ID: M5-301.5
Sample Location: GEDDES. NY

Date Collected: 10/23/19 12:35
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.044		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 09:20	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-06
Client ID: W-201R
Sample Location: GEDDES. NY

Date Collected: 10/23/19 13:20
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.042		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 09:21	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-07
Client ID: M5-106.3
Sample Location: GEDDES. NY

Date Collected: 10/23/19 14:25
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.023	J	mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 09:22	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-08
Client ID: M5-106.1
Sample Location: GEDDES. NY

Date Collected: 10/23/19 14:25
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.019	J	mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 08:21	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-09
Client ID: M5-106.2
Sample Location: GEDDES. NY

Date Collected: 10/23/19 15:55
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.035		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 09:23	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-10
Client ID: DUP
Sample Location: GEDDES. NY

Date Collected: 10/23/19 11:40
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	ND		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 08:27	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-12
Client ID: M5-104.3
Sample Location: GEDDES. NY

Date Collected: 10/23/19 17:00
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.036		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 09:23	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-13
Client ID: M5-104.5
Sample Location: GEDDES. NY

Date Collected: 10/23/19 17:25
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.026	J	mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 09:25	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-14
Client ID: M5-104.4
Sample Location: GEDDES. NY

Date Collected: 10/23/19 17:25
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.035		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 09:26	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-15
Client ID: RINSE BLANK-1
Sample Location: GEDDES. NY

Date Collected: 10/23/19 10:45
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	ND		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 09:27	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

SAMPLE RESULTS

Lab ID: L1950049-16
Client ID: W-5.6
Sample Location: GEDDES. NY

Date Collected: 10/23/19 16:15
Date Received: 10/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Phenolics, Total	0.037		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 09:28	4,420.1	MV

Project Name: GEDDES LANDFILL
Project Number: 8618809
Lab Number: L1950049
Report Date: 10/30/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-08 Batch: WG1300499-1										
Phenolics, Total	ND		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 08:08	4,420.1	MV
General Chemistry - Westborough Lab for sample(s): 09-10,12-16 Batch: WG1300502-1										
Phenolics, Total	ND		mg/l	0.030	0.010	1	10/25/19 00:55	10/25/19 08:24	4,420.1	MV

Lab Control Sample Analysis

Batch Quality Control

Project Name: GEDDES LANDFILL

Project Number: 8618809

Lab Number: L1950049

Report Date: 10/30/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-08 Batch: WG1300499-2								
Phenolics, Total	90		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 09-10,12-16 Batch: WG1300502-2								
Phenolics, Total	88		-		70-130	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-08 QC Batch ID: WG1300499-4 QC Sample: L1950049-08 Client ID: M5-106.1												
Phenolics, Total	0.019J	0.4	0.40	99		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 09-10,12-16 QC Batch ID: WG1300502-4 QC Sample: L1950049-12 Client ID: M5-104.3												
Phenolics, Total	0.036	0.4	0.58	**136**	Q	-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-08 QC Batch ID: WG1300499-3 QC Sample: L1950049-08 Client ID: M5-106.1						
Phenolics, Total	0.019J	0.025J	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 09-10,12-16 QC Batch ID: WG1300502-3 QC Sample: L1950049-12 Client ID: M5-104.3						
Phenolics, Total	0.036	0.035	mg/l	3		20

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1950049-01A	Plastic 250ml HNO3 preserved	A	<2	<2	3.1	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-01B	Amber 950ml H2SO4 preserved	A	<2	<2	3.1	Y	Absent		TPHENOL-420(28)
L1950049-02A	Plastic 250ml HNO3 preserved	A	<2	<2	3.1	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-02B	Amber 950ml H2SO4 preserved	A	<2	<2	3.1	Y	Absent		TPHENOL-420(28)
L1950049-03A	Plastic 250ml HNO3 preserved	A	<2	<2	3.1	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-03B	Amber 950ml H2SO4 preserved	A	<2	<2	3.1	Y	Absent		TPHENOL-420(28)
L1950049-04A	Plastic 250ml HNO3 preserved	A	<2	<2	3.1	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-04B	Amber 950ml H2SO4 preserved	A	<2	<2	3.1	Y	Absent		TPHENOL-420(28)
L1950049-05A	Plastic 250ml HNO3 preserved	A	<2	<2	3.1	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-05B	Amber 950ml H2SO4 preserved	A	<2	<2	3.1	Y	Absent		TPHENOL-420(28)
L1950049-06A	Plastic 250ml HNO3 preserved	A	3	<2	3.1	N	Absent		FE-UI(180),CR-UI(180)
L1950049-06B	Amber 950ml H2SO4 preserved	A	<2	<2	3.1	Y	Absent		TPHENOL-420(28)
L1950049-07A	Plastic 250ml HNO3 preserved	A	<2	<2	3.1	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-07B	Amber 950ml H2SO4 preserved	A	<2	<2	3.1	Y	Absent		TPHENOL-420(28)
L1950049-08A	Plastic 250ml HNO3 preserved	A	<2	<2	3.1	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-08B	Amber 950ml H2SO4 preserved	A	<2	<2	3.1	Y	Absent		TPHENOL-420(28)
L1950049-09A	Plastic 250ml HNO3 preserved	A	<2	<2	3.1	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-09B	Amber 950ml H2SO4 preserved	A	<2	<2	3.1	Y	Absent		TPHENOL-420(28)
L1950049-10A	Plastic 250ml HNO3 preserved	B	<2	<2	4.7	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-10B	Amber 950ml H2SO4 preserved	B	<2	<2	4.7	Y	Absent		TPHENOL-420(28)
L1950049-11A	Plastic 250ml HNO3 preserved	B	<2	<2	4.7	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-12A	Plastic 250ml HNO3 preserved	B	<2	<2	4.7	Y	Absent		FE-UI(180),CR-UI(180)

*Values in parentheses indicate holding time in days

Project Name: GEDDES LANDFILL
Project Number: 8618809

Lab Number: L1950049
Report Date: 10/30/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1950049-12A1	Plastic 250ml HNO3 preserved	B	4	<2	4.7	N	Absent		FE-UI(180),CR-UI(180)
L1950049-12A2	Plastic 250ml HNO3 preserved	B	12	<2	4.7	N	Absent		FE-UI(180),CR-UI(180)
L1950049-12B	Amber 950ml H2SO4 preserved	B	<2	<2	4.7	Y	Absent		TPHENOL-420(28)
L1950049-12B1	Amber 950ml H2SO4 preserved	B	<2	<2	4.7	Y	Absent		TPHENOL-420(28)
L1950049-12B2	Amber 950ml H2SO4 preserved	B	<2	<2	4.7	Y	Absent		TPHENOL-420(28)
L1950049-13A	Plastic 250ml HNO3 preserved	B	<2	<2	4.7	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-13B	Amber 950ml H2SO4 preserved	B	<2	<2	4.7	Y	Absent		TPHENOL-420(28)
L1950049-14A	Plastic 250ml HNO3 preserved	B	<2	<2	4.7	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-14B	Amber 950ml H2SO4 preserved	B	<2	<2	4.7	Y	Absent		TPHENOL-420(28)
L1950049-15A	Plastic 250ml HNO3 preserved	A	<2	<2	3.1	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-15B	Amber 950ml H2SO4 preserved	A	<2	<2	3.1	Y	Absent		TPHENOL-420(28)
L1950049-16A	Plastic 250ml HNO3 preserved	B	<2	<2	4.7	Y	Absent		FE-UI(180),CR-UI(180)
L1950049-16B	Amber 950ml H2SO4 preserved	B	<2	<2	4.7	Y	Absent		TPHENOL-420(28)

*Values in parentheses indicate holding time in days

Project Name:	GEDDES LANDFILL	**Lab Number:**	L1950049
Project Number:	8618809	**Report Date:**	10/30/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	GEDDES LANDFILL	**Lab Number:**	L1950049
Project Number:	8618809	**Report Date:**	10/30/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	GEDDES LANDFILL	**Lab Number:**	L1950049
Project Number:	8618809	**Report Date:**	10/30/19

REFERENCES

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA

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

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 2

Date Rec'd in Lab: 10/24/19

ALPHA Job #: L1950049

Project Information
Project Name: GEDDES LANDFILL
Project Location: GEDDES, NY
Project #: 8618809
(Use Project name as Project #) ☐
Project Manager: MELISSA DEYO
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Client Information
Client: GHD Consulting Services Inc.
Address: 1 Remington Park Dr, Cazenovia, NY 13035
Phone: 315-679-5732
Fax: 315-679-5801
Email: ian.mcnamara@ghd.com

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Billing Information
☒ Same as Client Info
PO # 33701180

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:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
SSOW # 8618809-190

Please specify Metals or TAL. Iron + Chromium

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Total Metals (Fe, Cr) EPA 200.7	Total Phenol EPA 420.1						Sample Specific Comments	Total Bottles
50049-1	MS-301.1	10-23-19	10:15	W	DT	X	X							2
-2	MS-301.2	10-23-19	10:50	W	DT	X	X							2
-3	MS-301.3	10-23-19	11:40	W	DT	X	X							2
-4	MS-301.4	10-23-19	12:00	W	DT	X	X							2
-5	MS-301.5	10-23-19	12:35	W	DT	X	X							2
-6	W-201R	10-23-19	13:20	W	DT	X	X							2
-7	MS-106.3	10-23-19	14:25	W	DT	X	X							2
-8	MS-106.1	10-23-19	14:25	W	DT	X	X							2
-9	MS-106.2	10-23-19	15:55	W	DT	X	X							2
-10	DUP	10-23-19	11:40	W	DT	X	X							2
					Container Type	P	A							
					Preservative	C	D							

Preservative Code: A = None, B = HCl, C = HNO_3, D = H_2SO_4, E = NaOH, F = MeOH, G = $NaHSO_4$, H = $Na_2S_2O_3$, 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

Relinquished By:	Date/Time	Received By:	Date/Time
Ian [signature]	10-23-19 1810	Richard [signature]	10/23/19 1922
		[signature]	10/24/19 0110

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. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

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

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: 2 of 2

Date Rec'd in Lab: 10/24/19

ALPHA Job #: L1950149

Client Information

Client: GHD CONSULTING SERVICES INC
Address: 1 REMINGTON PARK DR
CAZENOVIA, NY 13035
Phone: 315-679-5732
Fax: 315-679-5801
Email: jon.mcmonagle@ghd.com

Project Information

Project Name: GEDDES LANDFILL
Project Location: GEDDES, NY
Project #: 8618809
(Use Project name as Project #): ☐
Project Manager: MELISSA DEYO
ALPHAQuote #:

Turn-Around Time

Standard: ☒ Due Date:
Rush (only if pre approved): ☐ # of Days:

Deliverables

☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Regulatory Requirement

☒ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☒ Same as Client Info
PO #: 33701180

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

550W # 8618809-190

Please specify Metals or TAL. IRON + CHROMIUM

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TOTAL METALS (FE+CR) EPA 200.7	TOTAL PHENOL EPA 420.1	Sample Specific Comments	Total Bottle
50149-11	Trip Blank	10/23/19		W	DT	X			1
-12	MS-104.3	10-23-19	17:00	W	DT	X	X	MS/MSD	6
-13	MS-104.5	10-23-19	17:25	W	DT	X	X		2
-14	MS-104.4	10-23-19	17:25	W	DT	X	X		2
-15	RINSE BLANK-1	10-23-19	10:50	W	DT	X	X		2
-16	W-5.6	10-23-19	16:15	W	DT	X	X		2

Container Type: P A
Preservative: C D

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
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

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10-23-19 1810	[signature]	10/23/19 19:28
		[signature]	10/24/19 0610

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. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

Appendix F
Monitoring Well Decommissioning Logs

FIGURE 3

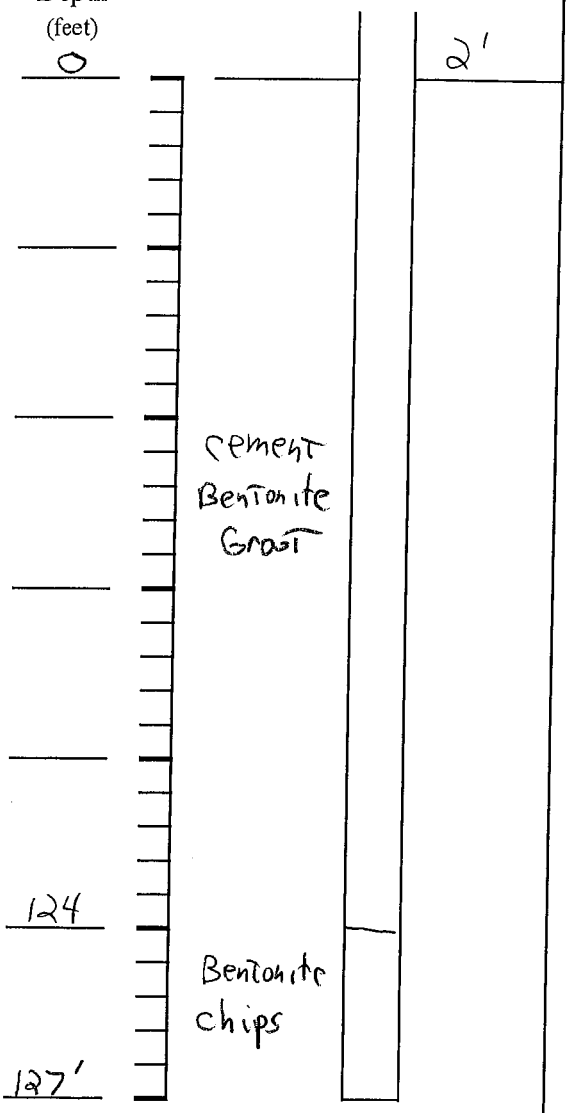
WELL DECOMMISSIONING RECORD

Site Name: NYS Fairgrounds - Orange Lot	Well I.D.: DW-101
Site Location: Syracuse, NY	Driller: Corey Brown
Drilling Co.: SJB Services, Inc.	Inspector:
	Date: 3/15/18

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	16
Quantity of cement used (lbs.)	188
Cement type	
Quantity of bentonite used (lbs.)	8
Quantity of calcium chloride used (lbs.)	NA
Volume of grout prepared (gal.)	20
Volume of grout used (gal.)	20

WELL SCHEMATIC*



COMMENTS:

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

Drilling Contractor

Department Representative

FIGURE 3

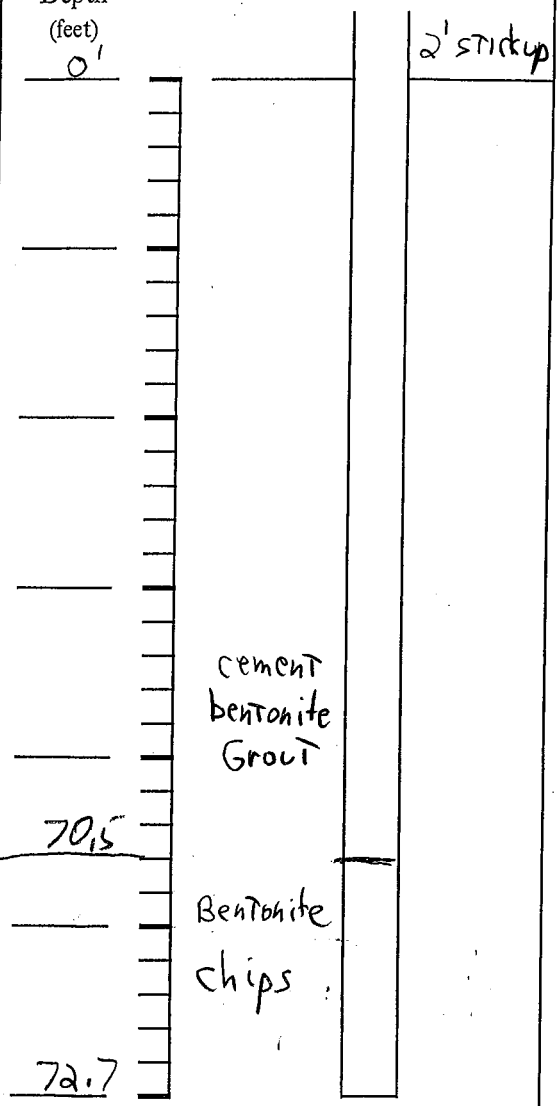
WELL DECOMMISSIONING RECORD

Site Name:	NYS FAIRGROUNDS - ORANGE LOT	Well I.D.:	PZ 101.1
Site Location:	SYRACUSE, NY	Driller:	COREY BROWN
Drilling Co.:	SJB SERVICES, Inc.	Inspector:	
		Date:	3/15/18

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	26
Quantity of cement used (lbs.)	282
Cement type	PORTLAND
Quantity of bentonite used (lbs.)	12
Quantity of calcium chloride used (lbs.)	NA
Volume of grout prepared (gal.)	35
Volume of grout used (gal.)	35

WELL SCHEMATIC*



COMMENTS: BATCH USED FOR PZ 101.1, PZ 101.2, PZ 101.3

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

SJB Services, Inc.
Drilling Contractor

Department Representative

FIGURE 3

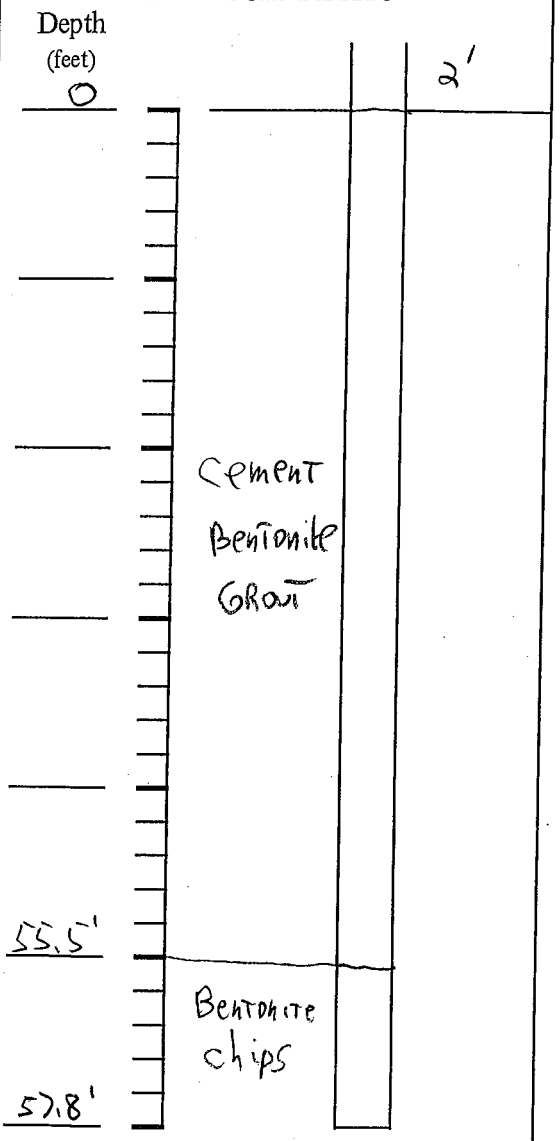
WELL DECOMMISSIONING RECORD

Site Name:	NYS FAIRGROUNDS - ORANGE LOT	Well I.D.:	PZ 101.2
Site Location:	SYRACUSE, NY	Driller:	COREY BROWN
Drilling Co.:	SJB SERVICES, INC.	Inspector:	
		Date:	3/15/18

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	26
Quantity of cement used (lbs.)	282
Cement type	PORTLAND
Quantity of bentonite used (lbs.)	12
Quantity of calcium chloride used (lbs.)	NA
Volume of grout prepared (gal.)	35
Volume of grout used (gal.)	35

WELL SCHEMATIC*



COMMENTS: BATCH USED FOR PZ 101.1, PZ 101.2, PZ 101.3

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

SJB Services, Inc.
Drilling Contractor

Department Representative

FIGURE 3

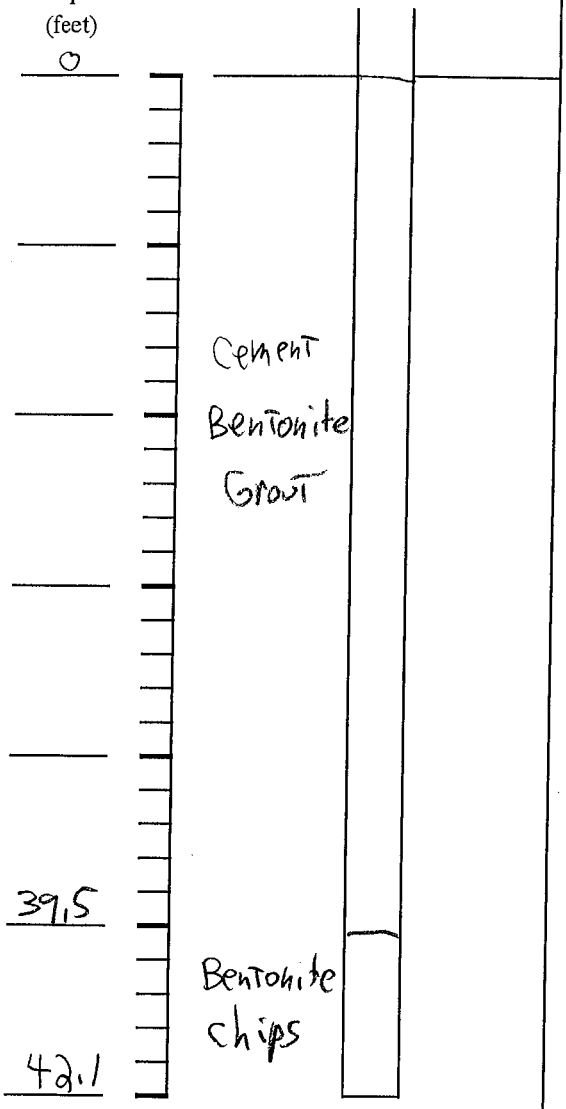
WELL DECOMMISSIONING RECORD

Site Name: NYS FAIRGROUNDS - ORANGE LOT	Well I.D.: PZ 101.3
Site Location: SYRACUSE, NY	Driller: COREY BROWN
Drilling Co.: SJB SERVICES, Inc.	Inspector:
	Date: 3/15/18

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	26
Quantity of cement used (lbs.)	282
Cement type	PORTLAND
Quantity of bentonite used (lbs.)	12
Quantity of calcium chloride used (lbs.)	NA
Volume of grout prepared (gal.)	35
Volume of grout used (gal.)	35

WELL SCHEMATIC*



COMMENTS: BATCH USED FOR PZ 101.1, PZ 101.2, PZ 101.3

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

SJB Services, Inc.
Drilling Contractor

Department Representative

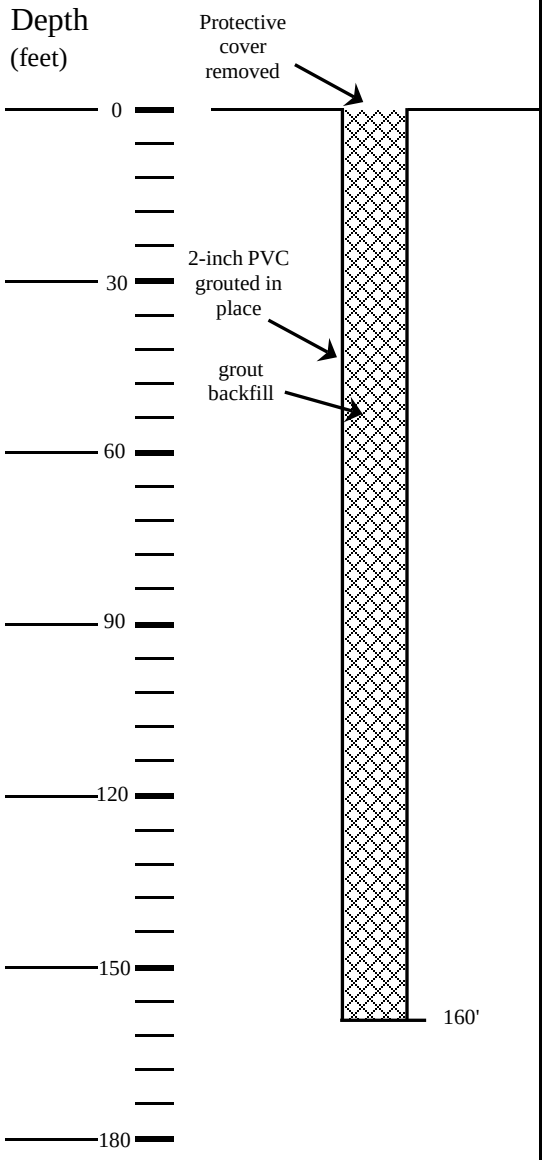
FIGURE 3
WELL DECOMMISSIONING RECORD

Site Name: **Crucible Specialty Metals Landfill**	Well I.D.: **DW-103**
Site Location: **Geddes, New York**	Driller: **Wayne Nielson**
Drilling Co.: **Parratt-Wolff, Inc.**	Inspector: **Ian McNamara**
	Date: **April 12, 2019**

DECOMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	NA
Drilling Method(s)	NA
Borehole Dia. (in.)	NA
Temporary Casing Installed? (y/n)	N
Depth temporary casing installed	NA
Casing type/dia. (in.)	NA
Method of installing	NA
CASING PULLING	
Method employed	NA
Casing retrieved (feet)	NA
Casing type/dia. (in)	PVC / 2"
CASING PERFORATING	
Equipment used	NA
Number of perforations/foot	NA
Size of perforations	NA
Interval perforated	NA
GROUTING	
Interval grouted (FBLS)	0 - 160'
# of batches prepared	1
For each batch record:	
Quantity of water used (gal.)	35
Quantity of cement used (lbs.)	376
Cement type	Portland I/II
Quantity of bentonite used (lbs.)	25
Quantity of calcium chloride used (lbs.)	NA
Volume of grout prepared (gal.)	45
Volume of grout used (gal.)	45

WELL SCHEMATIC*



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

COMMENTS:

Drilling Contractor

Department Representative

Appendix G
NYSDEC's RCRA Facility Inspection Report

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau D
625 Broadway, 12th Floor, Albany, NY 12233-7013
P: (518) 402-9676 I F: (518) 402-9773
www.dec.ny.gov

November 20, 2019

Ian McNamara
GHD
1 Remington Park Drive
Cazenovia, NY 13035

Re: RCRA Facility Groundwater Monitoring Operation and Maintenance Inspection Report
Crucible Landfill (EPA ID No. NYD071596449) DEC Inactive Hazardous Waste Site #7-34-021
Town of Geddes, NY

Dear Mr. McNamara:

On October 23, 2019 I conducted an inspection of the annual groundwater monitoring of the Crucible Landfill. The purpose of the inspection was to determine if groundwater monitoring activities were being conducted in accordance with the approved Post-Closure Work Plan Update (work plan), and whether inspection and maintenance of the landfill were being conducted as required. The landfill was found to be in compliance with the work plan groundwater monitoring, inspection and maintenance requirements. However, as we discussed that day, a manhole structure associated with the drainage system is damaged and will need to be repaired. This is noted in the inspection report that is attached.

If you have any questions, please contact me at 518-402-9796.

Sincerely,

Tracy A. Smith

Tracy A. Smith
Project Manager

ecc: H. Warner, NYSDEC
D. Vanetti, GHD
D. Hesler, NYSDEC
B. Hutson, EnPro

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau D
625 Broadway, 12th Floor, Albany, NY 12233-7013
P: (518) 402-9676 I F: (518) 402-9773
www.dec.ny.gov

Subject: **Crucible Landfill (EPA ID No. NYD071596449) DEC Inactive Hazardous Waste Site #7-34-021**
RCRA Facility Groundwater Monitoring Operation and Maintenance Inspection Report

Inspection Date: October 23, 2019

Purpose: To conduct an inspection of the groundwater monitoring and annual landfill maintenance (e.g., inspection, mowing)

Personnel: NYSDEC: Tracy Smith

RP Representative: Ian McNamara, GHD

Narrative Report of Field Activities:
I arrived at the site at approximately 11:00 AM on October 23, 2019 and met the GHD sampling crew. They were collecting groundwater samples from well cluster MS-301 (5 wells) located just north of the landfill. Mowing of the landfill vegetation was being performed.

When I arrived, GHD was performing groundwater sampling using low-flow techniques in accordance with the Post Closure Work Plan Update (work plan). This included purging the monitoring wells using a stainless-steel pump equipped with new tubing for each well. The pump was equipped with a flow controller to regulate the flow rate in order to reduce sediment in the water samples. During purging, field readings were collected for pH, temperature, conductivity and turbidity. After the field parameter readings indicated that the water had stabilized, groundwater samples were collected for laboratory analyses for total phenols, iron, and total chromium. Phenols were collected in 1 L amber glass bottles with sulfuric acid preservative and iron and chromium were collected in 750 mL plastic bottles with nitric acid preservative. Following collection of samples from two of these wells, I left the site at approximately 12:00 PM.

At approximately 3:00 PM later that day, I arrived back at the site and GHD was set up at the MS-106 well cluster (4 wells). I briefly observed the sampling and then left the site at approximately 3:30 PM. Groundwater sampling on any remaining wells were completed that day.

During sampling, fresh gloves and tubing were used at each well and equipment (e.g., pump) was deconned following the collection of each groundwater sample. Purged

groundwater was collected in five-gallon buckets and subsequently placed into a 55-gallon drum for later disposal. Tubing, gloves, and other disposable equipment were placed in garbage bags for disposal. The appropriate duplicates, matrix spike and matrix spike duplicates, and equipment blanks were collected.

Sampling was being performed in accordance with the post-closure work plan update and I did not observe any issues. During the inspection, the landfill cover and vegetation were in good condition. However, damage to a manhole structure associated with the landfill drainage system southeast of the landfill was noted (the cover was damaged and offset from the manhole). This will need to be repaired.

Attachments (photos taken on October 23, 2019)

Report prepared by: Tracy A. Smith

Tracy Smith, Environmental Engineer
Division of Environmental Remediation

Sampling at MS-301 well cluster

Sampling at MS-106 well cluster

Appendix H
Purge Water Disposal Documentation

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	NYD 085 161 008	1	(800) 839-3975	014157708 FLE

GENERATOR

5. Generator's Name and Mailing Address: ENPRO HOLDINGS, INC
1 REMINGTON PARK DRIVE
CAZENOVIA, NY 13035
Generator's Phone: (315) 679-5732

Generator's Site Address (if different than mailing address)
575 STATE FAIR BLVD
SOLVAY, NY 13209

6. Transporter 1 Company Name: EQ NORTHEAST, INC
U.S. EPA ID Number: MAD 084 814 136

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address: EQ DETROIT, INC
1923 FREDERICK STREET
DETROIT, MI 48211
Facility's Phone: (313) 347-1300
U.S. EPA ID Number: MID 980 991 566

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. RQ, UN3266, WASTE Corrosive liquid, basic, inorganic, n o s., (Soda Ash), 8, PGII, (D002), ERG #154	1	DM	55	G	D002		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1. A189117DET / (L,C) Groundwater IDW Drums

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: AS AGENT OF GENERATOR IAN MCNAMARA
Signature:
Month: 01 Day: 07 Year: 26

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: JAMES B MATHIS
Signature:
Month: 01 Day: 07 Year: 26
Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H110			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name
Signature
Month Day Year

US ecology

EQ Northeast, Inc.
185 Industrial Road
Wrentham, MA 02093

Emergency Response #: (800) 839-3975
Phone: (508) 384-6151
Fax: (508) 384-6028

Work Order: 10697900
Reference Code:
AX Project:
Arrival Time:
Date: 12/18/2019
Prepared By: Chelsea Medina

BILLING INFORMATION

Name: GHD CONSULTING SERVICES INC. Contact:
Acct. #: 600211-99 Title:
Phone: (716) 856-2142 Phone:
Addr: 285 DELAWARE AVE, SUITE 500 Mobile: ( ) -
BUFFALO, NY 14202-1885 PO / Rel:

GENERATOR INFORMATION

Name: ENPRO HOLDINGS, INC. Contact:
EPA #: NYD085161008 (ID: 173638) Title:
Phone: (315) 479-5732 Phone: ( ) -
Addr: 575 STATE FAIR BLVD Mobile: ( ) -
SOLVAY, NY 13209

TSDF INFORMATION

TSDF: EQ DETROIT, INC.
Addr: 1923 FREDERICK STREET
DETROIT,MI 48211

EPA #: MID980991566
Phone: (313) 347-1300
Fax: (313) 923-3375

Manifest: 014157708FLE

TSDF: EQ DETROIT, INC.
Addr: 1923 FREDERICK STREET
DETROIT,MI 48211

EPA #: MID980991566
Phone: (313) 347-1300
Fax: (313) 923-3375

HM	DESCRIPTION	# OF CONT.	TYPE	QUANTITY	UNIT
X	1. RQ, UN3266, WASTE Corrosive liquid, basic, inorganic, n.o.s., (Soda Ash), 8, PGII, (D002), ERG #154 Approval Code: A189117DET(588010 Waste Codes: D002 Waste Common Name: Groundwater IDW Drums Hand. Instruct:	1	DM	55	G

Supplies	Qty	Bill Unit	Qty Req	Description	Supplies	Qty	Bill Unit	Qty Req	Description

EQUIPMENT ACKNOWLEDGMENT

Customer acknowledges that this equipment is suitable for the transportation, storage or other service to be provided.

Tractor # 5611 Trailer # 396 Tanker #____ Roll-Off Box #____ w/ liner?____ Spotted #____ Picked_up # ____ Vac Fee ____

Driver Signature Date Customer Signature Date

Pickup	Date	Time	Explanation
Arrive at Shipper:	11/7/19	730	LOAD Drums
Start Loading:			
Finish Loading:	20	800	
Leave Site:			

SHIPMENT RECEIVED IN APPARENT GOOD ORDER (CONTENTS UNKNOWN) SUBJECT TO THE TERMS AND CONDITIONS OF THE UNIFORM STRAIGHT BILL OF LADING AND ANY GOVERNING CLASSIFICATIONS AND TARIFFS LAWFULLY ON FILE ON THE DATE OF SHIPMENT.

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

Driver Signature 11/7/20 Date X Customer Signature 11/7/20 Date

Delivery	Date	Time	Explanation
Arrive at TSDF:			
Start Unloading:			
Finish Unloading:			
Leave Site:			

Driver Signature Date Receiver Signature Date

Please comment on the job so we can continue to provide better service: ☐ Excellent ☐ Satisfactory ☐ Poor

LAND DISPOSAL RESTRICTION AND CERTIFICATION FORM

Generator: ENPRO HOLDINGS, INC.
575 STATE FAIR BLVD , SOLVAY, NY 13209

U.S. EPA ID No.: NYD085161008

Manifest: 014157708FLE

Page - Line			
1 -01	**Approval:**	A189117DET	NWW
	Waste Code(s):	D002	
	Hazardous Constituents:	NONE	
	Subcategory(s):	D002 – Alkaline Subcategory	
	Certification:	THIS RESTRICTED WASTE REQUIRES TREATMENT TO THE APPLICABLE STANDARD. This waste must be treated to the applicable performance based treatment standard set forth in 40CFR Part 268 Subpart C and Subpart D, 268.40 or RCRA Section 3004(d) prior to land disposal.	

I hereby certify that all information submitted on this and all associated documents, is complete and accurate to the best of my knowledge and information.

Generator Signature: _____ **Title:** SCIENTIST

AS AGENT OF GENERATOR

Printed Name: IAN McNAMARA **Date:** 1-7-20

For questions regarding this form, please call Customer Service at (800) 592-5489.

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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