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Manassas, VA 20109

August 15, 2017

Jessica LaClair
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau D
625 Broadway, 12th Floor
Albany, NY 12233-7017

Re: Transmittal of Extraction Well EN-154R Shutdown Test Report
Operable Unit #7: Assessment of Sewers in Northwestern Area of the Site
Order on Consent Index #A7-0502-0104, Site #704014

Dear Ms. LaClair:

The purpose of this letter is to transmit the report for the shutdown test of groundwater extraction well EN-154R, located in Operable Unit #7 (OU#7) of the Former IBM Endicott Site in Endicott, New York. Groundwater extraction operations at well EN-154R have been inactive since the shutdown of the extraction well on February 28, 2014.

Should you have any questions concerning the contents of this report, please contact Kevin Whalen of my staff at (540) 233-0676.

Sincerely,

A handwritten signature in black ink that reads "M. E. Meyers".

Mitchell E. Meyers
Program Manager, Corporate Environmental Affairs

Attachment

cc: Julia Kenney, NYSDOH – Albany
Harry Warner, NYSDEC – Syracuse
Dolores Tuohy, Esq., NYSDEC – Albany (w/o attachment)
Ron Brink, Broome County Health Dept.
Chris Peltó, Huron LLC
Paul Speranza, i3 Electronics, Inc.

EXTRACTION WELL EN-154R SHUTDOWN TEST REPORT

VILLAGE OF ENDICOTT / TOWN OF UNION
BROOME COUNTY, NEW YORK

**Order on Consent Index #A7-0502-0104
Site #704014**

**Operable Unit #7: Assessment of Sewers
in Northwestern Area of the Site**

Prepared for:

**IBM Corporate Environmental Affairs
8976 Wellington Road
Manassas, Virginia 20109**

August 14, 2017

Prepared by:

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1 INTRODUCTION

This report presents the findings of a shutdown test of Upper Aquifer groundwater extraction well EN-154R located in *Operable Unit #7: Assessment of Sewers in Northwestern Area of the Site* (OU#7) at the former International Business Machines Corporation (IBM) facility in Endicott, New York. This report has been prepared by Groundwater Sciences Corporation (GSC) at the request of IBM. OU#7 is one of seven operable units being remediated by IBM at the former IBM Endicott Site, pursuant to Order on Consent Index #A7-0502-0104 executed on August 4, 2004 (Order), for Site #704014 (Site) between the New York State Department of Environmental Conservation (NYSDEC) and IBM.

Extraction well EN-154R and its predecessor EN-154 operated for roughly three decades, providing containment and removal of dissolved volatile organic compounds (VOCs) in Upper Aquifer groundwater within and near the OU#7 portion of the Site. In 2013, a hydrogeologic assessment and chemical concentration trend analysis of EN-154/154R groundwater extraction data and OU#7 groundwater monitoring data indicated that although the first two decades of extraction operations had resulted in significant decreases in VOC concentrations, the most recent decade of operations had not resulted in further meaningful decreases in VOC concentrations. The findings of this review supported the conclusion that continued groundwater extraction operations at EN-154R were unlikely to provide additional remedial progress beyond the natural attenuation processes that are occurring. Based on these findings, IBM proposed a shutdown test of extraction well EN-154R, combined with additional groundwater monitoring, to confirm that groundwater monitoring of natural attenuation processes would serve as a more appropriate remedial alternative to address the remaining low concentrations of VOCs in the OU#7 Upper Aquifer groundwater.

The shutdown test consisted of a program of groundwater monitoring before and after shutdown of groundwater withdrawals from EN-154R. The shutdown test was performed by GSC in accordance with a November 11, 2013 shutdown request letter from IBM to the NYSDEC¹, approved by the NYSDEC and the New York State Department of Health (NYSDOH) on December 31, 2013.

¹ Mitchell E. Meyers, IBM, November 11, 2013, Letter to Alex Czuhanych of NYSDEC, Subject: Request for Extraction Well EN-154R Shutdown Test, Operable Unit No. 7: Assessment of Sewers in Northwestern Area of the Site, Former IBM Facility, Endicott, New York, Order on Consent Index #A7-0502-0104, Site #704014.

1.1 Purpose and Objectives

The purpose of the EN-154R shutdown test was to collect empirical data to confirm the results of a 2013 hydrogeologic assessment and trend analysis that predicted termination of EN-154R groundwater withdrawals would not result in meaningful changes in Upper Aquifer groundwater chemistry within and near OU#7. The shutdown test was designed to provide data of sufficient quantity and quality to support NYSDEC's selection of a final remedy for OU#7.

1.2 Organization of Report

The remainder of this report is organized in four additional sections with associated tables, figures, and appendices. Section 2 presents OU#7 background information pertinent to the shutdown test. Section 3 describes the shutdown test scope of work. Section 4 presents the findings of the shutdown test and Section 5 provides conclusions and recommendations pertinent to the NYSDEC's selection of a final remedy for OU#7.

2 BACKGROUND

This section provides an overview of pertinent background information concerning the location and hydrogeologic setting of OU#7, OU#7 corrective action history, and the technical rationale for the EN-154R shutdown.

2.1 Location and Hydrogeologic Setting

A portion of the Endicott, New York 7.5-minute USGS Quadrangle map showing the location of the Site and OU#7 is attached as **Figure 2-1**. OU#7 is located in the northwestern portion of the Site, north of the Norfolk Southern railroad tracks and west of Oak Hill Avenue. A map showing the location of OU#7 is attached as **Figure 2-2**. Virtually all of the parcels identified on this figure as being within OU#7 were purchased by IBM from the Endicott-Johnson Company (EJ), which historically conducted manufacturing operations within the limits of OU#7.

The hydrogeology of the OU#7 portion of the Site is characterized by a sequence of unconsolidated glacial and post-glacial sediments overlying bedrock. The unconsolidated sediments occur in a vertically downward sequence consisting of (1) post-glacial alluvium, localized to the margins of the Susquehanna River valley in the northern portion of OU#7, (2) glacial outwash sand and gravel, (3) glaciolacustrine silt and clay, locally grading to silty very fine sand, and (4) glacial till. Ice-contact sand and gravel may also be present in isolated areas. Where the outwash sand and gravel is below the water table, it constitutes an unconfined water table aquifer (the Upper Aquifer) while the underlying lacustrine silt and clay serves as an aquitard.

A map depicting elevations of the top of the glaciolacustrine silt aquitard is attached as **Figure 2-3**. The top of the lacustrine silt unit defines the bottom of the Upper Aquifer. As shown on **Figure 2-3**, the lacustrine silt pinches out against the Susquehanna River valley walls, which are topographically higher areas of glacial till and bedrock near the northwest limits of OU#7 in the area of Franklin Street, and in the northern portion of OU#7 along Clark Street. Upper Aquifer extraction well EN-154R is located within a large trough in the top of silt surface that extends from the area west of the Building 96 wastewater treatment plant to the area southwest of the RMJ Realty, LLC property (the “RMJ Property”).

2.2 Corrective Action History

Monitoring of the Upper Aquifer in the area of OU#7 began in 1980. Results of the monitoring identified the presence of VOCs, including chlorinated ethenes, chlorinated ethanes, and chlorofluorinated ethanes (Freons). The chlorinated ethenes, chlorinated ethanes, and Freons detected in groundwater samples from one or more monitoring wells have included tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (c12-DCE), vinyl chloride (VC), 1,1,1-trichloroethane (111-TCA), 1,1-dichloroethane (11-DCA), 1,1-dichloroethene (11-DCE), 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113) and 1,2-dichloro-1,2,2-trifluoroethane (Freon 123a).

Major milestones in remedial investigations and operations implemented by IBM in OU#7 following the discovery of VOCs in Upper Aquifer groundwater include (reference **Figure 2-4** for OU#7 and surrounding area features of interest):

- 1984 - Start-up of Upper Aquifer groundwater extraction operations at the EN-154/154R location with treatment in the Building 96 wastewater treatment plant.
- 1984 - Removal and off-Site disposal of nearly 780 tons of soil contaminated with VOCs and chromium from the northern “Clark Street Campus” portion of OU#7.
- 1988 - Closure of the former wastewater treatment lagoon/surface impoundment.
- 1994 - Start-up of Upper Aquifer groundwater extraction operations at the EN-218 location with treatment in the Building 96 wastewater treatment plant.
- 2005 – Completion of a Supplemental Remedial Investigation (SRI) of vertical migration potential in the northwestern area of the Site.
- 2006 – Completion of a Source Area Evaluation and an SRI consisting of an assessment of sewers in the northwestern area of the Site.
- 2006 – Replacement of extraction well EN-154 with nearby extraction well EN-154R.
- 2007 - Transfer of groundwater treatment operations from the Building 96 wastewater treatment plant to the Robble Avenue Groundwater Treatment Facility (GTF) located near EN-154R.
- 2012 - Shutdown of Upper Aquifer extraction well EN-218
- 2014 - Shutdown of Upper Aquifer extraction well EN-154R (*the subject of this report*).

In addition to IBM and IBM predecessor (Endicott-Johnson) operations in OU#7, other off-Site sources or potential sources of VOC groundwater contamination in the area of OU#7 include the following industrial and commercial facilities shown on **Figure 2-4**:

- The former Endicott-Johnson (EJ) rubber cement plant on the northwestern side of Franklin Street. This former EJ facility is a New York State Inactive Hazardous Waste Site (IHWS #704018) and reportedly manufactured rubber cement from 1918 to 1983. Constituents detected in groundwater at this facility include benzene, ethylbenzene, xylenes, and 111-TCA and its transformation products 11-DCA and chloroethane.
- The former Keytronics facility located at 707 North Street (currently owned by RMJ Realty, LLC) that is registered as IHWS #704001. This facility is listed as a RCRA generator that disposed of 275 gallons of F001 wastes (spent degreasing halogenated solvents). According to an April 1991 IHWS report by NYSDEC, “An area of railroad bed behind the plant was once used to dispose waste solvent. Methylene chloride contaminated with various lacquers & epoxy was dumped in small quantities over the rocks and allowed to evaporate.”
- The Schapiro’s Formal Shop, Inc. dry cleaning facility located at 709 North Street (currently owned by RMJ Realty, LLC) that is regulated as a New York State Voluntary Cleanup Program site (VCPS #V00667). According to NYSDEC records, the facility reportedly used PCE in its dry cleaning operations from 1981 to 1999. Investigations completed by RMJ Realty identified the presence of PCE in groundwater that is believed to be sourced beneath the central portion of the main building at the facility and in the area of a shed northwest of the main building.

Some of the VOC constituents in groundwater that appear to have originated in the area of the former EJ rubber cement plant are believed to be within the area of hydraulic capture of EN-154R, whereas VOC constituents in groundwater at the RMJ Realty property south of OU#7 are not. In addition to the former EJ rubber cement plant, spatial and temporal trends in concentrations for certain VOCs (TCE, c12-DCE, and VC) in the area of EN-154R suggest the potential for an additional source or sources of certain VOCs south of OU#7 but within the EN-154R hydraulic capture area.

2.3 Technical Rationale for EN-154R Shutdown

The conclusions that formed the basis for IBM's November 11, 2013 request to shut down well EN-154R and complete a program of groundwater monitoring in and near the southern portion of OU#7 are discussed below.

For nearly a decade, the VOC concentrations detected in groundwater monitoring wells near the southern limits of OU#7 have been relatively consistent from year to year with little variation. Inspection of time versus concentration graphs for wells located near the southern limits of OU#7 (see **Appendix A.1**) and time versus mass removal graphs for the most recent decade of EN-154/154R operations (see **Appendix A.2**) suggested that continued operation of extraction well EN-154R would be unlikely to result in additional meaningful remedial progress.

VOC concentrations in OU#7 groundwater are near or below applicable groundwater standards, so the effect of the shutdown of EN-154R groundwater withdrawals was expected to be insignificant with respect to downgradient groundwater quality. Transport of the remaining low concentration dissolved VOC mass in OU#7 Upper Aquifer groundwater was expected to be further attenuated downgradient from EN-154R due to the following fate and transport mechanisms:

- Partitioning to aquifer solids via diffusion and sorption.
- Dilution due to decreasing groundwater flow velocity, greater Upper Aquifer thickness and converging groundwater flow with significant volumetric flux from areas to the northwest, northeast, and south.
- Dispersion due to the heterogeneity of the Upper Aquifer outwash sand and gravel soils.
- Likely oxidation of c12DCE and VC due to the oxidizing geochemistry of the Upper Aquifer.

Furthermore, the shutdown of EN-154R groundwater extraction and Robble Avenue GTF treatment operations is consistent with NYSDEC's DER-31 Green Remediation program policy that promotes the use of more sustainable practices and technologies that are less disruptive to the environment, generate less waste, increase reuse and recycling, and emit fewer pollutants. Specific green

remediation / sustainable practice considerations relevant to IBM's proposed shutdown of EN-154R and the Robble Avenue GTF include:

- Elimination of a significant amount of electrical energy usage and associated greenhouse gases from the 24-hour, 7-days-per-week operation of the EN-154R pump system and Robble Avenue GTF air stripper blower.
- Direct and indirect reduction in greenhouse gas and other emissions by discontinuing operator visits to the Robble Avenue GTF, eliminating transportation of materials (e.g., activated carbon, treatment chemicals, etc.) and wastes, as well as eliminating waste disposal.
- Conservation of resources and materials required for the operation and maintenance of the EN-154R pump and treat system, including chemicals used for rehabilitation of the well and pumping system.
- Reduction of wastes generated during routine maintenance and replacement of pump and treatment system components.

3 DESCRIPTION OF WORK PERFORMED

The scope of the EN-154R shutdown test consisted of a program of groundwater monitoring pre- and post-shutdown of groundwater withdrawals from EN-154R. As proposed in IBM's November 11, 2013 shutdown test request letter to the NYSDEC, the test was performed in three phases as follows:

1. Pre-shutdown baseline groundwater monitoring in January and February 2014, followed by shutdown of extraction well EN-154R and the Robble Avenue GTF on February 28, 2014.
2. Post-shutdown monthly groundwater monitoring for a period of six months from March to August 2014, and
3. Post-shutdown quarterly groundwater monitoring for a period of 2.5 years (30 months) from November 2014 through May 2017.

The scope of the field activities associated with the EN-154R shutdown test included:

- Coordination with the RMJ Property owner to obtain a temporary access agreement for groundwater monitoring at six monitoring well locations, designated as RMJ-MW-1 through RMJ-MW-6.
- Inspection, surface completion repairs, and redevelopment of the six monitoring wells on the RMJ Property.
- Performance of a location and elevation field survey of the six monitoring wells on the RMJ Property. The field survey was performed on February 18, 2014 by Butler Land Surveying, LLC of Warren Center, Pennsylvania.
- Performance of three pre-shutdown water level measurement rounds and two pre-shutdown groundwater sampling rounds.
- Performance of seventeen (17) post-shutdown water level measurement and groundwater sampling rounds.

Descriptions of the groundwater monitoring and reporting performed as part of the shutdown test is provided in the following subsections.

3.1 Groundwater Elevation Measurements

The groundwater level elevation measurements for the shutdown test included recording of potentiometric water levels at thirty-seven (37) Upper Aquifer well locations within and near OU#7. The water level monitoring locations are shown on **Figure 3-1**. The lateral extent of the water level monitoring extended throughout OU#7, as well as areas near OU#7 to the east, west, and south, to allow for contouring of data outside of the apparent limits of EN-154R hydraulic capture. Physical specifications for the wells included in the scope of groundwater monitoring for the EN-154R shutdown test are listed on **Table 3-1**.

Groundwater elevations were calculated by subtracting the measured depth to water from the surveyed elevation of the measuring point listed in **Table 3-1**. The designated measuring point for most wells is the top of the inner well casing (i.e., "Reference Point Elevation"). Pre- and post-shutdown depth-to-water measurements and their calculated groundwater elevations are provided in **Table 3-2**.

3.2 Groundwater Sampling

The groundwater sampling program for the shutdown test consisted of collection of groundwater samples from the twelve (12) wells highlighted in yellow on **Figure 3-1**. The 12 wells sampled include:

- Extraction well EN-154R;
- Monitoring wells EN-96, EN-150, and EN-152, located near EN-154R in positions downgradient from OU#7 and the former EJ rubber cement plant site (IHWS #704018) and upgradient from the RMJ Property;
- Monitoring wells EN-95 and EN-104, in positions upgradient and sidegradient from the western portion of the RMJ Property;

- RMJ Realty, LLC monitoring wells RMJ-MW-1, RMJ-MW-2, and RMJ-MW-5 in positions downgradient from OU#7 and the former EJ Rubber cement plant site;
- RMJ Realty, LLC monitoring wells RMJ-MW-3, RMJ-MW-4, and RMJ-MW-6 in positions downgradient from PCE source areas at the former Schapiro's Formal Shop, Inc. dry cleaning facility (VCPS #V00667), OU#7, and the former EJ Rubber cement plant site.

The monitoring wells were purged using a dedicated pump system (EN-154R), small non-dedicated pump systems, or dedicated polyethylene bailers. After purging, the wells were sampled via dedicated sample tap (in the case of EN-154R), dedicated polyethylene sample tubing, or dedicated polyethylene bailers. The groundwater samples were collected in 40-millileter VOA vials with Teflon™ septa and were placed in coolers with ice for transportation to Eurofins Lancaster Laboratories, Inc. of Lancaster, Pennsylvania (Eurofins) using standard chain-of-custody protocols. The samples delivered to Eurofins were analyzed for VOCs using SW-846 Method 8260C. Field sampling data, including results of field screening of the groundwater samples for temperature, pH, specific conductance, and turbidity are summarized in **Table 3-3**. Results of VOC analyses for constituents of potential concern are summarized by well in **Table 3-4**. Analytical laboratory reports from Eurofins are provided in **Appendix B**.

3.3 Data Analysis and Reporting

Groundwater monitoring data collected as part of the EN-154R shutdown test were transmitted to the NYSDEC and the NYSDOH via quarterly analytical summary reports (ASRs), and as part of Site-wide semiannual and annual groundwater monitoring reports. The ASRs provided updated tabular summaries of the water level data, field sampling data, and VOC analytical results. The semi-annual and annual reports incorporated the shutdown test data with other Site-wide monitoring data to provide updated interpretations of Upper Aquifer groundwater levels and apparent flow directions, and VOC constituent plumes in OU#7 and the surrounding area.

4 FINDINGS

This section describes the findings of the EN-154R shutdown test, including (1) a comparison of pre- and post-shutdown groundwater levels and flow conditions in OU#7 and the surrounding area; (2) a review of temporal changes in VOC concentrations during more than three years of EN-154R shutdown conditions; and (3) a description of the apparent spatial distribution of specific VOC constituents of potential concern that developed about two years after termination of groundwater withdrawals from EN-154R.

4.1 Groundwater Levels and Flow Directions

Plate 4-1 compares groundwater elevation contours for the Upper Aquifer based on water levels recorded on February 26, 2014, two days prior to the shutdown of EN-154R, with groundwater elevation contours for the Upper Aquifer based on water levels recorded on February 10, 2016, about two years after the shutdown. As shown on the February 26, 2014 contour map (the left side of Plate 4-1), OU#7 Upper Aquifer groundwater elevations and inferred flow directions under extraction well EN-154R pumping conditions indicate a pattern of flow from the northwest, north, and northeast converging towards EN-154R. OU#7 lateral hydraulic gradients under these EN-154R pumping conditions are on the order of 0.01 to 0.02 feet per foot (ft/ft). A groundwater flow divide that depicts the apparent southern limits of EN-154R hydraulic capture is shown on the February 2014 contour map. The February 2014 Upper Aquifer groundwater elevations in the area of the RMJ Property suggest converging groundwater flow from areas to the northwest, northeast, and south. The lateral hydraulic gradients in this area are generally an order of magnitude lower than gradients in OU#7, ranging from about 0.001 to 0.003 ft/ft.

Under EN-154R non-pumping conditions, the February 2016 contour map on the right side of Plate 4-1 depicts an overall similar pattern of water level contours and flow directions with converging groundwater flow within OU#7 and within the RMJ Property. The magnitude of the lateral hydraulic gradients between OU#7 and the RMJ Property is also similar to February 2014. The primary differences in the two contour maps are (1) the groundwater elevation contours under non-pumping conditions are generally broader with less converging groundwater flow near well EN-154R and (2) the lateral hydraulic gradients in the area between EN-154R and the former OU#7 lagoon/surface impoundment are generally lower, as would be expected with recovery of water

levels. The lower lateral hydraulic gradients have resulted in decreased groundwater seepage velocities and greater groundwater travel times.

A closer inspection of the water level contours pre- and post-shutdown also indicates a slight westerly shift in the groundwater flow originating in the area of Franklin Street. Comparisons of the February 2014 pre-shutdown conditions with other post-shutdown groundwater elevation contour maps indicate similar minor changes in groundwater levels and flow directions. A comparison of post-shutdown water level data collected over the past three years does not indicate significant seasonal changes in overall water level elevations and flow directions.

Plate 4-2 depicts two hydrogeologic cross-sections designated as A-A' and B-B'. Cross-section A-A' is oriented north-northeast to south-southwest, generally parallel to the overall direction of groundwater flow, and cross-section B-B' is oriented west to east, generally perpendicular to the overall direction of groundwater flow. As depicted on cross-section A-A', the saturated thickness of the sandy outwash deposits increases from less than 10 feet in the area of Building 95 in OU#7 to greater than 50 feet beneath the RMJ Property. As depicted on cross-section B-B', well EN-154R is located near the center of a trough in the surface of finer textured glacial till and glaciolacustrine soils. The presence of this southwest plunging trough in the surface of the lacustrine silt unit is also depicted on Figure 2-3.

The saturated thickness of the Upper Aquifer, derived by cross-contouring the top of silt contour map with Upper Aquifer groundwater elevation contour maps, is generally on the order of 5 to 10 feet in the northern and central portions of OU#7 and 10 to 20 feet in the southern portion of OU#7. Water level and top of silt elevation data for wells in the area of the top of silt surface trough south of OU#7 indicate saturated thickness values on the order of 35 to 50 feet. This increase in saturated thickness and, by extension, the transmissivity of the Upper Aquifer, accounts for the order of magnitude reduction in hydraulic gradients south of OU#7.

4.2 VOC Constituents of Potential Concern

The VOC constituents of potential concern in Upper Aquifer groundwater within OU#7 and the surrounding area include chlorinated ethenes, chlorinated ethanes, and chlorofluorinated ethanes (Freons). A brief description of each of these groupings of VOCs is provided below.

- *Ethene Series* - The principal chlorinated ethenes present in Upper Aquifer groundwater within OU#7 and/or the surrounding area are PCE, TCE, c12-DCE, and VC. PCE and TCE are primary solvents typically used in degreasing and dry cleaning operations. TCE can be either a daughter product of PCE by reductive dechlorination or a primary solvent unrelated to PCE use. Dissolved TCE, whether derived from PCE or directly from the solvent TCE, degrades by reductive dechlorination to either c12-DCE (preferentially) or trans-1,2-dichloroethene. These two isomers of dichloroethene then degrade by reductive dechlorination to VC, which ultimately degrades to ethene.
- *Ethane Series* - The principal chlorinated ethanes present in Upper Aquifer groundwater within OU#7 and/or the surrounding area are 111-TCA and 11-DCA. 111-TCA is a primary solvent used in many industrial applications and in printing operations. Its principal transformation products are 11-DCA by reductive dechlorination and 11-DCE by an abiotic elimination reaction. 11-DCE may transform by reductive dechlorination to vinyl chloride and, although it is an ethene compound, 11-DCE is grouped with 111-TCA and 11-DCA because its parent compound is typically 111-TCA.
- *Freons* - Other compounds detected in Upper Aquifer groundwater in OU#7 and/or the surrounding area include Freon 113 and its transformation product, Freon 123a. Freon 113 transforms to Freon 123a by reductive dechlorination.

4.2.1 Temporal Variations in Groundwater Concentrations

Time versus concentration graphs for Upper Aquifer groundwater wells monitored before and after shutdown of EN-154R are provided in **Appendix C**. These semi-logarithmic graphs, with logarithmic concentrations shown on the y-axis, depict temporal variations in concentrations of constituents of potential concern before and after the termination of EN-154R groundwater withdrawals on February 28, 2014. (A timeline for February 28, 2014 is provided on each of the graphs for reference).

The pre-shutdown concentration data includes results of groundwater sampling and VOC analyses in August 2013 and February 2014. For comparison, pre-1985 concentration data is also shown on

the graphs for EN-154R and for three wells close to EN-154R. (Note: Data from 1985 through 2012 is not shown on these graphs; this gap is shown as a “break” in the x-axis.)

The post-shutdown concentration data includes results of the 17 sampling rounds performed from March 2014 to May 2017. Two graphs are provided for each well, with ethane-series and Freon constituent concentrations posted on the upper graph and ethene-series constituent concentrations posted on the lower graph.

Time versus concentration graphs for wells EN-96, EN-150, EN-154R, and EN-152 are grouped together in **Appendix C.1**. As noted above, these four graphs include pre-1985 concentration data for comparison with the data from 2013 through 2017, and show that concentrations of VOCs in these wells were generally 10 to 100 times higher 30 years ago. A review of the graphs for EN-96 and EN-154R indicates an abrupt change in concentrations of several constituents shortly after the EN-154R shutdown, followed by a more gradual increase in concentrations over a period of about two years. The abrupt rise in concentrations for well EN-96 and the abrupt decline in concentrations for well EN-154R is likely due to a westward shift in the VOC constituent plumes once EN-154R groundwater withdrawals were terminated. The more gradual upward trend in concentrations during the initial two years of post-shutdown monitoring, followed by a leveling off or a slight decline in concentrations is also observed with the concentration data for wells EN-150 and EN-152 and likely reflects:

- Greater residence time and greater VOC mass transfer from the outwash soils to groundwater due to slower groundwater flow velocities under non-pumping conditions; and
- Lesser dilution of the constituent plumes in proximity to EN-154R, as clean water outside the constituent plume areas is no longer drawn toward EN-154R.

The most recent increases and declines for certain constituents, such as the decrease in c12-DCE and VC concentrations for wells EN-96 and EN-152, corresponding to the timing of an increase in c12-DCE and VC concentrations at well EN-150, is likely due to seasonal eastward and westward shifts in groundwater flow paths. Overall, the graphs suggest concentrations of VOC constituents in the area of well EN-154R, downgradient from OU#7 and the former EJ rubber cement plant site (IHWS #704018), have stabilized during the period of the EN-154R shutdown test.

Time versus concentration graphs for RMJ Property monitoring wells RMJ-MW-1 through RMJ-MW-6 are grouped together in **Appendix C.2**. Under non-pumping conditions, wells RMJ-MW-1, RMJ-MW-2, and RMJ-MW-5 are located in apparent positions downgradient from OU#7 and the former EJ rubber cement plant site. Well RMJ-MW-5 is also located proximate to a former PCE source area on the RMJ Property (a shed used by the former Schapiro's dry cleaning facility, VCPS #V00667). Wells RMJ-MW-3 and RMJ-MW-4 are located downgradient from a former PCE source area (the main building of the former Schapiro's dry cleaning facility). Well RMJ-MW-6 is located in an area of converging flow, downgradient from OU#7, the former EJ rubber cement plant site, and former PCE source areas on the RMJ Property.

As indicated on the graphs for wells RMJ-MW-1, RMJ-MW-2, and RMJ-MW-5, low concentrations, typically less than 5 ug/L, of certain VOCs were detected within about one year after the EN-154R shutdown. The most prominent of these was the detection of 111-TCA in samples collected from well RMJ-MW-5. Similar or lower concentrations of PCE and TCE associated with the former Schapiro's dry cleaning facility shed were observed in the samples collected from this well. The decline in PCE and TCE concentrations likely reflects a slight shift in groundwater flow in the area of RMJ-MW-5 under non-pumping conditions. The graphs for wells RMJ-MW-3 and RMJ-MW-4 indicate similar concentrations of PCE and trace concentrations of TCE reflective of their positions downgradient from the main building of the former Schapiro's dry cleaning facility. The graph for RMJ-MW-6 reflects a mixture of low concentrations of ethane series constituents and Freons migrating from OU#7 and the former EJ rubber cement plant site, and ethene series constituents from former Schapiro's dry cleaning facility sources. Overall, the graphs suggest that concentrations of VOCs in the area of the RMJ Property have stabilized more than three years after the termination of EN-154R groundwater withdrawals. Although the 111-TCA plume originating from the former EJ rubber cement plant site has extended beneath the RMJ Property, the concentrations and lateral extent of the 111-TCA presence in groundwater are more limited than the concentrations and lateral extent of the PCE presence associated with the former Schapiro's dry cleaning facility.

Time versus concentration graphs for well EN-95 and well EN-104, located on the south side of North Street across from the RMJ Property are grouped together in **Appendix C.3**. Overall, the data for well EN-95 indicate stabilization of low-level concentrations of certain VOCs, apparently unaffected by the EN-154R shutdown. The lack of a temporal change in VOC concentrations for

this well is consistent with its apparent position upgradient from the RMJ Property. The graphs for well EN-104 indicate a gradual increase in the low concentrations (less than 5 ug/L) of ethane series, Freons, and ethene series constituents during more than three years of shutdown testing. The VOC speciation in the samples collected from this well suggests that it is located southeast of the commingled plume front that extends southwesterly beneath the RMJ Property.

4.2.2 Spatial Distribution of Groundwater Concentrations

Individual isoconcentration maps for each chemical of potential concern in OU#7 are presented on **Plate 4-3** for August 2016 under non-pumping conditions. For each of the nine chemicals of concern, the lowest concentration contour value shown on each isoconcentration contour map is the New York State Groundwater Quality Standard (NYSGQS) listed in 6NYCRR Part 703. The NYSGQS is 2 µg/L for vinyl chloride and 5 µg/L for the other principal VOCs.

Concentrations of 111-TCA, 11-DCE, Freon 113 and Freon 123a exceeded the NYSGQS only at well EN-96. Concentrations of 11-DCA, c12-DCE and VC exceeding the NYSGQS were more widespread, with the highest concentrations at well EN-96. Concentrations of TCE exceeded the NYSGQS only at wells EN-70 and EN-177. As indicated by the isoconcentration contours on **Plate 4-3**, the majority of the ethanes detected in the southern portion of OU#7 are inferred to originate from the former tank area of the former EJ rubber cement plant site, located northwest of Franklin Street. The 111-TCA plume extends to the south onto the RMJ Property. PCE is also present on the RMJ Property between the Norfolk Southern railroad tracks and North Street and is associated with former dry cleaning operations.

5 CONCLUSIONS AND RECOMMENDATIONS

In light of the EN-154R shutdown test findings described in Section 4, GSC offers the following conclusions:

1. Termination of EN-154R groundwater withdrawals has resulted in a slight shift in groundwater flow directions, but the overall pattern of converging groundwater flow in OU#7 and surrounding areas is relatively unchanged.
2. Termination of EN-154R groundwater withdrawals has lowered lateral hydraulic gradients in the southern area of OU#7, resulting in slower groundwater seepage velocities.
3. Performance of seventeen post-shutdown water level measurement rounds over a period of more than three years in OU#7 and the surrounding area does not indicate significant seasonal variations in groundwater elevations and flow directions.
4. Termination of EN-154R groundwater withdrawals has resulted in increases in concentrations of certain VOC constituents that appear to originate from the former EJ rubber cement plant site (IHWS #704018) and/or OU#7. However, the VOC concentrations detected during the shutdown test are generally 10 to 100 times lower than VOC concentrations detected 30 years ago.
5. An inspection of concentration trends at individual well locations suggests that concentrations have stabilized during the period of the EN-154R shutdown test.
6. Termination of EN-154R groundwater withdrawals has resulted in the southern migration of a plume of 111-TCA in groundwater beneath the RMJ Property; however, the concentrations and extent of the 111-TCA plume are more limited than the concentrations and lateral extent of the PCE plume associated with the former Schapiro's dry cleaning facility (VCPS #V00667).
7. In aggregate, the pre- and post-shutdown test groundwater monitoring data has confirmed the results of the 2013 hydrogeologic assessment and trend analysis which inferred that the termination of EN-154R groundwater withdrawals would not result in meaningful impacts to Upper Aquifer groundwater downgradient from OU#7.

Considering the conclusions listed above, GSC recommends the permanent shutdown of EN-154R and related treatment activities at the Robble Avenue GTF. The shutdown of extraction and treatment operations will have the greatest net benefit to the environment with the least direct, indirect and life-cycle impacts. Based on the results of the shutdown testing within and near OU#7, the permanent shutdown of extraction well EN-154R is expected to have no meaningful effects that would constitute a threat to public health and the environment. In place of groundwater extraction and treatment operations, we recommend implementation of a program of groundwater monitoring, in accordance with the Groundwater Monitoring Plan for 2017, as the final remedy for OU#7.

TABLE 3-1
PHYSICAL WELL DATA

EN-154R Shutdown Test
Former IBM Endicott Site, Endicott, NY

Well ID	Northing (Y) grid feet	Easting (X) grid feet	Ground Surface Elevation ft. amsl	Reference Point Elevation ft. amsl	Stickup ft.	Surface Completion	Installation Date	Total Drilled Depth ft. bgs	Borehole Diameter in.	Top of Well Screen Depth ft. bgs	Bottom of Well Screen Depth ft. bgs	Screen Length ft.	Screen Diameter in.	Slot Size in.	Screen Material	Casing Diameter in.	Casing Material	Location Description
IBM Wells																		
EN-026	767734.7	964681.3	838.29	840.96	2.67	SP	07-Feb-80	20.0	7.0	10.0	20.0	10.0	4.0	0.020	PVC	4.0	PVC	Building 252, inside fenced transformers
EN-066	767313.8	963976.9	840.07	839.70	-0.37	MH	17-Jul-80	40.0	7.0	12.0	38.0	26.0	4.0	0.020	PVC	4.0	PVC	Building 96 former lagoon (SW corner)
EN-067	767506.0	963916.1	835.25	837.85	2.60	SP	11-Jul-80	26.0	7.0	8.0	26.0	18.0	4.0	0.020	PVC	4.0	PVC	Building 96 former lagoon (W side)
EN-069	767791.7	964213.4	836.41	839.14	2.73	SP	16-Jul-80	22.0	7.0	9.0	22.0	13.0	2.0	0.020	PVC	2.0	PVC	Building 96 (SW corner)
EN-070	767582.2	964403.0	838.88	841.66	2.78	SP	14-Jul-80	18.0	7.0	10.0	16.0	6.0	4.0	0.020	PVC	4.0	PVC	Building 96 (S) near RR tracks
EN-072	768035.7	964873.6	835.67	838.45	2.78	SP	25-Jul-80	27.0	7.0	6.0	23.0	17.0	2.0	0.020	PVC	2.0	PVC	Clark St & Oak Hill Ave (SW corner)
EN-095	766654.7	963794.2	843.33	846.08	2.75	SP	21-Aug-80	54.0	6.0	18.0	54.0	36.0	4.0	0.020	PVC	4.0	PVC	North St & Harrison Ave (SW corner)
EN-096	767199.1	963686.1	835.93	838.65	2.72	SP	27-Aug-80	42.0	10.0	8.0	38.0	30.0	4.0	0.020	PVC	4.0	PVC	SW of former lagoon, betw/ Franklin St & RR tracks
EN-104	766472.9	963371.6	837.10	840.27	3.17	SP	18-Dec-81	72.0	10.0	10.5	72.0	61.5	4.0	0.020	PVC	4.0	PVC	610 North St, between Fillmore Ave & Parsons Ave
EN-105	767254.2	963408.9	832.21	834.60	2.39	SP	12-Dec-80	14.0	10.0	2.0	12.5	10.5	4.0	0.020	PVC	4.0	PVC	Franklin St (N side)
EN-121	768063.0	964325.4	834.36	837.09	2.73	SP	17-Mar-82	22.5	4.0	5.0	20.0	15.0	2.0	0.010	PVC	2.0	PVC	Building 96 (N side), on Clark St
EN-122	768044.4	964079.1	833.70	836.39	2.69	SP	16-Mar-82	21.5	4.0	5.0	20.0	15.0	2.0	0.010	PVC	2.0	PVC	Between Building 95 & Clark St, outside fence
EN-123	767897.3	963919.8	832.72	835.41	2.69	SP	17-Mar-82	19.5	4.0	5.0	20.0	15.0	2.0	0.010	PVC	2.0	PVC	Building 95 Annex, NW corner
EN-146	768041.2	964497.4	834.61	837.49	2.88	SP	29-Dec-82	22.0	8.0	7.0	21.0	14.0	4.0	0.010	PVC	4.0	PVC	W of E truck gate for Building 96
EN-149	767125.6	963726.5	838.28	841.06	2.78	SP	08-Sep-83	25.5	6.0	15.5	25.5	10.0	2.0	NA	NA	2.0	NA	SW of former lagoon, N of RR tracks
EN-150	767120.4	963722.2	838.31	841.04	2.73	SP	08-Sep-83	47.0	6.0	36.0	46.0	10.0	4.0	NA	NA	4.0	NA	SW of former lagoon, N of RR tracks
EN-151	767207.6	963800.4	836.09	838.74	2.65	SP	09-Sep-83	52.0	6.0	39.0	49.0	10.0	4.0	NA	NA	4.0	NA	SW of former lagoon, N of RR tracks
EN-152	767207.3	963804.4	836.07	838.74	2.67	SP	09-Sep-83	25.0	6.0	14.5	24.5	10.0	2.0	NA	NA	2.0	NA	SW of former lagoon, N of RR tracks
EN-153	767250.1	963602.8	835.49	838.21	2.72	SP	07-Sep-83	22.0	6.0	10.0	20.0	10.0	2.0	NA	NA	2.0	NA	SW of former lagoon, N of RR tracks
EN-154B	767173.5	963746.2	836.80	838.98	2.18	SP	04-Aug-04	48.0	6.0	41.0	43.0	2.0	2.0	0.010	PVC	2.0	PVC	NYSEG property, ~10 ft S of EN-154
EN-154R	767174.9	963749.6	836.20	838.31	2.11	SP	27-May-05	30.0	20.0	22.0	24.0	2.0	14.0	0.050	SS	14.0	SS	NYSEG property, ~10 ft SE of EN-154
EN-164	767402.0	964107.8	839.55	842.10	2.55	SP	20-Feb-85	17.0	9.0	12.5	17.5	5.0	4.0	0.020	PVC	4.0	PVC	Former lagoon, next to RR tracks
EN-165	767347.6	963932.5	835.86	838.31	2.45	SP	21-Feb-85	24.0	9.0	12.0	22.0	10.0	4.0	0.020	PVC	4.0	PVC	Former lagoon (SW corner)
EN-166	767694.7	963919.0	834.79	837.32	2.53	SP	21-Feb-85	22.0	9.0	13.0	18.0	5.0	4.0	0.020	PVC	4.0	PVC	Former lagoon (NW corner)
EN-167	767855.0	964021.8	836.00	835.48	-0.52	MH	25-Feb-85	22.0	9.0	7.0	17.0	10.0	4.0	0.020	PVC	4.0	PVC	Building 95 (inside)
EN-176	767315.2	963979.9	840.19	842.88	2.69	SP	16-Oct-85	25.0	9.0	14.0	22.5	8.5	4.0	0.020	PVC	4.0	PVC	Building 96 former lagoon (SW corner)
EN-177	767511.4	964278.0	839.20	841.88	2.68	SP	16-Oct-85	25.0	7.0	7.0	16.0	9.0	4.0	0.020	PVC	4.0	PVC	Building 96 former lagoon (S side)
EN-202	766785.8	964096.1	846.07	848.44	2.37	SP	07-Oct-92	48.0	12.0	27.5	47.5	20.0	4.0	0.010	SS	4.0	SS	North St & Clevel& Ave (SW corner)
EN-211	767943.8	964162.3	835.20	837.73	2.53	SP	31-Mar-93	18.5	12.0	7.1	17.1	10.0	4.0	0.010	SS	4.0	SS	Building 95 (E side)
EN-218	768014.7	964195.0	834.62	837.32	2.70	SP	01-Jun-94	22.5	16.0	12.5	18.5	6.0	8.0	0.030	SS	8.0	BS	Building 95 (NE corner), on Clark St
EN-487	768009.9	964196.6	834.50	834.18	-0.32	MH	11-Aug-05	18.0	8.0	5.0	15.0	10.0	2.0	0.020	PVC	2.0	PVC	S side of Clark St, 5 ft S of extracton well EN-218
RMJ Realty, LLC Monitoring Wells																		
RMJ-MW-1	766896.3	963748.0	844.1	843.41	-0.69	MH	08-Nov-04	34.0	8.0	19.0	34.0	15.0	2.0	0.020	PVC	2.0	PVC	Northeast side of Shapiro building, 709 North St.
RMJ-MW-2	766899.5	963620.3	841.5	841.23	-0.27	MH	09-Nov-04	32.0	8.0	16.0	31.0	15.0	2.0	0.020	PVC	2.0	PVC	North side of Shapiro building, 709 North St.
RMJ-MW-3	766731.4	963593.6	841.4	840.97	-0.43	MH	10-Nov-04	31.0	8.0	16.0	31.0	15.0	2.0	0.020	PVC	2.0	PVC	Southwest side of Shapiro building, 709 North St.
RMJ-MW-4	766709.9	963713.3	843.6	843.32	-0.28	MH	15-Feb-06	34.0	8.0	19.0	34.0	15.0	2.0	0.020	PVC	2.0	PVC	Front (south side) of Shapiro building, 709 North St.
RMJ-MW-5	766814.1	963516.2	839.2	838.79	-0.41	MH	16-Feb-06	32.0	8.0	17.0	32.0	15.0	2.0	0.020	PVC	2.0	PVC	West of Shapiro bldg, north of former Keytronics bldg
RMJ-MW-6	766589.0	963443.7	840.0	839.69	-0.31	MH	17-Feb-06	44.0	8.0	15.0	30.0	15.0	2.0	0.020	PVC	2.0	PVC	Front (south side) of former Keytronics bldg

Notes:
Planar coordinates, measuring point elevations and ground surface elevations for IBM wells are based on the May 2003 comprehensive well field survey with subsequent followup surveys through December 2013.
Planar coordinates, measuring point elevations and ground surface elevations for RMJ Realty, LLC wells are based on a well field survey performed on February 18, 2014.
Coordinate base is New York State Central, NAD1983.

Key:
ft bgs = feet below ground surface
ft amsl = feet above mean sea level
SP = Standpipe surface completion
MH = Flush-mount manhole surface completion
PVC = Polyvinyl Chloride
SS = Stainless steel
NA = Data not available or not applicable

TABLE 3-2
POTENTIOMETRIC ELEVATION DATA

EN-154R Shutdown Test

Former IBM Endicott Site, Endicott, NY

Well ID	Ground Surface Elevation (ft. amsl)	Measuring Point Elevation ² (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)
			1/30/2014		2/12/2014		2/26/2014		3/26/2014		4/29/2014	
EN-154R Operation Condition			Pumping		Pumping		Pumping		Shutdown - 1 Month		Shutdown - 2 Months	
IBM Wells												
EN-026	838.29	840.96	12.29	828.67	12.62	828.34	12.46	828.50	12.48	828.48	12.31	828.65
EN-066	840.07	839.70	18.53	821.17	18.82	820.88	18.82	820.88	17.95	821.75	17.52	822.18
EN-067	835.25	837.85	15.50	822.35	15.81	822.04	15.60	822.25	14.96	822.89	14.60	823.25
EN-069	836.41	839.14	12.05	827.09	12.33	826.81	12.05	827.09	12.02	827.12	11.92	827.22
EN-070	838.88	841.66	14.03	827.63	14.33	827.33	14.23	827.43	14.17	827.49	13.99	827.67
EN-072	835.67	838.45	9.67	828.78	10.25	828.20	9.92	828.53	10.10	828.35	9.96	828.49
EN-095	843.33	846.08	26.38	819.70	26.54	819.54	26.55	819.53	26.12	819.96	25.64	820.44
EN-096	835.93	838.65	18.90	819.75	19.15	819.50	19.13	819.52	17.77	820.88	17.26	821.39
EN-104	837.10	840.27	20.82	819.45	21.02	819.25	21.03	819.24	20.65	819.62	20.17	820.10
EN-105	832.21	834.60	9.25	825.35	8.83	825.77	9.02	825.58	9.15	825.45	8.39	826.21
EN-121	834.36	837.09	9.30	827.79	9.66	827.43	9.40	827.69	9.46	827.63	9.38	827.71
EN-122	833.70	836.39	9.00	827.39	9.32	827.07	8.99	827.40	9.08	827.31	9.02	827.37
EN-123	832.72	835.41	10.41	825.00	10.69	824.72	10.27	825.14	10.28	825.13	10.20	825.21
EN-146	834.61	837.49	9.51	827.98	9.90	827.59	9.56	827.93	9.64	827.85	9.60	827.89
EN-149	838.28	841.06	21.56	819.50	21.70	819.36	21.70	819.36	20.39	820.67	19.94	821.12
EN-150	838.31	841.04	21.48	819.56	21.63	819.41	21.63	819.41	20.42	820.62	19.92	821.12
EN-151	836.09	838.74	18.80	819.94	19.00	819.74	18.97	819.77	17.66	821.08	17.20	821.54
EN-152	836.07	838.74	18.80	819.94	18.98	819.76	18.95	819.79	17.67	821.07	17.18	821.56
EN-153	835.49	838.21	18.03	820.18	18.28	819.93	18.14	820.07	16.98	821.23	16.52	821.69
EN-154B	836.80	838.98	19.59	819.39	19.72	819.26	19.70	819.28	18.04	820.94	17.60	821.38
EN-154R	836.20	838.31	16.30	822.01	12.99	825.32	8.15	830.16	17.34	820.97	16.90	821.41
EN-164	839.55	842.10	19.86	822.24	20.20	821.90	20.32	821.78	19.70	822.40	19.24	822.86
EN-165	835.86	838.31	17.03	821.28	17.30	821.01	17.24	821.07	16.37	821.94	15.95	822.36
EN-166	834.79	837.32	13.45	823.87	13.73	823.59	13.53	823.79	13.10	824.22	12.83	824.49
EN-167	836.00	835.48	9.40	826.08	9.74	825.74	9.46	826.02	9.30	826.18	9.13	826.35
EN-176	840.19	842.88	21.71	821.17	21.99	820.89	21.99	820.89	21.15	821.73	20.65	822.23
EN-177	839.20	841.88	15.64	826.24	15.95	825.93	16.12	825.76	15.90	825.98	15.57	826.31
EN-202	846.07	848.44	28.80	819.64	28.87	819.57	28.86	819.58	28.51	819.93	28.12	820.32
EN-211	835.20	837.73	10.46	827.27	10.81	826.92	10.51	827.22	10.53	827.20	10.36	827.37
EN-218	834.62	837.32	9.75	827.57	10.07	827.25	9.81	827.51	9.80	827.52	9.75	827.57
EN-487	834.50	834.18	7.08	827.10	7.38	826.80	7.08	827.10	7.12	827.06	6.99	827.19
RMJ Realty LLC Wells												
MW-1	844.1	843.41	NR	-	23.87	819.54	23.87	819.54	23.24	820.17	22.77	820.64
MW-2	841.5	841.23	NR	-	21.80	819.43	21.80	819.43	21.22	820.01	20.71	820.52
MW-3	841.4	840.97	21.37	819.60	21.55	819.42	21.58	819.39	21.13	819.84	20.62	820.35
MW-4	843.6	843.32	23.70	819.62	23.85	819.47	23.82	819.50	23.42	819.90	22.92	820.40
MW-5	839.2	838.79	19.47	819.32	NR	-	19.40	819.39	18.95	819.84	18.42	820.37
MW-6	840.0	839.69	20.25	819.44	20.42	819.27	20.44	819.25	20.08	819.61	19.56	820.13

TABLE 3-2
POTENTIOMETRIC ELEVATION DATA
 EN-154R Shutdown Test
 Former IBM Endicott Site, Endicott, NY

Well ID	Ground Surface Elevation (ft. amsl)	Measuring Point Elevation ² (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)
			5/28/2014		6/24/2014		7/30/2014		8/28/2014		11/19/2014	
			EN-154R Operation Condition									
			Shutdown - 3 Months		Shutdown - 4 Months		Shutdown - 5 Months		Shutdown - 6 Months		Shutdown - 9 Months	
IBM Wells												
EN-026	838.29	840.96	12.38	828.58	NR	-	12.71	828.25	12.52	828.44	13.26	827.70
EN-066	840.07	839.70	17.40	822.30	NR	-	17.40	822.30	17.50	822.20	18.12	821.58
EN-067	835.25	837.85	14.51	823.34	NR	-	14.66	823.19	14.63	823.22	15.30	822.55
EN-069	836.41	839.14	11.91	827.23	NR	-	12.29	826.85	12.16	826.98	12.70	826.44
EN-070	838.88	841.66	14.00	827.66	NR	-	14.70	826.96	14.05	827.61	14.77	826.89
EN-072	835.67	838.45	9.80	828.65	NR	-	10.48	827.97	10.29	828.16	10.80	827.65
EN-095	843.33	846.08	25.50	820.58	25.57	820.51	25.53	820.55	25.71	820.37	26.30	819.78
EN-096	835.93	838.65	17.30	821.35	17.24	821.41	17.18	821.47	17.17	821.48	17.92	820.73
EN-104	837.10	840.27	20.05	820.22	20.30	819.97	20.33	819.94	20.49	819.78	21.13	819.14
EN-105	832.21	834.60	7.76	826.84	NR	-	7.82	826.78	7.09	827.51	7.72	826.88
EN-121	834.36	837.09	9.37	827.72	NR	-	9.75	827.34	9.58	827.51	10.14	826.95
EN-122	833.70	836.39	9.04	827.35	NR	-	9.40	826.99	9.25	827.14	9.68	826.71
EN-123	832.72	835.41	10.20	825.21	NR	-	10.56	824.85	10.50	824.91	10.95	824.46
EN-146	834.61	837.49	9.57	827.92	NR	-	10.01	827.48	9.84	827.65	10.36	827.13
EN-149	838.28	841.06	19.77	821.29	NR	-	19.83	821.23	19.87	821.19	20.57	820.49
EN-150	838.31	841.04	19.77	821.27	19.86	821.18	19.83	821.21	19.87	821.17	20.57	820.47
EN-151	836.09	838.74	17.01	821.73	NR	-	17.06	821.68	17.12	821.62	17.80	820.94
EN-152	836.07	838.74	17.06	821.68	17.17	821.57	17.06	821.68	17.13	821.61	17.81	820.93
EN-153	835.49	838.21	16.34	821.87	NR	-	16.42	821.79	16.45	821.76	17.17	821.04
EN-154B	836.80	838.98	17.46	821.52	NR	-	17.46	821.52	17.54	821.44	18.20	820.78
EN-154R	836.20	838.31	16.75	821.56	16.88	821.43	16.89	821.42	16.87	821.44	17.55	820.76
EN-164	839.55	842.10	19.22	822.88	NR	-	19.75	822.35	19.36	822.74	19.91	822.19
EN-165	835.86	838.31	15.85	822.46	NR	-	15.87	822.44	15.98	822.33	16.57	821.74
EN-166	834.79	837.32	12.73	824.59	NR	-	12.97	824.35	12.96	824.36	13.61	823.71
EN-167	836.00	835.48	9.10	826.38	NR	-	9.43	826.05	9.35	826.13	9.94	825.54
EN-176	840.19	842.88	20.55	822.33	NR	-	20.53	822.35	20.67	822.21	21.30	821.58
EN-177	839.20	841.88	15.67	826.21	NR	-	15.70	826.18	15.87	826.01	16.64	825.24
EN-202	846.07	848.44	27.80	820.64	NR	-	27.70	820.74	27.83	820.61	28.30	820.14
EN-211	835.20	837.73	10.40	827.33	NR	-	10.81	826.92	10.56	827.17	11.18	826.55
EN-218	834.62	837.32	9.75	827.57	NR	-	10.10	827.22	10.02	827.30	10.49	826.83
EN-487	834.50	834.18	7.03	827.15	NR	-	7.40	826.78	7.30	826.88	7.80	826.38
RMJ Realty LLC Wells												
MW-1	844.1	843.41	22.59	820.82	22.73	820.68	22.68	820.73	22.80	820.61	23.39	820.02
MW-2	841.5	841.23	20.56	820.67	20.70	820.53	20.62	820.61	20.83	820.40	21.43	819.80
MW-3	841.4	840.97	20.49	820.48	20.66	820.31	20.65	820.32	20.87	820.10	21.47	819.50
MW-4	843.6	843.32	22.75	820.57	22.88	820.44	22.86	820.46	23.05	820.27	23.65	819.67
MW-5	839.2	838.79	18.31	820.48	18.43	820.36	18.45	820.34	18.87	819.92	19.25	819.54
MW-6	840.0	839.69	19.49	820.20	19.70	819.99	19.73	819.96	19.94	819.75	20.53	819.16

TABLE 3-2
POTENTIOMETRIC ELEVATION DATA
 EN-154R Shutdown Test
 Former IBM Endicott Site, Endicott, NY

Well ID	Ground Surface Elevation (ft. amsl)	Measuring Point Elevation ² (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)
			2/26/2015		5/1/2015		8/6/2015		11/12/2015		2/10/2016	
EN-154R Operation Condition			Shutdown - 12 months		Shutdown - 15 months		Shutdown - 18 months		Shutdown - 21 months		Shutdown - 24 months	
IBM Wells												
EN-026	838.29	840.96	12.98	827.98	11.57	829.39	12.06	828.90	12.90	828.06	13.20	827.76
EN-066	840.07	839.70	18.47	821.23	17.04	822.66	16.50	823.20	17.45	822.25	17.76	821.94
EN-067	835.25	837.85	15.60	822.25	14.04	823.81	13.75	824.10	14.51	823.34	14.87	822.98
EN-069	836.41	839.14	12.20	826.94	11.41	827.73	11.70	827.44	12.01	827.13	12.36	826.78
EN-070	838.88	841.66	14.95	826.71	13.30	828.36	13.48	828.18	14.35	827.31	14.83	826.83
EN-072	835.67	838.45	9.46	828.99	9.42	829.03	9.73	828.72	10.86	827.59	10.55	827.90
EN-095	843.33	846.08	26.72	819.36	25.34	820.74	24.57	821.51	25.58	820.50	25.95	820.13
EN-096	835.93	838.65	18.32	820.33	16.90	821.75	16.26	822.39	17.08	821.57	17.53	821.12
EN-104	837.10	840.27	21.49	818.78	19.92	820.35	19.54	820.73	20.48	819.79	20.82	819.45
EN-105	832.21	834.60	9.07	825.53	8.20	826.40	7.40	827.20	7.30	827.30	8.07	826.53
EN-121	834.36	837.09	9.40	827.69	8.88	828.21	9.30	827.79	9.35	827.74	9.82	827.27
EN-122	833.70	836.39	9.13	827.26	8.60	827.79	8.90	827.49	8.95	827.44	9.36	827.03
EN-123	832.72	835.41	10.90	824.51	10.03	825.38	10.30	825.11	10.15	825.26	10.59	824.82
EN-146	834.61	837.49	9.57	827.92	9.05	828.44	9.55	827.94	9.55	827.94	10.08	827.41
EN-149	838.28	841.06	20.95	820.11	19.54	821.52	18.85	822.21	19.78	821.28	20.22	820.84
EN-150	838.31	841.04	20.95	820.09	19.57	821.47	18.88	822.16	19.78	821.26	20.20	820.84
EN-151	836.09	838.74	18.20	820.54	16.77	821.97	16.12	822.62	17.01	821.73	17.42	821.32
EN-152	836.07	838.74	18.21	820.53	16.79	821.95	16.16	822.58	17.04	821.70	17.42	821.32
EN-153	835.49	838.21	17.52	820.69	16.09	822.12	15.53	822.68	16.09	822.12	17.00	821.21
EN-154B	836.80	838.98	18.60	820.38	17.18	821.80	16.54	822.44	17.40	821.58	17.83	821.15
EN-154R	836.20	838.31	18.03	820.28	16.54	821.77	15.90	822.41	16.80	821.51	17.20	821.11
EN-164	839.55	842.10	20.21	821.89	18.66	823.44	18.24	823.86	19.35	822.75	19.62	822.48
EN-165	835.86	838.31	16.95	821.36	15.45	822.86	14.98	823.33	15.87	822.44	16.21	822.10
EN-166	834.79	837.32	NR	-	12.30	825.02	12.24	825.08	12.82	824.50	13.20	824.12
EN-167	836.00	835.48	9.62	825.86	8.60	826.88	8.92	826.56	9.27	826.21	9.60	825.88
EN-176	840.19	842.88	21.70	821.18	20.19	822.69	19.67	823.21	20.60	822.28	20.93	821.95
EN-177	839.20	841.88	16.72	825.16	14.77	827.11	14.91	826.97	16.26	825.62	16.50	825.38
EN-202	846.07	848.44	28.92	819.52	27.79	820.65	26.61	821.83	27.50	820.94	28.00	820.44
EN-211	835.20	837.73	10.56	827.17	9.91	827.82	9.72	828.01	10.43	827.30	10.88	826.85
EN-218	834.62	837.32	9.88	827.44	9.27	828.05	9.72	827.60	9.72	827.60	10.21	827.11
EN-487	834.50	834.18	7.18	827.00	6.52	827.66	6.85	827.33	6.98	827.20	7.45	826.73
RMJ Realty LLC Wells												
MW-1	844.1	843.41	NR	-	22.50	820.91	21.73	821.68	22.56	820.85	23.10	820.31
MW-2	841.5	841.23	NR	-	20.45	820.78	19.76	821.47	20.58	820.65	21.08	820.15
MW-3	841.4	840.97	21.80	819.17	20.37	820.60	19.76	821.21	20.70	820.27	21.14	819.83
MW-4	843.6	843.32	23.97	819.35	22.61	820.71	21.97	821.35	22.83	820.49	23.32	820.00
MW-5	839.2	838.79	19.65	819.14	18.17	820.62	17.60	821.19	18.45	820.34	18.95	819.84
MW-6	840.0	839.69	20.77	818.92	19.28	820.41	18.88	820.81	19.76	819.93	20.20	819.49

TABLE 3-2
POTENTIOMETRIC ELEVATION DATA
 EN-154R Shutdown Test
 Former IBM Endicott Site, Endicott, NY

Well ID	Ground Surface Elevation (ft. amsl)	Measuring Point Elevation ² (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)	Depth to Water (ft. below MP)	Ground-water Elevation (ft. amsl)
			5/25/2016		8/11/2016		11/17/2016		2/16/2017		5/18/2017	
EN-154R Operation Condition			Shutdown - 27 months		Shutdown - 30 months		Shutdown - 33 months		Shutdown - 36 months		Shutdown -39 months	
IBM Wells												
EN-026	838.29	840.96	12.93	828.03	13.11	827.85	13.67	827.29	12.99	827.97	11.55	829.41
EN-066	840.07	839.70	17.64	822.06	18.01	821.69	18.40	821.30	17.78	821.92	15.93	823.77
EN-067	835.25	837.85	14.71	823.14	15.09	822.76	15.50	822.35	14.68	823.17	13.30	824.55
EN-069	836.41	839.14	12.35	826.79	12.46	826.68	13.52	825.62	12.17	826.97	11.42	827.72
EN-070	838.88	841.66	14.42	827.24	14.50	827.16	14.76	826.90	14.34	827.32	12.87	828.79
EN-072	835.67	838.45	10.72	827.73	10.71	827.74	12.36	826.09	10.90	827.55	10.05	828.40
EN-095	843.33	846.08	25.87	820.21	26.47	819.61	26.78	819.30	26.14	819.94	23.94	822.14
EN-096	835.93	838.65	17.43	821.22	17.94	820.71	18.28	820.37	17.63	821.02	15.66	822.99
EN-104	837.10	840.27	20.64	819.63	21.24	819.03	21.64	818.63	20.90	819.37	18.86	821.41
EN-105	832.21	834.60	7.83	826.77	8.26	826.34	7.84	826.76	8.23	826.37	7.34	827.26
EN-121	834.36	837.09	9.80	827.29	9.78	827.31	11.05	826.04	9.67	827.42	9.15	827.94
EN-122	833.70	836.39	9.41	826.98	9.44	826.95	10.44	825.95	9.15	827.24	8.78	827.61
EN-123	832.72	835.41	10.42	824.99	10.81	824.60	11.35	824.06	10.08	825.33	9.93	825.48
EN-146	834.61	837.49	10.13	827.36	10.16	827.33	11.42	826.07	9.95	827.54	4.33	833.16
EN-149	838.28	841.06	20.13	820.93	20.64	820.42	20.93	820.13	20.28	820.78	18.30	822.76
EN-150	838.31	841.04	20.12	820.92	20.62	820.42	20.93	820.11	20.30	820.74	18.28	822.76
EN-151	836.09	838.74	17.32	821.42	17.89	820.85	18.74	820.00	17.51	821.23	15.56	823.18
EN-152	836.07	838.74	17.32	821.42	17.81	820.93	18.12	820.62	17.51	821.23	15.58	823.16
EN-153	835.49	838.21	16.63	821.58	17.12	821.09	17.48	820.73	16.74	821.47	14.95	823.26
EN-154B	836.80	838.98	17.72	821.26	18.25	820.73	18.55	820.43	17.92	821.06	15.95	823.03
EN-154R	836.20	838.31	17.08	821.23	17.60	820.71	17.92	820.39	17.26	821.05	15.31	823.00
EN-164	839.55	842.10	19.45	822.65	19.80	822.30	20.11	821.99	19.52	822.58	17.58	824.52
EN-165	835.86	838.31	16.06	822.25	16.49	821.82	16.82	821.49	16.18	822.13	14.43	823.88
EN-166	834.79	837.32	13.06	824.26	13.35	823.97	13.96	823.36	12.81	824.51	11.77	825.55
EN-167	836.00	835.48	9.48	826.00	9.72	825.76	10.57	824.91	9.36	826.12	8.47	827.01
EN-176	840.19	842.88	20.77	822.11	21.23	821.65	21.56	821.32	20.94	821.94	19.04	823.84
EN-177	839.20	841.88	16.13	825.75	16.51	825.37	16.35	825.53	15.83	826.05	14.13	827.75
EN-202	846.07	848.44	28.08	820.36	28.76	819.68	28.13	820.31	28.43	820.01	26.05	822.39
EN-211	835.20	837.73	10.88	826.85	10.95	826.78	12.00	825.73	10.69	827.04	10.00	827.73
EN-218	834.62	837.32	10.13	827.19	10.25	827.07	11.32	826.00	10.00	827.32	9.45	827.87
EN-487	834.50	834.18	7.47	826.71	7.57	826.61	8.68	825.50	7.26	826.92	6.73	827.45
RMJ Realty LLC Wells												
MW-1	844.1	843.41	22.95	820.46	23.52	819.89	23.86	819.55	23.25	820.16	21.13	822.28
MW-2	841.5	841.23	21.00	820.23	21.51	819.72	21.88	819.35	21.24	819.99	19.13	822.10
MW-3	841.4	840.97	20.99	819.98	21.57	819.40	21.00	819.97	21.27	819.70	19.13	821.84
MW-4	843.6	843.32	23.18	820.14	23.77	819.55	24.10	819.22	23.48	819.84	21.32	822.00
MW-5	839.2	838.79	18.78	820.01	19.35	819.44	19.74	819.05	19.04	819.75	16.95	821.84
MW-6	840.0	839.69	20.02	819.67	20.61	819.08	21.95	817.74	20.21	819.48	18.14	821.55

TABLE 3-3**FIELD SAMPLING DATA**

EN-154R Shutdown Test

Former IBM Endicott Site, Endicott, NY

Well ID	Date mm/dd/yy	Sampler	DTW (ft)	Purge/Sample Type	Rate	Target Volume (gal)	Actual Volume (gal)	FIELD_ID	Replicate ID	Sample Time (hh:mm)	Temp (°C)	pH (SU)	Spec. Cond. (umhos/cm)	Turbidity (NTU)
EN-095	02/13/14	JAR	26.52	2" SP/Bailer	4 GPM	93.8	96.0	EN095140213		11:02	12.9	7.65	950	1.50
EN-096	02/13/14	JAR	19.18	Bailer	NA	11.0	11.0	EN096140213		13:35	11.9	7.05	930	1000.00
EN-104	02/13/14	JAR	20.98	2" SP/Bailer	4 GPM	169.0	172.0	EN104140213		09:52	13.0	6.79	1700	8.10
EN-150	02/13/14	JAR	21.62	Bailer	NA	12.2	12.5	EN150140213		12:53	11.5	7.33	1190	145.00
EN-152	02/13/14	JAR	18.95	2" SP/Line	1 GPM	10.1	11.0	EN152140213		11:32	13.9	7.05	1280	1.33
EN-154R	02/13/14	JAR	12.99	SP/Tap	NA	NA	NA	EN154R140213		13:50	13.3	7.31	1290	1.36
RMJ-MW-1	02/12/14	JAR	23.87	Bailer	NA	6.5	6.5	RMJMW1140212		15:01	12.6	7.02	960	>1000
RMJ-MW-2	02/12/14	JAR	21.77	Bailer	NA	5.2	5.5	RMJMW2140212		15:29	12.5	7.38	422	>1000
RMJ-MW-3	02/12/14	JAR	21.55	Bailer	NA	6.5	6.5	RMJMW3140212	RMJMWX140212	17:05	14.4	7.42	574	>1000
RMJ-MW-4	02/12/14	JAR	23.85	Bailer	NA	8.0	8.0	RMJMW4140212		16:00	13.8	7.51	1360	>1000
RMJ-MW-6	02/12/14	JAR	20.42	Bailer	NA	7.5	7.5	RMJMW6140212		16:33	14.4	7.33	790	>1000
Trip Blank	02/12/14	JAR	NA	NA	NA	NA	NA	ETB140212JAR		14:30	NA	NA	NA	NA
Equip. Blank	02/18/14	JAR	NA	NA	NA	NA	NA	EEQ140218WLID		09:49	NA	NA	NA	NA
RMJ-MW-5	02/18/14	JAR	19.43	Bailer	NA	18.0	18.0	RMJMW5140218		09:30	13.0	7.95	491	>1000
Trip Blank	02/18/14	JAR	NA	NA	NA	NA	NA	ETB140218JAR		07:15	NA	NA	NA	NA
EN-095	02/27/14	JAR	26.53	2" SP/Bailer	3 GPM	56.2	57.0	EN095140227		10:56	13.1	7.73	1190	3.26
EN-096	02/27/14	JAR	19.13	Bailer	NA	11.0	11.0	EN096140227		14:20	12.0	6.86	1150	>1000
EN-104	02/27/14	JAR	20.99	2" SP/Bailer	4 GPM	101.4	104.0	EN104140227		10:02	13.5	6.79	2060	9.85
EN-150	02/27/14	JAR	21.64	Bailer	NA	12.2	12.5	EN150140227		13:25	11.8	6.60	1340	103.00
EN-152	02/27/14	JAR	19.00	2" SP/Line	1 GPM	10.0	10.0	EN152140227		11:50	13.8	7.14	1660	4.62
EN-154R	02/27/14	JAR	8.15	SP/Tap	NA	NA	NA	EN154R140227		14:36	13.2	7.57	1610	1.73
Equip. Blank	02/27/14	JAR	NA	NA	NA	NA	NA	EEQ140227WLID		15:03	NA	NA	NA	NA
RMJ-MW-1	02/26/14	JAR	23.87	Bailer	NA	3.9	4.0	RMJMW1140226		10:09	12.1	7.00	1170	>1000
RMJ-MW-2	02/26/14	JAR	21.80	Bailer	NA	3.1	3.5	RMJMW2140226		10:48	10.8	7.52	515	>1000
RMJ-MW-3	02/26/14	JAR	21.58	Bailer	NA	3.9	4.0	RMJMW3140226		14:54	14.2	7.63	690	>1000
RMJ-MW-4	02/26/14	JAR	23.82	Bailer	NA	4.8	5.0	RMJMW4140226		11:18	13.9	7.62	1720	>1000
RMJ-MW-5	02/26/14	JAR	19.40	Bailer	NA	5.4	5.5	RMJMW5140226	RMJMWXX140226	13:23	12.4	7.61	589	>1000
RMJ-MW-6	02/26/14	JAR	20.44	Bailer	NA	4.5	4.5	RMJMW6140226		12:50	14.2	7.52	970	>1000
Trip Blank	02/26/14	JAR	NA	NA	NA	NA	NA	ETB140226JAR		07:30	NA	NA	NA	NA
EN-095	03/26/14	JAR	26.12	2" SP/Bailer	5 GPM	57.0	60.0	EN095140326		13:13	12.9	7.53	1160	2.78
EN-096	03/26/14	JAR	17.77	Bailer	NA	11.7	12.0	EN096140326		14:35	11.8	7.11	1060	561.00
EN-104	03/26/14	JAR	20.65	2" SP/Bailer	5 GPM	102.0	105.0	EN104140326		12:08	13.4	7.01	1700	8.10
EN-150	03/26/14	JAR	20.42	Bailer	NA	12.8	13.0	EN150140326		15:10	11.7	7.34	1210	130.00
EN-152	03/26/14	JAR	17.67	2" SP/Line	1 GPM	12.6	13.0	EN152140326		14:06	13.1	7.09	1550	3.40
EN-154R	03/26/14	JAR	17.34	2" SP/Bailer	6 GPM	325.9	330.0	EN154R140326		10:49	13.1	7.15	2230	14.40
RMJ-MW-1	03/26/14	JAR	23.24	Bailer	NA	4.2	4.5	RMJMW1140326		15:40	12.1	7.41	1050	>1000

TABLE 3-3**FIELD SAMPLING DATA**

EN-154R Shutdown Test

Former IBM Endicott Site, Endicott, NY

Well ID	Date mm/dd/yy	Sampler	DTW (ft)	Purge/Sample Type	Rate	Target Volume (gal)	Actual Volume (gal)	FIELD_ID	Replicate ID	Sample Time (hh:mm)	Temp (°C)	pH (SU)	Spec. Cond. (umhos/cm)	Turbidity (NTU)
RMJ-MW-2	03/26/14	JAR	21.22	Bailer	NA	3.4	3.5	RMJMW2140326		16:07	11.3	7.23	462	>1000
RMJ-MW-3	03/26/14	JAR	21.13	Bailer	NA	4.1	4.5	RMJMW3140326		17:48	14.1	7.60	650	>1000
RMJ-MW-4	03/26/14	JAR	23.42	Bailer	NA	5.0	5.0	RMJMW4140326		16:29	13.8	7.59	1490	>1000
RMJ-MW-5	03/26/14	JAR	18.95	Bailer	NA	5.6	6.6	RMJMW5140326	RMJMWX140326	17:25	12.2	7.63	535	>1000
RMJ-MW-6	03/26/14	JAR	20.08	Bailer	NA	4.7	5.0	RMJMW6140326		16:54	14.5	7.53	850	>1000
Trip Blank	03/24/14	JAR	NA	NA	NA	NA	NA	ETB140324JAR		13:30	NA	NA	NA	NA
Trip Blank	03/26/14	JAR	NA	NA	NA	NA	NA	ETB140326JAR		09:30	NA	NA	NA	NA
EN-095	04/29/14	JAR	25.64	2" SP/Bailer	6 GPM	58.0	60.0	EN095140429		11:09	13.2	7.47	1720	2.57
EN-096	04/29/14	JAR	17.26	Bailer	NA	11.9	12.0	EN096140429		14:04	11.9	7.11	1040	546.00
EN-104	04/29/14	JAR	20.17	2" SP/Bailer	6 GPM	103.0	108.0	EN104140429		11:51	14.0	7.02	1760	5.77
EN-150	04/29/14	JAR	19.92	Bailer	NA	13.0	13.0	EN150140429		13:35	11.7	7.21	1240	117.00
EN-152	04/29/14	JAR	17.18	2" SP/Line	1 GPM	13.6	14.0	EN152140429		13:05	12.7	7.10	1780	2.80
EN-154R	04/29/14	JAR	16.90	2"SP/Bailer	7 GPM	336.50	343.00	EN154R140429		10:05	12.60	7.17	2280.00	5.49
RMJ-MW-1	04/29/14	JAR	22.77	Bailer	NA	4.4	4.5	RMJMW1140429		14:31	12.4	7.44	950	>1000
RMJ-MW-2	04/29/14	JAR	20.71	Bailer	NA	3.7	4.0	RMJMW2140429		14:54	11.5	7.57	473	>1000
RMJ-MW-3	04/29/14	JAR	20.62	Bailer	NA	4.4	4.5	RMJMW3140429		16:33	13.5	7.58	740	>1000
RMJ-MW-4	04/29/14	JAR	22.92	Bailer	NA	5.2	5.5	RMJMW4140429	RMJMWX140429	15:20	13.9	7.71	1320	>1000
RMJ-MW-5	04/29/14	JAR	18.42	Bailer	NA	5.9	6.0	RMJMW5140429		16:09	11.5	7.65	542	>1000
RMJ-MW-6	04/29/14	JAR	19.56	Bailer	NA	4.9	5.0	RMJMW6140429		15:44	14.3	7.62	830	>1000
Trip Blank	04/29/14	JAR	NA	NA	NA	NA	NA	ETB140429JAR		06:30	NA	NA	NA	NA
Equip. Blank	05/01/14	JAR	NA	NA	NA	NA	NA	EEQ140501WLID		08:11	NA	NA	NA	NA
EN-095	05/28/14	JAR	25.50	2" SP/Bailer	6 GPM	58.20	60.00	EN095140528		08:26	13.30	7.39	1940.00	7.06
EN-096	05/28/14	JAR	17.13	Bailer	NA	12.0	12.0	EN096140528		11:46	11.8	7.10	990	1000.00
EN-104	05/28/14	JAR	20.05	2" SP/Bailer	6 GPM	103.2	108.0	EN104140528		07:56	14.3	6.94	1750	9.90
EN-150	05/28/14	JAR	19.77	Bailer	NA	13.1	13.5	EN150140528		12:20	12.3	7.07	1400	130.00
EN-152	05/28/14	JAR	17.06	2"SP/Line	1 GPM	13.8	14.0	EN152140528		11:17	12.7	7.06	1680	23.60
EN-154R	05/28/14	JAR	16.75	2" SP/Bailer	6 GPM	340.1	342.0	EN154R140528		10:17	13.3	7.30	2260	15.60
RMJ-MW-1	05/28/14	JAR	22.59	Bailer	NA	4.5	4.5	RMJMW1140528		13:12	12.7	7.33	950	>1000
RMJ-MW-2	05/28/14	JAR	20.56	Bailer	NA	3.70	4.00	RMJMW2140528		13:31	11.6	7.4	468.0	>1000
RMJ-MW-3	05/28/14	JAR	20.49	Bailer	NA	4.4	4.5	RMJMW3140523		15:02	14.5	7.50	770	>1000
RMJ-MW-4	05/28/14	JAR	22.75	Bailer	NA	5.3	5.5	RMJMW4140528		13:51	14.2	7.62	1380	>1000
RMJ-MW-5	05/28/14	JAR	18.31	Bailer	NA	7.0	7.0	RMJMW5140528		14:41	12.7	7.85	525	>1000
RMJ-MW-6	05/28/14	JAR	19.49	Bailer	NA	4.9	5.0	RMJMW6140528	RMJMWXX140528	14:15	15.1	7.55	800	>1000
Trip Blank	05/28/14	JAR	NA	NA	NA	NA	NA	ETB140528JAR		07:00	NA	NA	NA	NA
Trip Blank	05/28/14	KJD	NA	NA	NA	NA	NA	ETB140528KJD		12:00	NA	NA	NA	NA
Equip. Blank	05/28/14	KJD	NA	NA	NA	NA	NA	EEQ140528WLID		15:15	NA	NA	NA	NA

TABLE 3-3**FIELD SAMPLING DATA**

EN-154R Shutdown Test

Former IBM Endicott Site, Endicott, NY

Well ID	Date mm/dd/yy	Sampler	DTW (ft)	Purge/Sample Type	Rate	Target Volume (gal)	Actual Volume (gal)	FIELD_ID	Replicate ID	Sample Time (hh:mm)	Temp (°C)	pH (SU)	Spec. Cond. (umhos/cm)	Turbidity (NTU)
EN-095	06/24/14	KJD	25.57	2" SP/Bailer	6 GPM	58.2	60.0	EN095140624		15:41	14.6	7.48	1811	14.00
EN-096	06/24/14	KJD	17.24	Bailer	NA	11.7	12.0	EN096140624		13:52	14.2	6.92	624	>1000
EN-104	06/24/14	KJD	20.30	2" SP/Bailer	6 GPM	98.8	100.0	EN104140624		16:04	15.4	7.18	2011	15.00
EN-150	06/24/14	KJD	19.86	Bailer	NA	13.0	13.0	EN150140624		15:07	14.2	7.13	2097	201.00
EN-152	06/24/14	KJD	17.17	2" SP/Line	6 GPM	13.5	15.0	EN152140624		16:44	14.5	7.35	1833	15.00
EN-154R	06/24/14	KJD	16.88	2"SP/Bailer	6 GPM	340.0	340.0	EN154R140624		14:15	13.7	7.28	2408	14.00
RMJ-MW-1	06/24/14	KJD	22.73	Bailer	NA	4.4	4.5	RMJMW1140624		08:59	14.0	7.55	984	>1000
RMJ-MW-2	06/24/14	KJD	20.70	Bailer	NA	3.6	4.0	RMJMW2140624	RMJMWX140624	09:29	12.5	7.72	555	>1000
RMJ-MW-3	06/24/14	KJD	20.66	Bailer	NA	4.3	4.5	RMJMW3140624		09:47	14.8	7.64	897	>1000
RMJ-MW-4	06/24/14	KJD	22.88	Bailer	NA	5.2	5.5	RMJMW4140624		10:08	15.6	7.76	1577	>1000
RMJ-MW-5	06/24/14	KJD	18.43	Bailer	NA	5.8	6.0	RMJMW5140624		10:30	12.8	7.80	593	>1000
RMJ-MW-6	06/24/14	KJD	19.70	Bailer	NA	4.8	5.0	RMJMW6140624		11:30	16.2	7.62	916	>1000
Trip Blank	06/24/14	KJD	NA	NA	NA	NA	NA	ETB140624KD		08:30	NA	NA	NA	NA
EN-095	07/30/14	JAR	25.53	2" SP/Bailer	6 GPM	58.2	60.0	EN095140730		13:26	14.0	7.45	1520	5.83
EN-096	07/30/14	JAR	17.18	Bailer	NA	12.0	12.0	EN096140730		11:09	13.4	7.08	1140	758.00
EN-104	07/30/14	JAR	20.33	2" SP/Bailer	6 GPM	102.7	108.0	EN104140730		09:26	14.3	6.92	2050	6.05
EN-150	07/30/14	JAR	19.83	Bailer	NA	13.1	13.5	EN150140730		13:18	13.6	7.24	2040	696.00
EN-152	07/30/14	JAR	17.06	2" SP/Line	1 GPM	13.8	14.0	EN152140730		12:52	14.4	7.12	1640	8.06
EN-154R	07/30/14	JAR	16.89	2" SP/Bailer	6 GPM	336.70	342.00	EN154R140730		11:43	14.30	7.24	2350.00	12.20
RMJ-MW-1	07/30/14	JAR	22.68	Bailer	NA	4.5	4.5	RMJMW1140730		13:48	14.2	7.15	960	>1000
RMJ-MW-2	07/30/14	JAR	20.62	Bailer	NA	3.7	4.0	RMJMW2140730		14:20	12.8	7.56	588	>1000
RMJ-MW-3	07/30/14	JAR	20.65	Bailer	NA	4.4	4.5	RMJMW3140730		16:56	15.6	9.91	1020	>1000
RMJ-MW-4	07/30/14	JAR	22.86	Bailer	NA	4.8	5.0	RMJMW4140730		14:42	15.2	7.68	1720	>1000
RMJ-MW-5	07/30/14	JAR	18.45	Bailer	NA	5.9	6.0	RMJMW5140730	RMJMWXX140730	15:49	13.1	7.65	690	>1000
RMJ-MW-6	07/30/14	JAR	19.73	Bailer	NA	4.8	5.0	RMJMW6140730		15:23	15.4	7.59	930	>1000
Trip Blank	07/30/14	JAR	NA	NA	NA	NA	NA	ETB140730JAR		07:00	NA	NA	NA	NA
EN-095	08/28/14	JAR	25.71	2" SP/Bailer	6 GPM	57.80	60.00	EN095140828		09:15	14.00	7.35	1230.00	9.13
EN-096	08/28/14	JAR	17.17	Bailer	NA	12.0	12.0	EN096140828		13:06	13.9	7.16	1060	428.00
EN-104	08/28/14	JAR	20.49	2" SP/Bailer	7 GPM	102.4	105.0	EN104140828		08:47	14.9	6.82	1780	12.00
EN-150	08/28/14	JAR	19.87	Bailer	NA	13.0	13.0	EN150140828		12:37	14.2	7.36	1850	153.00
EN-152	08/28/14	JAR	17.13	2" SP/Line	1 GPM	13.6	14.0	EN152140828		11:32	15.2	7.05	1540	6.93
EN-154R	08/28/14	JAR	16.87	2" SP/Bailer	7 GPM	337.2	343.0	EN154R140828		10:44	14.9	7.10	2190	11.60
EN-387A	08/28/14	JAR	24.76	Bailer	NA	4.2	4.5	EN387A140828	ENMWX8140828	11:51	17.6	6.92	2280	1000.00
RMJ-MW-1	08/28/14	JAR	22.80	Bailer	NA	4.40	4.50	RMJMW1140828		13:31	14.4	7.6	830.0	>1000
RMJ-MW-2	08/28/14	JAR	20.80	Bailer	NA	3.6	4.0	RMJMW2140828		13:58	14.5	7.64	493	>1000
RMJ-MW-3	08/28/14	JAR	20.87	Bailer	NA	4.3	4.5	RMJMW3140828		15:22	16.1	7.46	840	>1000

TABLE 3-3**FIELD SAMPLING DATA**

EN-154R Shutdown Test

Former IBM Endicott Site, Endicott, NY

Well ID	Date mm/dd/yy	Sampler	DTW (ft)	Purge/Sample Type	Rate	Target Volume (gal)	Actual Volume (gal)	FIELD_ID	Replicate ID	Sample Time (hh:mm)	Temp (°C)	pH (SU)	Spec. Cond. (umhos/cm)	Turbidity (NTU)
RMJ-MW-4	08/28/14	JAR	23.05	Bailer	NA	5.2	5.5	RMJMW4140828		14:19	16.1	7.77	1480	>1000
RMJ-MW-5	08/28/14	JAR	18.87	Bailer	NA	5.7	6.0	RMJMW5140828	RMJMWXX140828	15:05	14.8	7.65	620	>1000
RMJ-MW-6	08/28/14	JAR	19.94	Bailer	NA	5.0	5.0	RMJMW6140828		14:42	16.4	7.58	840	>1000
Trip Blank	08/28/14	JAR	NA	NA	NA	NA	NA	ETB140828JAR		08:00	NA	NA	NA	NA
EN-095	11/19/14	JAR	26.30	2" SP/Bailer	5 GPM	26.7	60.0	EN095141119		09:13	12.6	7.37	930	9.87
EN-096	11/19/14	JAR	17.92	Bailer	NA	11.6	12.0	EN096141119		12:36	12.6	7.18	1050	434.00
EN-104	11/19/14	JAR	21.13	2" SP/Bailer	6 GPM	101.1	102.0	EN104141119		08:44	12.9	6.61	1710	19.90
EN-150	11/19/14	JAR	20.57	Bailer	NA	12.7	13.0	EN150141119		12:09	12.8	7.29	1670	110.00
EN-152	11/19/14	JAR	17.81	2" SP/Line	1.5 GPM	12.3	13.5	EN152141119		11:37	15.7	7.10	1400	13.70
EN-154R	11/19/14	JAR	17.55	2" SP/Bailer	7 GPM	320.9	322.0	EN154R141119		10:47	14.2	7.30	1990	17.80
RMJ-MW-1	11/19/14	JAR	23.39	Bailer	NA	4.1	4.5	RMJMW1141119		13:18	12.2	7.33	880	>1000
RMJ-MW-2	11/19/14	JAR	21.43	Bailer	NA	3.3	3.5	RMJMW2141119		13:47	12.0	7.24	620	>1000
RMJ-MW-3	11/19/14	JAR	21.47	Bailer	NA	4.0	4.0	RMJMW3141119		15:10	14.3	7.35	770	>1000
RMJ-MW-4	11/19/14	JAR	23.65	Bailer	NA	4.9	5.0	RMJMW4141119		14:09	13.8	7.46	1380	>1000
RMJ-MW-5	11/19/14	JAR	19.25	Bailer	NA	5.5	5.5	RMJMW5141119	RMJMWXX141119	14:51	12.2	7.22	670	>1000
RMJ-MW-6	11/19/14	JAR	20.53	Bailer	NA	4.4	4.5	RMJMW6141119		14:28	13.6	7.28	860	>1000
EN-095	02/26/15	JAR	26.72	2" SP/Bailer	5 GPM	55.9	60.0	EN095150226		12:36	12.2	7.48	1400	7.8
EN-096	02/26/15	JAR	18.32	Bailer	NA	11.4	11.5	EN096150226		16:27	11.1	7.07	1490	284
EN-104	02/26/15	JAR	21.49	2" SP/Bailer	6 GPM	100.4	102.0	EN104150226		11:58	11.8	7.15	2080	74.6
EN-150	02/26/15	JAR	20.95	Bailer	NA	12.5	12.5	EN150150226		15:55	10.8	7.17	2100	203
EN-152	02/26/15	JAR	18.21	2" SP/Line	1.5 GPM	11.5	12.0	EN152150226		15:25	11.7	7.18	1960	28.4
EN-154R	02/26/15	JAR	18.03	2" SP/Line	6 GPM	309.4	312.0	EN154R150226		14:38	12.1	7.51	2190	12.9
RMJ-MW-1	02/26/15	JAR	NR	Bailer	NA	NA	NA	NA		Not Sampled				
RMJ-MW-2	02/26/15	JAR	NR	Bailer	NA	NA	NA	NA		Not Sampled				
RMJ-MW-3	02/26/15	JAR	21.80	Bailer	NA	3.8	4.0	RMJMW3150226	RMJMWXX150226	11:02	13.6	6.99	920	>1000
RMJ-MW-4	02/26/15	JAR	23.97	Bailer	NA	4.7	5.0	RMJMW4150226		09:54	13.3	7.32	1600	>1000
RMJ-MW-5	02/26/15	JAR	19.65	Bailer	NA	5.3	5.5	RMJMW5150226		10:39	11.6	6.77	840	>1000
RMJ-MW-6	02/26/15	JAR	20.77	Bailer	NA	4.3	4.5	RMJMW6150226		10:22	12.9	7.25	1340	>1000
EN-095	05/01/15	JAR	25.34	2" SP/Bailer	5 GPM	58.6	60.0	EN095150501		09:12	13.0	7.17	2120	1.26
EN-096	05/01/15	JAR	16.90	Bailer	NA	12.1	12.5	EN096150501		10:14	11.6	7.04	1230	1000
EN-104	05/01/15	JAR	19.92	2" SP/Bailer	6 GPM	103.5	108.0	EN104150501		08:43	13.9	6.74	2110	3.74
EN-150	05/01/15	JAR	19.57	Bailer	NA	13.2	13.5	EN150150501		11:02	12.1	7.24	2040	141
EN-152	05/01/15	JAR	16.79	2" SP/Line	1 GPM	14.4	15.0	EN152150501		11:54	12.0	6.98	1820	7.9
EN-154R	05/01/15	JAR	16.54	2" SP/Bailer	7.5 GPM	345.1	352.5	EN154R150501		10:46	12.3	7.13	2340	13.1
RMJ-MW-1	05/01/15	JAR	22.50	Bailer	NA	4.6	5.0	RMJMW1150501		12:54	12.3	7.21	990	>1000
RMJ-MW-2	05/01/15	JAR	20.45	Bailer	NA	3.8	4.0	RMJMW2150501		13:17	10.7	7.33	720	>1000

TABLE 3-3**FIELD SAMPLING DATA**

EN-154R Shutdown Test

Former IBM Endicott Site, Endicott, NY

Well ID	Date mm/dd/yy	Sampler	DTW (ft)	Purge/Sample Type	Rate	Target Volume (gal)	Actual Volume (gal)	FIELD_ID	Replicate ID	Sample Time (hh:mm)	Temp (°C)	pH (SU)	Spec. Cond. (umhos/cm)	Turbidity (NTU)
RMJ-MW-3	05/01/15	JAR	20.37	Bailer	NA	4.5	4.5	RMJMW3150501		14:41	14.0	7.35	970	>1000
RMJ-MW-4	05/01/15	JAR	22.61	Bailer	NA	5.4	5.5	RMJMW4150501		13:37	13.8	7.41	1220	>1000
RMJ-MW-5	05/01/15	JAR	18.17	Bailer	NA	6.0	6.0	RMJMW5150501	RMJMWXX150501	14:22	12.0	7.22	860	>1000
RMJ-MW-6	05/01/15	JAR	19.28	Bailer	NA	5.0	5.0	RMJMW6150501		13:58	14.2	7.37	900	>1000
EN-095	08/06/15	JAR	24.57	2" SP/Bailer	6 GPM	60.1	66	EN095150806		09:08	13.1	7.39	1220	2.10
EN-096	08/06/15	JAR	16.26	Bailer	NA	12.4	12.5	EN096150806		10:21	13.1	7.02	1070	>1000
EN-104	08/06/15	JAR	19.54	2" SP/Bailer	6 GPM	104.2	108	EN104150806		08:41	14.3	7.07	2000	5.20
EN-150	08/06/15	JAR	18.88	Bailer	NA	13.5	13.5	EN150150806		11:06	12.7	7.19	2250	471
EN-152	08/06/15	JAR	16.16	2" SP/Line	1 GPM	15.5	16	EN152150806		12:03	13.5	7.08	1370	10.3
EN-154R	08/06/15	JAR	15.90	2" SP/Bailer	7 GPM	360.5	364	EN154R150806		10:52	13.4	7.19	2420	3.2
RMJ-MW-1	08/06/15	JAR	21.73	Bailer	NA	4.9	5.0	RMJMW1150806	RMJMWX17150806	13:08	12.4	7.56	1040	>1000
RMJ-MW-2	08/06/15	JAR	19.76	Bailer	NA	4.1	4.5	RMJMW2150806		13:33	13.3	7.49	535	>1000
RMJ-MW-3	08/06/15	JAR	19.76	Bailer	NA	4.8	5.0	RMJMW3150806		15:08	14.5	7.29	940	>1000
RMJ-MW-4	08/06/15	JAR	21.97	Bailer	NA	5.7	6.0	RMJMW4150806		13:56	14.4	7.50	1200	>1000
RMJ-MW-5	08/06/15	JAR	17.60	Bailer	NA	6.3	6.5	RMJMW5150806		14:46	13.2	7.24	840	>1000
RMJ-MW-6	08/06/15	JAR	18.88	Bailer	NA	5.2	5.5	RMJMW6150806		14:21	14.4	7.35	870	>1000
EN-095	11/12/15	JAR	29.79	2" SP/Bailer	6 GPM	58.1	60	EN095151112		10:11	12.9	7.41	1100	13.30
EN-096	11/12/15	JAR	17.08	Bailer	NA	12.0	12.0	EN096151112		11:14	12.5	6.93	1640	519
EN-104	11/12/15	JAR	20.48	2" SP/Bailer	6 GPM	102.4	108	en104151112		09:41	13.8	6.84	1610	46.00
EN-150	11/12/15	JAR	19.78	Bailer	NA	13.1	13.5	EN150151112		13:18	12.8	7.10	1860	195
EN-152	11/12/15	JAR	17.04	2" SP/Line	2 GPM	13.8	14	EN152151112		12:49	15.1	7.13	1240	48.0
EN-154R	11/12/15	JAR	16.86	2" SP/Bailer	7 GPM	337.4	343	EN154R151112		11:39	15.0	7.44	1900	3.7
RMJ-MW-1	11/12/15	JAR	22.56	Bailer	NA	4.5	4.5	RMJMW1151112		13:44	12.7	7.14	780	>1000
RMJ-MW-2	11/12/15	JAR	20.58	Bailer	NA	3.7	4.0	RMJMW2151112	RMJMWX5151112	14:07	13.3	7.25	430	>1000
RMJ-MW-3	11/12/15	JAR	20.70	Bailer	NA	4.3	4.5	RMJMW3151112		15:43	14.2	6.99	650	>1000
RMJ-MW-4	11/12/15	JAR	22.83	Bailer	NA	5.3	5.5	RMJMW4151112		14:30	13.6	7.14	1180	>1000
RMJ-MW-5	11/12/15	JAR	18.45	Bailer	NA	5.9	6.0	RMJMW5151112		15:20	12.7	6.80	830	>1000
RMJ-MW-6	11/12/15	JAR	19.76	Bailer	NA	4.8	5.0	RMJMW6151113		14:53	13.4	7.10	740	>1000
EN-095	02/10/16	JAR	25.95	2" SP/Bailer	5 GPM	57.4	60	EN095160210		10:06	12.1	7.26	1150	30.60
EN-096	02/10/16	JAR	17.53	Bailer	NA	11.8	12.0	EN096160210		11:09	12.4	6.86	1660	928
EN-104	02/10/16	JAR	20.82	2" SP/Bailer	6 GPM	101.7	102	EN104160210		09:34	12.7	6.91	1700	28.50
EN-150	02/10/16	JAR	20.20	Bailer	NA	12.9	13.0	EN150160210		13:24	12.5	6.93	1920	315
EN-152	02/10/16	JAR	17.42	2" SP/Line	2 GPM	13.1	14	EN152160210		12:57	12.6	7.12	800	39.7
EN-154R	02/10/16	JAR	17.20	2" SP/Line	6 GPM	329.3	330	EN154R160210		11:42	13.0	7.41	1960	6.4
RMJ-MW-1	02/10/16	JAR	23.10	Bailer	NA	4.3	4.5	RMJMW1160210		13:46	11.7	7.17	960	>1000
RMJ-MW-2	02/10/16	JAR	21.08	Bailer	NA	3.5	3.5	RMJMW2160210		14:04	11.6	7.18	950	>1000

TABLE 3-3
FIELD SAMPLING DATA
 EN-154R Shutdown Test
 Former IBM Endicott Site, Endicott, NY

Well ID	Date mm/dd/yy	Sampler	DTW (ft)	Purge/Sample Type	Rate	Target Volume (gal)	Actual Volume (gal)	FIELD_ID	Replicate ID	Sample Time (hh:mm)	Temp (°C)	pH (SU)	Spec. Cond. (umhos/cm)	Turbidity (NTU)
RMJ-MW-3	02/10/16	JAR	21.14	Bailer	NA	4.1	4.5	RMJMW3160210	RMJMWX6160210	15:33	12.9	7.15	780	>1000
RMJ-MW-4	02/10/16	JAR	23.32	Bailer	NA	5.0	5.0	RMJMW4160210		14:23	12.9	7.27	1030	>1000
RMJ-MW-5	02/10/16	JAR	18.95	Bailer	NA	5.6	6.0	RMJMW5160210		15:08	11.8	6.98	820	>1000
RMJ-MW-6	02/10/16	JAR	20.20	Bailer	NA	4.6	5.0	RMJMW6160210		14:42	12.6	7.15	920	>1000
EN-095	05/25/16	JAR	25.87	2" SP/Bailer	6 GPM	57.5	60	EN095160525		11:54	14.0	7.04	1640	11.50
EN-096	05/25/16	JAR	17.43	Bailer	NA	11.8	12.0	EN096160525		13:18	14.2	6.61	2220	354
EN-104	05/25/16	JAR	20.64	2" SP/Bailer	5 GPM	102.1	105	EN104160525		11:26	14.2	6.71	2160	21.40
EN-150	05/25/16	JAR	20.12	Bailer	NA	12.9	13.0	EN150160525		14:47	15.2	6.93	2370	354
EN-152	05/25/16	JAR	17.32	2" SP/Line	1 GPM	13.3	14	EN152160525		15:13	14.0	7.24	750	47.2
EN-154R	05/25/16	JAR	17.08	2" SP/Bailer	6 GPM	332.2	336	EN154R160525		13:54	14.8	6.98	2770	9.0
RMJ-MW-1	05/25/16	JAR	22.95	Bailer	NA	4.4	4.5	RMJMW1160525		08:31	14.0	6.94	1020	>1000
RMJ-MW-2	05/25/16	JAR	21.00	Bailer	NA	3.5	3.5	RMJMW2160525		08:53	12.3	6.92	1380	>1000
RMJ-MW-3	05/25/16	JAR	20.99	Bailer	NA	4.2	4.5	RMJMW3160525		10:31	13.9	6.98	940	>1000
RMJ-MW-4	05/25/16	JAR	23.18	Bailer	NA	5.1	5.5	RMJMW4160525		09:17	14.8	7.02	1270	>1000
RMJ-MW-5	05/25/16	JAR	18.78	Bailer	NA	5.7	6.0	RMJMW5160525	RMJMWX11160525	10:10	12.5	6.79	980	>1000
RMJ-MW-6	05/25/16	JAR	20.02	Bailer	NA	4.7	5.0	RMJMW6160525		09:39	14.0	6.96	1150	>1000
EN-095	08/11/16	JAR	26.47	2"SP/Bailer	4 GPM	56.4	60	EN095160811		09:19	14.1	7.01	1420	63.4
EN-096	08/11/16	JAR	17.94	Bailer	NA	11.6	12.0	EN096160811		10:33	14.4	6.85	1790	351
EN-104	08/11/16	JAR	21.24	2"SP/Bailer	5 GPM	100.9	105	EN104160811		08:45	14.7	6.82	1700	23.7
EN-150	08/11/16	JAR	20.62	Bailer	NA	12.7	13.0	EN150160811		12:06	15.3	6.99	1970	359
EN-152	08/11/16	JAR	17.81	2" SP/Line	1 GPM	12.3	13	EN152160811		12:31	15.9	7.35	519	21.6
EN-154R	08/11/16	JAR	17.60	2"SP/Bailer	6 GPM	319.7	324	EN154R160811		11:01	16.0	7.13	2060	19.4
RMJ-MW-1	08/11/16	JAR	23.52	Bailer	NA	4.1	4.5	RMJMW1160811		13:26	14.7	7.19	730	>1000
RMJ-MW-2	08/11/16	JAR	21.51	Bailer	NA	3.3	3.5	RMJMW2160811		13:46	14.1	6.91	710	>1000
RMJ-MW-3	08/11/16	JAR	21.57	Bailer	NA	3.9	4.0	RMJMW3160811		15:15	14.3	6.88	750	>1000
RMJ-MW-4	08/11/16	JAR	23.77	Bailer	NA	4.8	5.0	RMJMW4160811		14:09	14.6	6.87	970	>1000
RMJ-MW-5	08/11/16	JAR	19.35	Bailer	NA	5.4	5.5	RMJMW5160811	RMJMWXX160811	14:53	13.3	6.61	880	>1000
RMJ-MW-6	08/11/16	JAR	20.61	Bailer	NA	4.4	4.5	RMJMW6160811		14:29	14.6	6.96	1080	>1000
EN-095	11/17/16	JAR	26.78	2" SP/Bailer	5 GPM	55.8	60.6	EN095161117		10:46	13.8	7.56	1504	22.50
EN-096	11/17/16	JAR	18.28	Bailer	NA	11.4	11.5	EN096161117		13:08	12.7	7.12	2066	585.00
EN-104	11/17/16	JAR	21.64	2" SP/Bailer	4 GPM	100.0	100.0	EN104161117		10:16	14.0	7.34	2102	55.20
EN-150	11/17/16	JAR	20.93	Bailer	NA	12.5	12.5	EN150161117		11:42	13.1	7.38	2569	140.00
EN-152	11/17/16	JAR	18.12	2" SP/Line	1 GPM	11.7	12.0	EN152161117		13:28	14.7	7.75	603	51.30
EN-154R	11/17/16	JAR	17.92	2" SP/Bailer	7 GPM	312.0	315.0	EN154R161117		12:08	14.9	7.49	2573	11.90
RMJ-MW-1	11/17/16	JAR	23.86	Bailer	NA	3.9	4.0	RMJMW1161117		13:56	13.3	7.41	735	>1000
RMJ-MW-2	11/17/16	JAR	21.88	Bailer	NA	3.1	3.5	RMJMW2161117		14:18	13.7	7.52	1131	>1000

TABLE 3-3**FIELD SAMPLING DATA**

EN-154R Shutdown Test

Former IBM Endicott Site, Endicott, NY

Well ID	Date mm/dd/yy	Sampler	DTW (ft)	Purge/Sample Type	Rate	Target Volume (gal)	Actual Volume (gal)	FIELD_ID	Replicate ID	Sample Time (hh:mm)	Temp (°C)	pH (SU)	Spec. Cond. (umhos/cm)	Turbidity (NTU)
RMJ-MW-3	11/17/16	JAR	21.95	Bailer	NA	3.7	4.0	RMJMW3161117		15:52	14.0	7.55	879	>1000
RMJ-MW-4	11/17/16	JAR	24.10	Bailer	NA	4.7	5.0	RMJMW4161117		15:04	13.9	7.52	1191	>1000
RMJ-MW-5	11/17/16	JAR	19.74	Bailer	NA	5.2	5.5	RMJMW5161117	ENMWX12161117	15:30	13.2	7.27	1099	>1000
RMJ-MW-6	11/17/16	JAR	21.00	Bailer	NA	4.2	4.5	RMJMW6161117		14:41	13.6	7.43	1342	>1000
EN-095	02/16/17	JAR	26.14	2" SP/Bailer	4 GPM	57.0	60.0	EN095170216		10:16	13.2	7.45	1750	25.00
EN-096	02/16/17	JAR	17.63	Bailer	NA	11.0	11.0	EN096170216		11:17	12.2	7.29	2020	453.00
EN-104	02/16/17	JAR	20.90	2" SP/Bailer	5 GPM	101.6	105.0	EN104170216		09:42	12.6	7.37	2260	69.90
EN-150	02/16/17	JAR	20.30	Bailer	NA	12.8	13.0	EN150170216		12:50	12.7	7.50	2680	>1000
EN-152	02/16/17	JAR	17.51	2" SP/Line	1 GPM	12.9	13.0	EN152170216		13:12	11.8	7.76	890	117.00
EN-154R	02/16/17	JAR	17.26	2" SP/Line	7 GPM	327.8	329.0	EN154R170216		11:43	12.5	7.77	2720	19.10
RMJ-MW-1	02/16/17	JAR	23.25	Bailer	NA	4.2	4.5	RMJMW1170216		13:59	13.1	7.96	730	>1000
RMJ-MW-2	02/16/17	JAR	21.24	Bailer	NA	3.4	3.5	RMJMW2170216		14:21	11.0	7.64	930	>1000
RMJ-MW-3	02/16/17	JAR	21.27	Bailer	NA	4.1	4.5	RMJMW3170216		15:58	11.5	7.64	800	>1000
RMJ-MW-4	02/16/17	JAR	23.48	Bailer	NA	5.0	5.0	RMJMW4170216		15:04	12.8	7.50	1380	>1000
RMJ-MW-5	02/16/17	JAR	19.04	Bailer	NA	5.6	6.0	RMJMW5170216	RMJMWX5170216	15:34	11.9	7.41	990	>1000
RMJ-MW-6	02/16/17	JAR	20.21	Bailer	NA	4.6	5.0	RMJMW6170216		14:44	11.5	7.56	1460	>1000
EN-095	05/18/17	JAR	23.94	2" SP/Bailer	4 GPM	61.3	64.0	EN095170518		08:27	14.3	7.59	1590	13.60
EN-096	05/18/17	JAR	15.66	Bailer	NA	12.7	13.0	EN096170518		11:06	14.4	7.29	1930	863.00
EN-104	05/15/17	JAR	18.80	2" SP/Bailer	5 GPM	105.7	110.0	EN104170518		07:53	14.2	7.34	1980	57.10
EN-112	05/15/17	JAR	12.81	Bailer	NA	11.8	6.0	EN112170515		15:36	15.3	7.88	2340	224.00
EN-150	05/18/17	JAR	18.28	Bailer	NA	13.8	14.0	EN150170518		11:40	15.5	7.56	2290	1000.00
EN-152	05/18/17	JAR	15.58	2" SP/Line	2 GPM	16.7	18.0	EN152170518		12:02	14.6	7.73	640	61.90
EN-154R	05/18/17	JAR	15.31	2" SP/Bailer	7 GPM	374.6	378.0	EN154R170518		10:06	14.4	7.89	2600	4.02
RMJ-MW-1	05/18/17	JAR	21.13	Bailer	NA	5.2	5.5	RMJMW1170518		12:53	14.1	7.47	617	>1000
RMJ-MW-2	05/18/17	JAR	19.13	Bailer	NA	4.4	4.5	RMJMW2170518		13:18	11.6	7.65	571	>1000
RMJ-MW-3	05/18/17	JAR	19.13	Bailer	NA	5.1	5.5	RMJMW3170518		14:55	14.0	7.67	700	>1000
RMJ-MW-4	05/18/17	JAR	21.32	Bailer	NA	6.0	6.0	RMJMW4170518		14:04	14.7	7.51	1270	>1000
RMJ-MW-5	05/17/17	JAR	16.95	Bailer	NA	6.6	7.0	RMJMW5170518	RMJMWXX170518	14:30	12.8	7.40	910	>1000
RMJ-MW-6	05/18/17	JAR	18.14	Bailer	NA	5.6	6.0	RMJMW6170518		13:43	14.1	7.56	1230	>1000

TABLE 3-4
GROUNDWATER CHEMISTRY DATA - VOCS
 EN-154R Shutdown Test
 Former IBM Endicott Site, Endicott, NY

Well Designation	Shutdown Test Sample Round	Sample Date	Units	Constituents of Potential Concern									
				Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethene	1,1-Dichloroethane	Freon 113	Freon 123a
NYS Part 703 Groundwater Quality Standard				5	5	5	5	2	5	5	5	5	5
Operable Unit #7 Area - North of Railroad Tracks													
EN-96	Baseline	2/13/2014	ug/L	0.4 J	2.6	7.6	<0.5	0.5	16	1.4	20	5.4	3.5
EN-96	Baseline	2/27/2014	ug/L	0.3 J	2.2	7.5	<0.5	0.4 J	15	1.3	17	5.0	3.0
EN-96	1 Month	3/26/2014	ug/L	<0.5	0.6	19	0.1 J	11	14	4.5	38	16 J	6.9
EN-96	2 Months	4/29/2014	ug/L	0.2 J	1.7	24	0.2 J	12	23	4.0	33	15	6.3
EN-96	3 Months	5/28/2014	ug/L	0.2 J	1.7	20	0.3 J	8.0	22	2.9	28	12	4.5
EN-96	4 Months	6/24/2014	ug/L	0.2 J	2.4	21	0.4 J	9.9	23 J	3.1	33	16	5.4
EN-96	5 Months	7/30/2014	ug/L	0.2 J	2.7	20	0.3 J	10	23	2.9	32	14	5.7
EN-96	6 Months	8/28/2014	ug/L	0.2 J	2.8	18	0.2 J	8.1	23	3.0	32	13 J	4.4
EN-96	9 Months	11/19/2014	ug/L	<0.5	1.5	21	0.1 J	10	17	4.3	60	17	7.7
EN-96	12 Months	2/26/2015	ug/L	0.2 J	2.4	24	0.1 J	11	17	5.0	71	19	8.5
EN-96	15 Months	5/1/2015	ug/L	0.2 J	2.6	21	0.2 J	7.9	16	3.3	40	12	5.6
EN-96	18 Months	8/6/2015	ug/L	0.2 J	2.6	23	0.2 J	11	22	4.4	51	18	7.0
EN-96	21 Months	11/12/2015	ug/L	0.2 J	1.6	36	0.2 J	23	24	7.7	110	24	11
EN-96	24 Months	2/10/2016	ug/L	0.4 J	3.5	34	0.2 J	23	34	7.5	94	21	9.4
EN-96	27 Months	5/25/2016	ug/L	0.3 J	3.3	39	0.3 J	22	49	10	72	27	10
EN-96	30 Months	8/11/2016	ug/L	0.2 J	2.5	35	0.2 J	18	39	8.3	73	19	10
EN-96	33 Months	11/17/2016	ug/L	0.2 J	2.6	46	0.2 J	24	42	11	85	27	11
EN-96	36 Months	2/16/2017	ug/L	0.4 J	3.8	39	0.3 J	21	89	9.5	78	33	12
EN-96	39 Months	5/18/2017	ug/L	0.2 J	2.5	21	0.3 J	4.5	95	3.5	34	23	5.6
EN-150	Baseline	2/13/2014	ug/L	<0.5	1.7	0.4 J	<0.5	0.2 J	3.6	0.6	6.1	0.9	1.0
EN-150	Baseline	2/27/2014	ug/L	<0.5	0.9	0.2 J	<0.5	<0.5	1.6	0.3 J	3.9	0.5	0.4 J
EN-150	1 Month	3/26/2014	ug/L	<0.5	1.6	0.4 J	<0.5	0.2 J	2.4	0.4 J	5.2	0.9 J	0.8
EN-150	2 Months	4/29/2014	ug/L	<0.5	1.3	0.3 J	<0.5	0.2 J	2.8	0.4 J	5.6	0.9	0.8
EN-150	3 Months	5/28/2014	ug/L	<0.5	1.5	0.6	<0.5	<0.5	3.9	0.5	6.3	1.0	1.0
EN-150	4 Months	6/24/2014	ug/L	<0.5	0.3 J	0.1 J	<0.5	0.1 J	0.5 J	0.1 J	1.5	<0.5	<0.5
EN-150	5 Months	7/30/2014	ug/L	<0.5	1.5	0.4 J	<0.5	2.9	2.6	0.4 J	6.3	1.2	0.9
EN-150	6 Months	8/28/2014	ug/L	<0.5	1.5	0.5 J	<0.5	2.2	2.7	0.4 J	7.7	1.6	1.1
EN-150	9 Months	11/19/2014	ug/L	<0.5	1.2	0.6	<0.5	2.4	2.3	0.5 J	11	1.7	1.2
EN-150	12 Months	2/26/2015	ug/L	<0.5	2.4	5.5	<0.5	3.2	2.4	0.9	11	2.1	1.6
EN-150	15 Months	5/1/2015	ug/L	<0.5	2.0	14	<0.5	0.3 J	2.3	1.4	8.2	2.6	1.5
EN-150	18 Months	8/6/2015	ug/L	<0.5	1.8	14	<0.5	1.7	2.7	1.6	12	3.0	2.0
EN-150	21 Months	11/12/2015	ug/L	<0.5	2.2	20	<0.5	1.3	3.1	2.2	13	5.2	2.9
EN-150	24 Months	2/10/2016	ug/L	<0.5	2.4	15	<0.5	0.8	2.8	1.7	15	4.3	2.5
EN-150	27 Months	5/25/2016	ug/L	0.1 J	2.9	17	<0.5	0.6	2.3	2.1	20	3.3	2.8
EN-150	30 Months	8/11/2016	ug/L	<0.5	2.0	15	0.1 J	0.9	2.4	2.1	27	3.2	2.9
EN-150	33 Months	11/17/2016	ug/L	<0.5	2.5	20	<0.5	1.3	2.3	3.9	30	2.6	3.7
EN-150	36 Months	2/16/2017	ug/L	<0.5	2.7	21	<0.5	1.6	2.1	4.1	21	2.6	3.6
EN-150	39 Months	5/18/2017	ug/L	<0.5	2.9	31	0.1 J	4.2	2.3	4.9	20	2.9	4.5

TABLE 3-4
GROUNDWATER CHEMISTRY DATA - VOCS
 EN-154R Shutdown Test
 Former IBM Endicott Site, Endicott, NY

Well Designation	Shutdown Test Sample Round	Sample Date	Units	Constituents of Potential Concern									
				Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethene	1,1-Dichloroethane	Freon 113	Freon 123a
NYS Part 703 Groundwater Quality Standard				5	5	5	5	2	5	5	5	5	5
EN-154R	Baseline	2/13/2014	ug/L	3.3	8.0	16	0.2 J	2.4	19	2.1	16	10	4.2
EN-154R	Baseline	2/27/2014	ug/L	2.7	6.5	16	0.2 J	2.6	16	2.0	14	7.9	3.5
EN-154R	1 Month	3/26/2014	ug/L	2.9	3.6	5.2	0.1 J	0.3 J	1.6	0.3 J	5.6	1.5 J	2.5
EN-154R	2 Months	4/29/2014	ug/L	3.5	3.3	4.7	0.1 J	0.3 J	1.5	0.2 J	5.7	1.2	2.8
EN-154R	3 Months	5/28/2014	ug/L	4.0	3.4	4.6	0.1 J	0.3 J	1.6	0.2 J	6.1	1.2	2.8
EN-154R	4 Months	6/24/2014	ug/L	4.1	3.5	4.2	0.1 J	0.3 J	2.0	0.2 J	6.4	1.3	2.8
EN-154R	5 Months	7/30/2014	ug/L	4.4	3.3	4.9	<0.5	0.3 J	2.0	0.2 J	7.1	1.2	3.3
EN-154R	6 Months	8/28/2014	ug/L	4.9	3.2	5.0	0.1 J	0.4 J	1.6	0.3 J	7.9	1.4	3.6
EN-154R	9 Months	11/19/2014	ug/L	4.2	3.3	5.0	0.1 J	0.3 J	1.9	0.3 J	9.0	1.3	3.5
EN-154R	12 Months	2/26/2015	ug/L	3.7	2.1	4.4	0.1 J	0.2 J	1.7	0.2 J	8.7	1.2	3.6
EN-154R	15 Months	5/1/2015	ug/L	3.7	3.7	5.5	0.1 J	0.3 J	2.0	0.3 J	8.3	1.4	3.3
EN-154R	18 Months	8/6/2015	ug/L	3.6	3.9	5.6	0.1 J	0.2 J	2.0	0.3 J	7.2	1.2	2.6
EN-154R	21 Months	11/12/2015	ug/L	3.4	4.2	5.2	<0.5	0.2 J	1.9	0.3 J	6.5	1.0	2.9
EN-154R	24 Months	2/10/2016	ug/L	1.6	1.0	2.8	<0.5	0.1 J	0.8	0.2 J	2.8	0.5	1.2
EN-154R	27 Months	5/25/2016	ug/L	4.3	2.4	7.2	0.1 J	0.4 J	2.0	0.4 J	8.9	1.5	4.2
EN-154R	30 Months	8/11/2016	ug/L	4.2	2.5	7.4	0.2 J	0.4 J	2.3	0.4 J	11	1.5	4.6
EN-154R	33 Months	11/17/2016	ug/L	4.9	2.5	7.8	0.1 J	0.4 J	1.9	0.4 J	10	1.1	3.9
EN-154R	36 Months	2/16/2017	ug/L	3.6	2.0	6.8	0.1 J	0.2 J	1.6	0.4 J	7.3	1.2	3.6
EN-154R	39 Months	5/18/2017	ug/L	3.3	2.0	6.4	<0.5	0.1 J	1.8	0.3 J	7.3	1.5	3.9
EN-152	Baseline	2/13/2014	ug/L	3.7	1.8	0.8	<0.5	0.6	0.8	<0.5	1.6	0.4 J	1.0
EN-152	Baseline	2/27/2014	ug/L	3.7	1.7	0.8	<0.5	0.9	0.7	<0.5	1.5	0.4 J	0.9
EN-152	1 Month	3/26/2014	ug/L	3.7	1.7	0.7	<0.5	0.6	0.7	<0.5	1.4	0.3 J	0.8
EN-152	2 Months	4/29/2014	ug/L	3.8	1.7	0.7	<0.5	1.4	0.7	<0.5	1.3	0.3 J	1.0
EN-152	3 Months	5/28/2014	ug/L	3.9	1.6	0.7	<0.5	0.9	0.6	<0.5	1.2	0.3 J	0.9
EN-152	4 Months	6/24/2014	ug/L	4.2	1.6	0.7	<0.5	0.7	0.7 J	<0.5	1.3	0.4 J	1.0
EN-152	5 Months	7/30/2014	ug/L	4.0	1.5	0.8	<0.5	0.5 J	0.7	<0.5	1.6	0.4 J	1.5
EN-152	6 Months	8/28/2014	ug/L	3.8	1.6	0.9	<0.5	0.4 J	0.7	0.1 J	2.4	0.4 J	1.7
EN-152	9 Months	11/19/2014	ug/L	4.2	1.7	1.2	<0.5	0.4 J	0.9	0.1 J	5.7	0.5 J	3
EN-152	12 Months	2/26/2015	ug/L	2.9	1.1	1.2	<0.5	0.1 J	0.8	<0.5	5.0	0.4 J	2.4
EN-152	15 Months	5/1/2015	ug/L	3.3	1.2	2.6	<0.5	0.2 J	0.9	0.2 J	6.3	0.5	3.2
EN-152	18 Months	8/6/2015	ug/L	2.8	1.1	2.7	<0.5	0.2 J	0.9	0.2 J	4.9	0.5 J	2.4
EN-152	21 Months	11/12/2015	ug/L	2.2	0.9	1.4	<0.5	<0.5	0.9	<0.5	2.1	0.3 J	1.2
EN-152	24 Months	2/10/2016	ug/L	3.4	1.3	4.0	<0.5	0.2 J	0.9	0.2 J	5.5	0.6	3.1
EN-152	27 Months	5/25/2016	ug/L	2.9	1.2	3.7	<0.5	<0.5	0.8	0.2 J	5.4	0.6	3.2
EN-152	30 Months	8/11/2016	ug/L	2.6	1.1	4.0	<0.5	<0.5	0.8	0.2 J	5.7	0.5	2.9
EN-152	33 Months	11/17/2016	ug/L	3.6	1.6	6.5	0.1 J	<0.5	0.8	0.3 J	5.2	0.7	2.7
EN-152	36 Months	2/16/2017	ug/L	3.3	1.5	6.2	<0.5	<0.5	0.8	0.3 J	2.2	0.6	1.5
EN-152	39 Months	5/18/2017	ug/L	2.4	1	2.5	<0.5	<0.5	0.7	0.1 J	0.8	0.4 J	0.7

TABLE 3-4
GROUNDWATER CHEMISTRY DATA - VOCS
 EN-154R Shutdown Test
 Former IBM Endicott Site, Endicott, NY

Well Designation	Shutdown Test Sample Round	Sample Date	Units	Constituents of Potential Concern									
				Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethene	1,1-Dichloroethane	Freon 113	Freon 123a
NYS Part 703 Groundwater Quality Standard				5	5	5	5	2	5	5	5	5	5
South of North Street													
EN-95	Baseline	2/13/2014	ug/L	2.9	4.2	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
EN-95	Baseline	2/27/2014	ug/L	3.1	4.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
EN-95	1 Month	3/26/2014	ug/L	2.9	4.2	<0.5	<0.5	<0.5	0.5 J	<0.5	<0.5	<0.5 J	<0.5
EN-95	2 Months	4/29/2014	ug/L	2.5	3.7	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
EN-95	3 Months	5/28/2014	ug/L	2.8	3.9	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
EN-95	4 Months	6/24/2014	ug/L	2.9	4.0	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5
EN-95	5 Months	7/30/2014	ug/L	2.7	3.9	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5
EN-95	6 Months	8/28/2014	ug/L	2.5	3.8	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
EN-95	9 Months	11/19/2014	ug/L	2.8	4.0	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
EN-95	12 Months	2/26/2015	ug/L	2.4	3.7	0.1 J	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5
EN-95	15 Months	5/1/2015	ug/L	2.3	3.6	<0.5	<0.5	<0.5	0.5 J	<0.5	<0.5	<0.5	<0.5
EN-95	18 Months	8/6/2015	ug/L	2.1	3.1	<0.5	<0.5	<0.5	0.4 J	<0.5	<0.5	<0.5	<0.5
EN-95	21 Months	11/12/2015	ug/L	2.7	3.7	<0.5	<0.5	<0.5	0.4 J	<0.5	<0.5	<0.5	<0.5
EN-95	24 Months	2/10/2016	ug/L	2.2	3.2	<0.5	<0.5	<0.5	0.4 J	<0.5	<0.5	<0.5	<0.5
EN-95	27 Months	5/25/2016	ug/L	2.5	3.4	<0.5	<0.5	<0.5	0.5 J	<0.5	<0.5	<0.5	<0.5
EN-95	30 Months	8/11/2016	ug/L	2.6	3.7	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
EN-95	33 Months	11/17/2016	ug/L	2.8	4.6	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
EN-95	36 Months	2/16/2017	ug/L	2.7	3.8	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
EN-95	39 Months	5/18/2017	ug/L	2.3	3.4	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
EN-104	Baseline	2/13/2014	ug/L	0.1 J	<0.5	0.3 J	<0.5	0.1 J	1.2	0.1 J	1.1	<0.5	0.2 J
EN-104	Baseline	2/27/2014	ug/L	0.1 J	<0.5	0.2 J	<0.5	0.2 J	1.0	0.1 J	0.9	<0.5	<0.5
EN-104	1 Month	3/26/2014	ug/L	0.1 J	<0.5	0.3 J	<0.5	0.2 J	1.0	0.1 J	1.0	<0.5 J	<0.5
EN-104	2 Months	4/29/2014	ug/L	0.1 J	<0.5	0.3 J	<0.5	0.2 J	1.2	0.1 J	1.1	<0.5	0.2 J
EN-104	3 Months	5/28/2014	ug/L	0.1 J	<0.5	0.3 J	<0.5	0.2 J	1.1	0.1 J	1.0	<0.5	0.2 J
EN-104	4 Months	6/24/2014	ug/L	0.1 J	<0.5	0.2 J	<0.5	0.3 J	1.2 J	0.1 J	0.9	<0.5	<0.5
EN-104	5 Months	7/30/2014	ug/L	<0.5	<0.5	0.2 J	<0.5	0.3 J	1.0	0.1 J	1.0	<0.5	<0.5
EN-104	6 Months	8/28/2014	ug/L	<0.5	<0.5	0.2 J	<0.5	0.2 J	0.9	0.1 J	0.9	<0.5	<0.5
EN-104	9 Months	11/19/2014	ug/L	<0.5	<0.5	0.2 J	<0.5	0.2 J	1.1	0.1 J	0.9	<0.5	<0.5
EN-104	12 Months	2/26/2015	ug/L	0.2 J	<0.5	0.5	<0.5	0.2 J	1.9	0.2 J	0.9	<0.5	0.2 J
EN-104	15 Months	5/1/2015	ug/L	<0.5	<0.5	0.2 J	<0.5	0.2 J	1.0	0.1 J	0.9	<0.5	<0.5
EN-104	18 Months	8/6/2015	ug/L	<0.5	<0.5	0.2 J	<0.5	0.3 J	1.0	0.1 J	0.8	<0.5	<0.5
EN-104	21 Months	11/12/2015	ug/L	0.2 J	<0.5	0.7	<0.5	0.2 J	2.2	0.3 J	1.1	<0.5	0.3 J
EN-104	24 Months	2/10/2016	ug/L	0.1 J	<0.5	0.5	<0.5	0.2 J	1.8	0.2 J	0.9	<0.5	0.2 J
EN-104	27 Months	5/25/2016	ug/L	0.2 J	<0.5	0.5	<0.5	0.2 J	1.9	0.3 J	1.1	<0.5	0.3 J
EN-104	30 Months	8/11/2016	ug/L	0.3 J	<0.5	0.7	<0.5	<0.5	2.7	0.3 J	1.5	<0.5	0.4 J
EN-104	33 Months	11/17/2016	ug/L	0.2 J	<0.5	0.5	<0.5	0.1 J	2.1	0.2 J	1.3	<0.5	0.3 J
EN-104	36 Months	2/16/2017	ug/L	0.2 J	<0.5	0.5 J	<0.5	<0.5	2.2	0.2 J	1.5	<0.5	0.3 J
EN-104	39 Months	5/18/2017	ug/L	0.2 J	<0.5	0.4 J	<0.5	0.1 J	2.4	0.2 J	1.6	<0.5	0.4 J

TABLE 3-4
GROUNDWATER CHEMISTRY DATA - VOCS
 EN-154R Shutdown Test
 Former IBM Endicott Site, Endicott, NY

Well Designation	Shutdown Test Sample Round	Sample Date	Units	Constituents of Potential Concern									
				Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethene	1,1-Dichloroethane	Freon 113	Freon 123a
NYS Part 703 Groundwater Quality Standard				5	5	5	5	2	5	5	5	5	5
Between Railroad Tracks and North Street (all wells designated "RMJ-MW-X" are abbreviated as "MW-X")													
MW-1	Baseline	2/12/2014	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5
MW-1	Baseline	2/26/2014	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5 J	0.9	<0.5	<0.5	<0.5	<0.5
MW-1	1 Month	3/26/2014	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5 J	<0.5
MW-1	2 Months	4/29/2014	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5
MW-1	3 Months	5/28/2014	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5
MW-1	4 Months	6/24/2014	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	1.6	<0.5	<0.5	<0.5	<0.5
MW-1	5 Months	7/30/2014	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5
MW-1	6 Months	8/28/2014	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5
MW-1	9 Months	11/19/2014	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<0.5
MW-1	12 Months	2/26/2015	ug/L	Not Sampled--Well Inaccessible									
MW-1	15 Months	5/1/2015	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	<0.5
MW-1	18 Months	8/6/2015	ug/L	<0.5 J	<0.5 J	<0.5 J	<0.5 J	<0.5 J	0.9 J	<0.5 J	<0.5 J	<0.5 J	<0.5 J
MW-1 (Replicate)	18 Months	8/6/2015	ug/L	<0.5 J	<0.5 J	<0.5 J	<0.5 J	<0.5 J	0.9 J	<0.5 J	<0.5 J	<0.5 J	<0.5 J
MW-1	21 Months	11/12/2015	ug/L	<0.5	0.1 J	<0.5	<0.5	<0.5	1.4	<0.5	0.2 J	<0.5	<0.5
MW-1	24 Months	2/10/2016	ug/L	<0.5	0.2 J	<0.5	<0.5	<0.5	1.5	<0.5	0.3 J	<0.5	<0.5
MW-1	27 Months	5/25/2016	ug/L	<0.5	0.2 J	<0.5	<0.5	<0.5	1.1	<0.5	0.3 J	<0.5	0.2 J
MW-1	30 Months	8/11/2016	ug/L	<0.5	0.2 J	<0.5	<0.5	<0.5	1.2	<0.5	0.3 J	<0.5	0.2 J
MW-1	33 Months	11/17/2016	ug/L	<0.5	0.4 J	<0.5	<0.5	<0.5	1.2	<0.5	0.6	<0.5	0.4 J
MW-1	36 Months	2/16/2017	ug/L	<0.5	0.2 J	<0.5	<0.5	<0.5	1.1	<0.5	0.4 J	<0.5	0.3 J
MW-1	39 Months	5/18/2017	ug/L	<0.5	0.2 J	<0.5	<0.5	<0.5	1.0	<0.5	0.5	<0.5	0.4 J
MW-2	Baseline	2/12/2014	ug/L	0.6	0.1 J	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5	<0.5
MW-2	Baseline	2/26/2014	ug/L	0.6	0.1 J	<0.5	<0.5	<0.5 J	0.3 J	<0.5	<0.5	<0.5	<0.5
MW-2	1 Month	3/26/2014	ug/L	0.9	0.1 J	<0.5	<0.5	<0.5	0.4 J	<0.5	<0.5	<0.5 J	<0.5
MW-2	2 Months	4/29/2014	ug/L	0.6	0.1 J	<0.5	<0.5	<0.5	0.4 J	<0.5	<0.5	<0.5	<0.5
MW-2	3 Months	5/28/2014	ug/L	0.6	0.1 J	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5	<0.5
MW-2	4 Months	6/24/2014	ug/L	1.6	0.2 J	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5
MW-2 (Replicate)	4 Months	6/24/2014	ug/L	1.8	0.1 J	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5
MW-2	5 Months	7/30/2014	ug/L	0.9	0.1 J	<0.5	<0.5	<0.5	0.4 J	<0.5	<0.5	<0.5	<0.5
MW-2	6 Months	8/28/2014	ug/L	0.9	0.1 J	<0.5	<0.5	<0.5	0.4 J	<0.5	<0.5	<0.5 J	<0.5
MW-2	9 Months	11/19/2014	ug/L	0.6	0.1 J	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5	<0.5
MW-2	12 Months	2/26/2015	ug/L	Not Sampled--Well Inaccessible									
MW-2	15 Months	5/1/2015	ug/L	1.0	0.2 J	<0.5	<0.5	<0.5	33	0.5 J	0.7	3.5	0.4 J
MW-2	18 Months	8/6/2015	ug/L	0.8	0.1 J	0.6	<0.5	<0.5	22	0.5	0.6	4.9	0.3 J
MW-2	21 Months	11/12/2015	ug/L	0.3 J	0.1 J	0.2 J	<0.5	<0.5	3.1	0.1 J	0.1 J	0.5 J	<0.5
MW-2 (Replicate)	21 Months	11/12/2015	ug/L	0.3 J	<0.5	0.2 J	<0.5	<0.5	3.4	0.1 J	0.1 J	0.5 J	<0.5
MW-2	24 Months	2/10/2016	ug/L	0.6	0.1 J	0.8	<0.5	<0.5	6.1	0.4 J	0.4 J	1.4	0.2 J
MW-2	27 Months	5/25/2016	ug/L	0.6	0.1 J	0.8	<0.5	<0.5	5.7	0.6	0.3 J	1.6	0.2 J
MW-2	30 Months	8/11/2016	ug/L	0.3 J	0.1 J	0.6	<0.5	<0.5	4.1	0.2 J	0.3 J	1.1	<0.5
MW-2	33 Months	11/17/2016	ug/L	0.8 J	0.2 J	1.2	<0.5	<0.5	7.0	0.4 J	0.8	2.2	0.4 J
MW-2	36 Months	2/16/2017	ug/L	0.3 J	<0.5	0.3 J	<0.5	<0.5	2.1	<0.5	0.1 J	0.7	<0.5
MW-2	39 Months	5/18/2017	ug/L	0.1 J	<0.5	0.1 J	<0.5	<0.5	1.3	<0.5	<0.5	0.5	<0.5

TABLE 3-4
GROUNDWATER CHEMISTRY DATA - VOCS
 EN-154R Shutdown Test
 Former IBM Endicott Site, Endicott, NY

Well Designation	Shutdown Test Sample Round	Sample Date	Units	Constituents of Potential Concern									
				Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethene	1,1-Dichloroethane	Freon 113	Freon 123a
NYS Part 703 Groundwater Quality Standard				5	5	5	5	2	5	5	5	5	5
MW-3	Baseline	2/12/2014	ug/L	36	0.4 J	<0.5	<0.5	<0.5	0.5 J	<0.5	<0.5	<0.5	<0.5
MW-3 (Replicate)	Baseline	2/12/2014	ug/L	36	0.4 J	<0.5	<0.5	<0.5	0.5 J	<0.5	<0.5	<0.5	<0.5
MW-3	Baseline	2/26/2014	ug/L	36	0.4 J	<0.5	0.2	<0.5 J	0.5 J	<0.5	<0.5	<0.5	<0.5
MW-3	1 Month	3/26/2014	ug/L	30	0.3 J	<0.5	<0.5	<0.5	0.4 J	<0.5	<0.5	<0.5 J	<0.5
MW-3	2 Months	4/29/2014	ug/L	37	0.4 J	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5
MW-3	3 Months	5/28/2014	ug/L	34	0.4 J	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5
MW-3	4 Months	6/24/2014	ug/L	39	0.8	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<0.5
MW-3	5 Months	7/30/2014	ug/L	35	0.4 J	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5
MW-3	6 Months	8/28/2014	ug/L	29	0.4 J	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5 J	<0.5
MW-3	9 Months	11/19/2014	ug/L	38	0.4 J	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5
MW-3	12 Months	2/26/2015	ug/L	28	0.4 J	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
MW-3 (Replicate)	12 Months	2/26/2015	ug/L	27	0.3 J	<0.5	<0.5	<0.5	0.5 J	<0.5	<0.5	<0.5	<0.5
MW-3	15 Months	5/1/2015	ug/L	25	0.4 J	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5
MW-3	18 Months	8/6/2015	ug/L	25	0.3 J	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5
MW-3	21 Months	11/12/2015	ug/L	23	0.3 J	<0.5 J	<0.5 J	<0.5 J	0.5 J	<0.5 J	<0.5 J	<0.5 J	<0.5 J
MW-3	24 Months	2/10/2016	ug/L	24	0.3 J	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5
MW-3 (Replicate)	24 Months	2/10/2016	ug/L	24	0.3 J	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5
MW-3	27 Months	5/25/2016	ug/L	21	0.3 J	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5
MW-3	30 Months	8/11/2016	ug/L	24	0.2 J	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5
MW-3	33 Months	11/17/2017	ug/L	21	0.2 J	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5
MW-3	36 Months	2/16/2017	ug/L	25	0.2 J	<0.5	<0.5	<0.5	0.9	<0.5	0.1 J	<0.5	<0.5
MW-3	39 Months	5/18/2017	ug/L	22	0.2 J	<0.5	<0.5	<0.5	1.0	<0.5	0.2 J	<0.5	<0.5
MW-4	Baseline	2/12/2014	ug/L	30	1.3	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5	<0.5
MW-4	Baseline	2/26/2014	ug/L	31	1.1	<0.5	<0.5	<0.5 J	0.3 J	<0.5	<0.5	<0.5	<0.5
MW-4	1 Month	3/26/2014	ug/L	31	1.5	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5 J	<0.5
MW-4	2 Months	4/29/2014	ug/L	33	1.7	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5	<0.5
MW-4 (Replicate)	2 Months	4/29/2014	ug/L	34	1.7	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5	<0.5
MW-4	3 Months	5/28/2014	ug/L	36	1.5	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5	<0.5
MW-4	4 Months	6/24/2014	ug/L	47	2.8	<0.5	<0.5	<0.5	0.5 J	<0.5	<0.5	<0.5	<0.5
MW-4	5 Months	7/30/2014	ug/L	39	2.7	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5	<0.5
MW-4	6 Months	8/28/2014	ug/L	36	2.0	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5 J	<0.5
MW-4	9 Months	11/19/2014	ug/L	44	1.3	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5	<0.5
MW-4	12 Months	2/26/2015	ug/L	31	0.7	<0.5	<0.5	<0.5	0.2 J	<0.5	<0.5	<0.5	<0.5
MW-4	15 Months	5/1/2015	ug/L	30	1.8	<0.5	<0.5	<0.5	0.4 J	<0.5	<0.5	<0.5	<0.5
MW-4	18 Months	8/6/2015	ug/L	36	0.9 J	<0.5 J	<0.5 J	<0.5 J	0.2 J	<0.5 J	<0.5 J	<0.5 J	<0.5 J
MW-4	21 Months	11/12/2015	ug/L	24	0.9	<0.5	<0.5	<0.5	0.2 J	<0.5	<0.5	<0.5	<0.5
MW-4	24 Months	2/10/2016	ug/L	35	1.1	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5	<0.5
MW-4	27 Months	5/25/2016	ug/L	27	0.9	<0.5	<0.5	<0.5	0.2 J	<0.5	<0.5	<0.5	<0.5
MW-4	30 Months	8/11/2016	ug/L	27	0.7	<0.5	<0.5	<0.5	0.2 J	<0.5	<0.5	<0.5	<0.5
MW-4	33 Months	11/17/2016	ug/L	32	0.9	<0.5	<0.5	<0.5	0.2 J	<0.5	<0.5	<0.5	<0.5
MW-4	36 Months	2/16/2017	ug/L	31	0.9	<0.5	<0.5	<0.5	0.4 J	<0.5	<0.5	<0.5	<0.5
MW-4	39 Months	5/18/2017	ug/L	30	0.8	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	<0.5	<0.5

TABLE 3-4
GROUNDWATER CHEMISTRY DATA - VOCS
 EN-154R Shutdown Test
 Former IBM Endicott Site, Endicott, NY

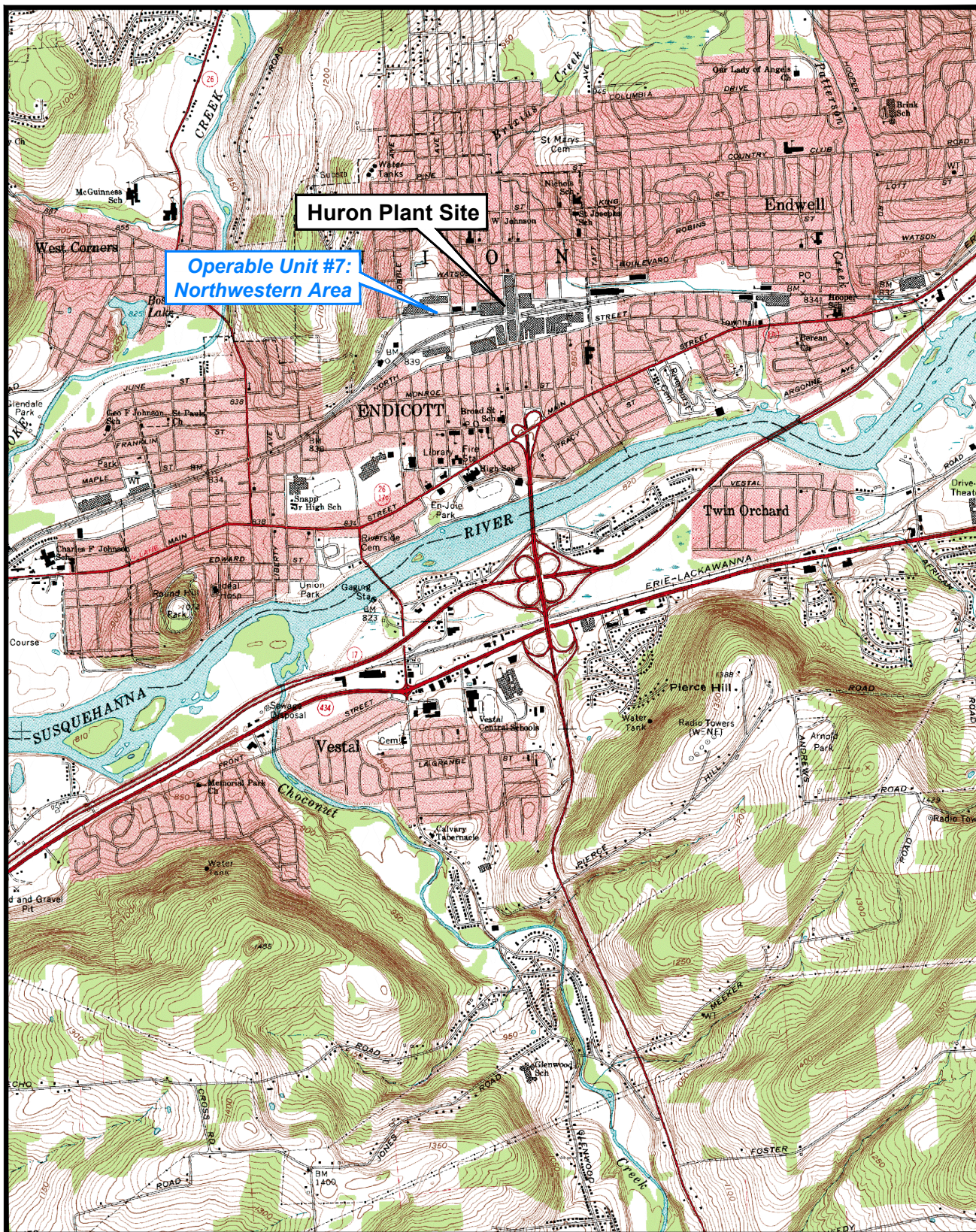
Well Designation	Shutdown Test Sample Round	Sample Date	Units	Constituents of Potential Concern									
				Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethene	1,1-Dichloroethane	Freon 113	Freon 123a
NYS Part 703 Groundwater Quality Standard				5	5	5	5	2	5	5	5	5	5
MW-5	Baseline	2/18/2014	ug/L	7.0	3.1	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	1.0	<0.5
MW-5	Baseline	2/26/2014	ug/L	6.8	5.4	<0.5	<0.5	<0.5 J	2.0	<0.5	<0.5	1.3	<0.5
MW-5 (Replicate)	Baseline	2/26/2014	ug/L	6.8	5.5	<0.5	<0.5	<0.5 J	2.0	<0.5	<0.5	1.4	<0.5
MW-5	1 Month	3/26/2014	ug/L	5.7	5.1	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	1.3 J	<0.5
MW-5 (Replicate)	1 Month	3/26/2014	ug/L	6.2	5.5	<0.5	<0.5	<0.5	1.9	<0.5	<0.5	1.4	<0.5
MW-5	2 Months	4/29/2014	ug/L	5.5	4.7	<0.5	<0.5	<0.5	2.0	<0.5	<0.5	1.2	<0.5
MW-5	3 Months	5/28/2014	ug/L	5.7	5.1	<0.5	<0.5	<0.5	1.9	<0.5	<0.5	1.3	<0.5
MW-5	4 Months	6/24/2014	ug/L	6.2	3.3	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	1.0	<0.5
MW-5	5 Months	7/30/2014	ug/L	5.4	5.4	<0.5	<0.5	<0.5	1.9	<0.5	<0.5	1.3	<0.5
MW-5 (Replicate)	5 Months	7/30/2014	ug/L	5.6	5.6	<0.5	<0.5	<0.5	2.0	<0.5	<0.5	1.3	<0.5
MW-5	6 Months	8/28/2014	ug/L	4.8	5.9	<0.5	<0.5	<0.5	2.0	0.1 J	<0.5	1.5 J	<0.5
MW-5 (Replicate)	6 Months	8/28/2014	ug/L	5.2	6.4	<0.5	<0.5	<0.5	2.2	0.1 J	<0.5	1.6	<0.5
MW-5	9 Months	11/19/2014	ug/L	5.7	6.0	<0.5	<0.5	<0.5	2.6	0.1 J	0.2 J	1.8	<0.5
MW-5 (Replicate)	9 Months	11/19/2014	ug/L	6.1	6.0	<0.5	<0.5	<0.5	2.6	0.1 J	0.2 J	1.7	<0.5
MW-5	12 Months	2/26/2015	ug/L	4.7	3.0	<0.5	<0.5	<0.5	2.4	<0.5	0.3 J	1.2	<0.5
MW-5	15 Months	5/1/2015	ug/L	4.1	2.5	<0.5	<0.5	<0.5	2.1	<0.5	0.2 J	1.1	<0.5
MW-5 (Replicate)	15 Months	5/1/2015	ug/L	3.9	2.4	<0.5	<0.5	<0.5	1.9	<0.5	0.2 J	1.0	<0.5
MW-5	18 Months	8/6/2015	ug/L	4.5	2.3	0.1 J	<0.5	<0.5	2.9	<0.5	0.6	1.2	0.2 J
MW-5	21 Months	11/12/2015	ug/L	4.7	2.5	0.3 J	<0.5	<0.5	5.0	0.1 J	1.4	1.7	0.4 J
MW-5	24 Months	2/10/2016	ug/L	5.2	2.3	0.5 J	<0.5	<0.5	9.0	0.2 J	1.7	2.1	0.4 J
MW-5	27 Months	5/25/2016	ug/L	4.4	2.2	0.8	<0.5	<0.5	10	0.6	2.2	2.7	0.6
MW-5 (Replicate)	27 Months	5/25/2016	ug/L	4.6	2.1	0.8	<0.5	<0.5	10	0.6	2.2	2.9	0.6
MW-5	30 Months	8/11/2016	ug/L	3.6	1.8	0.8	<0.5	<0.5	9.6	0.3 J	2.4	2.5	0.6
MW-5 (Replicate)	30 Months	8/11/2016	ug/L	3.7	1.8	0.8	<0.5	<0.5	9.6	0.3 J	2.4	2.5	0.6
MW-5	33 Months	11/17/2016	ug/L	4.7	2.9	1.3	<0.5	<0.5	11	0.4 J	3.2	3.5	0.8
MW-5 (Replicate)	33 Months	11/17/2016	ug/L	4.0 J	2.8 J	1.2 J	<0.5 J	<0.5 J	11 J	0.3 J	3.1 J	3.2 J	0.8 J
MW-5	36 Months	2/16/2017	ug/L	3.7	2.4	1.0	<0.5	<0.5	9.4	0.3 J	2.3	2.7	0.7
MW-5 (Replicate)	36 Months	2/16/2017	ug/L	3.6	2.5	1.0	<0.5	<0.5	9.3	0.2 J	2.4	2.8	0.7
MW-5	39 Months	5/18/2017	ug/L	3.3	2.2	0.9	<0.5	<0.5	11.0	0.3 J	1.9	3.1	0.6
MW-5 (Replicate)	39 Months	5/18/2017	ug/L	3.2	2.0	0.9	<0.5	<0.5	11.0	0.2 J	1.9	3.0	0.6

TABLE 3-4
GROUNDWATER CHEMISTRY DATA - VOCS
 EN-154R Shutdown Test
 Former IBM Endicott Site, Endicott, NY

Well Designation	Shutdown Test Sample Round	Sample Date	Units	Constituents of Potential Concern									
				Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethene	1,1-Dichloroethane	Freon 113	Freon 123a
NYS Part 703 Groundwater Quality Standard				5	5	5	5	2	5	5	5	5	5
MW-6	Baseline	2/12/2014	ug/L	30	5.2	0.8	<0.5	<0.5	4.1	0.3 J	0.9	1.4	0.5 J
MW-6	Baseline	2/26/2014	ug/L	32	5.9	0.8	<0.5	<0.5 J	4.2	0.4 J	0.8	1.6	0.5 J
MW-6	1 Month	3/26/2014	ug/L	26	4.8	0.7	<0.5	<0.5	3.7	0.3 J	0.8	1.3 J	0.5 J
MW-6	2 Months	4/29/2014	ug/L	22	4.0	0.7	<0.5	<0.5	3.9	0.3 J	0.8	1.3	0.5 J
MW-6	3 Months	5/28/2014	ug/L	22	3.6	0.7	<0.5	<0.5	3.7	0.3 J	0.7	1.2	0.4 J
MW-6 (Replicate)	3 Months	5/28/2014	ug/L	23	3.5	0.7	<0.5	<0.5	3.6	0.3 J	0.7	1.1	0.4 J
MW-6	4 Months	6/24/2014	ug/L	27	5.6	1.0	<0.5	<0.5	5.7	0.5	1.6	1.7	0.7
MW-6	5 Months	7/30/2014	ug/L	22	3.1	0.6	<0.5	<0.5	3.4	0.3 J	0.6	1.0	0.4 J
MW-6	6 Months	8/28/2014	ug/L	19	4.3	0.8	<0.5	<0.5	4.1	0.4 J	1.0	1.6 J	0.5
MW-6	9 Months	11/19/2014	ug/L	24	5.1	0.5 J	<0.5	<0.5	4.3	0.4 J	0.6	1.7 J	0.4 J
MW-6	12 Months	2/26/2015	ug/L	24	5.0	0.5	<0.5	<0.5	3.9	0.3 J	0.7	1.6	0.4 J
MW-6	15 Months	5/1/2015	ug/L	17	2.9	0.4 J	<0.5	<0.5	2.9	0.2 J	0.6	0.9	0.3 J
MW-6	18 Months	8/6/2015	ug/L	16 J	2.7 J	0.5 J	<0.5 J	<0.5 J	3.1 J	0.2 J	0.6 J	0.9 J	0.3 J
MW-6	21 Months	11/12/2015	ug/L	20	1.7	0.3 J	<0.5	<0.5	3.5	0.2 J	0.4 J	0.9	0.2 J
MW-6	24 Months	2/10/2016	ug/L	19	1.7	0.3 J	<0.5	<0.5	4.2	0.2 J	0.5 J	1.1	0.2 J
MW-6	27 Months	5/25/2016	ug/L	18	1.6	0.4 J	<0.5	<0.5	4.8	0.4 J	0.6	1.2	0.3 J
MW-6	30 Months	8/11/2016	ug/L	14	1.5	0.6	<0.5	<0.5	5.7	0.2 J	0.9	1.4	0.3 J
MW-6	33 Months	11/17/2016	ug/L	22 J	2.5 J	0.9 J	<0.5 J	<0.5 J	9.9 J	0.4 J	1.7 J	2.7 J	0.6 J
MW-6	36 Months	2/16/2017	ug/L	17	2.1	0.9	<0.5	<0.5	10	0.4 J	1.4	2.4	0.5 J
MW-6	39 Months	5/18/2017	ug/L	15	1.4	1.0	<0.5	<0.5	9.8	0.3 J	1.1	2.2	0.4 J

NOTES:

- 1) This table provides a summary of the results of volatile organic compound (VOC) analyses of groundwater samples collected in 2014, 2015, 2016, and 2017 as part of the EN-154R shutdown test. VOCs included in the table consist of constituents of potential concern that were detected in one or more of the groundwater samples.
- 2) The groundwater sampling was performed by Groundwater Sciences Corporation personnel on the dates listed in the table.
- 3) The groundwater samples were analyzed for VOCs by Eurofins Lancaster Laboratories Environmental of Lancaster, Pennsylvania using method SW-846 8260C. The concentrations are in units of micrograms per liter (ug/L). Concentrations of VOCs greater than the applicable New York State 6NYCRR Part 703 Groundwater Quality Standards are in bold typeface.
- 4) Other notes:
 "J" signifies an estimated value, typically between the method detection limit (MDL) and the limit of quantitation (LOQ).
 "<" signifies "not detected" at the limit of quantitation shown.

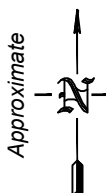
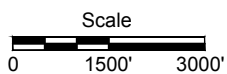


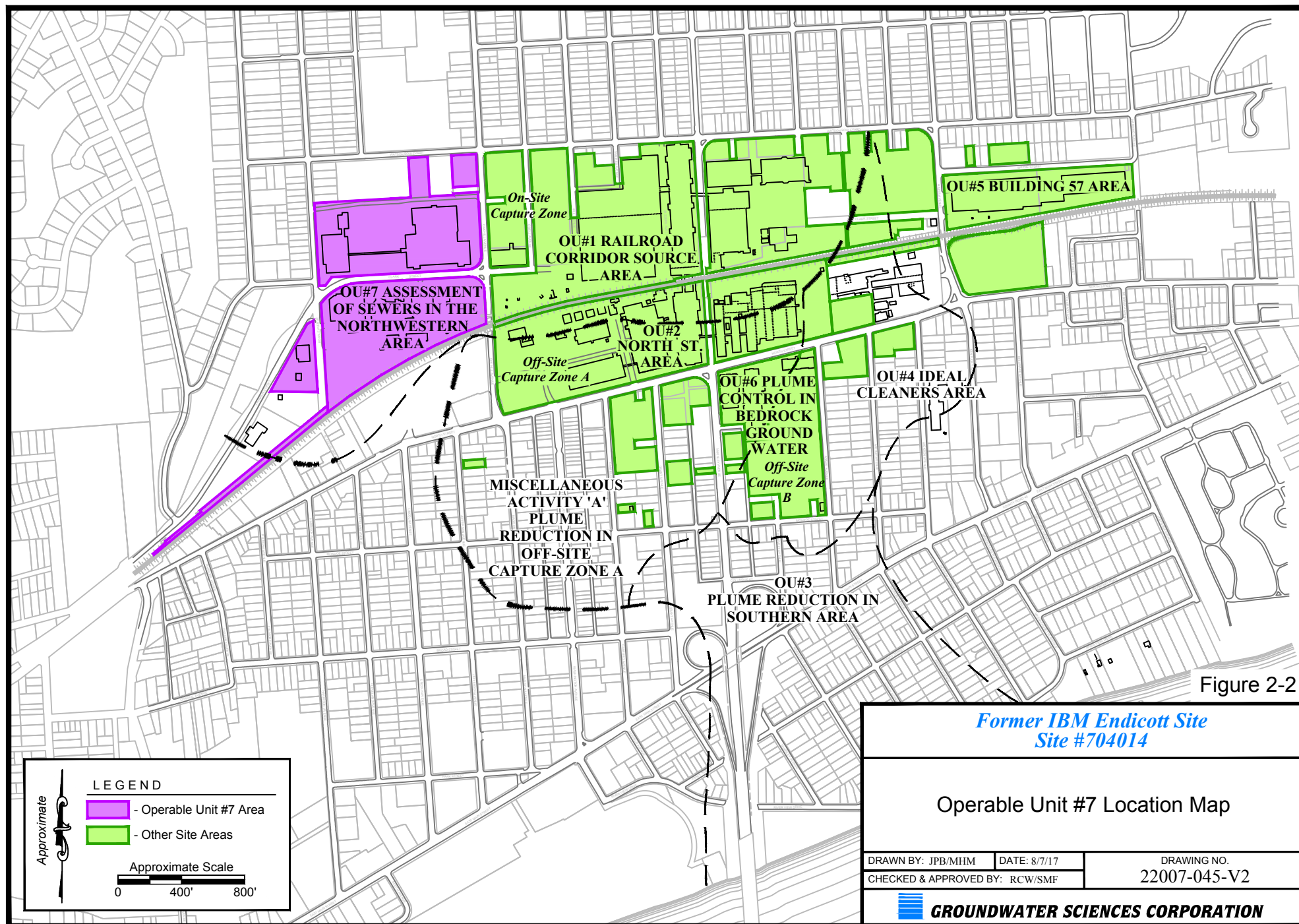
Portion of the Endicott, New York
7.5-minute USGS Quadrangle
(1969; Photoinspected 1976)

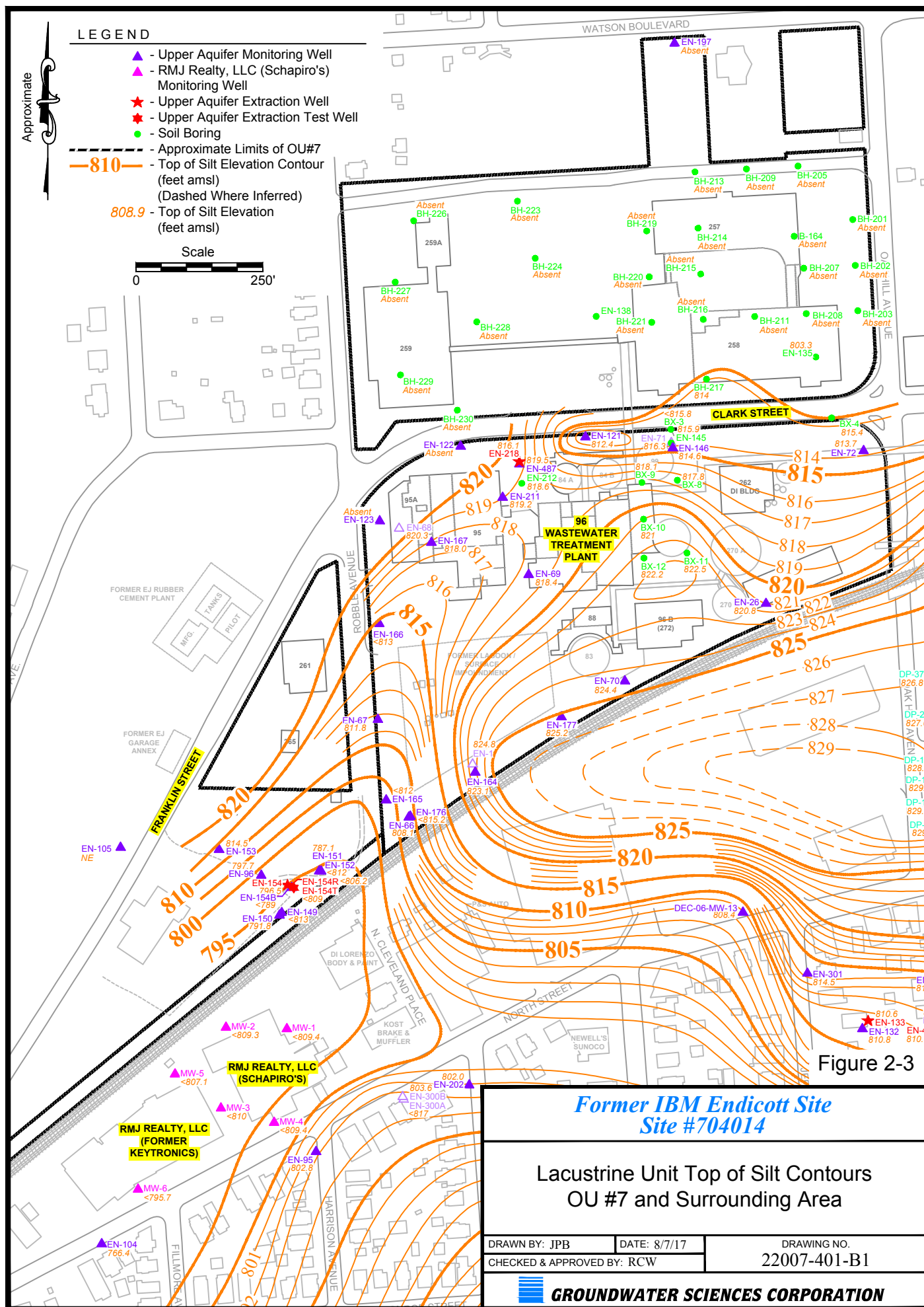
Figure 2-1

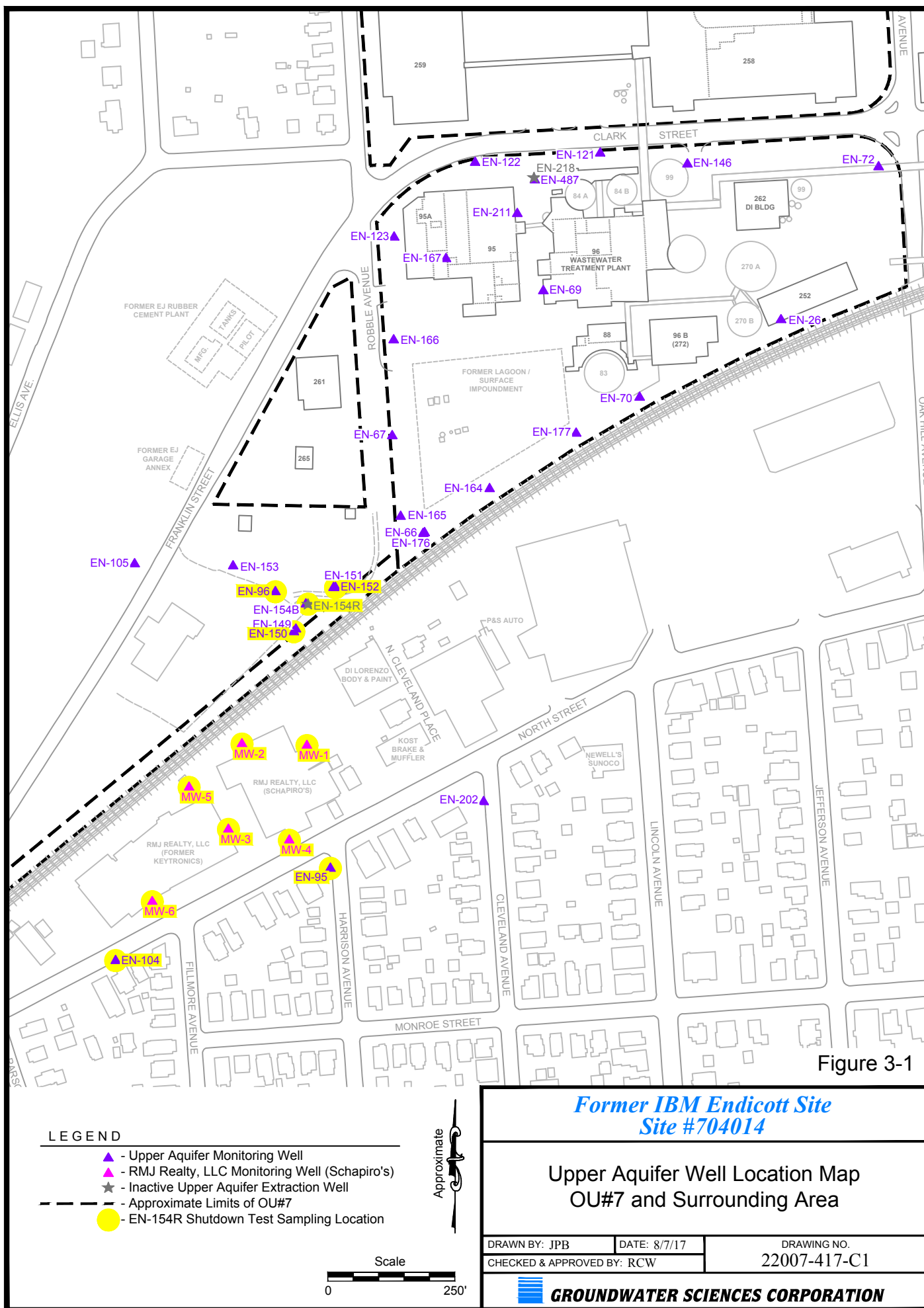
*Former IBM Endicott Site
Site #704014*

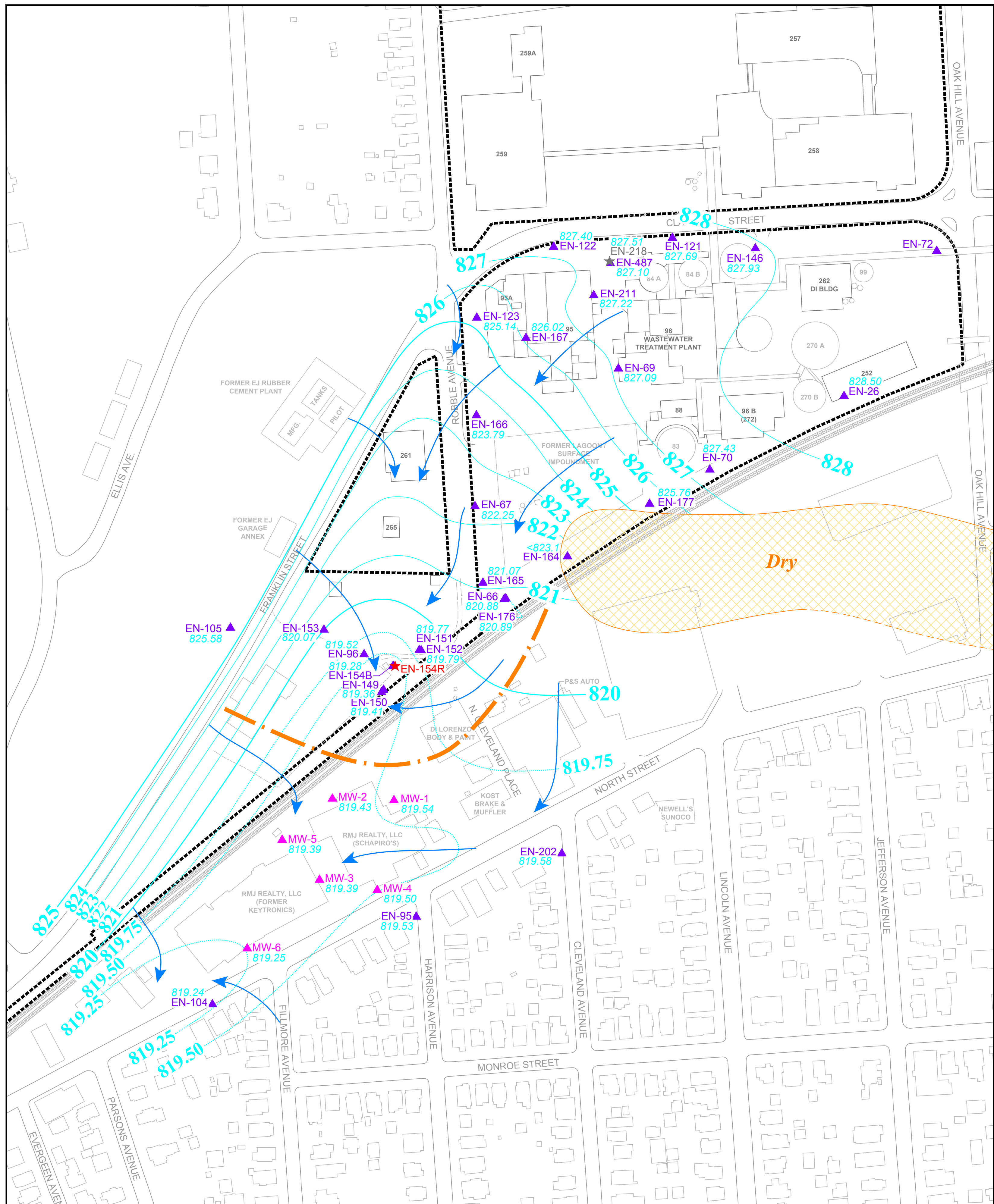
Site Location Map



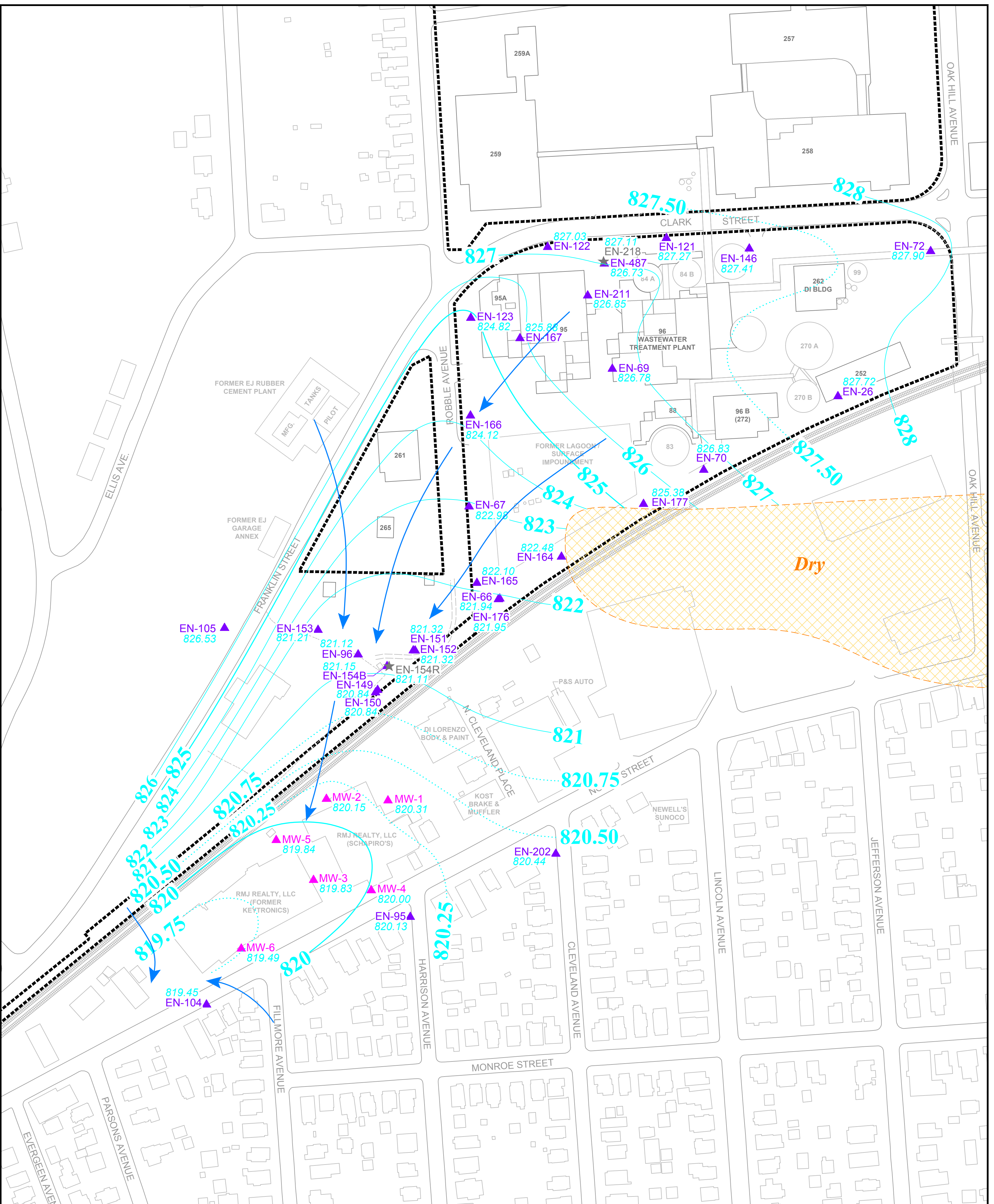








Upper Aquifer Groundwater Elevation Contour Map
OU #7 and Surrounding Area
February 26, 2014
(Prior to EN-154R Shutdown)



Upper Aquifer Groundwater Elevation Contour Map
OU #7 and Surrounding Area
February 10, 2016
(Two Years After EN-154R Shutdown)

LEGEND

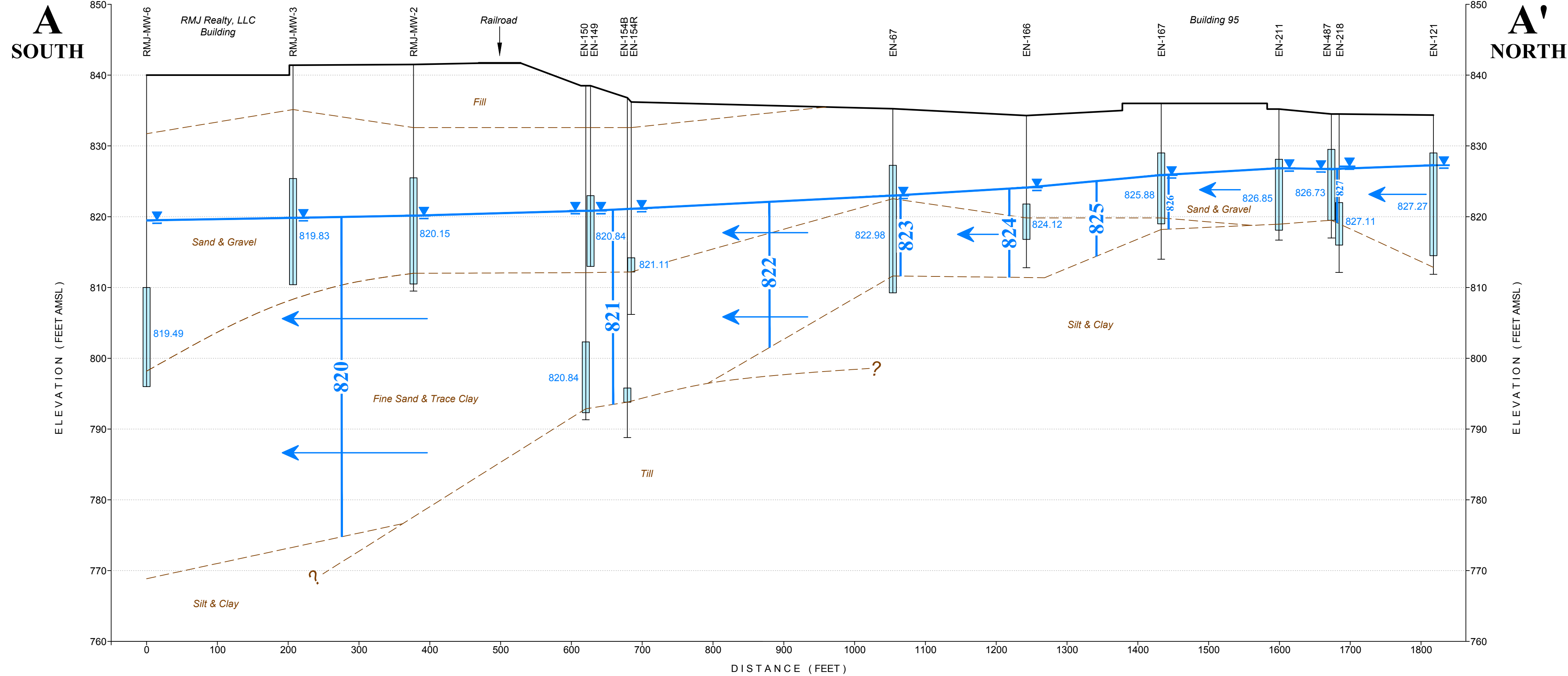
- Upper Aquifer Monitoring Well
- RMJ Realty, LLC Monitoring Well (Schapiro's)
- Upper Aquifer Extraction Well
- Inactive Upper Aquifer Extraction Well
- Approximate Limits of OU#7
- Groundwater Elevation Contour (feet amsl)
- Supplemental Contour
- Groundwater Elevation (feet amsl)
- Inferred Direction of Groundwater Flow
- Groundwater Flow Divide

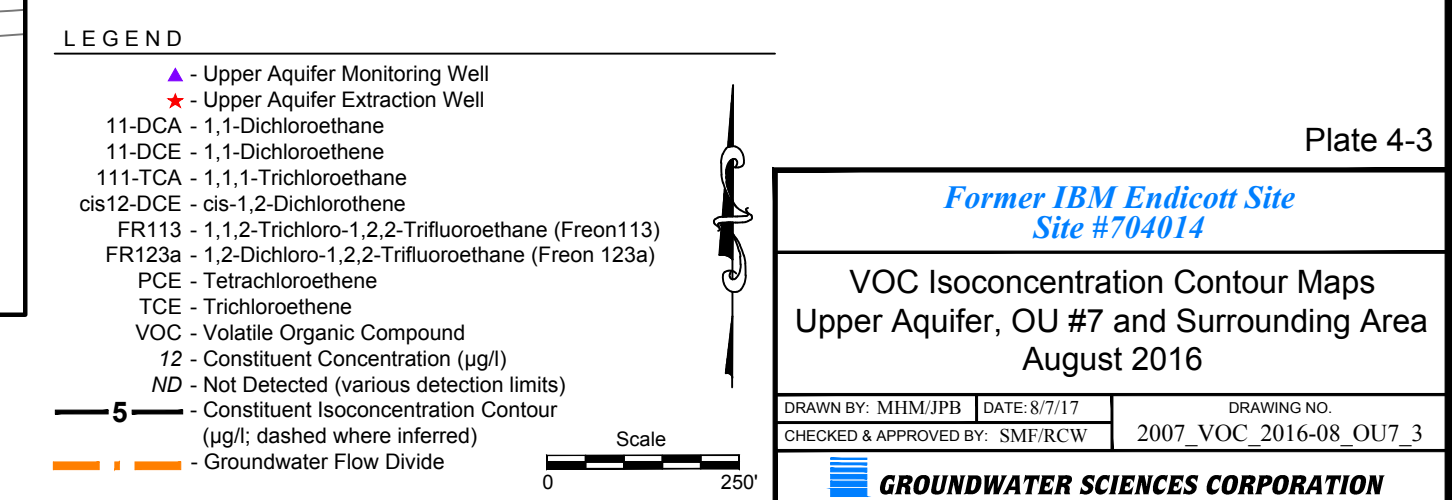
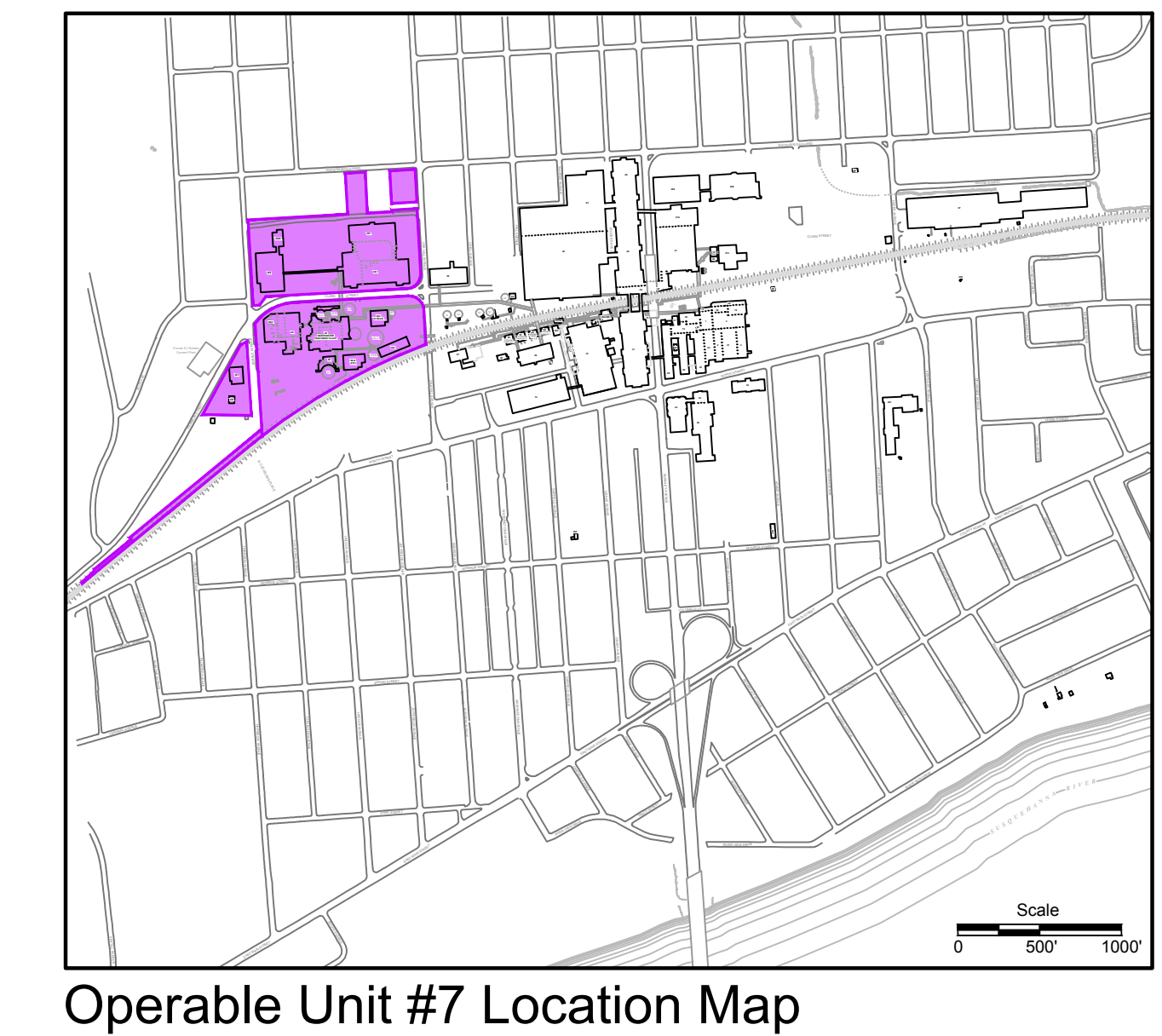
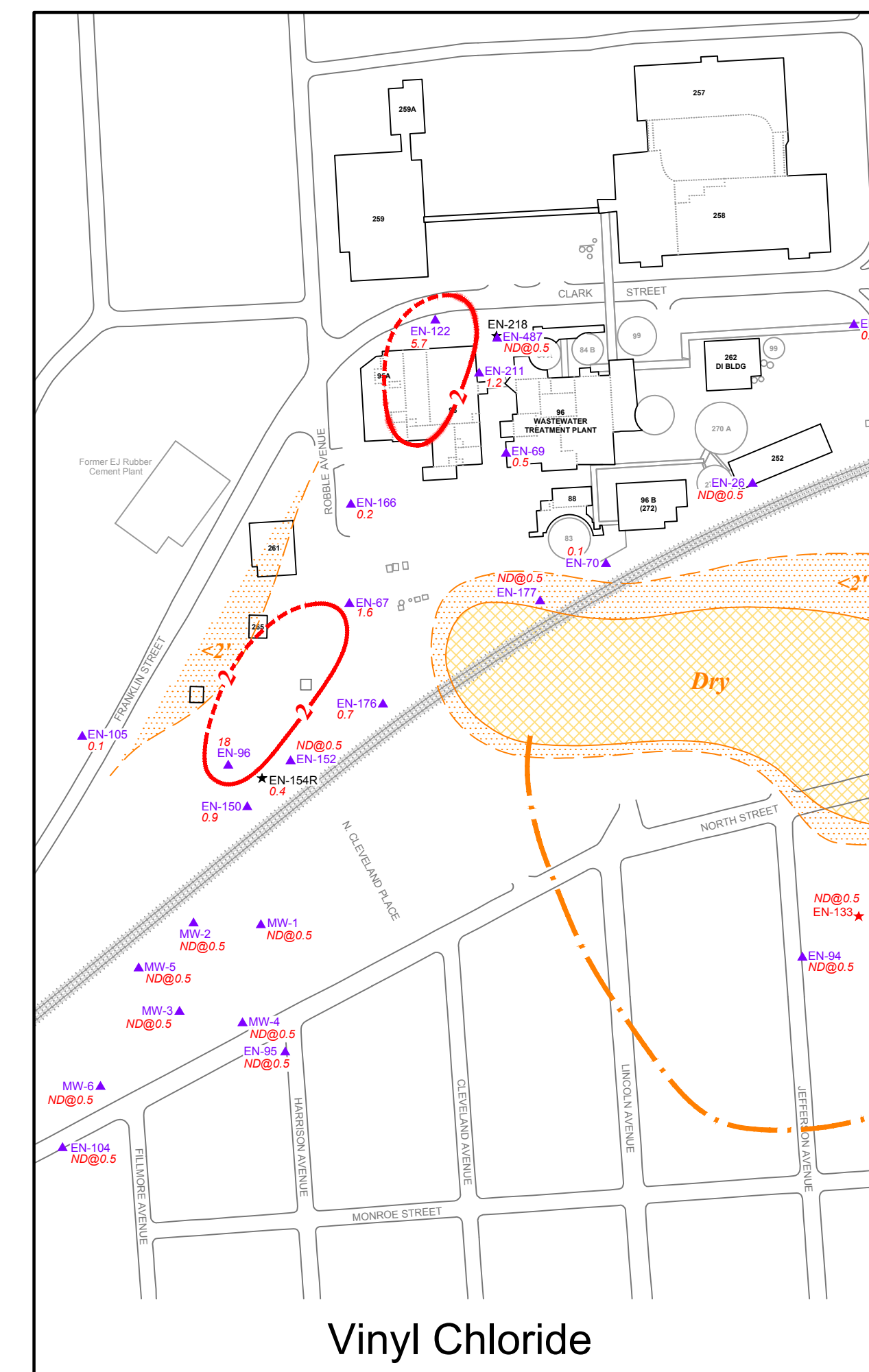
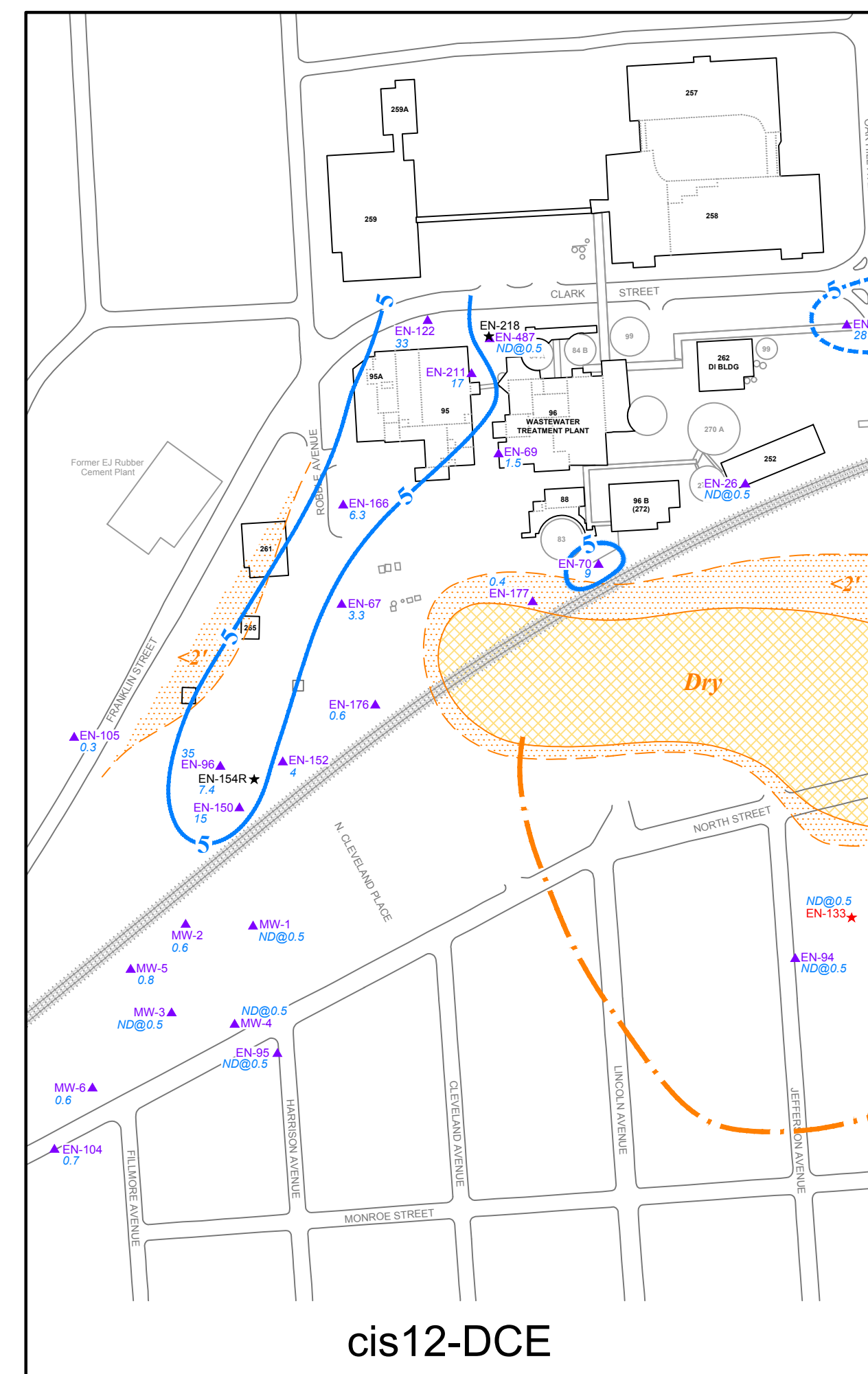
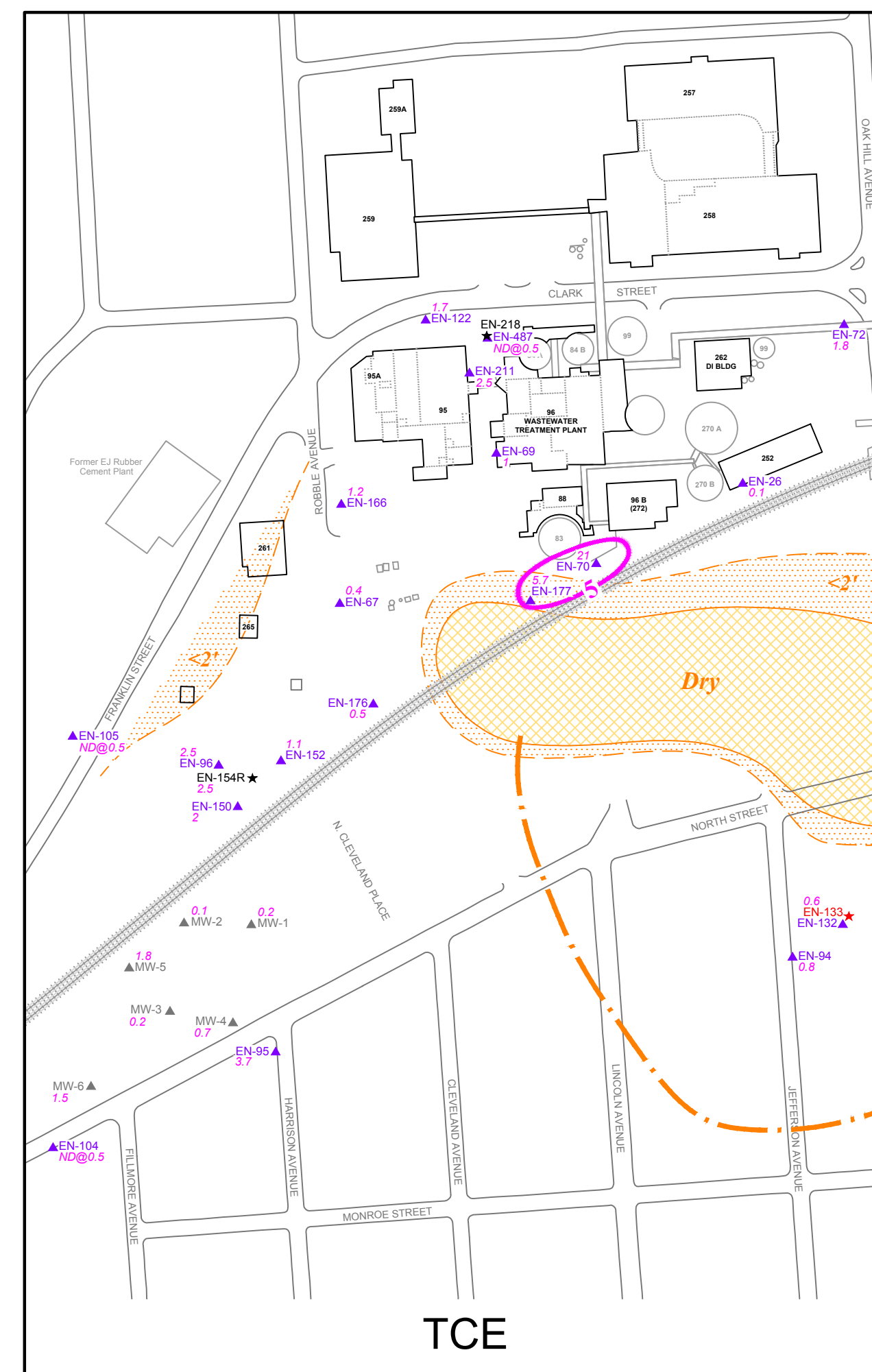
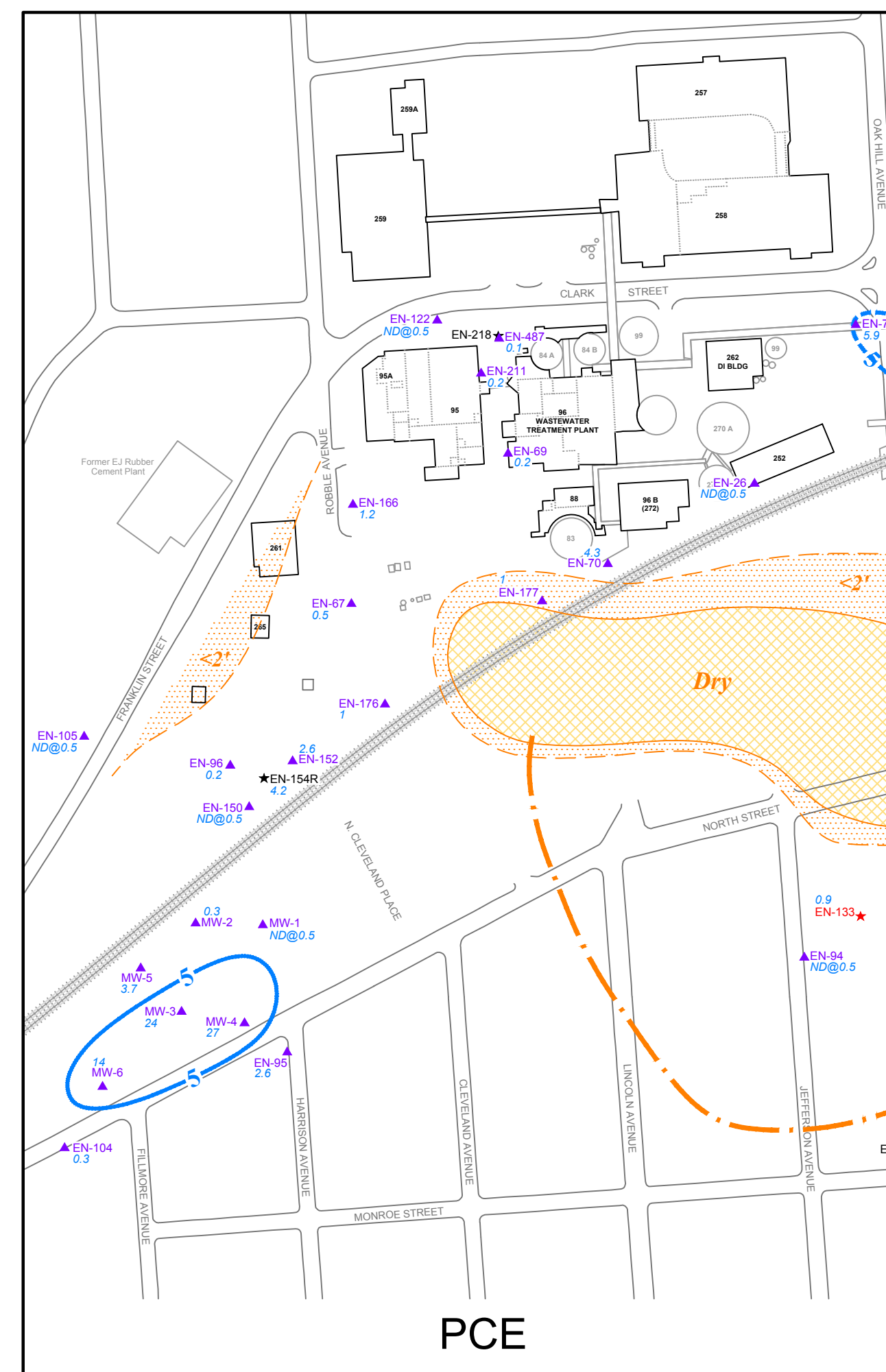
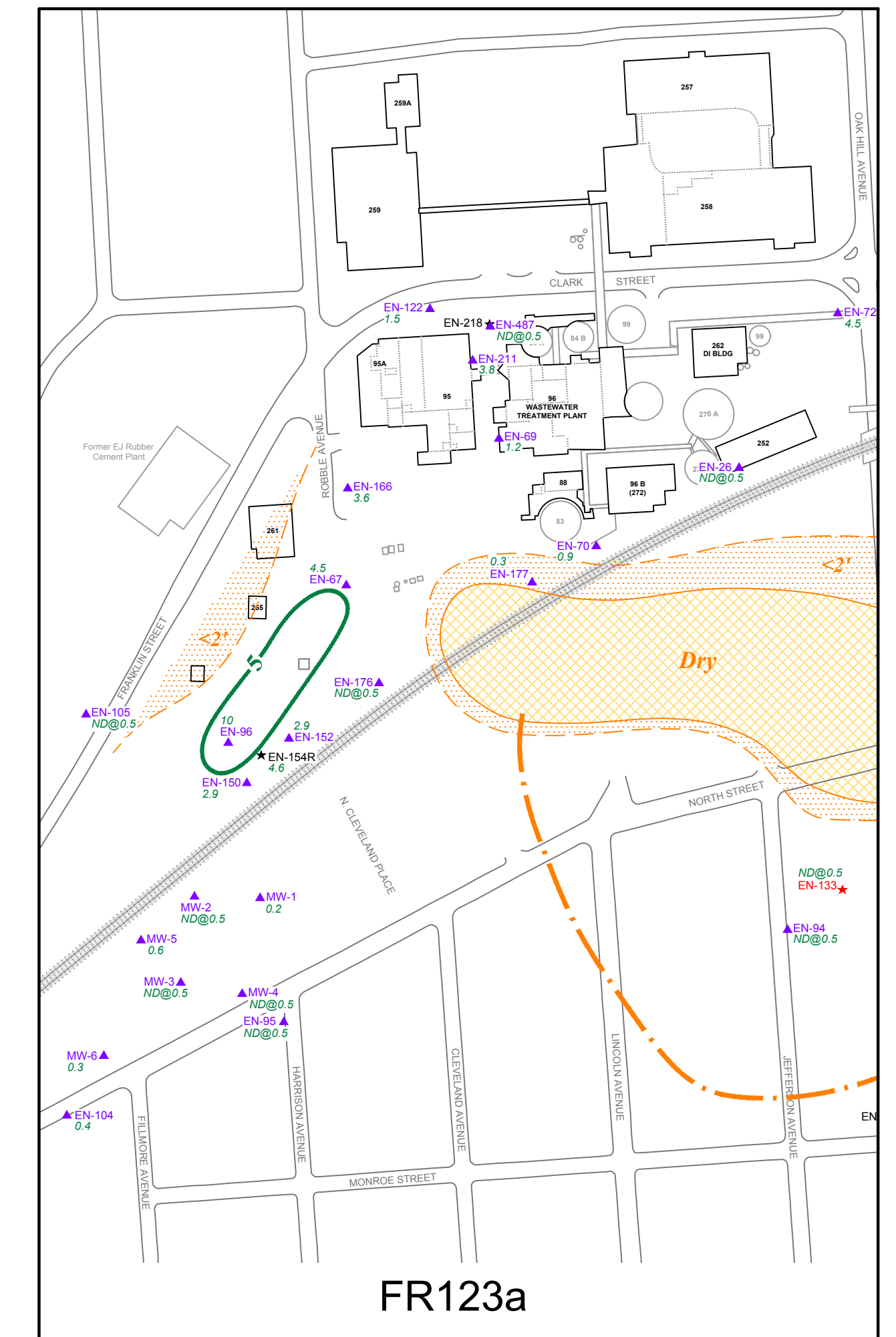
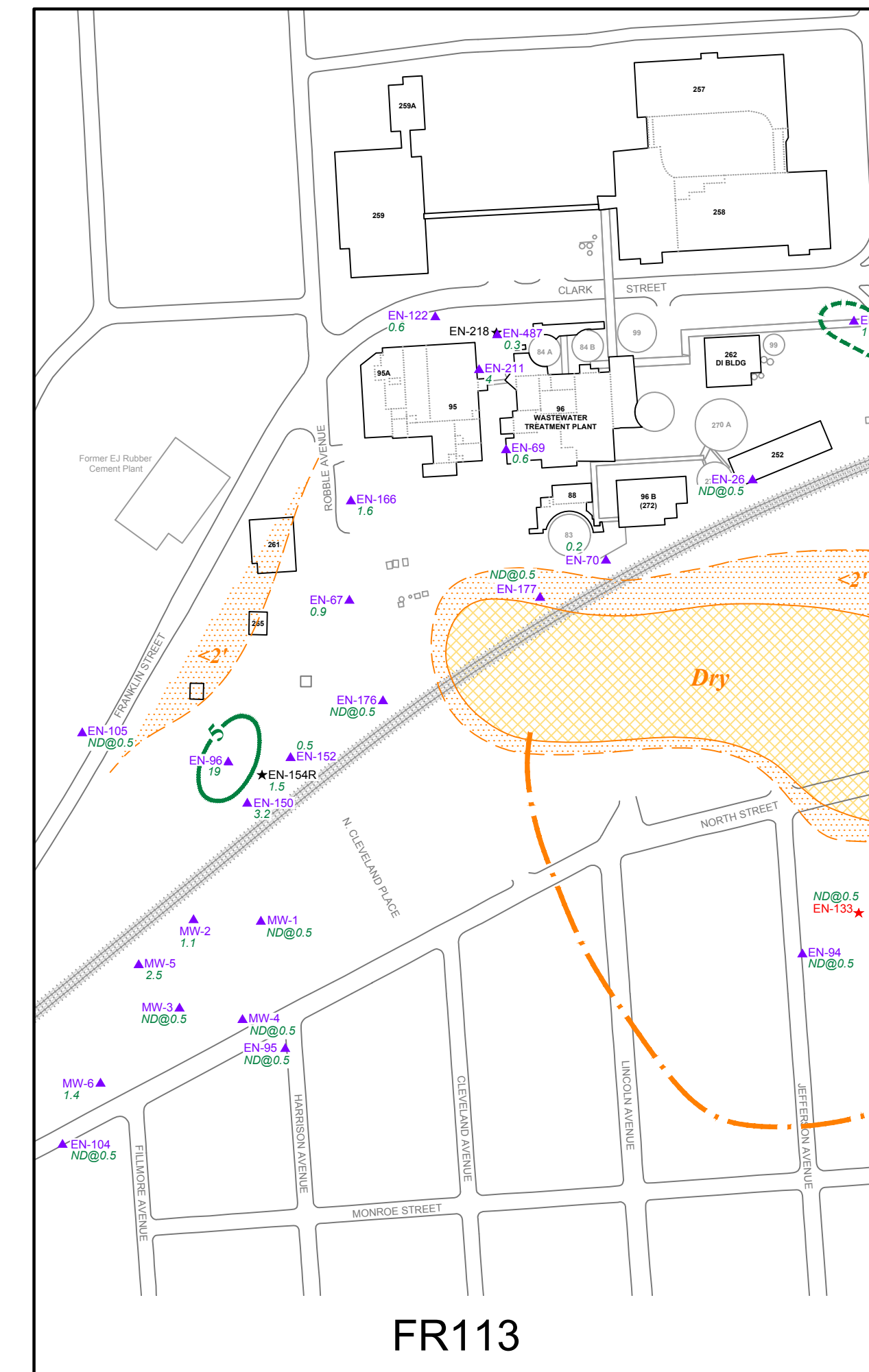
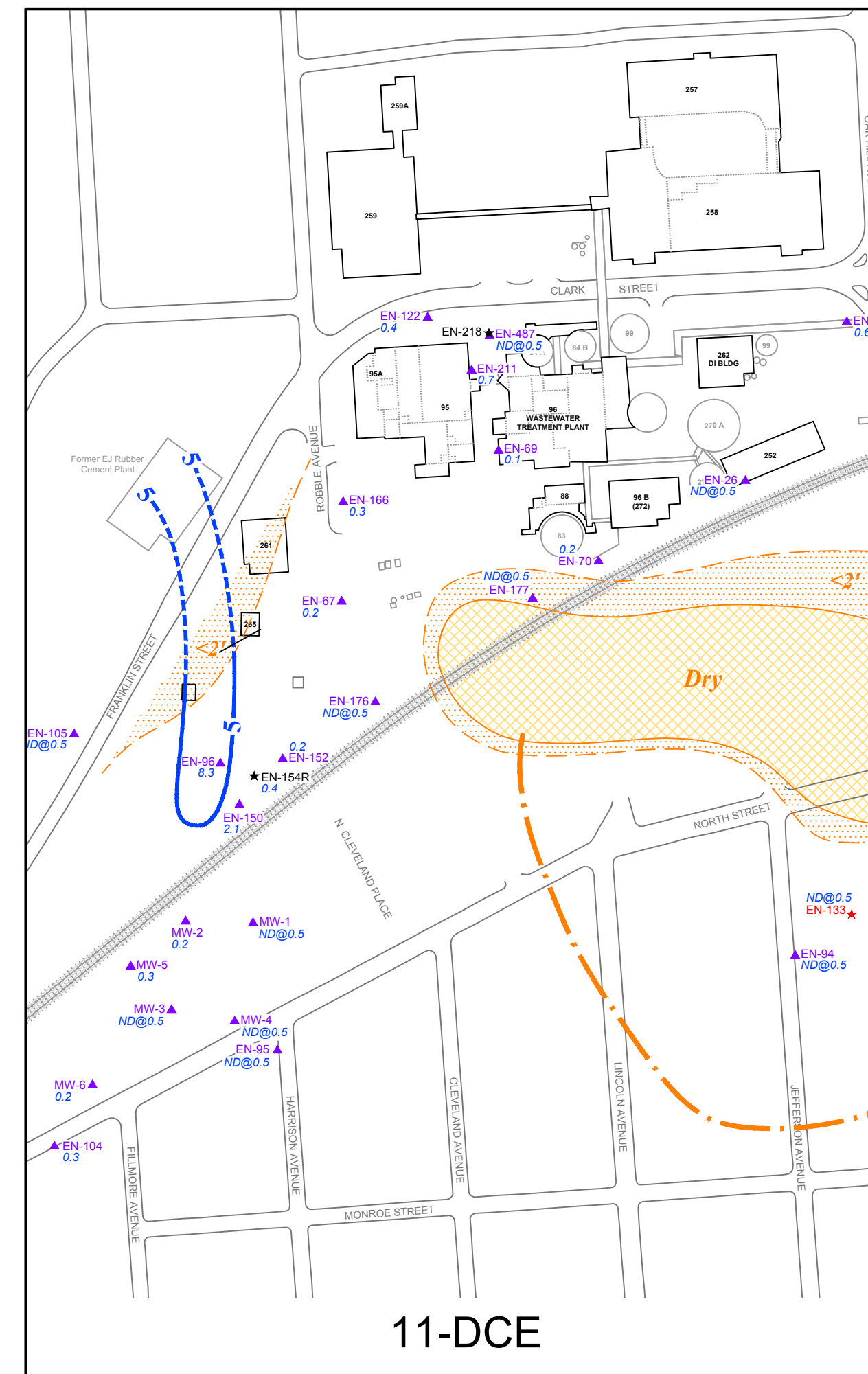
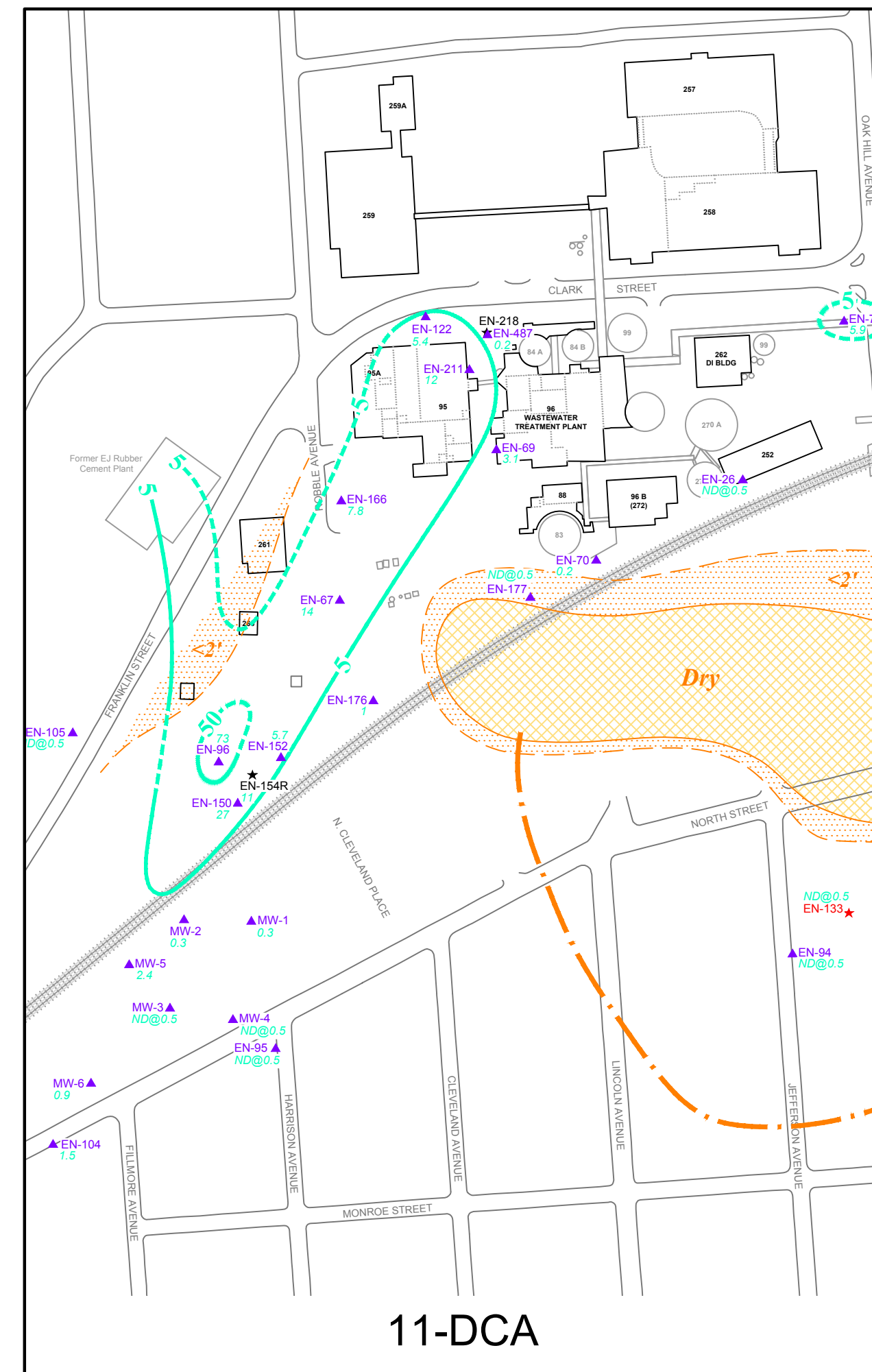
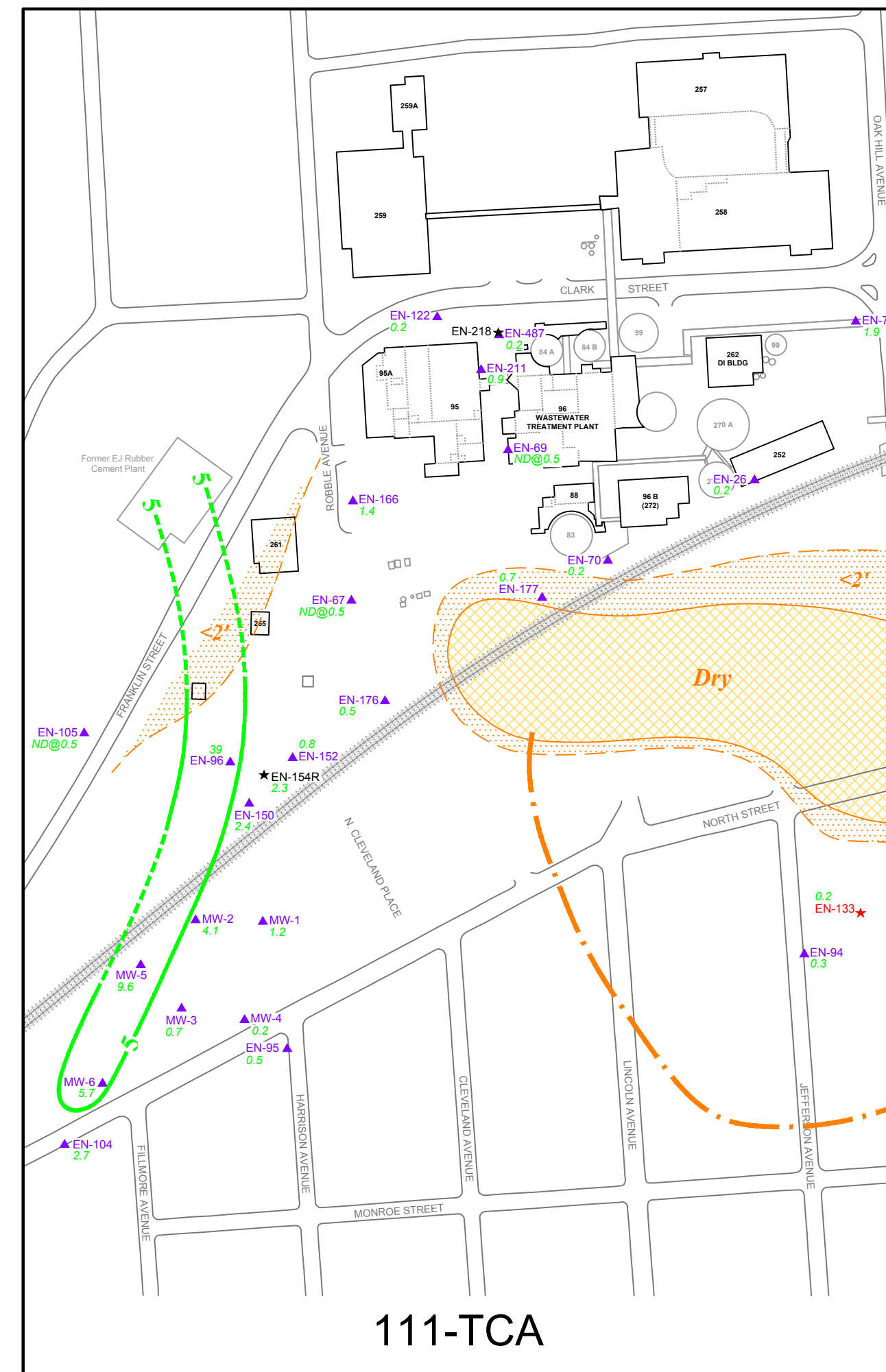
FORMER IBM ENDICOTT SITE
Site #704014

Upper Aquifer Groundwater Elevation Contour Maps
Pre- and Post-Shutdown of Well EN-154R,
OU #7 and Surrounding Area

DRAWN BY: JPB DATE: 8/8/17 DRAWING NO: 22007-398-S2
CHECKED & APPROVED BY: ST/CIC/RW

GROUNDWATER SCIENCES CORPORATION





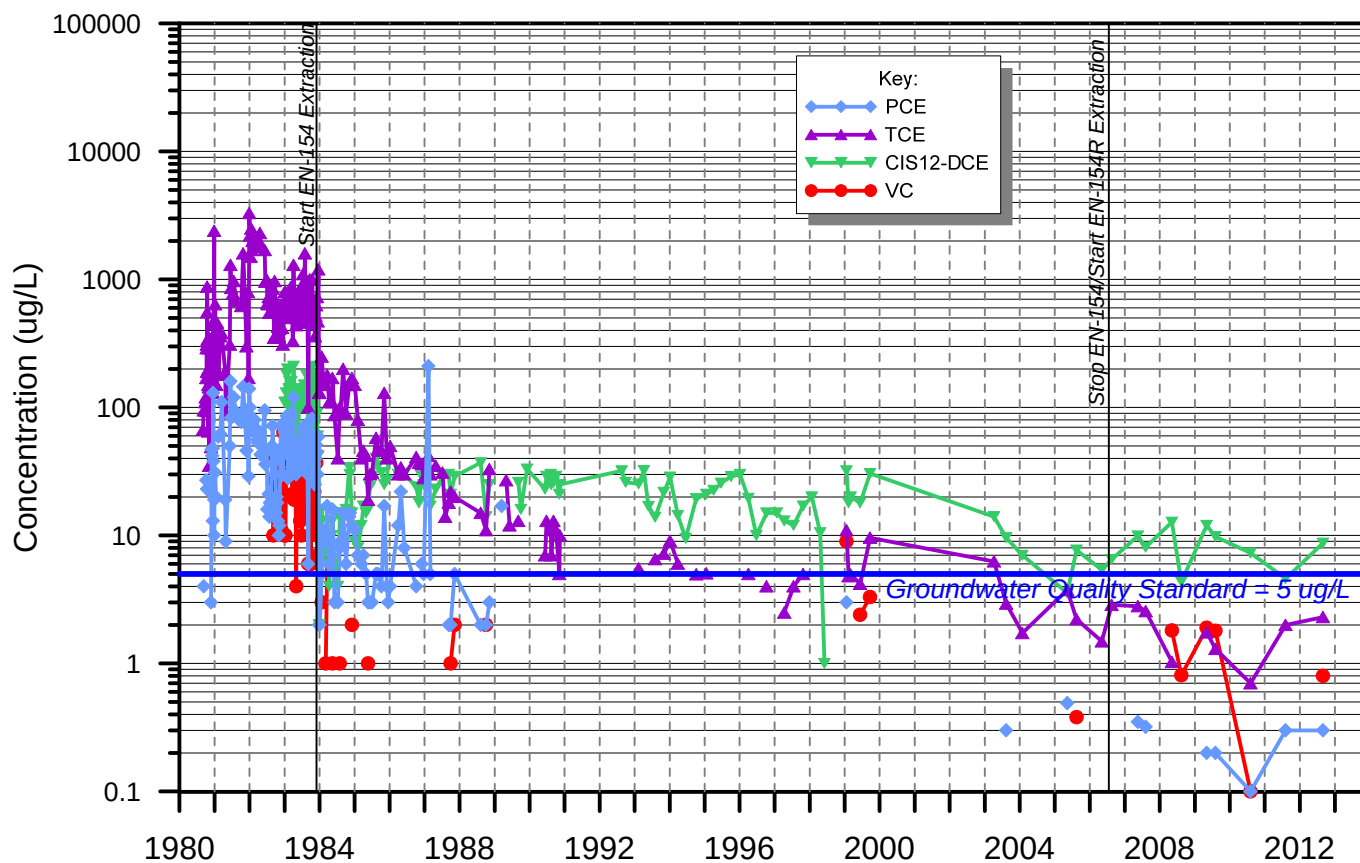
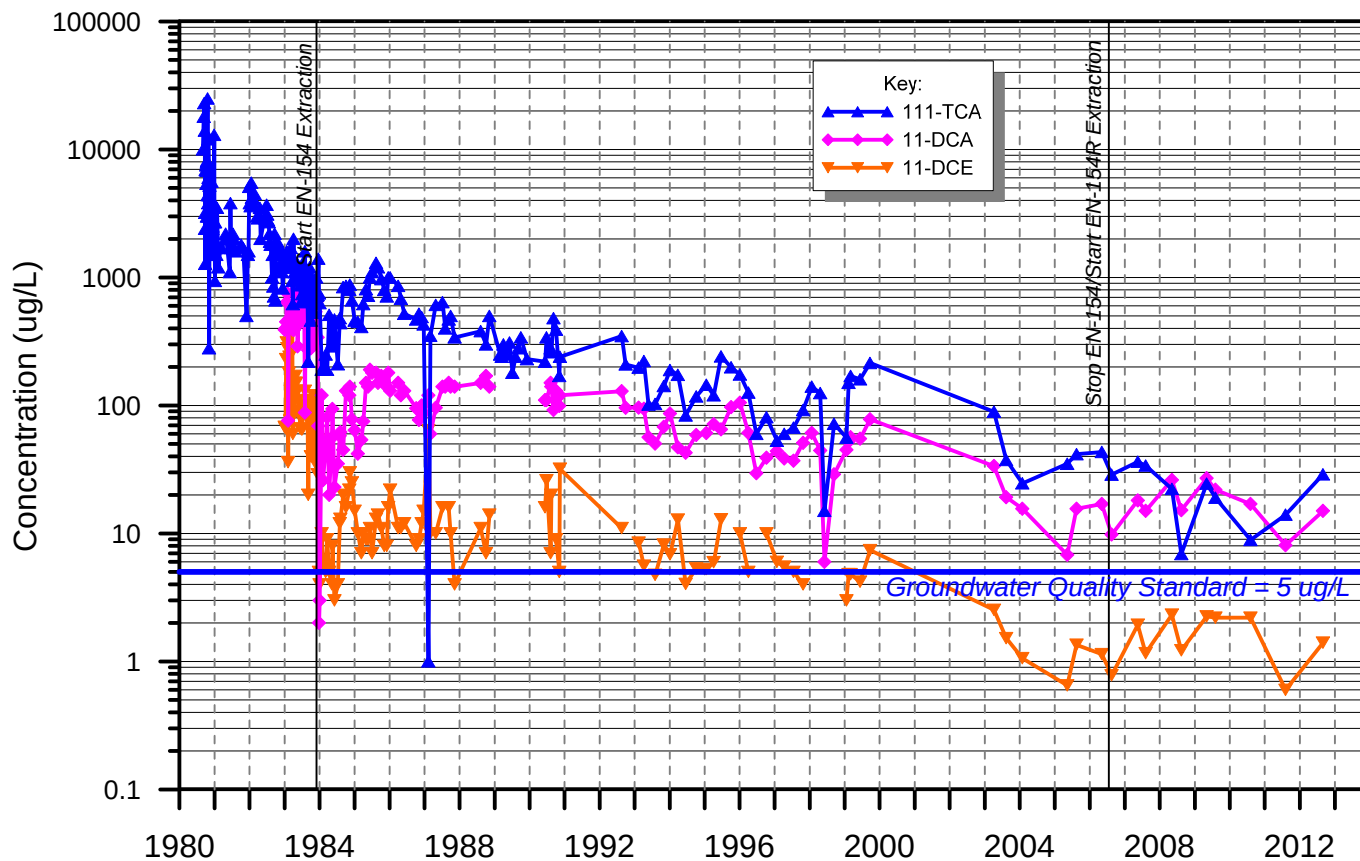
APPENDIX A

CORRECTIVE ACTION HISTORY GRAPHS

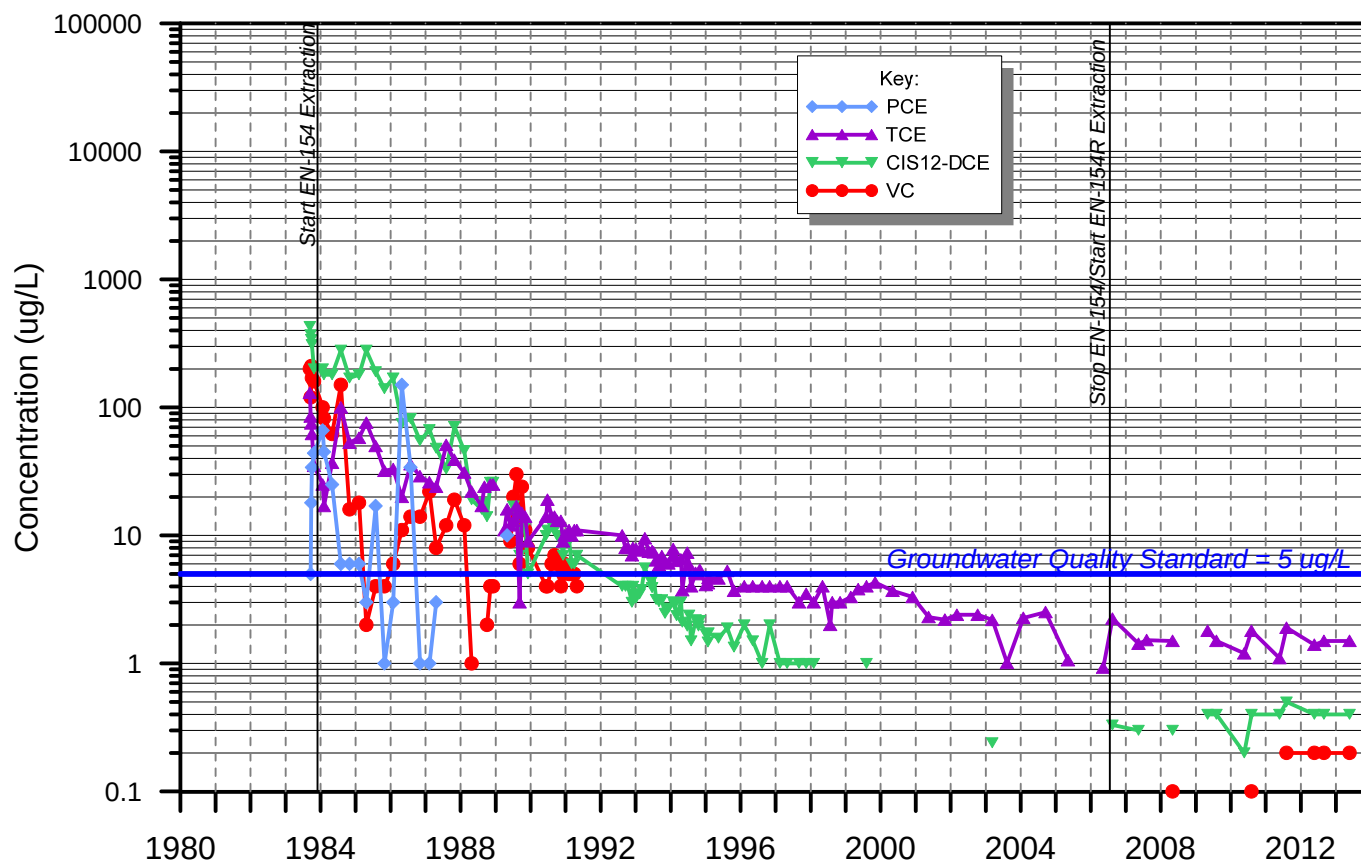
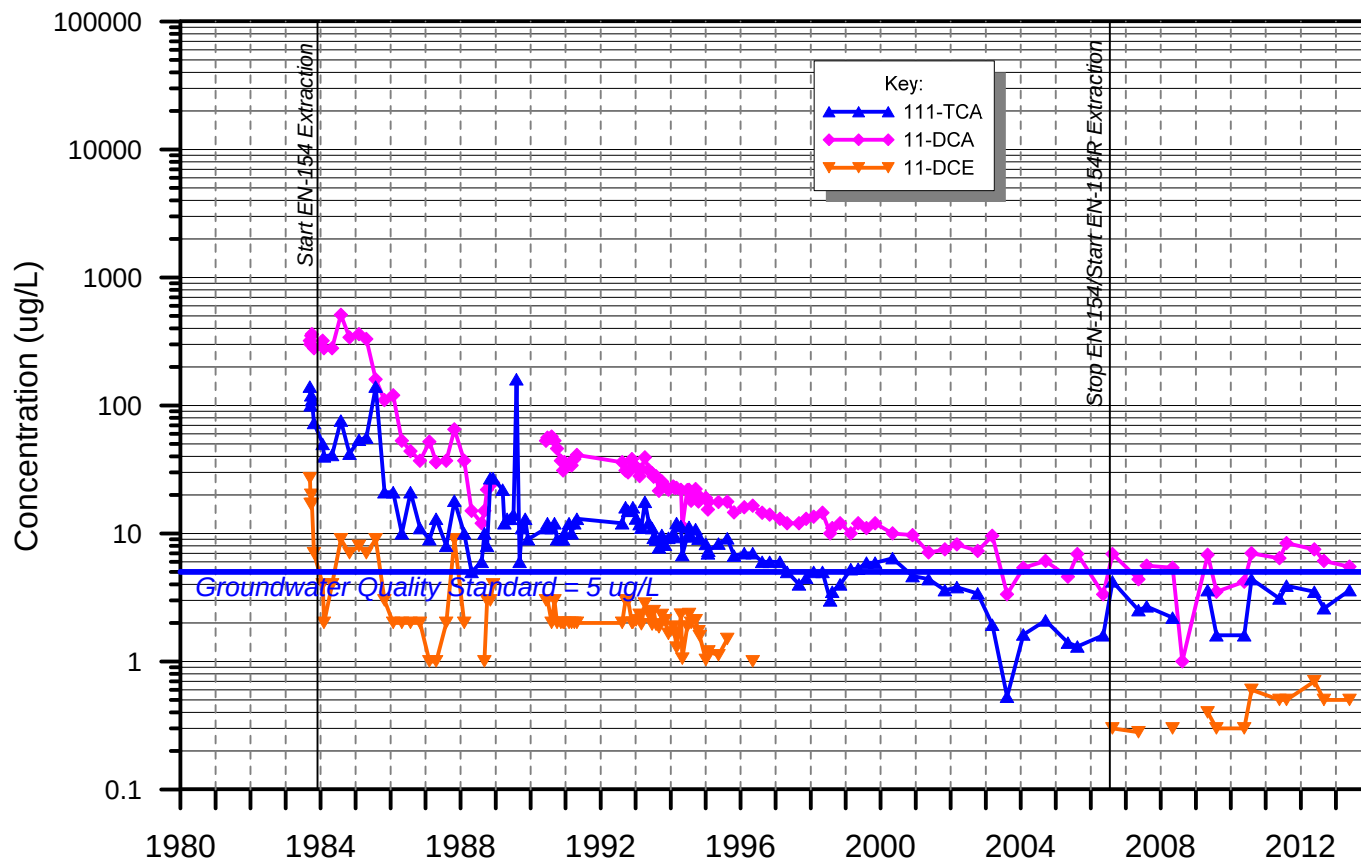
APPENDIX A.1

Time vs. Ethane and Ethene Concentrations, 1980s through 2013

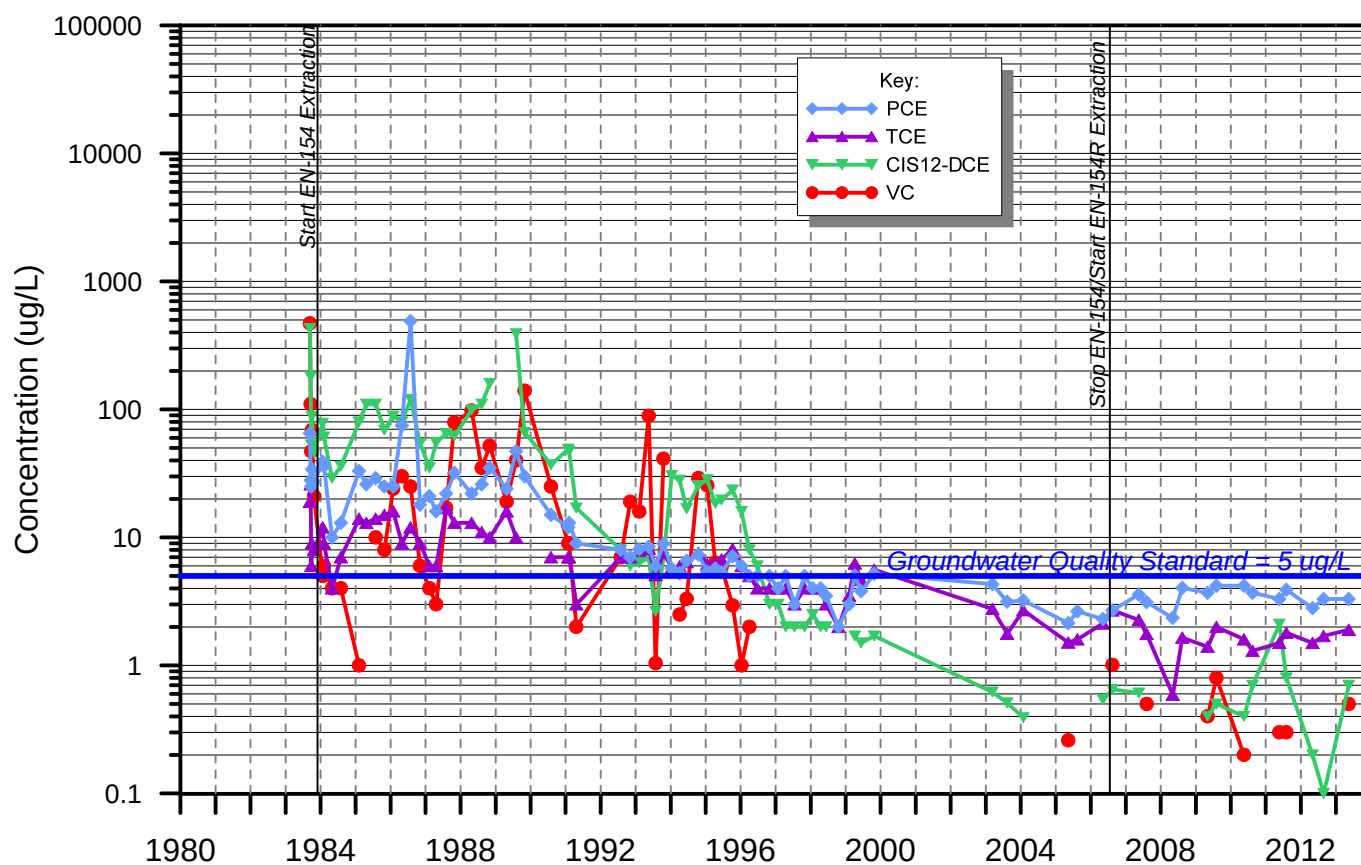
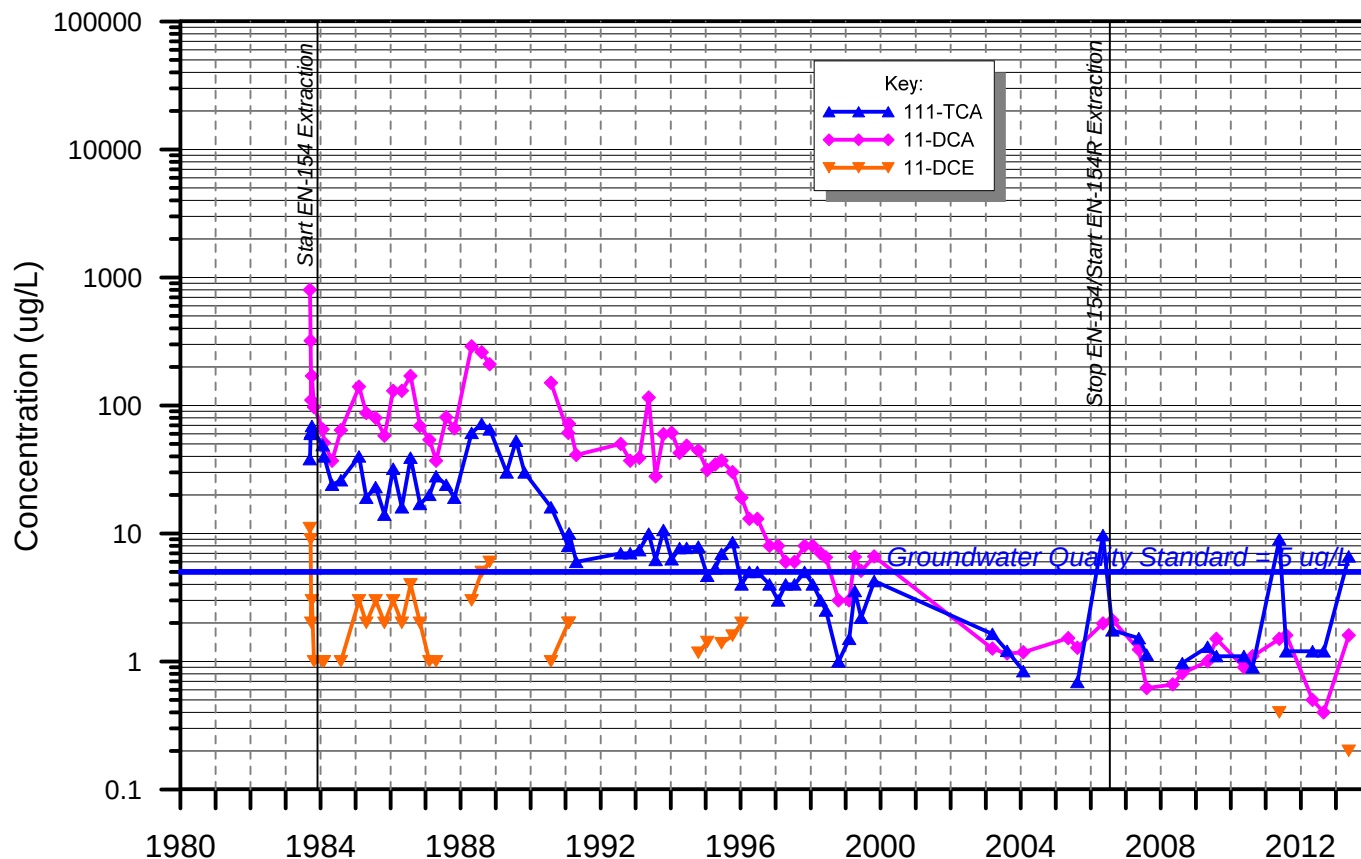
EN-096



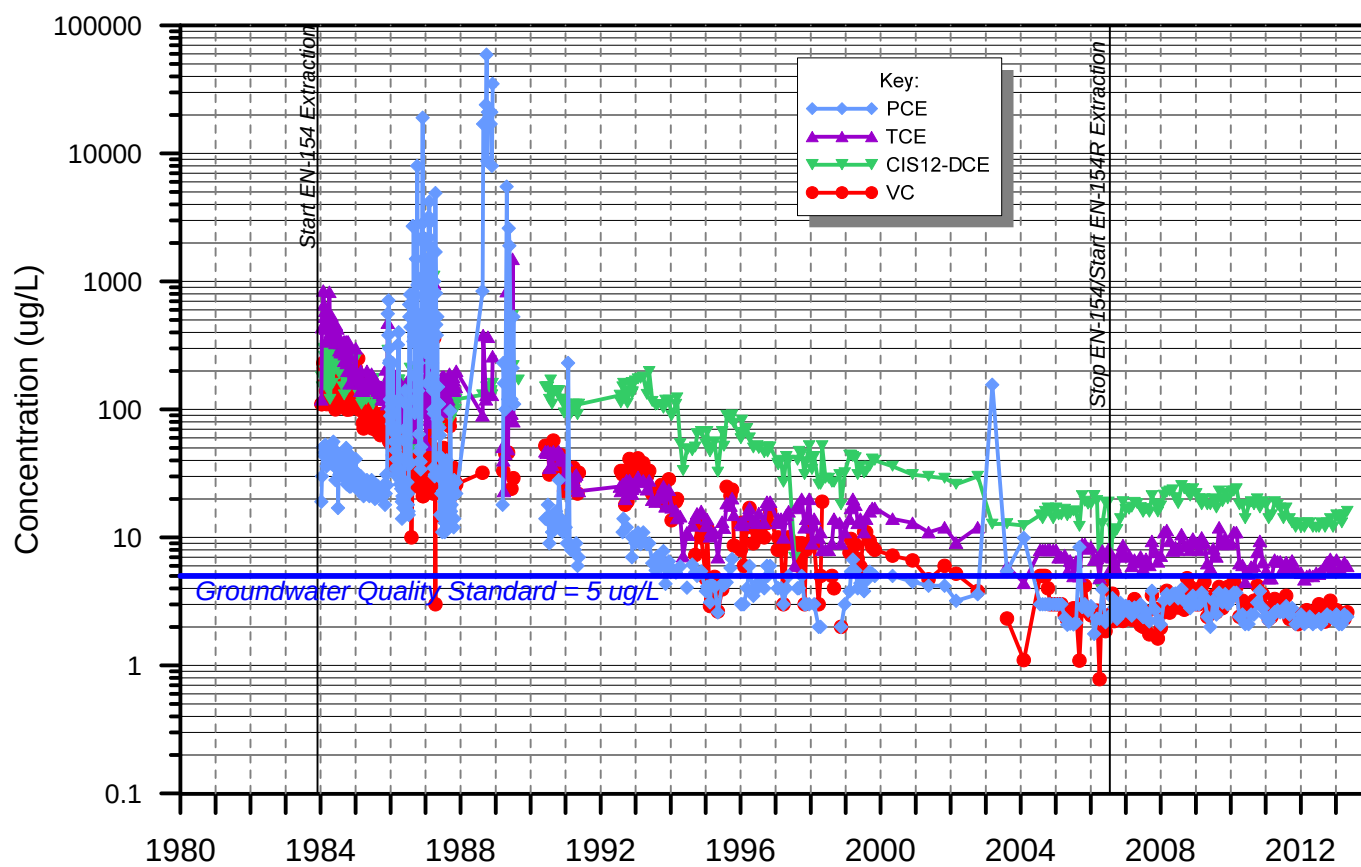
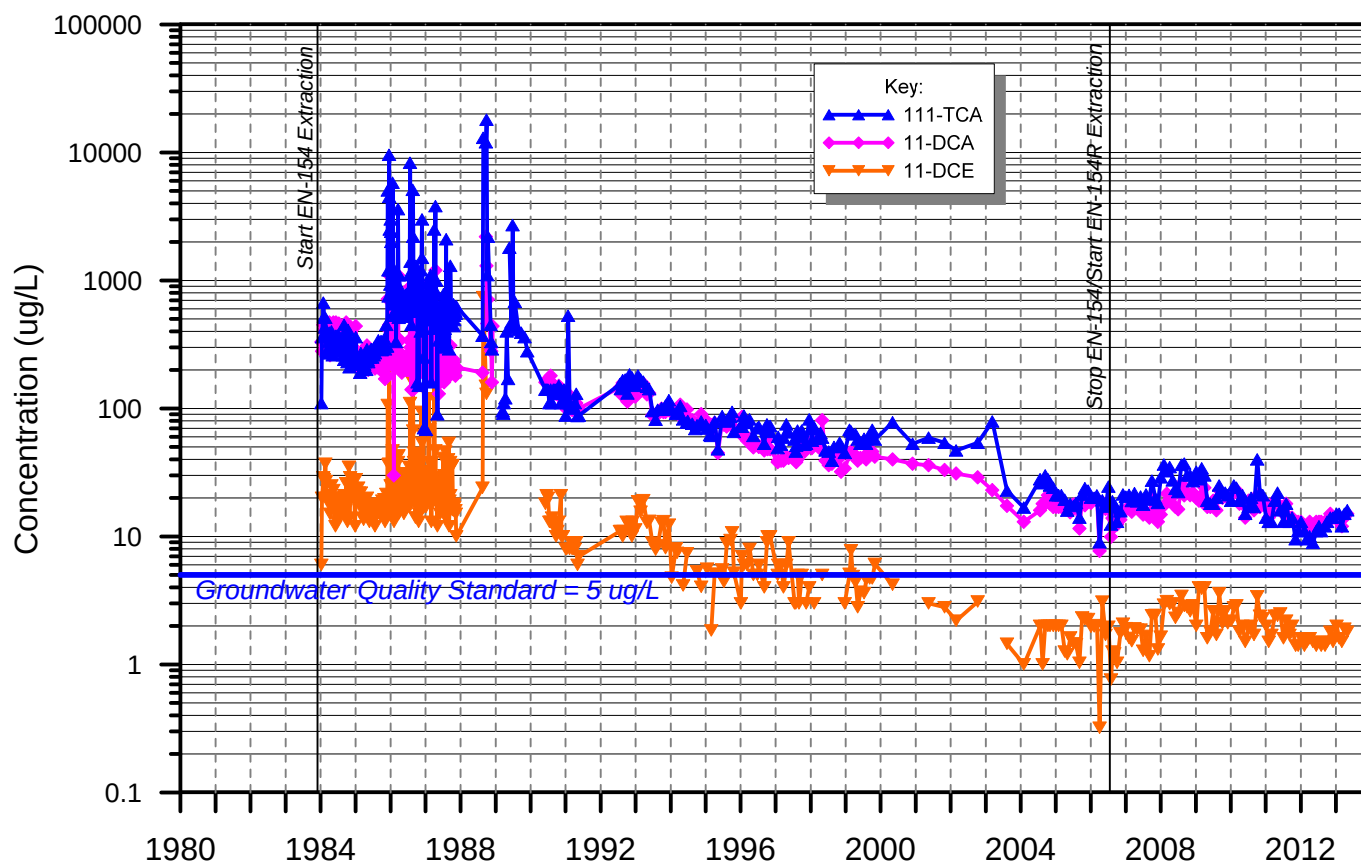
EN-150



EN-152



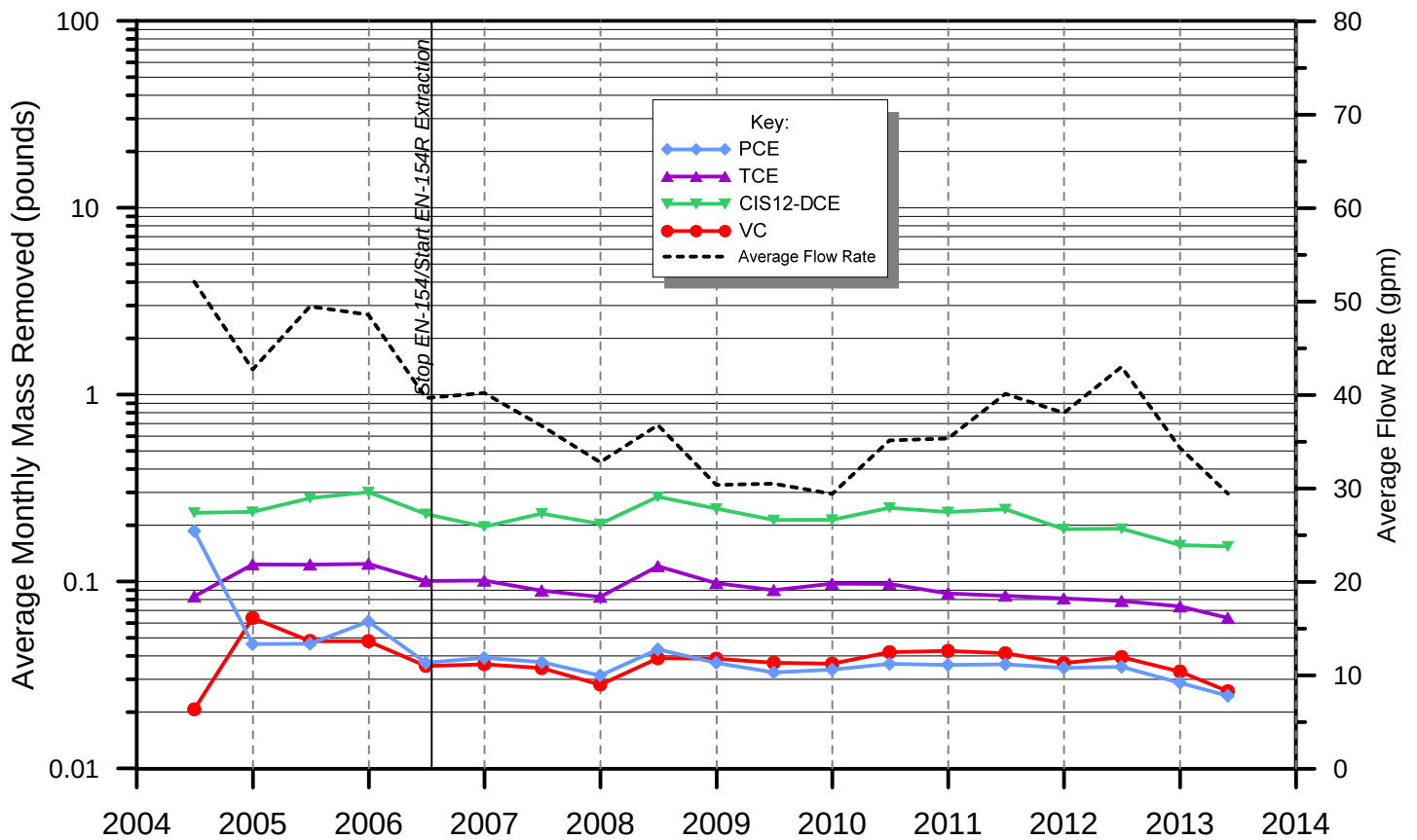
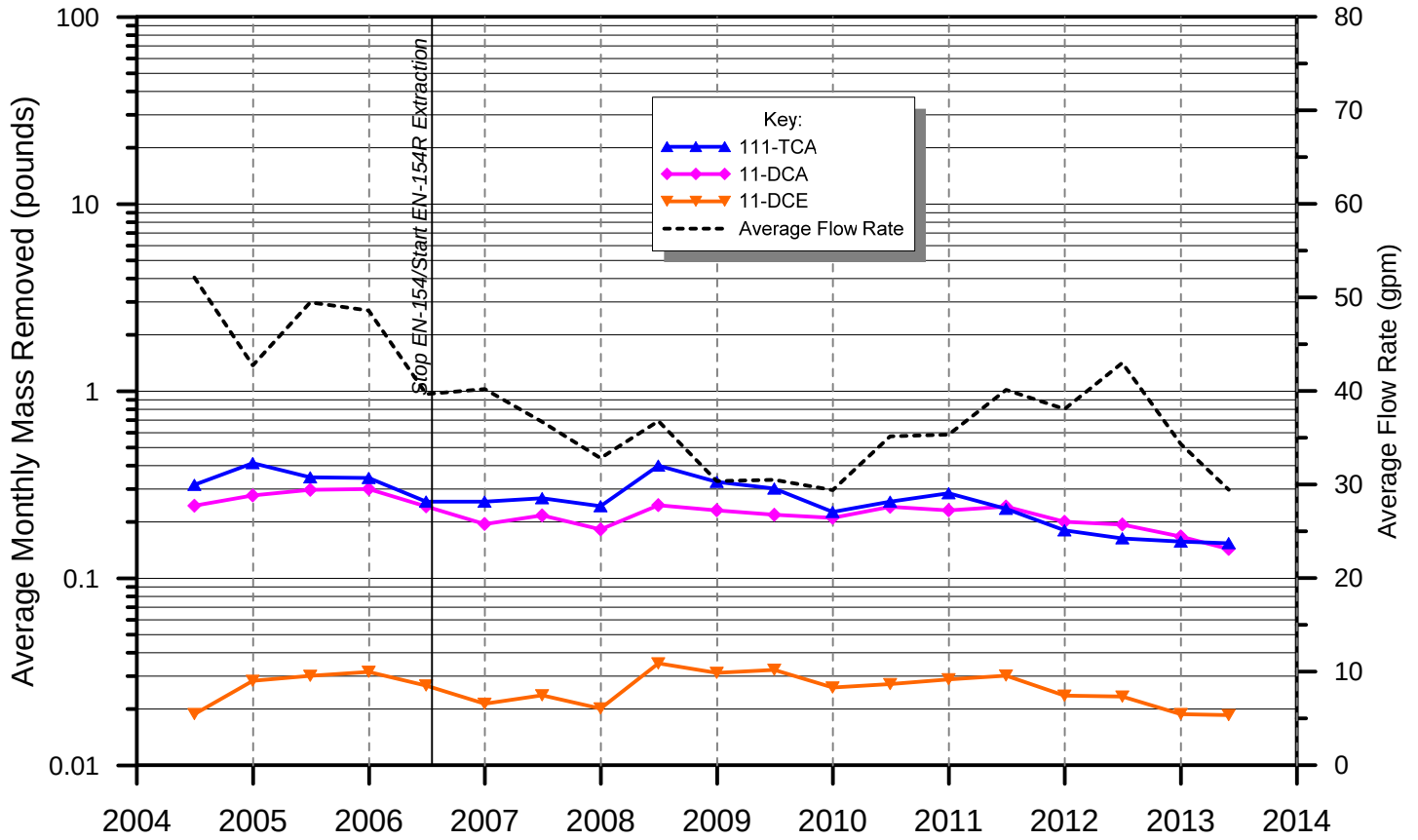
EN-154/154R



APPENDIX A.2

EN-154/154R Time vs. Mass Removal, 2004 through 2013

EN-154/154R Mass Removal



APPENDIX B

ANALYTICAL LABORATORY REPORTS

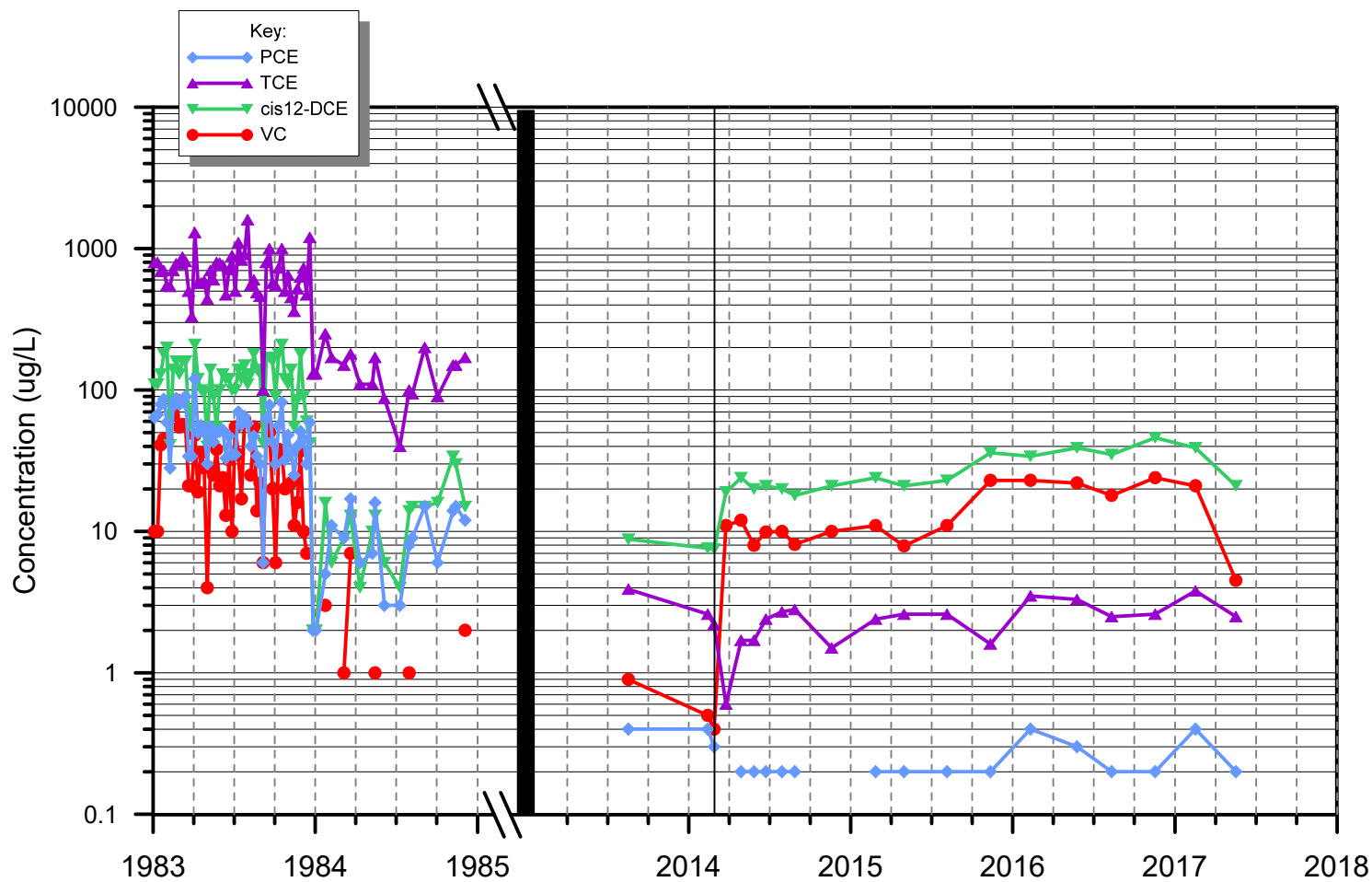
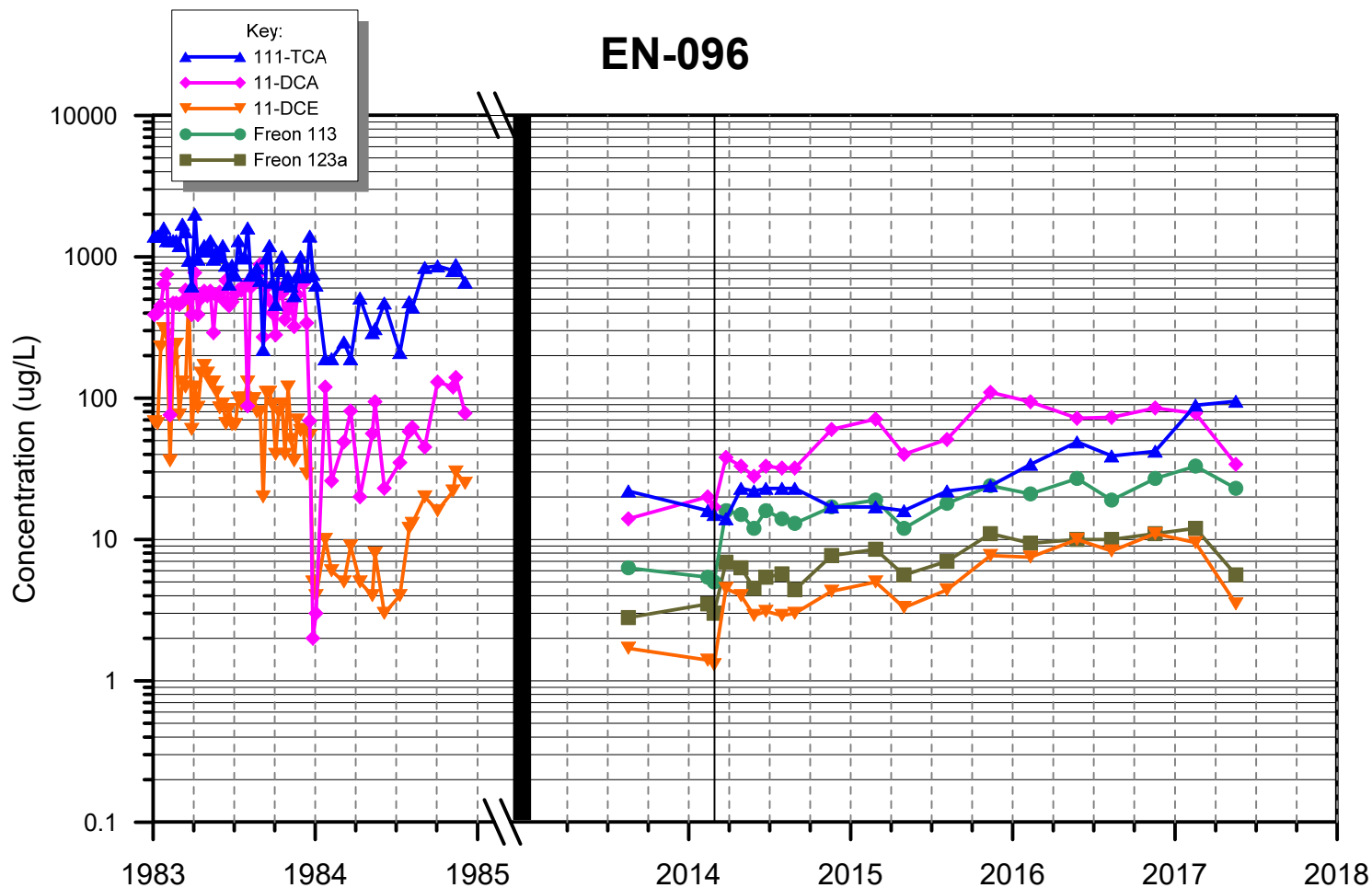
APPENDIX C

EN-154R SHUTDOWN TEST GRAPHS

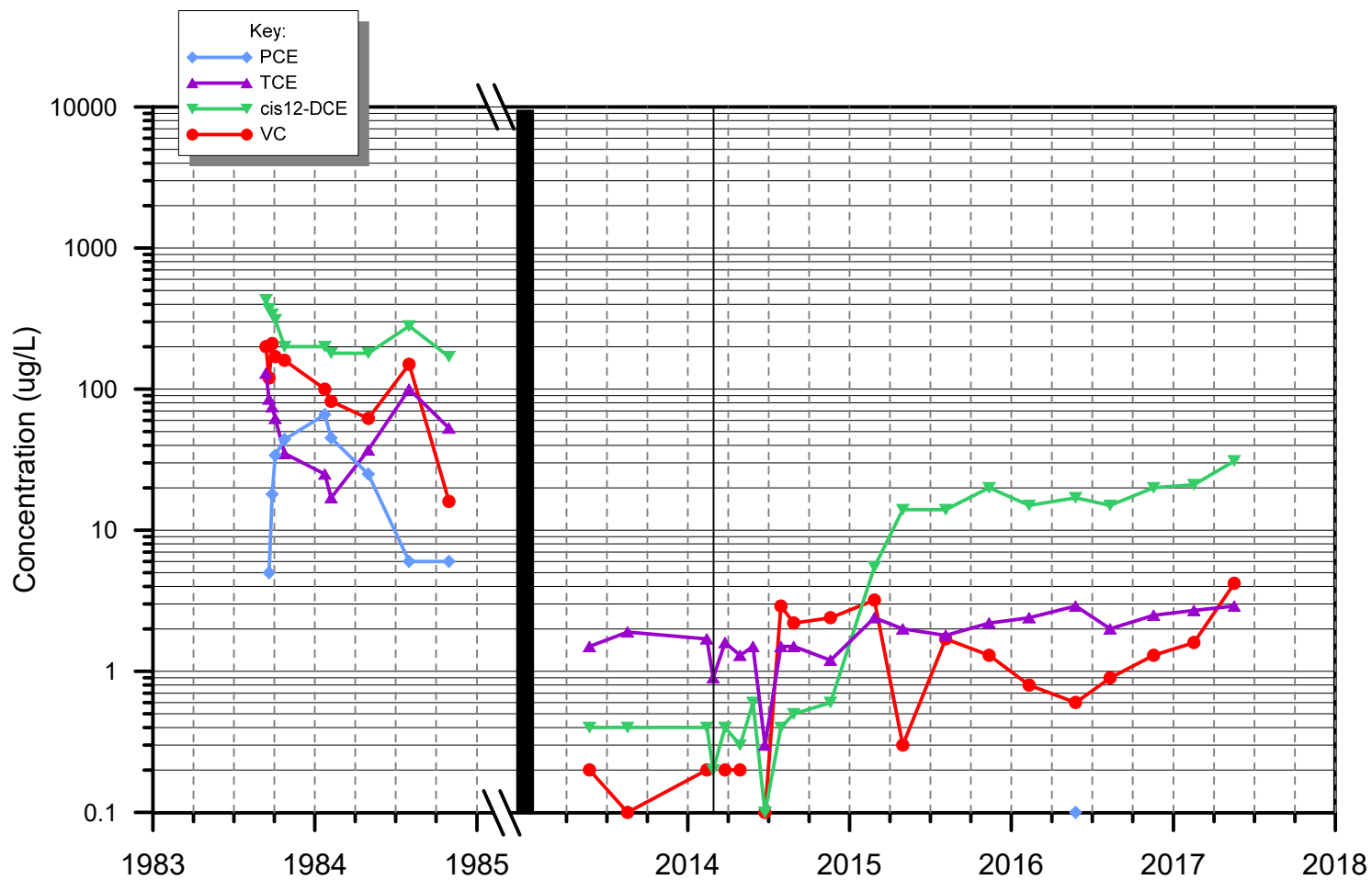
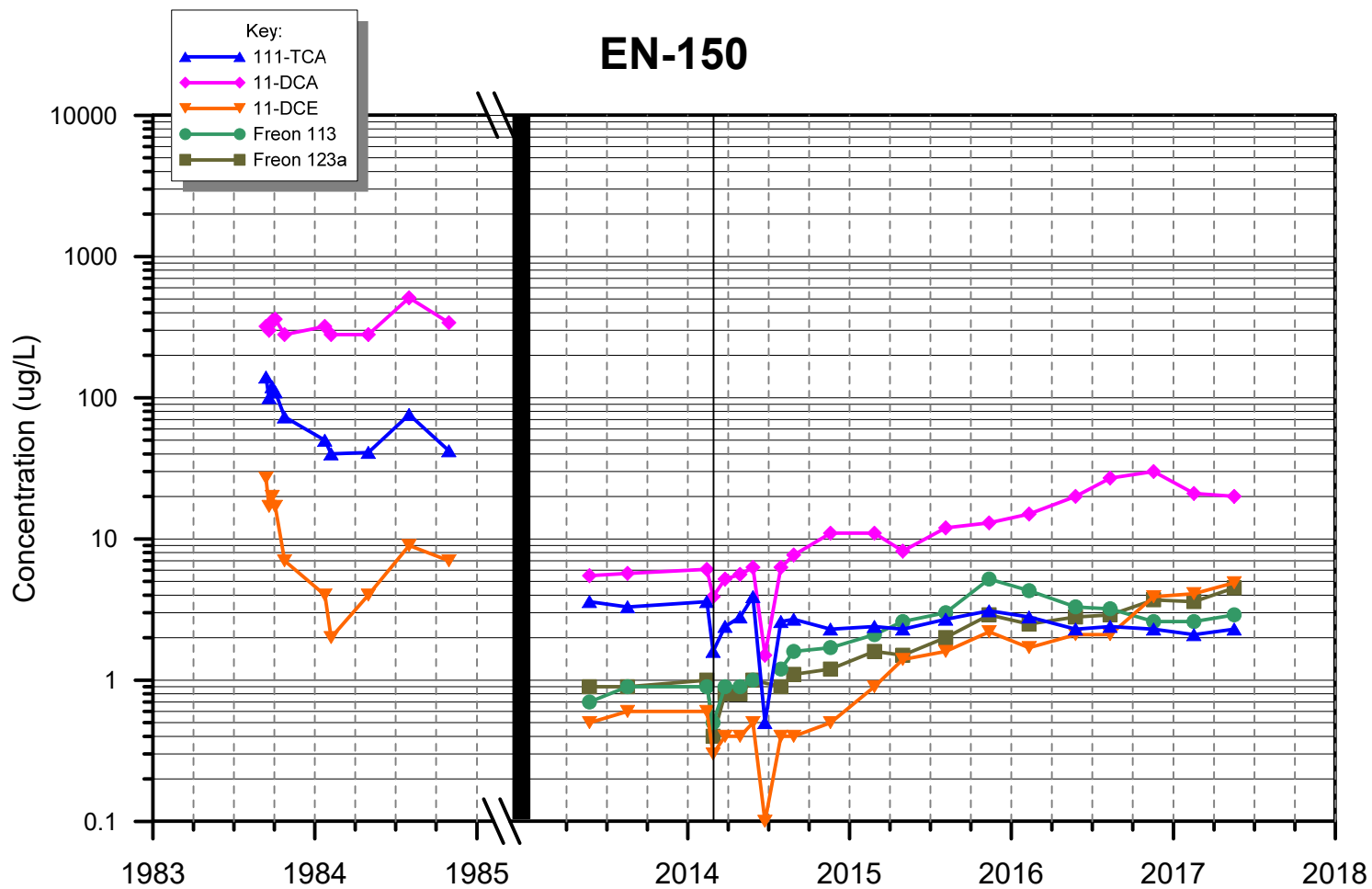
APPENDIX C.1

Time vs. Ethane and Ethene Concentrations, EN-154R and Surrounding Area

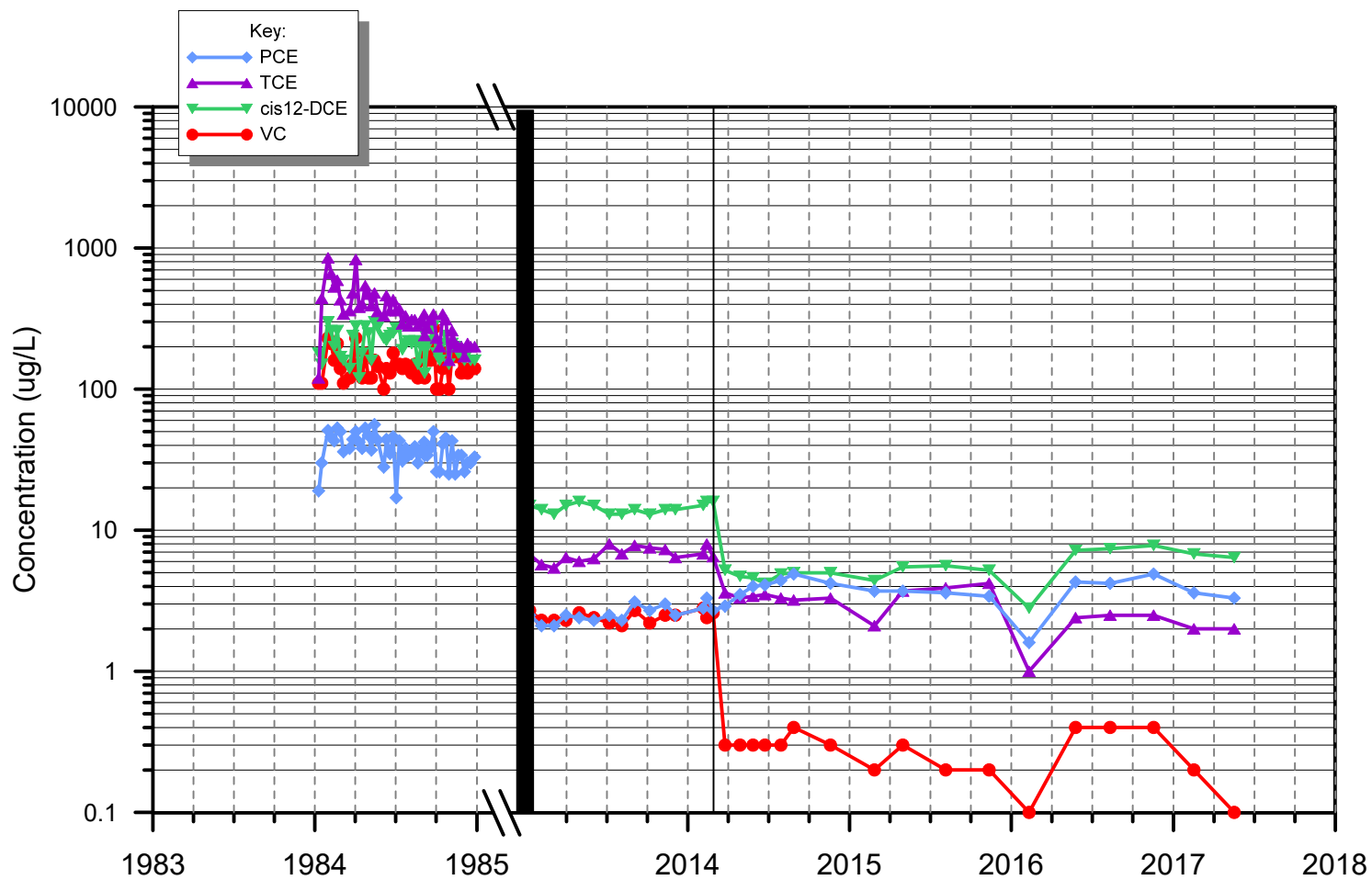
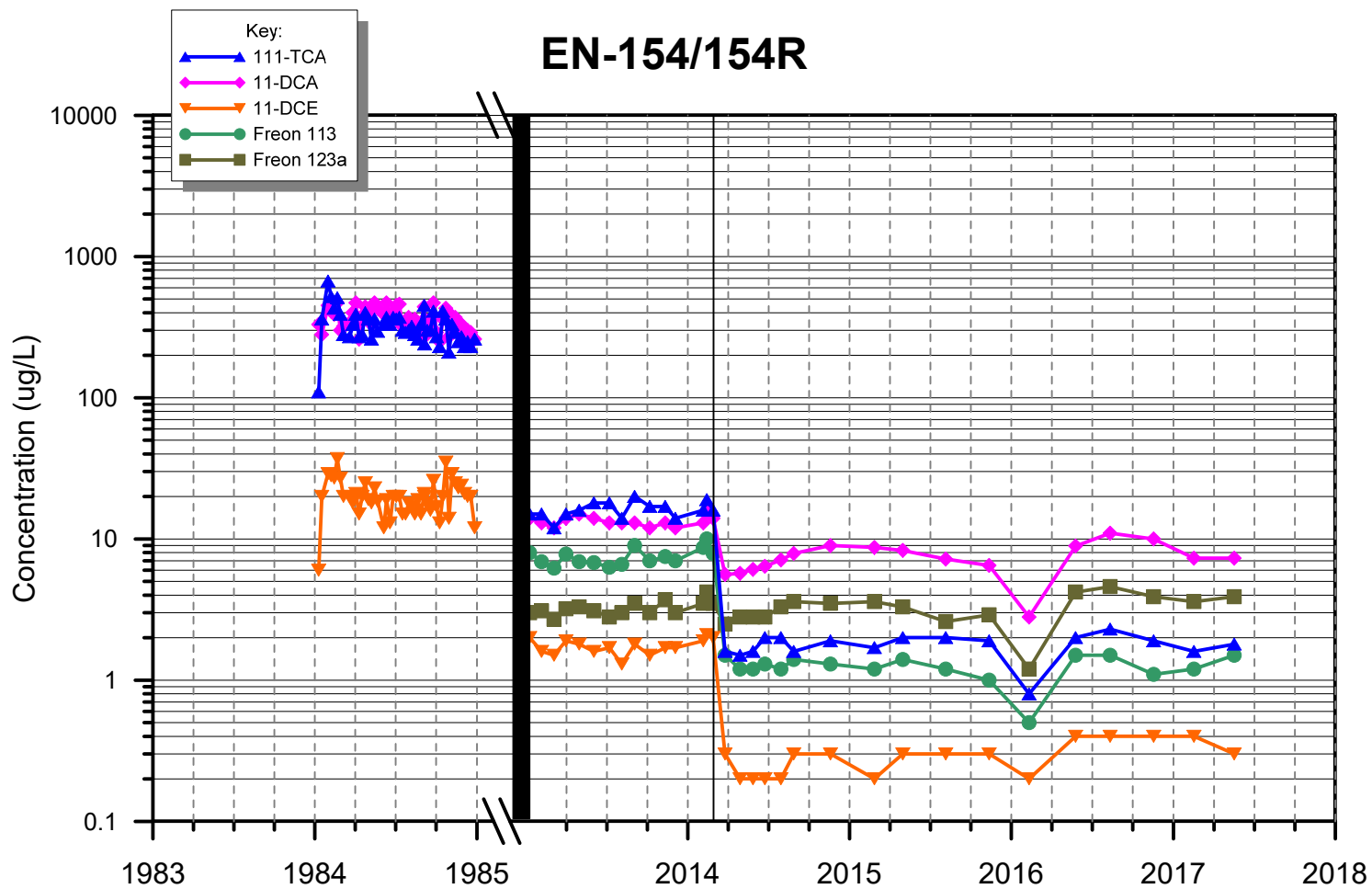
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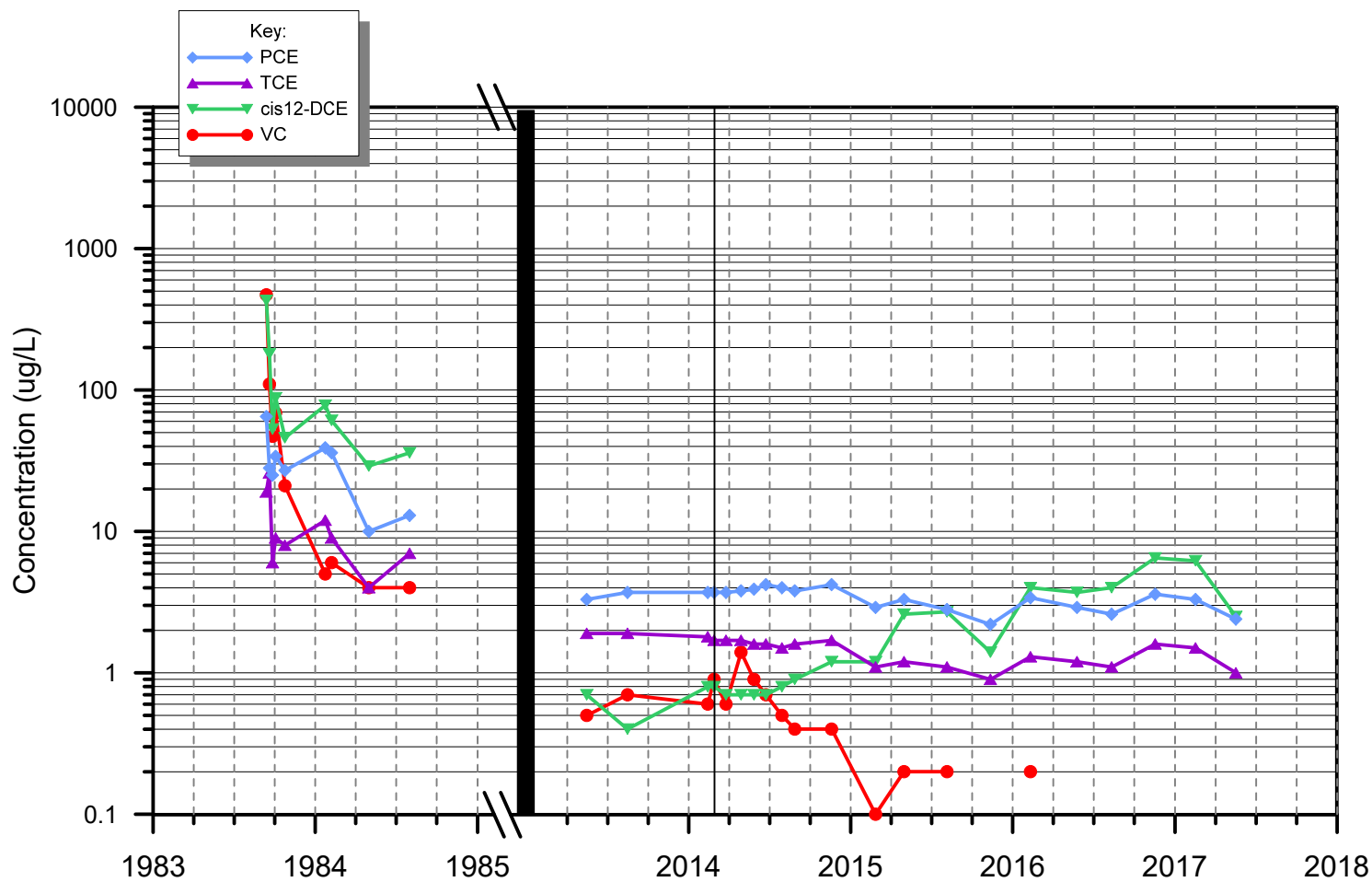
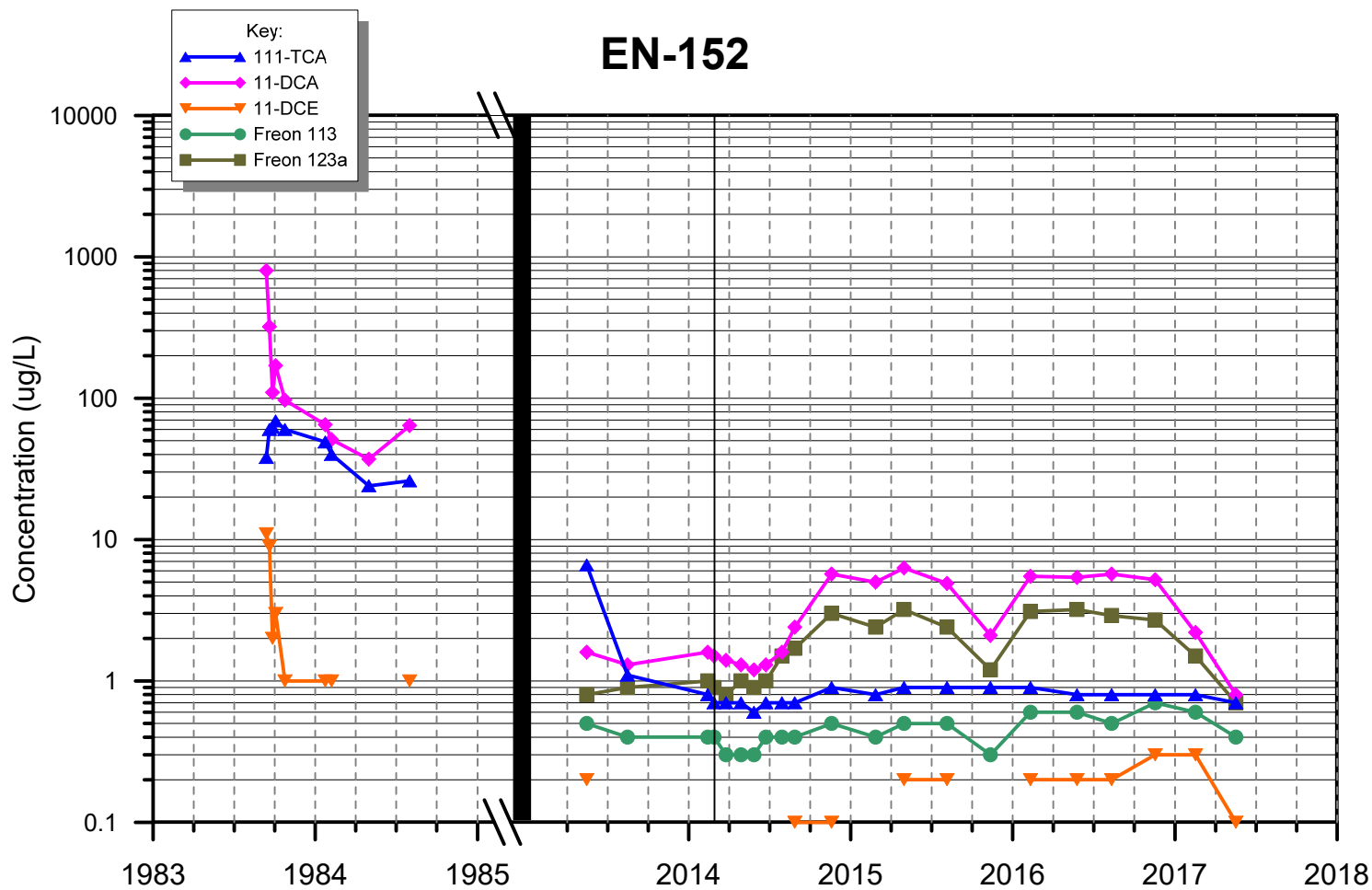
EN-150



EN-154/154R



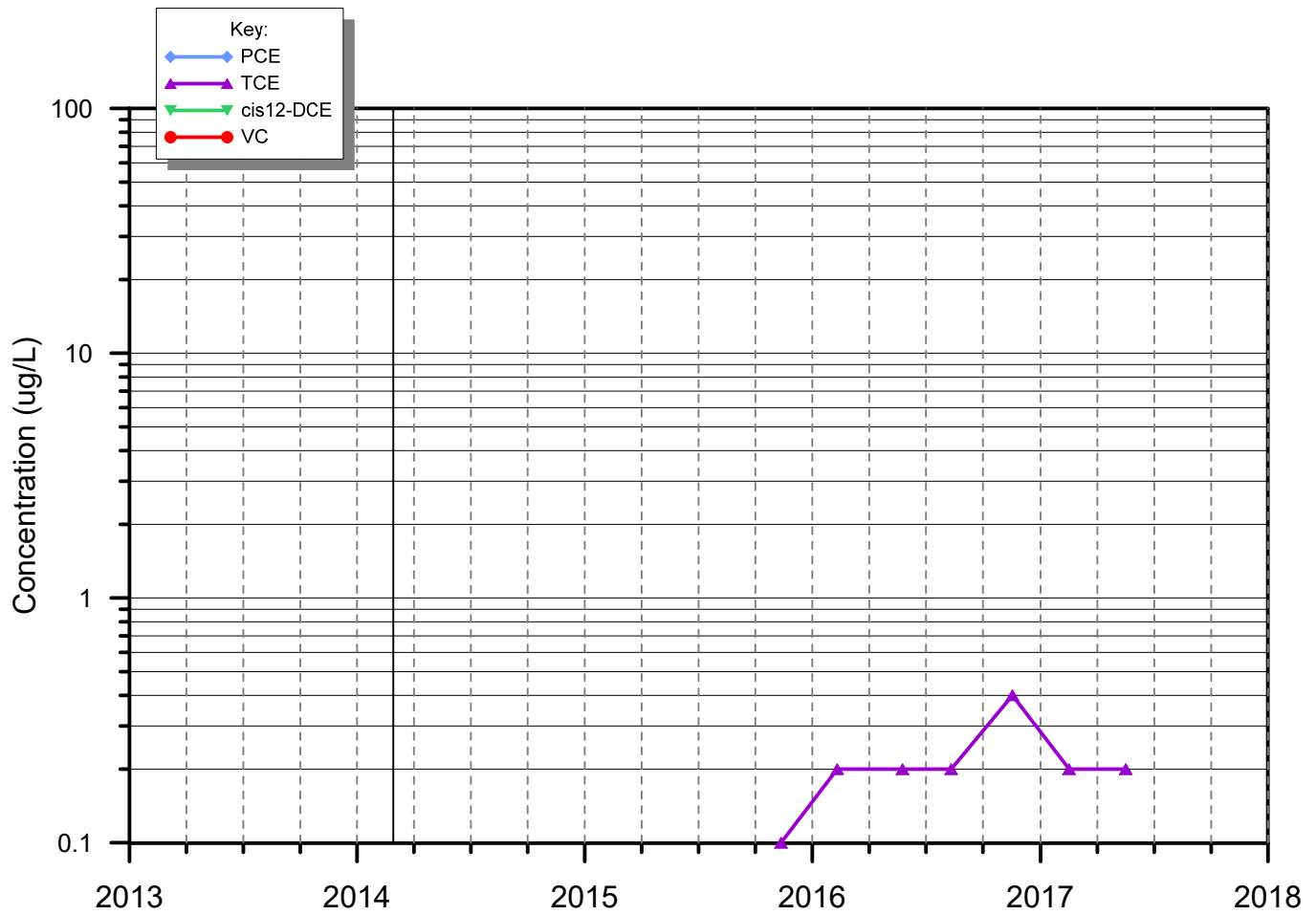
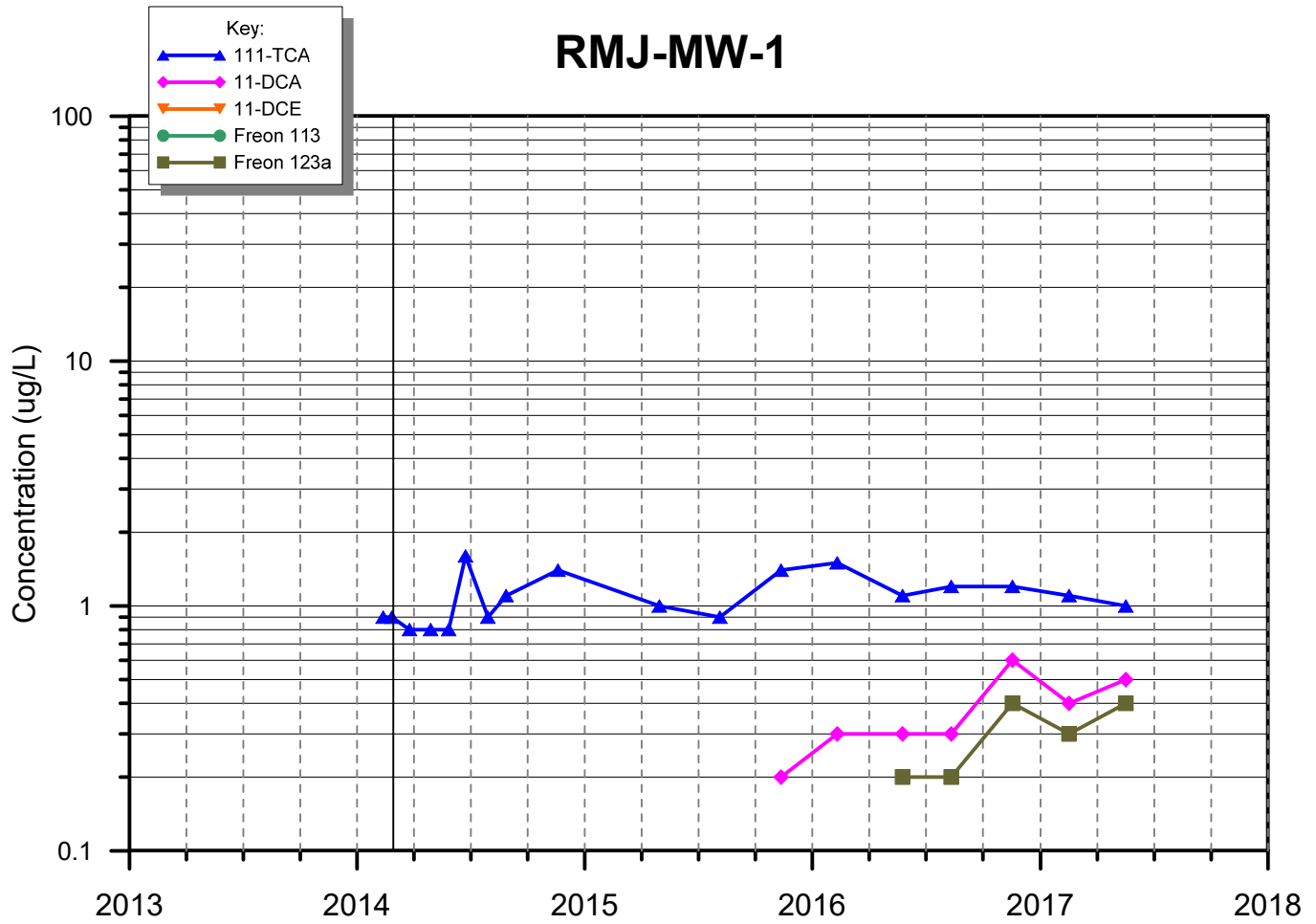
EN-152



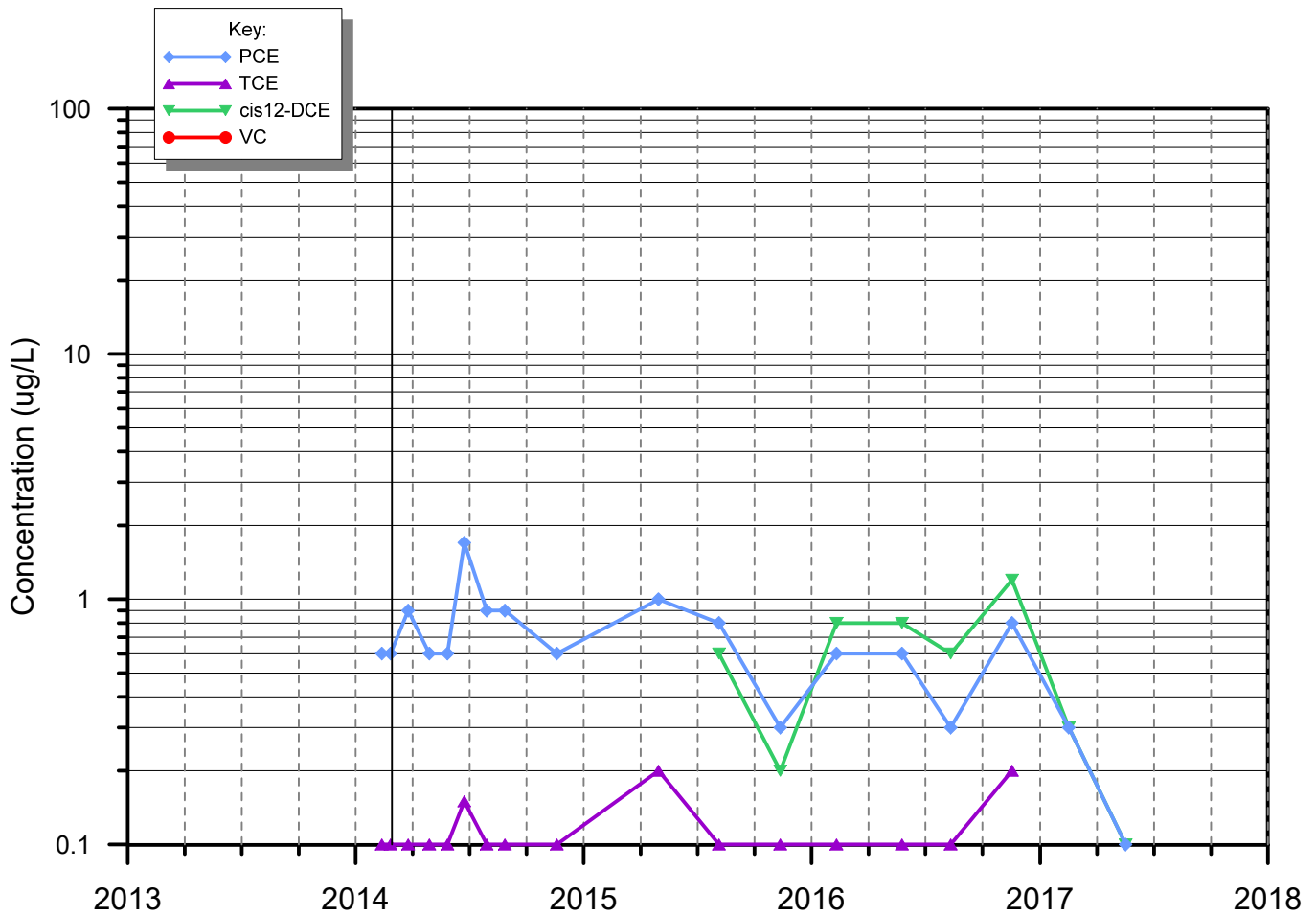
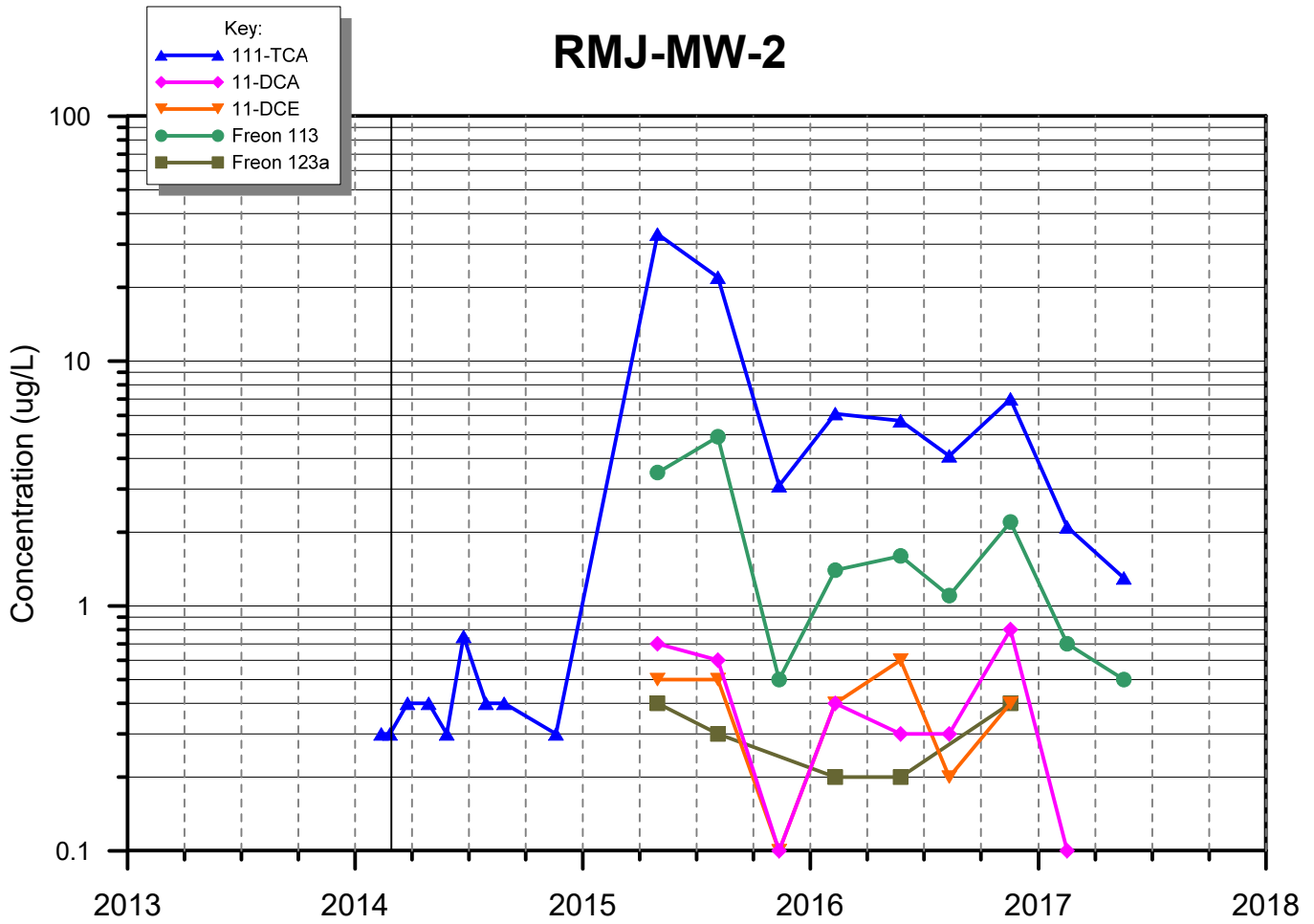
APPENDIX C.2

Time vs. Ethane and Ethene Concentrations, RMJ Realty LLC Property

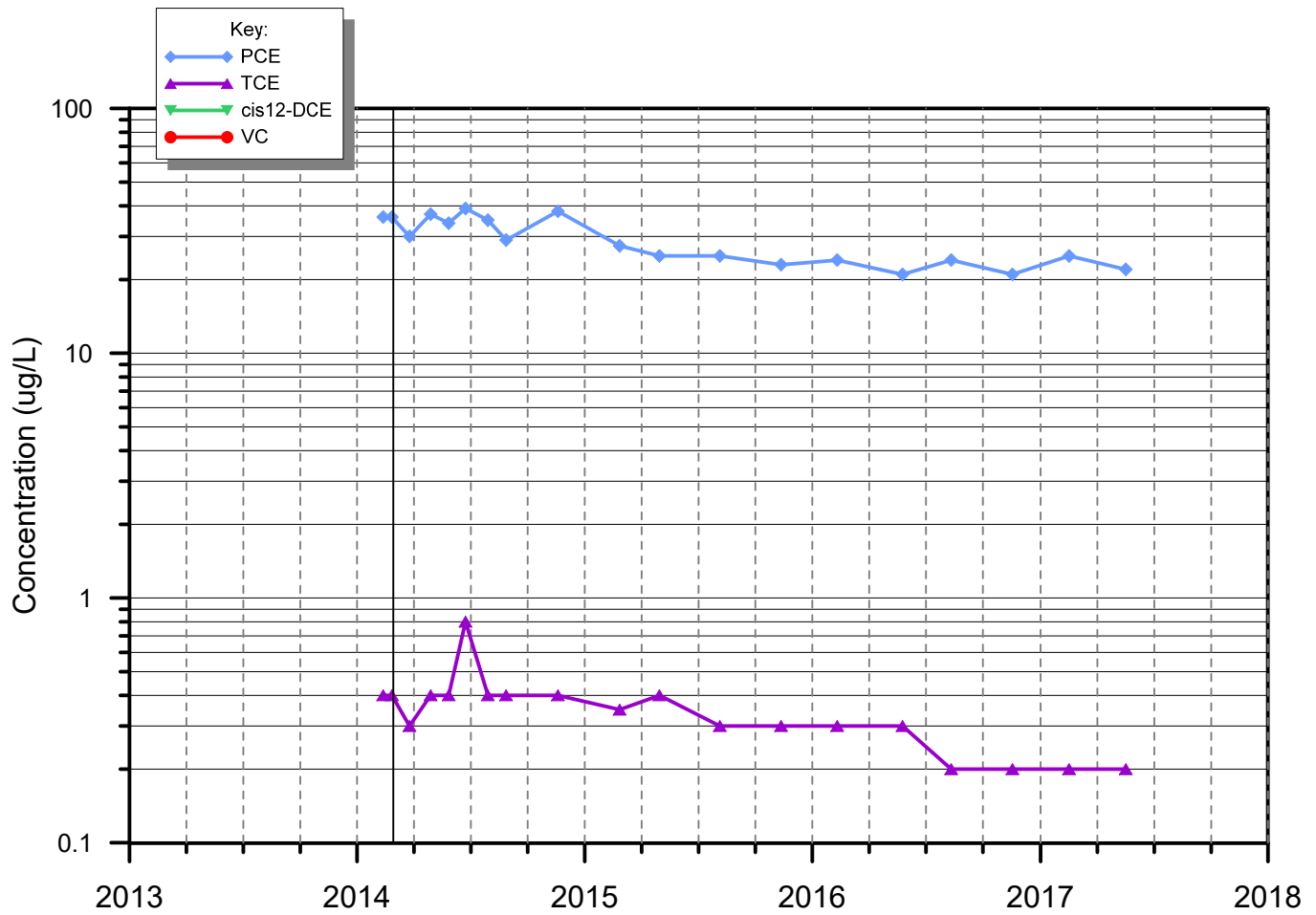
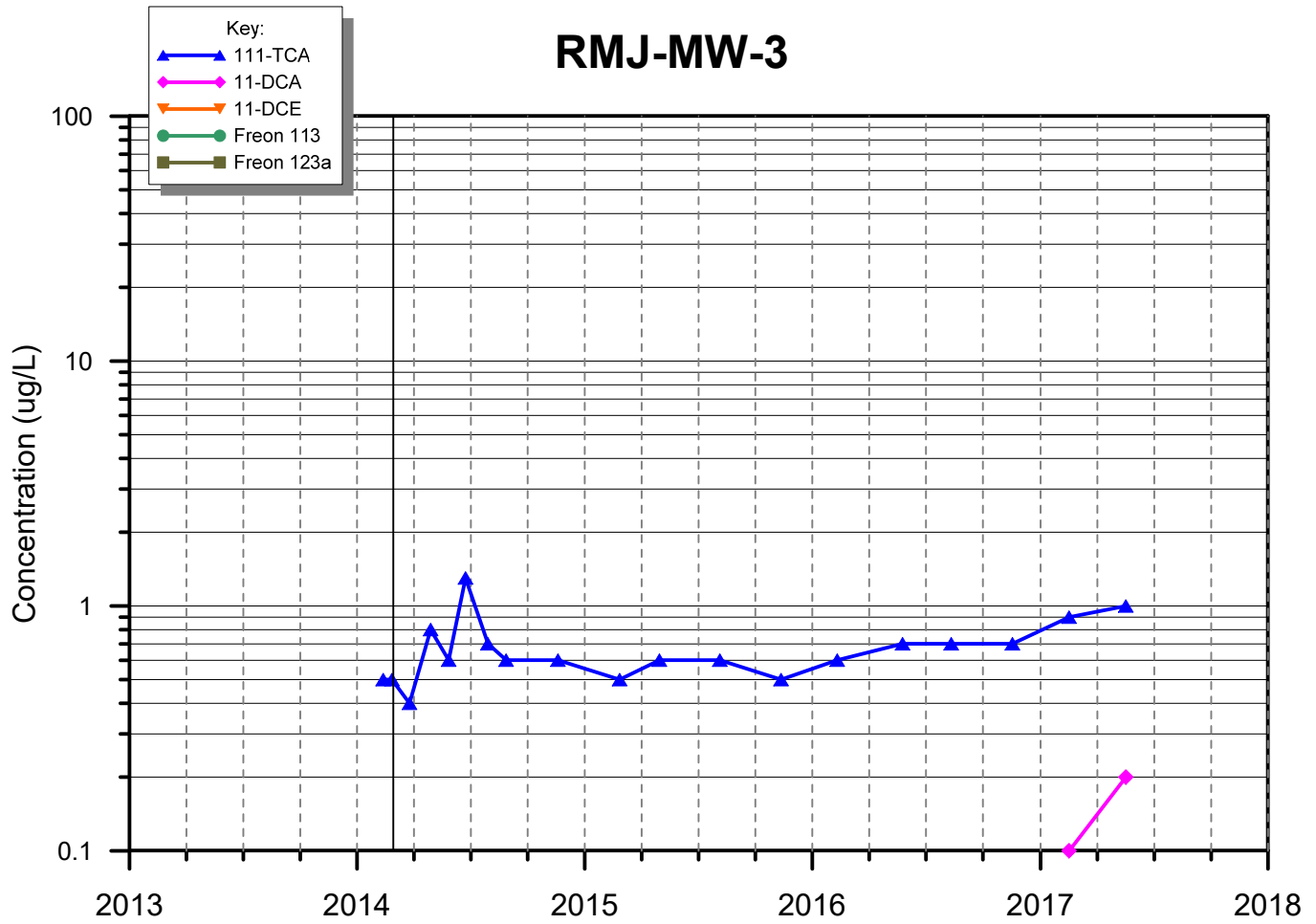
RMJ-MW-1



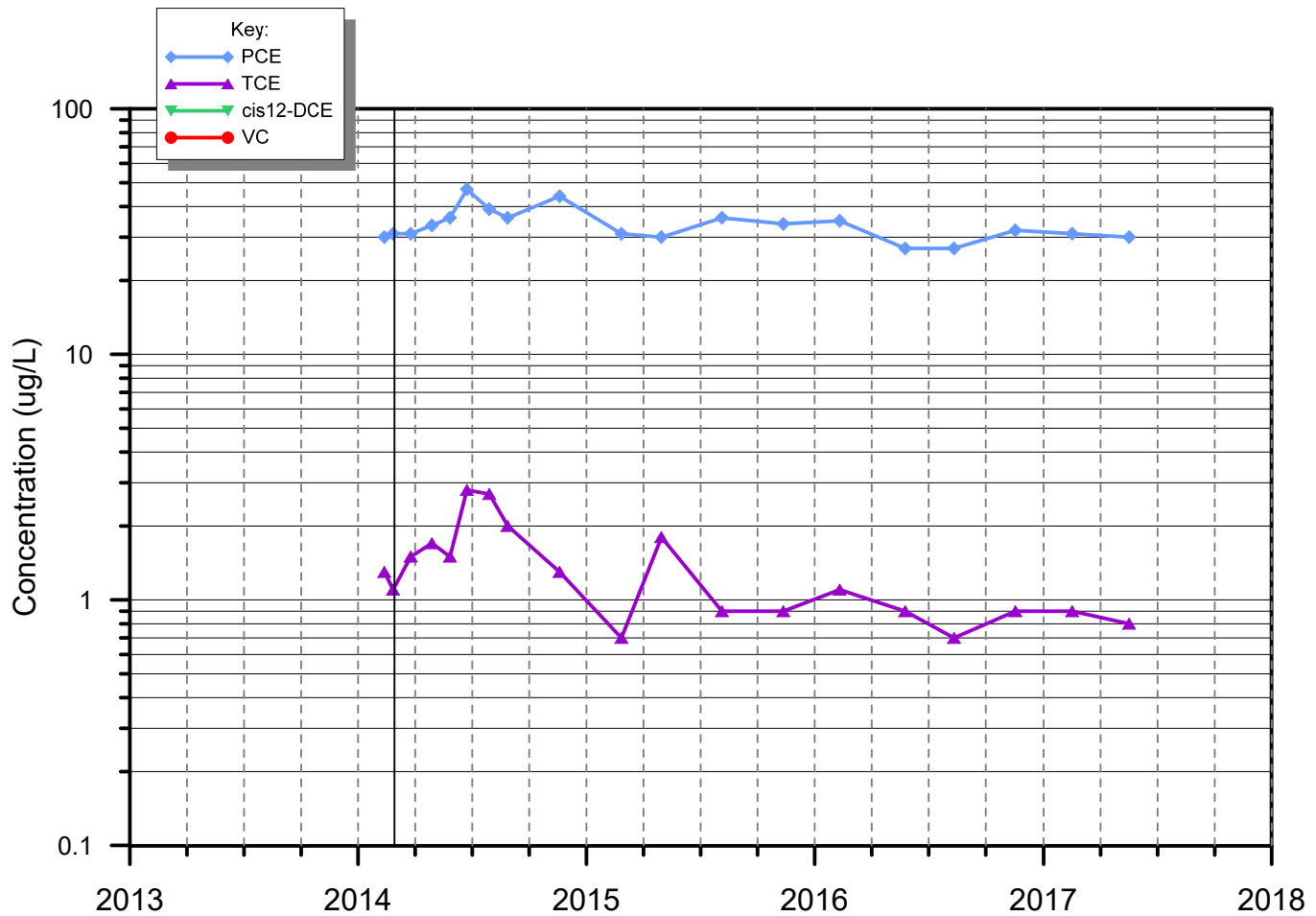
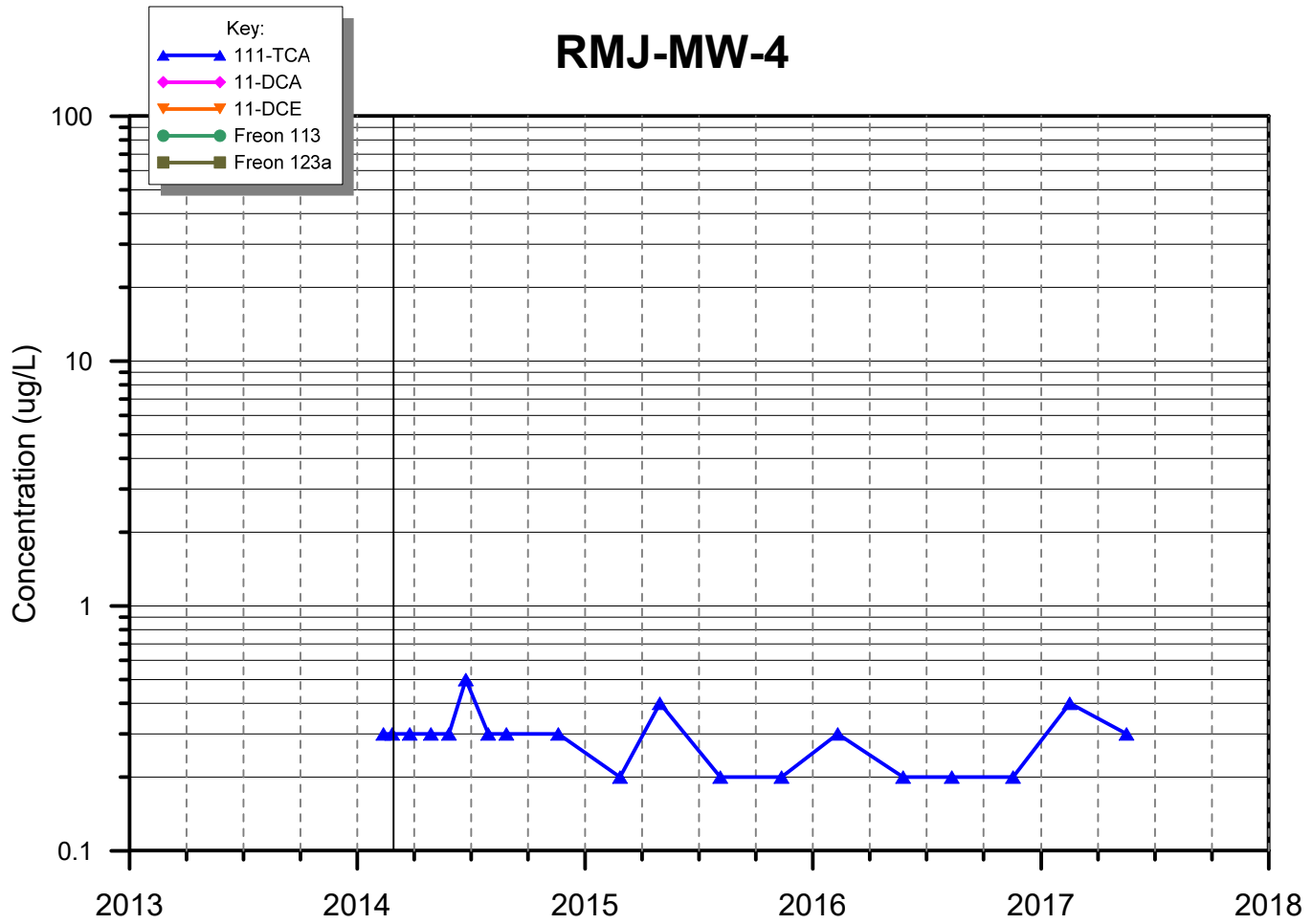
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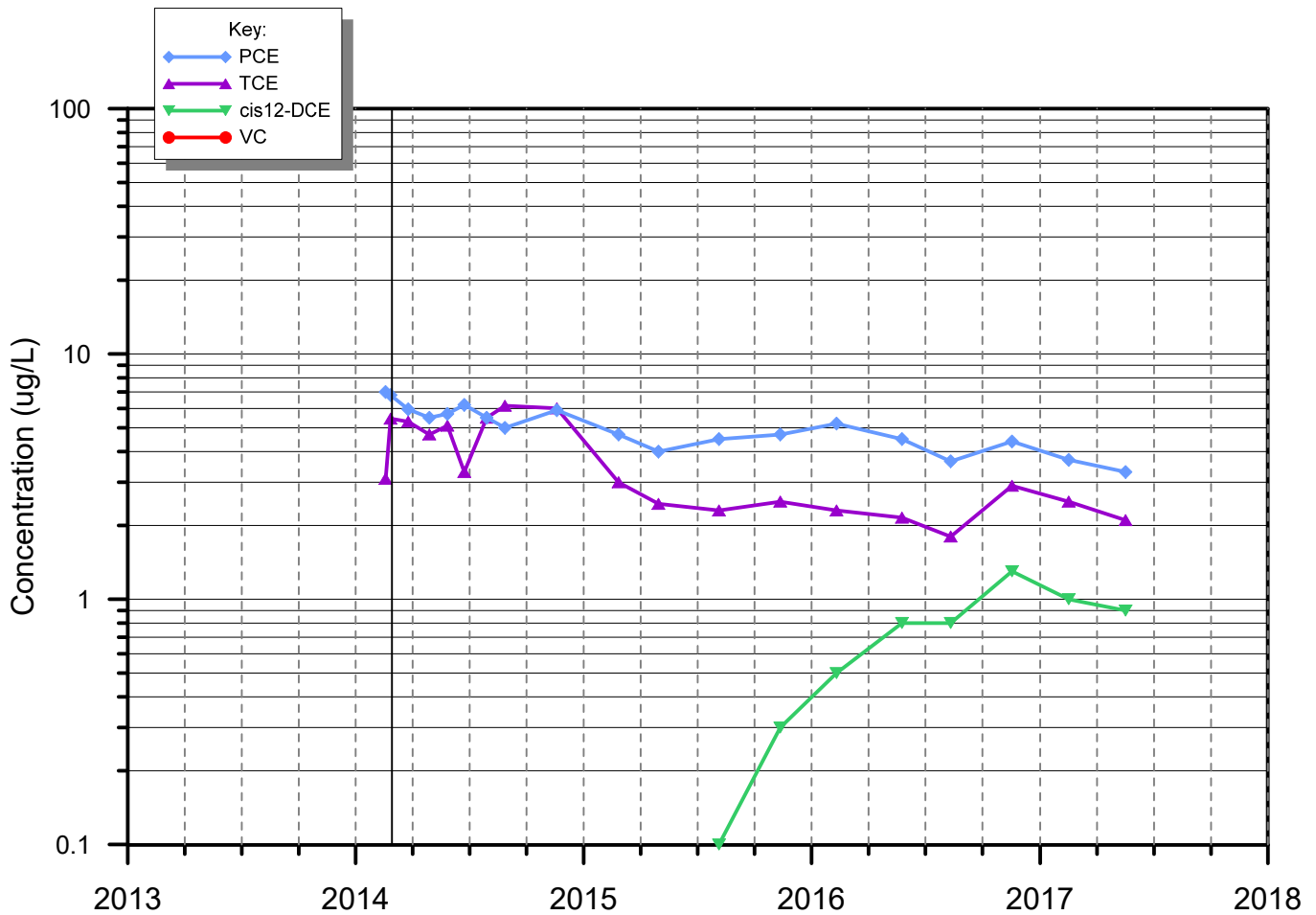
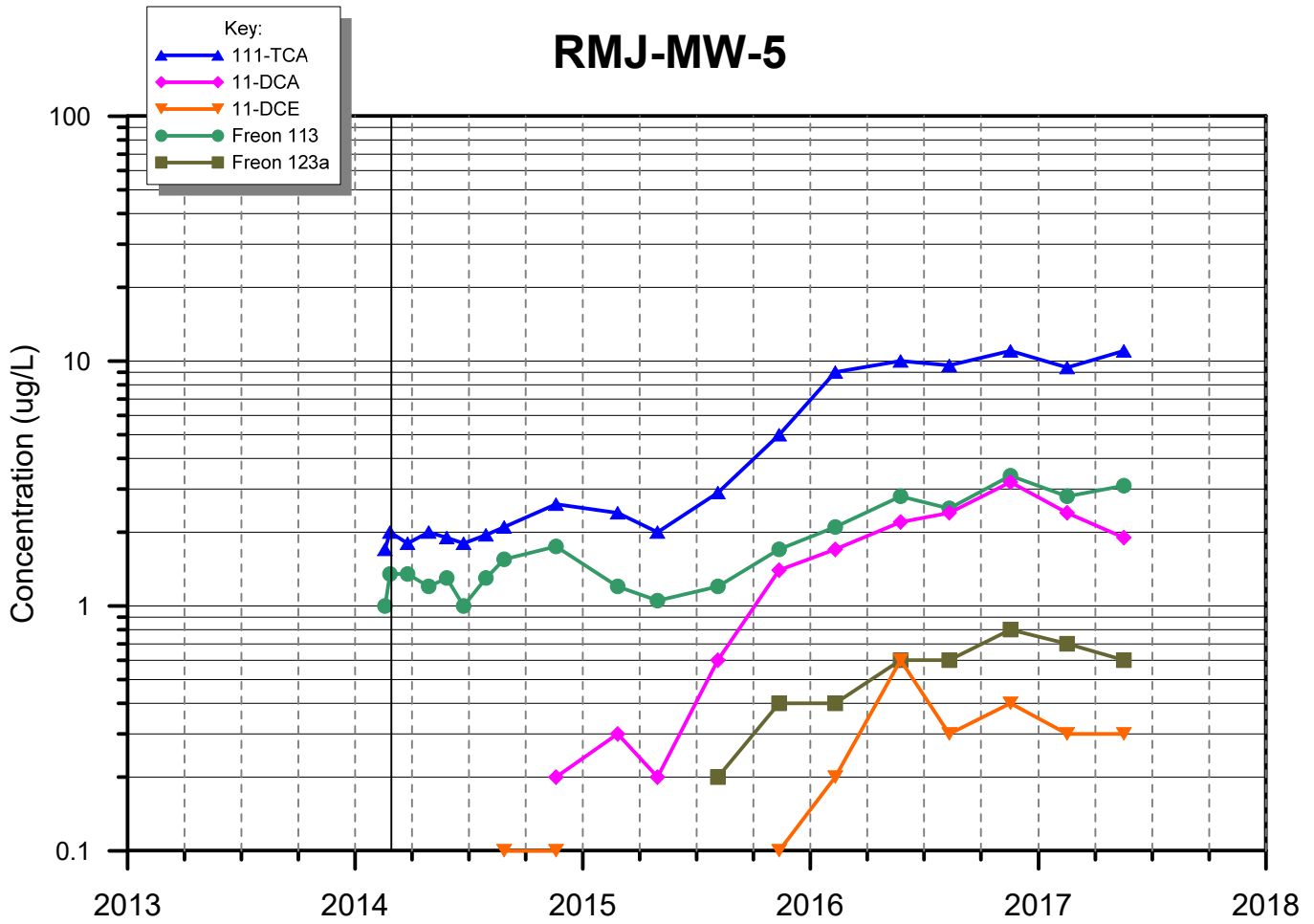
RMJ-MW-3



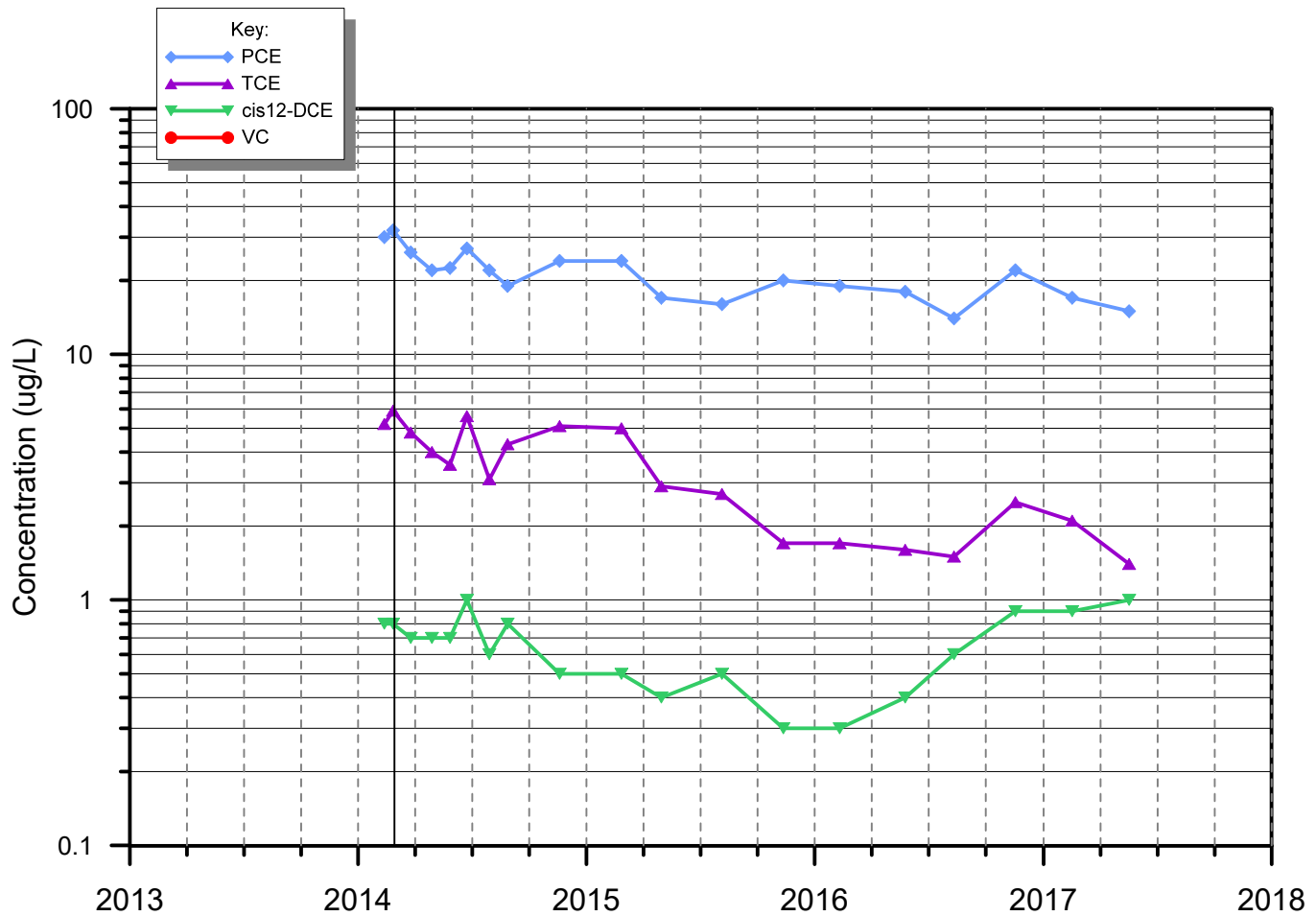
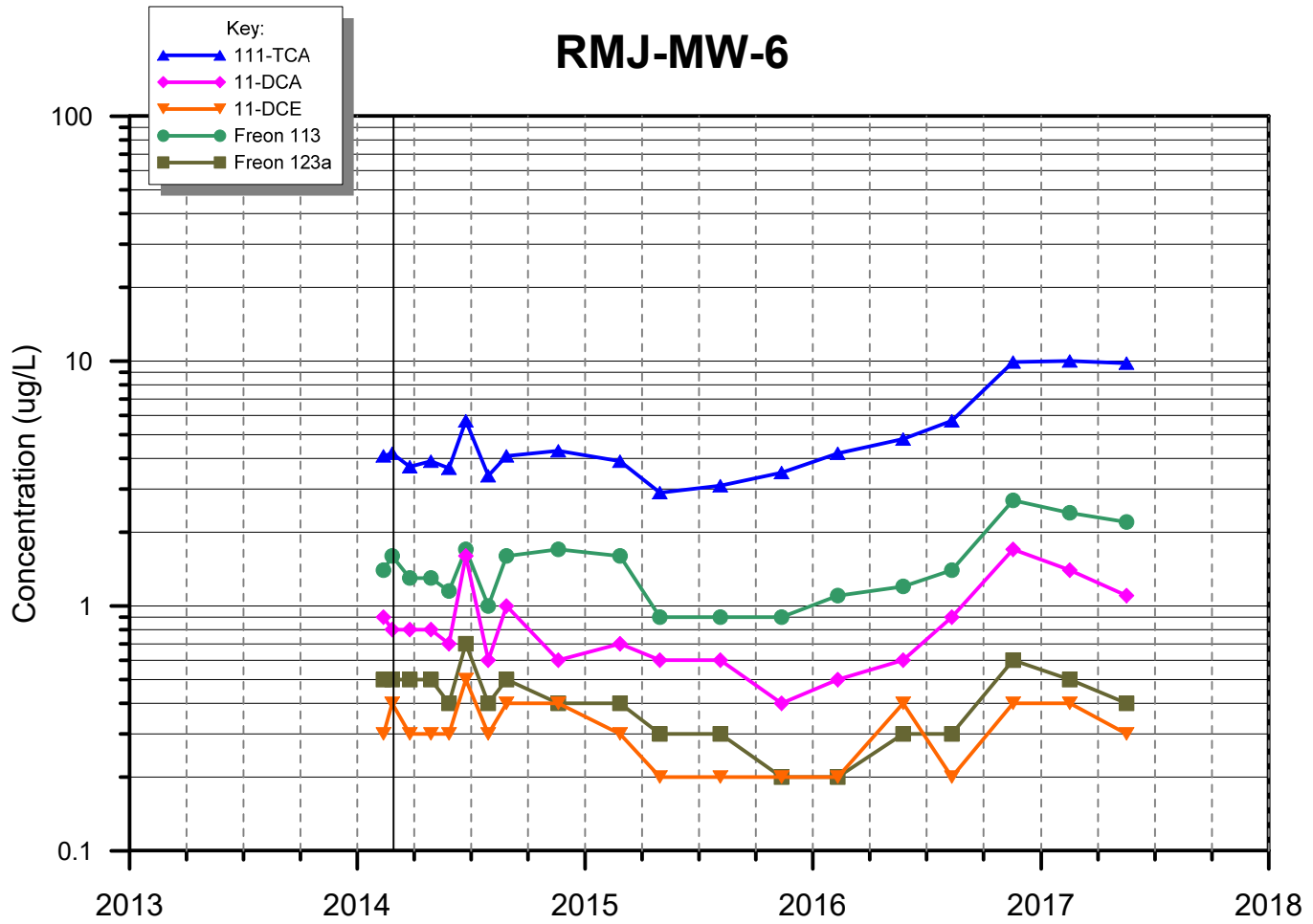
RMJ-MW-4



RMJ-MW-5



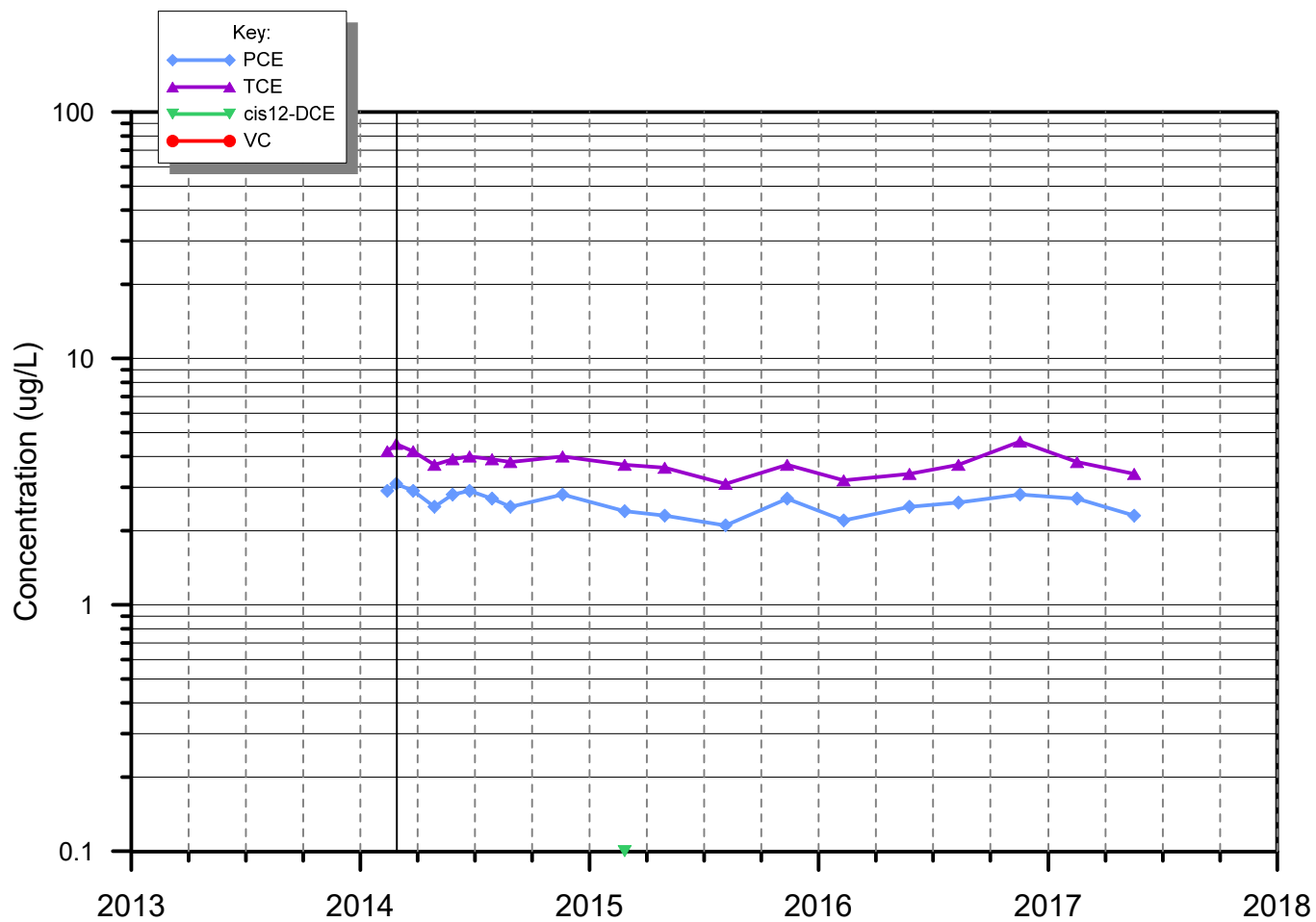
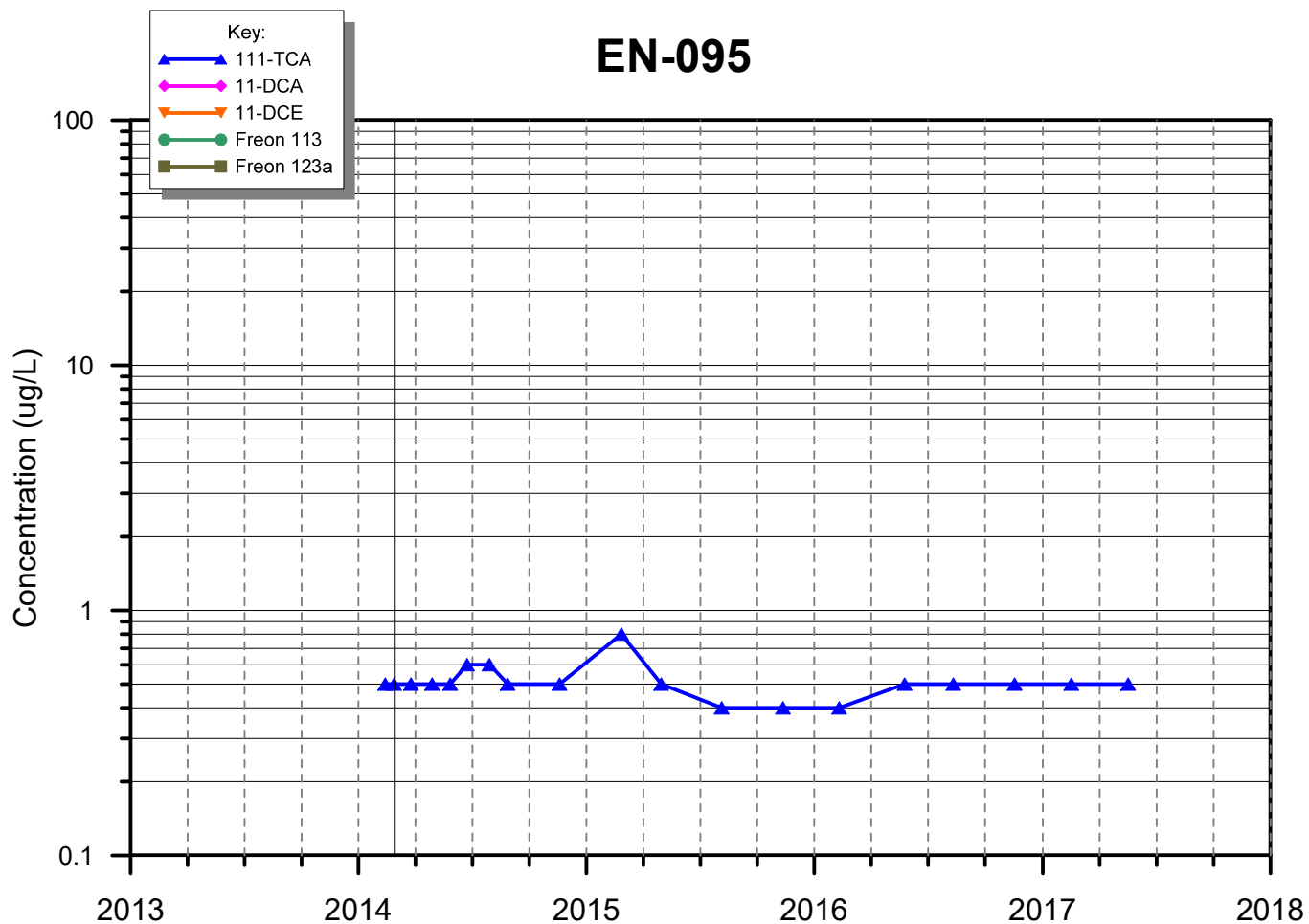
RMJ-MW-6



APPENDIX C.3

Time vs. Ethane and Ethene Concentrations, South of North Street

EN-095



EN-104

