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FOURTH QUARTER 2019 STATUS REPORT
Maricopa County Cave Creek Landfill
Phoenix, Arizona

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EXECUTIVE SUMMARY

In response to the detection of elevated levels of trichloroethene (TCE) in groundwater underlying Cave Creek Landfill, Maricopa County entered into a Consent Order in 1999 with the Arizona Department of Environmental Quality (ADEQ) to characterize the nature and extent of site groundwater contamination, develop a Remedial Action Plan (RAP) to address contamination impacts, implement the RAP, and provide quarterly status updates on project activities. This status report documents site assessment and remediation efforts conducted pursuant to the RAP during the fourth calendar quarter of 2019 (October through December 2019) and presents an annual review of data collection at the site in 2019.

Groundwater Data Collection and Discussion. Quarterly groundwater levels were monitored on November 18 through November 27, 2019. During the reporting period, the predominant direction of groundwater flow was 174 degrees from north with a gradient of 0.002 feet per foot (ft/ft). Groundwater elevations at the site remained relatively stable in the year between Fourth Quarter 2018 and Fourth Quarter 2019, with an average site-wide decrease in groundwater elevation of 0.12 feet (ft).

Maricopa County collected quarterly groundwater samples concurrent with quarterly groundwater level monitoring. Analytical results from Fourth Quarter 2019 indicate that the highest concentrations of TCE underlie the southern and southwestern portions of the New Landfill near MW-02 and MW-10, respectively. The concentration of TCE in the sample collected from TSSV-03-PZ continued to decline and was 92 micrograms per liter (µg/L). The TCE concentrations in the samples collected from MW-02, 1,200 ft downgradient of TSSV-03-PZ, have remained relatively stable throughout 2019. These data indicate that if elevated concentrations at TSSV-03-PZ have migrated to the south with groundwater flow, they have not been observed at MW-02 to date. The elevated concentrations at MW-10 raise the possibility that contaminant flowpaths exist that are not concurrent with groundwater flow direction. The TCE concentration in the sample collected from MW-10, on the southwest boundary of the New Landfill, was 320 µg/L which is consistent with TCE concentrations observed at this well since installation in 2018. The concentration reported at MW-10 represents the highest concentration of TCE observed during site groundwater monitoring in Fourth Quarter 2019. The TCE concentration at MW-05, 1,210 ft southwest of MW-10, was 51 µg/L in Fourth Quarter 2019, which is similar to concentrations in previous quarters dating back to 2018. The trend in concentrations at MW-05 suggest that a leading edge of TCE concentrations has passed through the well. .

TCE was present above the Arizona Water Quality Standard (AWQS) for TCE of 5 µg/L in off-site downgradient wells MW-05 (51 µg/L), MW-07 (33 µg/L), and MW-11 (39/41 µg/L [original/duplicate sample]). The TCE concentration in the sample collected from MW-08, south of the Old Landfill, was 36 µg/L. This represents a decrease from previous quarters and suggests that the tail of the plume that was observed to peak in MW-08 in 2018 is moving through this area.

Soil Vapor Data Collection and Discussion. Wood collected quarterly soil vapor samples between December 3 to 11, 2019. The analytical results from Fourth Quarter 2019 indicate that the highest concentrations of TCE in site soil vapor occur in the above the water table zone around TSSV-04-PZ, located in the northern portion of the New Landfill and at MW-13, located in the center of the Old Landfill. In general, compared to the historical results, TCE concentrations in soil vapor at all depth profiles have decreased. This suggests that the soil vapor extraction (SVE) system operating at the site is successfully extracting contaminated vapors from the subsurface. TCE concentrations in soil vapor samples collected from the shallow and middle zones were less than 20 milligrams per cubic meter (mg/m^3) excluding TSSV-01-M where TCE was detected at 27 mg/m^3. Samples collected from SVE-03 and SVE-04 in the deep zone had TCE concentrations of 60 mg/m^3 and 180/110 (original/duplicate sample) mg/m^3, respectively. TCE concentrations at SVE-04 increased from 170 mg/m^3 in Third Quarter 2019 but are comparable to First

Quarter 2019 (200 mg/m^3) which is a similar trend at SVE-03. TCE concentrations in soil vapor from MW-13 and TSSV-04-PZ were the highest observed in the above water table zone, at 270 mg/m^3 and 410 mg/m^3, respectively. This is the highest TCE detection at TSSV-04-PZ which has been historically declining since First Quarter 2016 at a concentration of 240 mg/m^3.

SVE System Performance. Based on the results of SVE system performance sampling, the soil vapor treatment system captured or destroyed over 97 percent (%) of extracted volatile organic compounds (VOCs), as defined by Maricopa County Air Quality Department Rule 100 Section 200.113, and over 74% of Federal Hazardous Air Pollutants (HAPs) present in extracted vapors during the reporting period. The calculated total mass of VOCs removed from the vadose zone since full-scale SVE system startup on September 15, 2015 is 43,496 pounds (lbs). During Fourth Quarter 2019, the SVE system removed 186 lbs of VOCs, which is equivalent to a daily mass removal rate of approximately 2 lbs per day.

1.0 INTRODUCTION

In response to the detection of elevated levels of trichloroethene (TCE) in groundwater underlying Cave Creek Landfill, Maricopa County entered into a Consent Order (CO) in 1999 with the Arizona Department of Environmental Quality (ADEQ) to characterize the nature and extent of site groundwater contamination. Since that time, the CO has been revised based on the results of multiple site investigations, and the current CO (ADEQ Identification Number 30604, Docket No. S-2-10) requires Maricopa County to complete groundwater characterization, develop a revised Remedial Action Plan (RAP), and complete ADEQ-approved remedial activities (ADEQ, 2010). Maricopa County submitted the final version of the RAP in May 2016 which includes soil vapor extraction (SVE) to address TCE-impacted vapor that serves as a source of groundwater contamination and an on-site pump and treat groundwater system to contain and remediate the existing groundwater plume (Amec Foster Wheeler Environment & Infrastructure, Inc. [Amec Foster Wheeler], 2016a). ADEQ approved the RAP in their letter dated November 23, 2016 (ADEQ, 2016a).

Section IV of the CO requires quarterly status reports to document Maricopa County's progress implementing the stipulations of the CO and provide evidence of regulatory compliance (ADEQ, 2016b). This status report documents site assessment and remediation efforts conducted pursuant to the RAP during the fourth calendar quarter of 2019 (October through December 2019) and presents an annual review of data collected at the site in 2019.

Wood Environment and Infrastructure Solutions, Inc. (Wood) prepared this quarterly report on behalf of Maricopa County Risk Management and Maricopa County Waste Resources & Recycling under the terms and conditions of Environmental Services Contract 13134-ITN.

2.0 SUMMARY OF MEASURES TAKEN TO IMPLEMENT THE RAP

Activities conducted in support of RAP implementation during the reporting period are as follows:

Monitoring Program

- Maricopa County collected quarterly groundwater levels and samples from site monitoring wells on November 18 through 21, 2019, with the exception of EW-01, where no sample was collected, and the groundwater level at this location was measured on November 27, 2019.
- SGS North America, Inc. (SGS), an environmental laboratory certified by the Arizona Department of Health Services (ADHS) (AZ0769), analyzed the groundwater samples.
- Maricopa County collected quarterly soil vapor samples between December 3 through 11, 2019.
- Airtech Environmental Laboratories (AEL), an environmental laboratory certified by the ADHS (AZ0740), analyzed the soil vapor samples for volatile organic compounds (VOCs) in air by United States Environmental Protection Agency (EPA) Method TO-15.

SVE System Operation and Compliance

- The SVE system operated in the Fourth Quarter 2019 from October 1 through December 31, 2019.
- Maricopa County collected monthly SVE system performance samples on October 18, November 22, and December 18, 2019.
- AEL analyzed the monthly SVE system performance samples for VOCs in air by EPA Method TO-15.
- On behalf of Maricopa County, Wood submitted the quarterly SVE system performance report in compliance with the Maricopa County Air Quality permit on December 20, 2019.

Design, Permitting, and Construction of the Groundwater Treatment System (GWTS):

- Maricopa County completed the following activities with regards to Phase 1, On-Site Infrastructure:
  - Construction oversight of the groundwater treatment system at the New Landfill. Work included the installation of bollards along electrical transformer the week of October 23, 2019.
  - Evaluation of alternative running lines for the APS electrical line necessary to power the GWTS
- Maricopa County completed the following activities with regards to Phase 2, Conveyance Pipeline:
  - A site walk was conducted with Wood personnel, construction subcontractors, and the City of Phoenix on October 8, 2019.
  - Class III Cultural Resources Survey submitted by Paleo West Archaeology to City of Phoenix on October 22, 2019.
  - Landscape and salvage plans for Phase II Conveyance Pipeline were approved on December 12, 2019.
- Maricopa County completed the following activities with regard to Phase 3, Injection Well:
  - Completed reaming of the IW-01 borehole on October 31, 2019.
  - IW-01 well installation was completed on November 7, 2019.
  - Well development and pump testing began on November 08, 2019 and continued through the reporting period.
  - Requested bids for construction of the Phase 3 perimeter wall from construction subcontractors.

Appendix A summarizes the progress of activities scheduled for Cave Creek Landfill RAP implementation. The schedule has been updated with the current status of project tasks. Notable revisions include:

- Phase 1 On-Site Infrastructure Construction has been extended to April 2020 due to delays in obtaining an easement from the City of Phoenix (COP) for the Arizona Power Service (APS) electrical service line.
- Phase 2 Conveyance Pipeline Contractor Procurement has been completed. Construction is projected to start in July 2020 and finish in November 2020. This projected start date was delayed based on the migratory bird nesting season which occurs from January through June.
- IW-01 testing will be completed in January 2020 and reporting has been extended to April 2020 due to the increased depth of the pilot boring that was achieved during drilling and associated decision to install a deeper injection well.
- The groundwater model update has been extended to July 2020 (the update has a schedule dependency of IW-01 testing and reporting).
- GWTS operations are currently projected to begin in October 2021.
- An additional well installation program (2020 well installation program) has been added to the project schedule for further downgradient groundwater characterization as discussed in the Groundwater Characterization Work Plan (Wood, 2019).
- An additional extraction well (EW-02) installation has been added to the project schedule with a proposed location near the Phase 1 GWTS to maximize the Phase 1 GWTS capacity and accelerate remediation. Addition of EW-02 is possible due to the County extending the depth of injection well

IW-01, which will allow for up a 500 gallon per minute (gpm) injection rate of treated groundwater from the GWTS.

3.0 DATA COLLECTED DURING THE REPORTING PERIOD

3.1 Groundwater Elevations

On behalf of Maricopa County, Wood collected quarterly groundwater levels on November 18 through 21, 2019 and November 27, 2019. Groundwater elevations were adjusted accordingly. Locations and construction details of site wells are presented in **Figure 1** and **Table 1**, respectively. Groundwater elevations and the calculated groundwater flow direction and gradient for the reporting period are presented in **Table 2** along with groundwater elevations from the previous four reporting periods. Contoured water table elevations and the calculated flow direction and gradient are shown in **Figure 2** and **Sheet 1**. Historical trends of groundwater elevations with associated TCE concentrations over time are displayed on **Sheet 1** with the associated well locations. **Appendix B** includes all hydrographs to display groundwater elevation changes over time. During the reporting period, the direction of groundwater flow was 174 degrees from north with a gradient of 0.002 feet per foot (ft/ft). As discussed in the Fourth Quarter 2018 status report (Wood, 2019), only groundwater elevations derived from the groundwater monitoring wells (i.e., well identifiers starting with MW and PW) were used for contouring the water table surface.

3.2 Groundwater Quality Monitoring

Maricopa County conducts groundwater quality monitoring at Cave Creek Landfill in accordance with the requirements of 40 Code of Federal Regulations (CFR) 258.50, as detailed in the Post-Closure Care Plan for Maricopa County Solid Waste Landfills (Post-Closure Care Plan) (Hydro Geo Chem, 2014). Groundwater samples from applicable Cave Creek Landfill wells are collected and analyzed for VOCs on a quarterly basis (typically February, May, August, and November). In addition to the evaluation of organic constituents, Maricopa County also samples compliance wells (i.e., MW-02, MW-03, MW-04, MW-05, MW-06, MW-07, MW-08, and PW) semi-annually (typically in February and August) for 40 CFR 258 Appendix I inorganic constituents (total metals) and general chemistry parameters.

Wood, on behalf of Maricopa County, collected quarterly groundwater samples on November 18 through November 21, 2019 with the exception of EW-01, which was not sampled due to limited access from installed extraction equipment. In addition to the compliance wells noted above, the following site wells were also sampled: MW-09, MW-10, MW-11, MW-12, MW-13, TSSV-02-PZ, TSSV-03-PZ, TSSV-04-PZ, TSSV-05-PZ, TSSV-06-PZ, and TSSV-07-PZ. Fourth Quarter 2019 groundwater samples were collected using passive sampling devices (i.e., passive diffusion bags [PDBs]) placed approximately 15 feet below the water table (ft bwt) during the previous quarterly sampling event (i.e., PDBs were placed in August 2019 for the November 2019 sampling event).

SGS analyzed the groundwater samples for VOCs in water by EPA Method 8260. Laboratory results of analyses reports for samples collected during the reporting period are included in **Appendix D**.

Groundwater analytical results for 2019 are presented in **Table 3** (VOCs), **Table 4** (General Chemistry), and **Table 5** (Metals). The estimated extent of the TCE plume in groundwater and results of sampling at individual wells are shown in **Figure 2** and **Sheet 1**. **Appendix C** includes all TCE concentration changes over time in groundwater in groundwater wells.

3.3 Soil Vapor Monitoring

Maricopa County conducts quarterly soil vapor monitoring at the Cave Creek Landfill to evaluate the concentration and extent of contaminated soil vapors in the vadose zone. Wood, on behalf of Maricopa County, collected quarterly soil vapor samples from 51 site wells on December 3 through December 11, 2019.

Wood collected the soil vapor samples using laboratory-supplied 1.0-liter passivated vacuum canisters. AEL analyzed the soil vapor samples for VOCs in air by EPA Method TO-15. Soil vapor analytical results for 2019 are presented in **Table 6**. The estimated extent of the TCE plume in soil vapor in the shallow, middle, deep, and above water table zones is shown in **Figures 3**, **4**, **5**, and **6**, respectively. The estimated extent of 1,1-Dichloroethene (1,1-DCE) in soil vapor in the deep and above water table zones is shown in **Figure 7** and **Figure 8**, respectively. Laboratory results of analytical reports for samples collected during the reporting period are included in **Appendix D**.

3.4 SVE System Performance Monitoring

The SVE system is part of the remedy identified in the RAP and provides source control (extraction of contaminated soil vapors) at the site. It was fully operational with both skids functioning and had a runtime of 64 percent (%) from October 1 through December 31, 2019. The system extracted vapor from SVE-03 and SVE-04 during that time. The Carbon Adsorption System (CAS) treated the extracted vapor under pressurized flow (**Figure 9**).

The SVE system consists of three Granular Activated Carbon (GAC) vessels, identified as C1, C2, and C3, and one Hydrosil (i.e., potassium permanganate impregnated media) vessel, identified as H1. During routine operation, two GAC vessels are operated in lead/lag series configuration and the Hydrosil vessel is operated as the third and final vessel in the series. The remaining GAC vessel is a standby (offline) vessel and is placed into service as a lag vessel when the lead GAC vessel is spent and removed from service. During a change-out event, the lag vessel is moved into the lead position and the standby vessel is moved into the lag position. GAC is replaced in the former lead vessel and it becomes the new standby vessel.

Four GAC vessel change-outs were conducted during the reporting period. The change-outs occurred on the following dates:

- October 21, 2019
- November 6, 2019
- November 21, 2019
- December 9, 2019

No Hydrosil change-outs were required during the reporting period.

Discharge of treated effluent from the SVE system is permitted by Maricopa County Air Quality Permit 980398 (Maricopa County Air Quality Department, 2016a). Under this permit, Maricopa County is required to collect monthly samples to calculate 12-month rolling total emissions and quarterly performance samples to demonstrate compliance with the performance requirements of the site air quality permit. Wood collected monthly process samples on October 18 and November 22, 2019 and the monthly/quarterly performance sample on December 18, 2019. Process samples were collected with laboratory-supplied 1.0-liter passivated vacuum canisters at four locations: entering the CAS (at sample port [SP]-01), after the lead carbon vessel (at SP-02), after the lag carbon vessel (at SP-03), and after the Hydrosil vessel (at SP-04). These

samples are named using the following convention: the sample port (e.g., SP-02) – the vessel that is monitored (e.g., C1 or H1) – the sample date in MMDDYY format. Sample locations are shown in **Figure 9**.

AEL analyzed process samples for VOCs in air by EPA Method TO-15. Results of process sample analysis are presented in **Table 7**. Laboratory results of analyses for samples collected during the reporting period are included in **Appendix D**.

4.0 DISCUSSION OF COLLECTED DATA

4.1 Groundwater Elevations

The groundwater flow direction and gradient observed during the Fourth Quarter 2019 were consistent with the groundwater flow direction and gradient observed during previous quarters (**Table 2**). The groundwater flow direction continues to be nearly due south (averaging 174 degrees from north in 2019) and the gradient is steady at 0.002 ft/ft. Groundwater elevations at the site remained relatively stable between Fourth Quarter 2018 and Fourth Quarter 2019 with an average site-wide decrease in groundwater elevations measured at monitoring wells of 0.12 ft. Observed declines in groundwater elevations ranged from 0.1 ft (at MW-09 and TSSV-02-PZ) to 0.2 ft (at MW-02, MW-03, MW-04, MW-06, MW-07, and MW-10). Groundwater elevations rises from Fourth Quarter 2018 to Fourth Quarter 2019 ranged from 0.1 ft (MW-08, MW-11, TSSV-04-PZ) to 1.1 ft (TSSV-03-PZ).

Historically, groundwater elevations have been declining over time. Groundwater elevation changes over time for each groundwater well are presented in hydrographs presented in **Appendix B**. Historical trends of groundwater elevations with associated TCE concentrations over time are displayed on **Sheet 1** with the associated well locations.

4.2 Groundwater Quality

Appendix C includes all TCE concentration changes over time in groundwater in groundwater wells. Historical trends of groundwater elevations with associated TCE concentrations over time are displayed on **Sheet 1** with the associated well locations.

Vicinity of the New Landfill. Analytical results from Fourth Quarter 2019 indicate that the highest concentrations of TCE in groundwater are associated with monitoring locations MW-02 (110 micrograms per liter [µg/L]) and MW-10 (320 µg/L), which are located in the southern portion of the New Landfill and to the west of the New Landfill, respectively. Notably, TCE concentrations in TSSV-03-PZ, located near the center of the New Landfill, continue to decline from a peak concentration observed in the fourth quarter of 2017 (1,100 µg/L), suggesting that the higher concentrations previously observed at this well may have migrated to the south with groundwater flow. Concentrations of TCE at MW-10 and MW-02 have remained relatively stable throughout 2019. The TCE concentrations in the samples collected from MW-02, 1,200 ft downgradient of TSSV-03-PZ, have remained relatively stable throughout 2019. These data indicate that if elevated concentrations at TSSV-03-PZ have migrated to the south with groundwater flow, they have not been observed at MW-02 to date. The elevated concentrations at MW-10 raise the possibility that contaminant flowpaths exist that are not concurrent with groundwater flow direction.

The TCE concentration measured in TSSV-04-PZ, on the northern boundary of the New Landfill, was 87 µg/L in Fourth Quarter 2019 which is consistent with First and Third Quarter 2019 concentrations of 94 and 106 µg/L, respectively. In general, TCE concentrations at TSSV-04-PZ have been trending upward since February 2017 (20 µg/L) with the highest detected concentration in Third Quarter 2019 (110 µg/L).

Downgradient of the Property Boundary. TCE was present above the Arizona Water Quality Standard (AWQS) for TCE of 5 µg/L in off-site downgradient wells MW-05 (51 µg/L), MW-07 (33 µg/L), and MW-11 (39/41 µg/L [original/duplicate sample]). MW-11 was installed in 2018 and was intended to delineate the downgradient extent of the TCE plume as well as possibly monitor the future mounding influence of GWTS injection well IW-01, which was installed in Fourth Quarter 2019 approximately 1,000 feet down/cross-gradient of MW-11. Elevated concentrations of TCE in MW-11 prompted Maricopa County to conduct zonal sampling at IW-01 during the drilling process; results of the zonal sampling indicated concentrations of TCE were below the laboratory reporting limit at all depths in IW-01. TCE concentrations at MW-05, 1,200 ft southeast of MW-10, have been generally increasing since 2016; however, concentrations appeared to stabilize in 2019. A TCE concentration of 43 µg/L was observed in the First Quarter 2019 and 51 µg/L observed in the Fourth Quarter 2019.

Vicinity of the Old Landfill. The TCE concentration in the sample collected from MW-08, south of the Old Landfill, was 36 µg/L. TCE concentrations at MW-08 display an overall declining trend in 2019 (from a high of 140/130 µg/L in the original/duplicate samples collected in Fourth Quarter 2018) and TCE concentrations decreased from 71 µg/L in First Quarter 2019 to 36 µg/L in Fourth Quarter 2019. TSSV-07-PZ, on the southwest corner of the Old Landfill, continues to provide definition to the plume underlying this property as concentrations of TCE were less than the AWQS throughout 2019. Concentrations of TCE in MW-13, which was installed in 2018 near the center of the Old Landfill, ranged from 6.0 to 2.2 µg/L in 2019, suggesting that the northern extent of the plume underlying the Old Landfill is near the center of the property.

Other Chlorinated VOCs and Compliance Constituents Present in Groundwater. Co-contaminants 1,1-DCE and PCE have been observed in groundwater samples collected from site monitoring wells for some time, although concentrations do not routinely exceed applicable AWQSs. Analytical results from Fourth Quarter 2019 indicate that the highest concentrations of 1,1-DCE and PCE were generally observed in the wells that have the highest concentrations of TCE. The sample from MW-10, for example, has PCE concentrations of 12 µg/L (above the AWQS for PCE of 5 µg/L) and 1,1-DCE concentrations of 9.3 µg/L (above the AWQS for 1,1-DCE of 7 µg/L). The sample collected from TSSV-04-PZ has a PCE concentration of 5.7 µg/L.

Arsenic was the only other constituent detected above their respective AWQS of 0.01 µg/L in the previous four reporting periods. Arsenic exceeded the AWQS at groundwater wells: MW-02, MW-04, MW-07, and PW. Arsenic exceedances ranged from 0.011 (MW-02 in February 2019) to 0.013 µg/L (MW-02 in August 2019 and MW-07 in February 2019). These detections are below the upper background threshold value of 0.1 µg/L. No other samples collected from site monitoring wells contained concentrations of PCE, 1,1-DCE, Arsenic or other constituents above the respective AWQS.

Environmental Laboratory Selection. Due to contracting constraints with the environmental laboratory from the First Quarter 2019 reporting period, SGS was selected to analyze samples collected for the remainder of the 2019 analytical sampling. Wood conducted a review of Fourth Quarter 2019 groundwater sample results to evaluate consistency with historical trends, laboratory dilution factors, and laboratory reporting limits. Based on a comparison of Fourth Quarter 2019 data to historical data, Fourth Quarter 2019 groundwater data are consistent with previous results and usable for evaluation of long-term trends in contaminant concentrations in groundwater at the site.

4.3 Soil Vapor

The analytical results from Fourth Quarter 2019 indicate that the highest concentrations of TCE in site soil vapor occur in the deep zone and the above water table zone around SVE-04, SVE-03, MW-13, and TSSV-

04-PZ (**Figure 5**). In general, compared to the historical results, TCE concentrations in soil vapor at all depth profiles have decreased. This suggests the SVE system is successfully extracting contaminant mass from the subsurface.

Notable conditions in each depth profile are as follows:

Shallow Zone. TCE concentrations in soil vapor samples collected from the shallow zone have been less than 10 milligrams per cubic meter (mg/m^3) since First Quarter 2019 (**Figure 3**).

Middle Zone. TCE concentrations in soil vapor samples collected from the middle zone were generally less than 10 mg/m^3 (**Figure 4**) with the exception of samples from TSSV-01-M and SVE-04-M, which had TCE concentrations of 27 and 14 mg/m^3, respectively. TCE concentrations at TSSV-01-M were relatively stable in 2019, ranging from 13 and 29 mg/m^3 (note that the Second Quarter original sample from this well is disregarded as it is inconsistent with historical data). SVE-04-M was sampled three times in 2019 and TCE concentrations varied from 3.4 mg/m^3 in the Third Quarter to 14 mg/m^3 in the Fourth Quarter.

Deep Zone. TCE concentrations in the deep zone (**Figure 5**) exceeded 10 mg/m^3 at SVE-04, TSSV-02-D, SVE-03, and MW-13-D. SVE-03 and SVE-04 are currently extracting vapor from the deep zone, and elevated concentrations in these wells suggest that continued operation is warranted. The presence of elevated TCE in TSSV-02-D and MW-13-D is consistent with previous quarters.

Above Water Table Zone. TCE concentrations in the above water table zone (**Figure 6**) exceeded 10 mg/m^3 at MW-10, TSSV-02-PZ, TSSV-04-PZ, and MW-13. The highest concentrations of TCE in the vadose zone were detected in the above water table depth profile at TSSV-04-PZ (410 mg/m^3) and MW-13 (270 mg/m^3). There is currently no soil vapor extraction from the above water table zone. These locations will be monitored in 2020 to evaluate whether extraction from above water table zone SVE wells is warranted.

Other Chlorinated VOCs Present in Soil Vapor. 1,1-DCE is frequently observed in soil vapor samples collected from wells in and near the Old Landfill, specifically in the deep and above water table zones (**Figure 7** and **Figure 8**, respectively). During Fourth Quarter 2019, the highest concentrations of 1,1-DCE in the soil vapor occurred in the above-water table zone at MW-13 at a concentration of 316 mg/m^3. This well is located near the center of the Old Landfill (**Figure 8**).

4.4 SVE System Performance

Based on the results of SVE system performance sampling, the CAS captured or destroyed over 97% of extracted VOCs, as defined by Maricopa County Air Quality Department Rule 100 Section 200.113, and over 74% of Federal Hazardous Air Pollutants (HAPs) in extracted vapors, during the reporting period.

The calculated total mass removed from the vadose zone since SVE system startup is presented in **Table 8**. Mass removal rates are based on actual hours of operation (hour meter readings) and the estimated hourly VOC extraction rate derived from performance testing. During the reporting period, the SVE system removed 186 pounds (lbs) of VOCs over a time period of 91 days, which is equivalent to a daily mass extraction rate of approximately 2 lbs per day. Since operations began on September 15, 2015, the calculated total mass of VOCs removed through March 20, 2019 is 43,496 lbs.

The SVE system operated for 64% of the time in the Fourth Quarter 2019. The system was commonly turned off for the weekend if on Friday, the field readings to estimate VOC removal efficiency of the CAS indicated that the removal efficiency on Saturday or Sunday would fall below the minimum VOC removal efficiency of 90% mandated by the air quality permit. The system was also turned off for several hours approximately

every week to change the GAC order. The SVE system was turned off for maintenance on October 10, 2019 and Skid 01 remained off until repairs were completed on October 18, 2019. The system was shutoff for system maintenance and repairs from December 20, 2019 until the end of the reporting period. Monthly testing of the CAS indicates that the system is operating as intended and is compliant with the air quality permit issued by Maricopa County.

5.0 FUTURE ACTIVITIES

Maricopa County will continue to conduct quarterly monitoring as described in Section 3.0 of this report. Other upcoming activities targeted for completion during the First Quarter of 2020 and/or scheduled through the Third Quarter of 2020 include:

- Continued operation of the SVE system for source control;
- Continued Phase 1 GWTS construction and electrical service line design, permitting and installation followed by system commissioning. This activity is currently on-going and completion is estimated in April 2020;
- Initiation of Phase 2 construction which has a projected completion date of July 2020;
- Completion of aquifer and pump testing at IW-01; and,
- Initiation of Phase 3 construction of the injection well site perimeter wall and design, permitting and construction of the injection well infrastructure, which has a projected completion date of February 2021.

6.0 REFERENCES

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TABLES

Table 1. Well Construction Summary

Cave Creek Landfill, Maricopa County

WellName	Location Type	ADWR ID	Northing (NAD83SP Int'l Ft)	Easting (NAD83SP Int'l Ft)	TOC (ft amsl)	Ground Surface (ft amsl)	Total Well Depth (ft)	Date Installed	Casing Diameter (I.D.)	CasingType	Top Screen Depth (ft bgs)	Bottom Screen Depth (ft bgs)	Top Screen Elevation (ft amsl)	Pump Intake Depth (ft bgs)	Pump Intake Elevation (ft amsl)	Comment
EW-01	Groundwater	55-226136	1012934.6	675653.9	1,854.5	1,852.9	830	8/20/2016	12	HSLA	729.1	809.4	1,123.8	-	-	-
MW-01	Groundwater	55-538298	1013459.3	675955.8	1,895.6	1,895.6	820	5/1/1993	6 inch	LCS	660	820	1,235.6	-	-	Originally installed at 695 ft bgs; moved to 740 ft bgs (at bottom of pump) on 3/2/2005.
MW-02	Groundwater	55-538299	1012899.4	675673.9	1,856.0	1,855.0	805	5/1/1993	6 inch	LCS	630	805	1,225.0	-	-	Originally installed at 675 ft bgs; moved to 704 ft bgs (at bottom of pump) on 3/1/2005; moved to 714 ft bgs on 6/26/2009. Pump removed 8/2017
MW-03	Groundwater	55-216293	1013323.0	676495.2	1,866.4	1,867.0	830	12/13/2007	6 inch	LCS	679	799	1,188.0	-	-	Originally installed at 777 ft bgs; moved to 724 ft bgs on 6/25/2009. Pump removed 8/2017
MW-04	Groundwater	55-912575	1012613.0	675427.0	1,849.8	1,848.7	768	10/26/2010	6 inch	LCS	667.5	752.7	1,181.2	-	-	Pump removed 8/2017
MW-05	Groundwater	55-912728	1012467.6	674571.8	1,845.1	1,843.2	767	12/15/2010	6 inch	LCS	660	740.2	1,183.2	-	-	Pump removed 8/2017
MW-06	Groundwater	55-913112	1012139.1	675961.1	1,860.7	1,858.6	776.9	5/16/2011	6 inch	LCS	683	763	1,175.6	-	-	Pump removed 8/2017
MW-07	Groundwater	55-914001	1012607.3	675919.7	1,859.6	1,857.8	765	2/8/2012	8.25 inch	LCS	674.8	754.8	1,183.0	-	-	Pump removed 8/2017
MW-08	Groundwater	55-913859	1015700.0	676938.9	1,889.1	1,887.5	766.5	1/9/2012	8.25 inch	LCS	691.5	761.5	1,196.0	-	-	Pump removed 8/2017
MW-09	Groundwater	55-920632	1015090.4	675043.7	1,864.8	1,864.2	775	7/25/2017	6 inch	Sch 80 PVC	685	775	1,179.2	-	-	-
MW-09-S	Soil Vapor	55-920632	1015090.4	675043.7	1,864.8	1,864.2	160	7/25/2017	1 inch	Sch 80 PVC	140	160	1,724.2	-	-	-
MW-09-M	Soil Vapor	55-920632	1015090.4	675043.7	1,864.8	1,864.2	360	7/25/2017	1 inch	Sch 80 PVC	340	360	1,524.2	-	-	-
MW-09-D	Soil Vapor	55-920632	1015090.4	675043.7	1,864.8	1,864.2	585	7/25/2017	1 inch	Sch 80 PVC	535	585	1,329.2	-	-	-
MW-10	Groundwater	55-920633	1013594.3	674997.4	1,848.3	1,847.4	765	9/3/2017	6 inch	Sch 80 PVC	670	760	1,177.4	-	-	-
MW-10-S	Soil Vapor	55-920633	1013594.3	674997.4	1,848.3	1,847.4	140	9/6/2017	1 inch	Sch 80 PVC	120	140	1,727.4	-	-	-
MW-10-M	Soil Vapor	55-920633	1013594.3	674997.4	1,848.3	1,847.4	340	9/6/2017	1 inch	Sch 80 PVC	320	340	1,527.4	-	-	-
MW-10-D	Soil Vapor	55-920633	1013594.3	674997.4	1,848.3	1,847.4	570	9/6/2017	1 inch	Sch 80 PVC	520	570	1,327.4	-	-	-
MW-11	Groundwater	55-229174	1011611.5	675676.7	1,850.8	1,851.1	781	10/8/2018	6 inch	Sch 80 PVC	686	776	1,165.1	-	-	-
MW-12	Groundwater	55-921934	1014678.7	676009.7	1,873.2	1,873.6	785	9/5/2018	6 inch	Sch 80 PVC	690	780	1,183.6	-	-	-

Table 1. Well Construction Summary

Cave Creek Landfill, Maricopa County

WellName	Location Type	ADWR ID	Northing (NAD83SP Int'l Ft)	Easting (NAD83SP Int'l Ft)	TOC (ft amsl)	Ground Surface (ft amsl)	Total Well Depth (ft)	Date Installed	Casing Diameter (I.D.)	CasingType	Top Screen Depth (ft bgs)	Bottom Screen Depth (ft bgs)	Top Screen Elevation (ft amsl)	Pump Intake Depth (ft bgs)	Pump Intake Elevation (ft amsl)	Comment
MW-12-S	Soil Vapor	55-921934	1014679.0	676009.8	1,873.5	1,873.6	196	9/5/2018	1 inch	Sch 80 PVC	146	196	1,727.6	-	-	-
MW-12-M	Soil Vapor	55-921934	1014678.8	676009.5	1,873.4	1,873.6	396	9/5/2018	1 inch	Sch 80 PVC	346	396	1,527.6	-	-	-
MW-12-D	Soil Vapor	55-921934	1014679.2	676009.7	1,873.3	1,873.6	596	9/5/2018	2 inch	Sch 80 PVC	546	596	1,327.6	-	-	-
MW-13	Groundwater	55-229175	1016320.9	676680.0	1,900.7	1,900.0	802	11/10/2018	6 inch	Sch 80 PVC	707	797	1,193.0	-	-	-
MW-13-S	Soil Vapor	55-229175	1016321.0	676680.3	1,900.5	1,900.0	223	11/10/2018	1 inch	Sch 80 PVC	173	223	1,727.0	-	-	-
MW-13-M	Soil Vapor	55-229175	1016321.1	676680.0	1,900.5	1,900.0	423	11/10/2018	1 inch	Sch 80 PVC	373	423	1,527.0	-	-	-
MW-13-D	Soil Vapor	55-229175	1016320.9	676679.8	1,900.5	1,900.0	623	11/10/2018	2 inch	Sch 80 PVC	573	623	1,327.0	-	-	-
PW	Groundwater	55-503913	1015806.0	675722.2	1,882.0	1,881.4	820	10/1/1982	6 inch	LCS	680	810	1,201.4	-	-	Originally installed at 750 ft bgs; moved to 729 ft bgs on 6/25/2009. Pump removed 8/2017
SVE-01	Soil Vapor Extraction	55-917896	1015834.8	675971.9	-	1,882.1	610	5/18/2015	6 inch	Sch 80 PVC	120	600	1,762.1	-	-	-
SVE-01-S	Soil Vapor	55-917896	1015834.8	675971.9	1,882.1	1,882.1	610	5/18/2015	1 inch	Sch 80 PVC	180	200	1,702.1	-	-	-
SVE-01-M	Soil Vapor	55-917896	1015834.8	675971.9	1,882.1	1,882.1	610	5/18/2015	1 inch	Sch 80 PVC	360	380	1,522.1	-	-	-
SVE-01-D	Soil Vapor	55-917896	1015834.8	675971.9	1,882.1	1,882.1	610	5/18/2015	1 inch	Sch 80 PVC	480	500	1,402.1	-	-	-
SVE-02	Soil Vapor Extraction	55-917897	1015472.6	675617.9	1,900.4	1,900.4	630	5/5/2015	6 inch	Sch 80 PVC	400	620	1,500.4	-	-	-
SVE-02-S	Soil Vapor	55-917897	1015472.6	675617.9	1,900.4	1,900.4	630	5/5/2015	1 inch	Sch 80 PVC	150	170	1,750.4	-	-	-
SVE-02-M	Soil Vapor	55-917897	1015472.6	675617.9	1,900.4	1,900.4	630	5/5/2015	1 inch	Sch 80 PVC	300	350	1,600.4	-	-	-
SVE-03	Soil Vapor Extraction	55-920634	1015112.6	675423.8	1,907.5	1,905.1	655	8/8/2017	6 inch	Sch 80 PVC	530	650	1,375.1	-	-	-
SVE-03-S	Soil Vapor	55-920634	1015112.6	675423.8	1,907.5	1,905.1	200	8/8/2017	1 inch	Sch 80 PVC	180	200	1,725.1	-	-	-
SVE-03-M	Soil Vapor	55-920634	1015112.6	675423.8	1,907.5	1,905.1	400	8/8/2017	1 inch	Sch 80 PVC	380	400	1,525.1	-	-	-
SVE-04	Soil Vapor Extraction	55-920878	1015934.6	676182.8	1,893.0	1,890.8	644	10/4/2017	6 inch	Sch 80 PVC	514	639	1,376.8	-	-	-
SVE-04-S	Soil Vapor	55-920878	1015934.6	676182.8	1,893.0	1,890.8	185	10/4/2017	1 inch	Sch 80 PVC	165	185	1,725.8	-	-	-
SVE-04-M	Soil Vapor	55-920878	1015934.6	676182.8	1,893.0	1,890.8	385	10/4/2017	1 inch	Sch 80 PVC	365	385	1,525.8	-	-	-
TSSV-01-S	Soil Vapor	55-911519	1015918.8	675991.0	1,881.0	1,881.0	610	1/22/2010	2 inch	Sch 80 PVC	150	200	1,731.0	-	-	-

Table 1. Well Construction Summary

Cave Creek Landfill, Maricopa County

WellName	Location Type	ADWR ID	Northing (NAD83SP Int'l Ft)	Easting (NAD83SP Int'l Ft)	TOC (ft amsl)	Ground Surface (ft amsl)	Total Well Depth (ft)	Date Installed	Casing Diameter (I.D.)	CasingType	Top Screen Depth (ft bgs)	Bottom Screen Depth (ft bgs)	Top Screen Elevation (ft amsl)	Pump Intake Depth (ft bgs)	Pump Intake Elevation (ft amsl)	Comment
TSSV-01-M	Soil Vapor	55-911519	1015918.8	675991.0	1,881.0	1,881.0	610	1/22/2010	2 inch	Sch 80 PVC	350	400	1,531.0	-	-	-
TSSV-01-D	Soil Vapor	55-911519	1015918.8	675991.0	1,881.0	1,881.0	610	1/22/2010	2 inch	Sch 80 PVC	549	599	1,332.0	-	-	-
TSSV-02-S	Soil Vapor	55-915432	1015688.3	675875.9	1,880.2	1,881.4	210	5/3/2013	2 inch	Sch 80 PVC	150.3	200.3	1,731.1	-	-	-
TSSV-02-M	Soil Vapor	55-915432	1015688.3	675875.9	1,880.2	1,881.4	410	5/3/2013	2 inch	Sch 80 PVC	350.3	400.3	1,531.1	-	-	-
TSSV-02-D	Soil Vapor	55-915279	1015688.8	675860.8	1,880.2	1,881.2	609	4/24/2013	2 inch	Sch 80 PVC	549.3	599.3	1,331.9	-	-	-
TSSV-02-PZ	Groundwater	55-915279	1015688.8	675860.8	1,880.2	1,881.2	779	4/24/2013	2 inch	Sch 80 PVC	699.3	769.3	1,181.9	-	-	-
TSSV-03-S	Soil Vapor	55-915281	1014061.5	675688.5	1,902.7	1,901.8	230	4/26/2013	2 inch	Sch 80 PVC	170.5	220.5	1,731.3	-	-	-
TSSV-03-M	Soil Vapor	55-915281	1014061.5	675688.5	1,902.7	1,901.8	430	4/26/2013	2 inch	Sch 80 PVC	370.5	420.5	1,531.3	-	-	-
TSSV-03-D	Soil Vapor	55-915281	1014061.5	675688.5	1,902.7	1,901.8	629	4/26/2013	2 inch	Sch 80 PVC	569.5	619.5	1,332.3	-	-	-
TSSV-03-PZ	Groundwater	55-915281	1014061.5	675688.5	1,902.7	1,901.8	799	4/26/2013	2 inch	Sch 80 PVC	719.5	789.5	1,182.3	-	-	-
TSSV-03-P	Soil Vapor	55-915281	1014061.5	675688.5	1,902.7	1,901.8	73	4/26/2013	1 inch	Sch 80 PVC	60	70	1,841.8	-	-	-
TSSV-04-S	Soil Vapor	55-915282	1015319.7	675423.9	1,906.0	1,905.4	235	5/31/2013	2 inch	Sch 80 PVC	174.5	224.5	1,730.9	-	-	-
TSSV-04-M	Soil Vapor	55-915282	1015319.7	675423.9	1,906.0	1,905.4	435	5/31/2013	2 inch	Sch 80 PVC	374.5	424.5	1,530.9	-	-	-
TSSV-04-D	Soil Vapor	55-915629	1015319.7	675423.9	1,906.0	1,905.0	635	6/10/2013	2 inch	Sch 80 PVC	575	625	1,330.0	-	-	-
TSSV-04-PZ	Groundwater	55-915282	1015319.7	675423.9	1,906.0	1,905.8	804	5/31/2013	3 inch	Sch 80 PVC	723.5	793.5	1,182.3	-	-	-
TSSV-05-S	Soil Vapor	55-917870	1014659.1	675396.6	1,905.7	1,904.7	430	3/8/2015	2 inch	Sch 80 PVC	170	220	1,734.7	-	-	-
TSSV-05-M	Soil Vapor	55-917870	1014659.1	675396.6	1,905.7	1,904.7	430	3/8/2015	2 inch	Sch 80 PVC	370	420	1,534.7	-	-	-
TSSV-05-D	Soil Vapor	55-917892	1014659.1	675396.6	1,905.7	1,905.1	805	4/21/2015	2 inch	Sch 80 PVC	570	620	1,335.1	-	-	-
TSSV-05-PZ	Groundwater	55-917892	1014659.1	675396.6	1,905.7	1,905.1	805	4/21/2015	4 inch	Sch 80 PVC	720	790	1,185.1	-	-	-
TSSV-06-S	Soil Vapor	55-917894	1015997.6	675654.5	1,876.9	1,876.5	610	3/18/2015	2 inch	Sch 80 PVC	150	200	1,726.5	-	-	-
TSSV-06-M	Soil Vapor	55-917894	1015997.6	675654.5	1,876.9	1,876.5	610	3/18/2015	2 inch	Sch 80 PVC	350	400	1,526.5	-	-	-
TSSV-06-D	Soil Vapor	55-917894	1015997.6	675654.5	1,876.9	1,876.5	610	3/18/2015	2 inch	Sch 80 PVC	550	600	1,326.5	-	-	-
TSSV-06-PZ	Groundwater	55-917895	1015997.6	675654.5	1,876.9	1,876.1	794	4/8/2015	4 inch	Sch 80 PVC	700	785	1,176.1	-	-	-

Table 1. Well Construction Summary

Cave Creek Landfill, Maricopa County

WellName	Location Type	ADWR ID	Northing (NAD83SP Int'l Ft)	Easting (NAD83SP Int'l Ft)	TOC (ft amsl)	Ground Surface (ft amsl)	Total Well Depth (ft)	Date Installed	Casing Diameter (I.D.)	CasingType	Top Screen Depth (ft bgs)	Bottom Screen Depth (ft bgs)	Top Screen Elevation (ft amsl)	Pump Intake Depth (ft bgs)	Pump Intake Elevation (ft amsl)	Comment
TSSV-07-S	Soil Vapor	55-917947	1015855.0	676202.1	1,889.9	1,889.5	620	3/30/2015	2 inch	Sch 80 PVC	160	210	1,729.5	-	-	-
TSSV-07-M	Soil Vapor	55-917947	1015855.0	676202.1	1,889.9	1,889.5	620	3/30/2015	2 inch	Sch 80 PVC	360	410	1,529.5	-	-	-
TSSV-07-D	Soil Vapor	55-917947	1015855.0	676202.1	1,889.9	1,889.5	620	3/30/2015	2 inch	Sch 80 PVC	560	610	1,329.5	-	-	-
TSSV-07-PZ	Groundwater	55-917946	1015855.0	676202.1	1,889.9	1,889.0	795	4/13/2015	4 inch	Sch 80 PVC	710	780	1,179.0	-	-	-

Notes: LFG - Landfill Gas
ft - Feet
ft bgs - Feet below ground surface
ft amsl - Feet above mean sea level
I.D. - Inner Diameter
Pumps removed for wells MW-02 - MW-08 and PW 8/2017.

Table 2. Groundwater Elevation, Gradient, and Flow Direction

Cave Creek Landfill, Maricopa County

Groundwater Elevation by Well (ft amsl)

Well ID	Fourth Quarter 2018	First Quarter 2019	Second Quarter 2019	Third Quarter 2019	Fourth Quarter 2019
EW-01[1]	1156.63	1156.54	1156.22	NM	1157.28
PW	1162.73	1162.45	1162.43	1162.54	1162.78
MW-02	1156.79	1156.61	1156.32	1156.37	1156.62
MW-03	1157.71	1157.33	1157.32	1157.38	1157.48
MW-04	1156.39	1156.15	1155.97	1156.09	1156.19
MW-05	1155.94	1155.74	1155.56	1155.81	1155.92
MW-06	1155.21	1154.93	1154.91	1154.88	1154.98
MW-07	1156.40	1156.21	1156.13	1156.00	1156.17
MW-08	1162.47	1162.06	1162.01	1162.11	1162.59
MW-09	1161.30	1161.11	1160.98	1161.13	1161.22
MW-10	1158.40	1158.20	1158.02	1158.12	1158.21
MW-11	1154.12	1153.97	1154.03	1154.06	1154.06
MW-12	1158.69	1158.46	1158.02	1158.43	1158.63
MW-13	1163.27	1162.93	1162.80	1163.04	1163.47
TSSV-02-PZ[1]	1162.69	1161.70	1162.24	1162.35	1162.62
TSSV-03-PZ[1]	1157.87	1158.72	1158.47	1158.68	1158.99
TSSV-04-PZ*	1160.60	1163.90	1160.04	1160.28	1160.65
TSSV-05-PZ[1]	1160.34	1160.06	1159.78	1160.12	1160.38
TSSV-06-PZ[1]	1162.52	1162.16	1162.20	1162.35	1162.48
TSSV-07-PZ[1]	1162.04	1161.98	1161.84	1162.00	1162.25
Gradient (ft/ft)	0.002	0.002	0.002	0.002	0.002
Flow Direction (deg. from N)	176.7	174.3	176.2	171.4	174.0

Notes:

Flow direction measured in a clockwise rotation; North is 0 degrees, East is 90 degrees, South is 180 degrees, and West is 270 degrees.

deg. = degrees

ft amsl = Feet above mean sea level

ID = Identification

MW = Monitoring Well

NM = Not Measured

PW = Production Well

PZ = Piezometer

TSSV = Monitoring Well

* = not included in calculation of gradient or flow direction, all quarters

[1] = not included in calculation of gradient or flow direction starting in First Quarter 2019

Table 3. Groundwater Analytical Results - Summary of VOC Data

Cave Creek Landfill, Maricopa County

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Sample Method	1,1-Dichloroethane	1,1-Dichloroethene	Benzene	Bromoform	Carbon disulfide	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	Naphthalene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Vinyl Chloride	Comments
EW-01																			
	2/27/2019	1,141.5	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	1.5	<5	<1	<1	<1	21	<1	- -
	5/23/2019	1,142.5	µg/L	PDB	<1	1.0	<1	<1	<5	<1	<1	1.9	<5	<1	<1	<1	23	<1	- -
	7/1/2019	1,141.5	µg/L	PDB	<1	<1	<1	<1	<2	<1	<1	1.7	<1	<1	<1	<1	16	<1	- -
	7/1/2019	1,116.5	µg/L	PDB	<1	<1	<1	<1	<2	<1	<1	1.7	<1	<1	<1	<1	20	<1	Duplicate
	7/1/2019	1,116.5	µg/L	PDB	<1	<1	<1	<1	<2	<1	<1	1.7	<1	<1	<1	<1	19	<1	- -
MW-02																			
	2/27/2019	1,142.0	µg/L	PDB	0.22	9.8	<1	<1	<1	<1	<5	3.6	<5	4.6	<1	<1	93	<1	- -
	5/23/2019	1,142.0	µg/L	PDB	3.2	2.2	<1	<1	<5	<1	<1	3.5	<5	4.3	<1	<1	97	<1	- -
	8/22/2019	1,142.0	µg/L	PDB	3.2	3.4	<1	<1	<5	<1	<1	3.5	<5	4.0	<1	<1	120	<1	- -
	11/18/2019	1,142.0	µg/L	PDB	3.0	3.1	<1	<1	<5	<1	<1	3.9	<5	4.6	<1	<1	110	<1	- -
MW-03																			
	3/4/2019	1,142.4	µg/L	PDB	<1	1.4	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	2.7	<1	- -
	5/22/2019	1,142.4	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	2.3	<1	- -
	8/21/2019	1,143.4	µg/L	PDB	<1	1.2	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	1.8	<1	- -
	11/21/2019	1,142.4	µg/L	PDB	<1	1.2	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	1.9	<1	- -
MW-04																			
	2/27/2019	1,141.8	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	- -
	5/22/2019	1,141.8	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	15 ft bwt
	5/22/2019	1,116.8	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	40 ft bwt
	5/22/2019	1,106.8	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	50 ft bwt (10 ft above TD)
	8/21/2019	1,141.8	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	- -
	11/21/2019	1,140.8	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	- -
MW-05																			
	2/27/2019	1,141.1	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	43	<1	- -
	5/23/2019	1,141.1	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	62	<1	- -
	8/22/2019	1,142.1	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	0.40 J	<1	<1	54	<1	- -
AWQS:					**N/A**	**7**	**5**	**80**	**N/A**	**100**	**80**	**70**	**N/A**	**5**	**1,000**	**100**	**5**	**2**	

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Sample Method	1,1-Dichloroethane	1,1-Dichloroethene	Benzene	Bromoform	Carbon disulfide	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	Naphthalene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Vinyl Chloride	Comments
MW-05																			
	11/18/2019	1,141.1	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	1.8	<5	<1	<1	<1	51	<1	- -
MW-06																			
	2/28/2019	1,140.7	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	1.3	<1	- -
	5/22/2019	1,140.7	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	1.8	<1	- -
	8/21/2019	1,140.7	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	1.7	<1	Duplicate
	8/21/2019	1,140.7	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	1.7	<1	- -
	11/21/2019	1,139.7	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	1.5	<1	- -
MW-07																			
	2/28/2019	1,141.6	µg/L	PDB	<1	1.0	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	30	<1	- -
	5/22/2019	1,141.6	µg/L	PDB	<1	1.0	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	32	<1	15 ft bwt
	5/22/2019	1,116.6	µg/L	PDB	<1	1.1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	28	<1	40 ft bwt
	8/21/2019	1,141.6	µg/L	PDB	<1	1.2	<1	<1	<5	<1	<1	0.66 J	<5	0.61 J	<1	<1	33	<1	- -
	11/21/2019	1,140.6	µg/L	PDB	<1	1.1	<1	<1	<5	<1	<1	1.7	<5	<1	<1	<1	33	<1	- -
MW-08																			
	2/27/2019	1,147.1	µg/L	PDB	<1	4.7	<1	<1	<1	<1	<5	<1	<5	1.5	<1	<1	76	<1	Duplicate
	2/27/2019	1,147.1	µg/L	PDB	<1	4.5	<1	<1	<1	<1	<5	<1	<5	1.3	<1	<1	71	<1	- -
	5/22/2019	1,147.1	µg/L	PDB	<1	5.3	<1	<1	<5	<1	<1	<1	<5	1.5	<1	<1	59	<1	- -
	8/22/2019	1,148.1	µg/L	PDB	0.59 J	5.0	<1	<1	<5	<1	<1	0.46 J	<5	1.3	<1	<1	43	<1	Duplicate
	8/22/2019	1,148.1	µg/L	PDB	0.60 J	6.1	<1	<1	<5	<1	<1	0.43 J	<5	1.3	<1	<1	48	<1	- -
	11/19/2019	1,147.1	µg/L	PDB	<1	7.2	<1	<1	<5	<1	<1	<1	<5	1.7	<1	<1	36	<1	- -
MW-09																			
	3/1/2019	1,146.8	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	15	<1	Duplicate
	3/1/2019	1,146.8	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	15	<1	- -
	5/21/2019	1,146.8	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	21	<1	Duplicate
	5/21/2019	1,146.8	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	22	<1	- -
	8/20/2019	1,146.8	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	23	<1	- -
AWQS:					**N/A**	**7**	**5**	**80**	**N/A**	**100**	**80**	**70**	**N/A**	**5**	**1,000**	**100**	**5**	**2**	

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Sample Method	1,1-Dichloroethane	1,1-Dichloroethene	Benzene	Bromoform	Carbon disulfide	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	Naphthalene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Vinyl Chloride	Comments
MW-09																			
	11/18/2019	1,145.8	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	1.5	<5	<1	<1	<1	17	<1	- -
MW-10																			
	3/1/2019	1,143.3	µg/L	PDB	1.3	7.8	<1	<1	<1	<1	<5	23	<5	11	<1	<1	340	<1	- -
	5/21/2019	1,143.3	µg/L	PDB	1.7	9.5	<1	<1	<5	<1	1.5	25	<5	11	<1	<1	310	<1	- -
	8/20/2019	1,144.3	µg/L	PDB	<2.5	7.7	<2.5	<2.5	<13	<2.5	<2.5	23	<13	8.8	<2.5	<2.5	360	<2.5	- -
	11/18/2019	1,143.3	µg/L	PDB	1.8	9.3	<1	<1	<5	<1	1.6	25	<5	12	<1	<1	320	<1	- -
MW-11																			
	2/28/2019	1,138.8	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	22	<1	- -
	2/28/2019	1,138.8	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	22	<1	Duplicate
	5/22/2019	1,138.8	µg/L	PDB	<1	1.2	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	26	<1	Duplicate
	5/22/2019	1,138.8	µg/L	PDB	<1	1.3	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	26	<1	15 ft bwt
	5/22/2019	1,113.8	µg/L	PDB	<1	1.3	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	25	<1	40 ft bwt
	5/22/2019	1,084.8	µg/L	PDB	<1	1.3	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	25	<1	69 ft bwt (10 ft above TD)
	8/21/2019	1,138.8	µg/L	PDB	<1	1.4	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	32	<1	Duplicate
	8/21/2019	1,138.8	µg/L	PDB	<1	1.3	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	32	<1	- -
	11/21/2019	1,138.8	µg/L	PDB	<1	1.8	<1	<1	<5	<1	<1	<1	<5	1.0	<1	<1	41	<1	Duplicate
	11/21/2019	1,138.8	µg/L	PDB	<1	1.8	<1	<1	<5	<1	<1	1.2	<5	<1	<1	<1	39	<1	- -
MW-12																			
	3/4/2019	1,144.2	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	1.9	<1	- -
	5/23/2019	1,144.2	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	- -
	8/22/2019	1,144.2	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	- -
	11/21/2019	1,143.2	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	- -
MW-13																			
	3/1/2019	1,148.7	µg/L	PDB	<1	2.3	<1	<1	<1	<1	<5	<1	<5	2.1	<1	<1	5.7	<1	- -
	5/21/2019	1,148.7	µg/L	PDB	<1	3.7	<1	<1	<5	<1	<1	1.1	<5	1.7	<1	<1	6.0	<1	Duplicate
	5/21/2019	1,148.7	µg/L	PDB	<1	3.6	<1	<1	<5	<1	<1	1.1	<5	1.7	<1	<1	5.9	<1	- -
AWQS:					**N/A**	**7**	**5**	**80**	**N/A**	**100**	**80**	**70**	**N/A**	**5**	**1,000**	**100**	**5**	**2**	

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Sample Method	1,1-Dichloroethane	1,1-Dichloroethene	Benzene	Bromoform	Carbon disulfide	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	Naphthalene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Vinyl Chloride	Comments
MW-13																			
	8/22/2019	1,148.7	µg/L	PDB	<1	2.4	<1	<1	<5	<1	<1	<1	<5	1.3	<1	<1	3.8	<1	--
	11/18/2019	1,170.7	µg/L	PDB	<1	1.5	<1	<1	<5	<1	<1	1.0	<5	<1	<1	<1	2.2	<1	Duplicate
	11/18/2019	1,170.7	µg/L	PDB	<1	1.6	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	2.2	<1	--
PW																			
	2/28/2019	1,148.0	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	--
	5/21/2019	1,148.0	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	--
	8/22/2019	1,098.0	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	0.63 J	<1	--
	11/18/2019	1,147.0	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	--
TSSV-02-PZ																			
	3/4/2019	1,147.2	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	--
	5/21/2019	1,148.2	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	--
	8/20/2019	1,148.2	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	--
	11/19/2019	1,146.2	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	1.6	<5	<1	<1	<1	<1	<1	--
TSSV-03-PZ																			
	3/1/2019	1,142.7	µg/L	PDB	1.2	3.0	<1	<1	<1	<1	<5	10.0	<5	3.9	<1	<1	170	<1	Duplicate
	3/1/2019	1,142.7	µg/L	PDB	1.2	3.2	<1	<1	<1	<1	<5	10	<5	3.9	<1	<1	180	<1	--
	5/23/2019	1,142.7	µg/L	PDB	1.1	3.1	<1	<1	<5	<1	<1	9.4	<5	3.3	<1	<1	140	<1	--
	8/20/2019	1,142.7	µg/L	PDB	<1	2.2	<1	<1	<5	<1	<1	6.8	<5	2.1	<1	<1	110	<1	--
	11/19/2019	1,143.7	µg/L	PDB	<1	2.3	<1	<1	<5	<1	<1	7.4	<5	2.3	<1	<1	92	<1	--
TSSV-04-PZ																			
	3/1/2019	1,146.0	µg/L	PDB	<1	4.6	<1	<1	<1	<1	<5	7.1	<5	5.7	<1	<1	94	<1	--
	5/23/2019	1,146.0	µg/L	PDB	<1	6.0	<1	<1	<5	<1	<1	7.7	<5	5.7	<1	<1	96	<1	--
	8/20/2019	1,146.0	µg/L	PDB	<1	5.2	<1	<1	<5	<1	<1	6.5	<5	5.5	<1	<1	110	<1	--
	11/19/2019	1,149.0	µg/L	PDB	<1	5.6	<1	<1	<5	<1	<1	6.8	<5	5.7	<1	<1	87	<1	--
TSSV-05-PZ																			
	3/4/2019	1,145.7	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	4.8	<1	--
AWQS:					**N/A**	**7**	**5**	**80**	**N/A**	**100**	**80**	**70**	**N/A**	**5**	**1,000**	**100**	**5**	**2**	

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Sample Method	1,1-Dichloroethane	1,1-Dichloroethene	Benzene	Bromoform	Carbon disulfide	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	Naphthalene	Tetrachloroethene	Toluene	trans-1,2-dichloroethene	Trichloroethene	Vinyl Chloride	Comments
TSSV-05-PZ																			
	5/23/2019	1,145.7	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	3.4	<1	- -
	8/20/2019	1,145.7	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	2.9	<1	- -
	11/19/2019	1,144.7	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	3.1	<1	- -
TSSV-06-PZ																			
	3/4/2019	1,147.9	µg/L	PDB	<1	1.3	<1	<1	<1	<1	<5	<1	<5	2.4	<1	<1	14	<1	- -
	5/21/2019	1,147.9	µg/L	PDB	<1	1.0	<1	<1	<5	<1	<1	<1	<5	1.5	<1	<1	9.8	<1	- -
	8/22/2019	1,147.9	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	1.5	<1	- -
	11/18/2019	1,146.9	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	1.7	<1	- -
TSSV-07-PZ																			
	3/1/2019	1,146.9	µg/L	PDB	<1	<1	<1	<1	<1	<1	<5	<1	<5	<1	<1	<1	<1	<1	- -
	5/21/2019	1,147.9	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	1.2	<1	- -
	8/22/2019	1,147.9	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	- -
	11/18/2019	1,146.9	µg/L	PDB	<1	<1	<1	<1	<5	<1	<1	1.3	<5	<1	<1	<1	1.5	<1	- -
AWQS:					**N/A**	**7**	**5**	**80**	**N/A**	**100**	**80**	**70**	**N/A**	**5**	**1,000**	**100**	**5**	**2**	

Notes: AWQS - Aquifer Water Quality Standard
Grey text indicates result was less than the reporting limit
Red text indicates a result detected above the AWQS
µg/L - micrograms per liter
ft amsl - feet above mean sea level
bwt - below water table
PDB - Passive Diffusion Bag
TD - Total Depth
VOC - Volatile Organic Compound
Analytical method is VOCs by SW 8260B unless otherwise noted.
- = data not applicable or not available
* = approximate sample location
B1 = Method blank: Target analyte detected in method blank at or above the method reporting limit.
D2 = Dilution: Sample required dilution due to high concentration of target analyte. See case narrative.
E4 = Estimated Concentration: Concentration estimated. Analyte was detected below laboratory minimum reporting level limit (mrl).
E8 = Analyte reported to mdl per project specification. Target analyte was not detected in the sample.
H1 = Hold time: Sample analysis performed past holding time.
M3 = Matrix spike: The spike recovery value is unusable the analyte concentration in the sample is disproportionate to the spike level the associated blank spike recovery was acceptable
N1 = General: see case narrative.
V1 = Calibration verification: CCV recovery was above method acceptance limits. This target analyte was not detected in the sample

Table 4. Groundwater Analytical Results - Summary of General Chemistry

Cave Creek Landfill, Maricopa County

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Alkalinity, (as CaCO3)	Chloride	Fluoride	Nitrate (As N)	Sulfate	Comments
MW-02									
	2/27/2019	1,142.0	mg/L	380	18	0.16	<0.1	<5	--
	8/22/2019	1,142.0	mg/L	310	18	<0.7	<0.5	2.8	--
MW-03									
	3/4/2019	1,142.4	mg/L	140	19	0.29	<0.1	<5	--
	8/21/2019	1,143.4	mg/L	120	18	<0.7	<0.5	1.3	--
MW-04									
	2/27/2019	1,141.8	mg/L	220	23	0.30	<0.1	6.9	--
	8/21/2019	1,141.8	mg/L	210	22	<0.7	<0.5	7.8	--
MW-05									
	2/27/2019	1,141.1	mg/L	220	20	0.63	<0.1	8.3	--
	8/22/2019	1,142.1	mg/L	210	18	<0.7	<0.5	9.0	--
MW-06									
	2/28/2019	1,140.7	mg/L	230	17	0.22	<0.1	9.8	--
	8/21/2019	1,140.7	mg/L	210	16	<0.7	<0.5	15	--
	8/21/2019	1,140.7	mg/L	200	16	<0.7	<0.5	15	Duplicate
MW-07									
	2/28/2019	1,141.6	mg/L	170	22	0.30	<0.1	<5	--
	8/21/2019	1,141.6	mg/L	150	22	<0.7	<0.5	0.98	--
MW-08									
	2/27/2019	1,147.1	mg/L	120	20	0.39	<0.1	<5	Duplicate
	2/27/2019	1,147.1	mg/L	120	20	0.39	<0.1	<5	--
	8/22/2019	1,148.1	mg/L	110	18	<0.7	<0.5	<0.5	--
AWQS:				**N/A**	**N/A**	**4**	**10**	**N/A**	

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Alkalinity, (as CaCO3)	Chloride	Fluoride	Nitrate (As N)	Sulfate	Comments
PW									
	2/28/2019	1,148.0	mg/L	240	21	0.33	1.3	18	- -
	8/22/2019	1,098.0	mg/L	210	21	<0.7	1.4	19	- -
AWQS:				**N/A**	**N/A**	**4**	**10**	**N/A**	

Notes: AWQS - Aquifer Water Quality Standard
Grey text indicates result was less than the reporting limit
Bold text indicates a result detected above the AWQS
mg/L - milligrams per liter
ft amsl - feet above mean sea level
- = data not applicable or not available

Table 5. Groundwater Analytical Results - Summary of Metals Data

Cave Creek Landfill, Maricopa County

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Comments
MW-02																			
	2/27/2019	1,142.0	mg/L	<0.01	0.011	0.041	<0.002	<0.002	<0.01	<0.01	<0.01	<0.005	<0.01	<0.01	<0.005	<0.01	<0.02	0.20	--
	8/22/2019	1,142.0	mg/L	<0.006	0.013	0.036	<0.004	<0.005	<0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	0.17	--
MW-03																			
	3/4/2019	1,142.4	mg/L	<0.01	<0.01	0.017	<0.002	<0.002	<0.01	<0.01	<0.01	<0.005	<0.01	<0.01	<0.005	<0.01	<0.02	0.48	--
	8/21/2019	1,143.4	mg/L	<0.006	<0.01	0.016	<0.004	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.34	--
MW-04																			
	2/27/2019	1,141.8	mg/L	<0.01	<0.01	0.018	<0.002	<0.002	<0.01	<0.01	<0.01	0.0063	<0.01	<0.01	<0.005	<0.01	0.029	0.069	--
	8/21/2019	1,141.8	mg/L	<0.006	0.012	0.011	<0.004	<0.005	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	<0.01	<0.01	0.023	0.029	--
MW-05																			
	2/27/2019	1,141.1	mg/L	<0.01	<0.01	0.021	<0.002	<0.002	<0.01	<0.01	<0.01	<0.005	<0.01	<0.01	<0.005	<0.01	<0.02	0.17	--
	8/22/2019	1,142.1	mg/L	<0.006	<0.01	0.013	<0.004	<0.005	<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	0.15	--
MW-06																			
	2/28/2019	1,140.7	mg/L	<0.01	<0.01	0.0093	<0.002	<0.002	<0.01	<0.01	0.026	<0.005	<0.01	<0.01	<0.005	<0.01	<0.02	2.1	--
	8/21/2019	1,140.7	mg/L	<0.006	<0.01	<0.01	<0.004	<0.005	<0.01	<0.01	<0.01	0.016	<0.01	<0.01	<0.01	<0.01	<0.01	0.13	--
	8/21/2019	1,140.7	mg/L	<0.006	<0.01	0.014	<0.004	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.021	Duplicate
MW-07																			
	2/28/2019	1,141.6	mg/L	<0.01	0.013	0.014	<0.002	<0.002	<0.01	<0.01	<0.01	<0.005	<0.01	<0.01	<0.005	<0.01	<0.02	<0.05	--
	8/21/2019	1,141.6	mg/L	<0.006	<0.01	0.017	<0.004	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.075	--
MW-08																			
	2/27/2019	1,147.1	mg/L	<0.01	<0.01	0.016	<0.002	<0.002	<0.01	<0.01	<0.01	<0.005	<0.01	<0.01	<0.005	<0.01	<0.02	0.092	Duplicate
	2/27/2019	1,147.1	mg/L	<0.01	<0.01	0.017	<0.002	<0.002	<0.01	<0.01	<0.01	<0.005	<0.01	<0.01	<0.005	<0.01	<0.02	0.12	--
	8/22/2019	1,148.1	mg/L	<0.006	<0.01	<0.01	<0.004	<0.005	<0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	0.27	--
PW																			
	2/28/2019	1,148.0	mg/L	<0.01	<0.01	0.0062	<0.002	<0.002	<0.01	<0.01	<0.01	<0.005	<0.01	<0.01	<0.005	<0.01	<0.02	0.092	--
	8/22/2019	1,098.0	mg/L	<0.006	0.012	<0.01	<0.004	<0.005	<0.01	<0.01	<0.01	0.019	<0.01	<0.01	<0.01	<0.01	0.016	0.052	--
AWQS:				**0.006**	**0.01**	**2.0**	**0.004**	**0.005**	**0.1**	**NA**	**NA**	**0.05**	**0.1**	**0.05**	**NA**	**0.002**	**NA**	**NA**	
Upper Background Threshold Value:				*****	**0.1**	**0.25**	*****	*****	**0.025**	**0.025**	**0.025**	**0.1**	**0.25**	**0.05**	*****	*****	**0.045**	**0.7948**	

Notes: AWQS - Aquifer Water Quality Standard
Grey text indicates result was less than the reporting limit
Red text indicates a result detected above the AWQS
mg/L - milligrams per liter
ft amsl - feet above mean sea level
NA = data not applicable or not available
* = Two consecutive detect values in downgradient wells
B1 = Target analyte detected in method blank at or above the method reporting limit.

Table 6. Soil Vapor Analytical Results - Wellhead TO-15 Analysis Data

Cave Creek Landfill, Maricopa County

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chlorobenzene	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comments
MW-09																					
	3/14/2019	1,179.2	µg/m³	<11,900	<14,800	<2,300	<2,440	<2,030	<2,030	2,380	<1,980	<1,980	<2,810	<4,950	8,040	<6,940	<6,780	<5,900	83,200	<1,280	- -
	6/4/2019	1,179.2	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	<39.7	<39.6	<39.6	<56.2	<99.0	110	<139	<136	<118	1,360	<25.6	- -
MW-09-S																					
	3/14/2019	1,724.2	µg/m³	<59.5	<73.8	<11.5	<12.2	<10.1	<10.1	19.7	<9.90	<9.90	46.1	43.8	90.0	<34.7	261	<29.5	874	<6.40	- -
	3/14/2019	1,724.2	µg/m³	<59.5	<73.8	<11.5	<12.2	<10.1	<10.1	19.9	<9.90	<9.90	44.4	43.8	96.1	<34.7	217	<29.5	810	<6.40	Duplicate
	6/4/2019	1,724.2	µg/m³	<59.5	<73.8	<11.5	<12.2	<10.1	<10.1	<9.93	<9.90	<9.90	27.5	<24.8	<19.2	<34.7	197	<29.5	<13.4	<6.40	- -
MW-09-M																					
	6/4/2019	1,524.2	µg/m³	<119	<148	<23.0	<24.4	113	<20.3	<19.9	24.9	<19.8	232	206	364	223	763	<59.0	306	<12.8	- -
	10/4/2019	1,524.2	µg/m³	<23.8	<29.5	<4.60	<4.88	8.91	<4.05	<3.97	<3.96	<3.96	17.2	15.2	20.7	16.7	43.5	<11.8	16.9	<2.56	- -
	12/3/2019	1,524.2	µg/m³	<23.8	<29.5	<4.60	17.5	89.9	<4.05	<3.97	13.7	<3.96	108	83.3	97.6	129	592	<11.8	212	<2.56	- -
MW-09-D																					
	3/14/2019	1,329.2	µg/m³	<59.5	<73.8	<11.5	<12.2	13.6	<10.1	<9.93	<9.90	<9.90	89.9	160	517	<34.7	172	<29.5	876	<6.40	- -
	6/4/2019	1,329.2	µg/m³	<59.5	<73.8	<11.5	<12.2	<10.1	<10.1	<9.93	<9.90	<9.90	52.0	74.3	118	<34.7	135	<29.5	703	<6.40	- -
	10/4/2019	1,329.2	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	23.0	29.9	27.4	<13.9	36.1	<11.8	258	<2.56	- -
	12/3/2019	1,329.2	µg/m³	<59.5 R6	<73.8	<11.5	<12.2	<10.1	<10.1	<9.93	<9.90	<9.90	37.4	50.7	36.4	<34.7	119	<29.5	703	<6.40	- -
MW-10																					
	6/4/2019	1,177.4	µg/m³	<238	<295	<46.0	140	4,460	<40.5	1,180	116	<39.6	8,710	18,500	1,990	<139	4,850	118	7,200	50.7	- -
	9/18/2019	1,177.4	µg/m³	<2,380	<2,950	<460	<488	9,400	<405	2,620	<396	<396	17,200	36,900	4,000	<1,390	6,220	<1,180	18,800	<256	- -
	12/3/2019	1,177.4	µg/m³	<2,380	<2,950	<460	<488	8,180	<405	1,380	<396	<396	12,500	22,900	2,450	<1,390	8,810	<1,180	18,100	<256	- -
MW-10-S																					
	3/14/2019	1,727.4	µg/m³	<59.5	<73.8	<11.5	12.9	80.8	<10.1	<9.93	<9.90	<9.90	2,280	8,070	559	<34.7	1,330	<29.5	48.9	<6.40	- -
	6/4/2019	1,727.4	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	<39.7	<39.6	<39.6	886	2,690	176	<139	1,040	<118	<53.7	<25.6	- -
	9/18/2019	1,727.4	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	<39.7	<39.6	<39.6	934	3,240	205	<139	1,200	<118	<53.7	<25.6	- -

Table 6. Soil Vapor Analytical Results - Wellhead TO-15 Analysis Data

Cave Creek Landfill, Maricopa County

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chlorobenzene	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comments
MW-10-M																					
	6/4/2019	1,527.4	µg/m³	<1,190	<1,480	<230	<244	2,820	<203	1,310	404	<198	10,800	12,900	2,260	<694	6,140	<590	1,360	<128	- -
	9/18/2019	1,527.4	µg/m³	<2,380	<2,950	<460	<488	3,650	<405	1,860	<396	<396	12,300	49,000	3,420	<1,390	2,360	<1,180	1,140	<256	- -
	12/3/2019	1,527.4	µg/m³	<2,380	<2,950	<460	<488	3,410	<405	1,120	<396	<396	10,500	29,500	2,280	<1,390	6,710	<1,180	1,510	<256	- -
MW-10-D																					
	3/14/2019	1,327.4	µg/m³	<2,380	<2,950	<460	<488	7,740	<405	1,030	<396	<396	7,030	21,600	1,330	1,470	3,580	<1,180	2,230	<6.40	- -
	6/4/2019	1,327.4	µg/m³	<2,380	<2,950	<460	<488	10,600	<405	1,230	<396	<396	7,480	22,600	1,210	2,070	7,390	<1,180	3,180	<256	- -
	9/18/2019	1,327.4	µg/m³	<2,380	<2,950	<460	<488	12,600	<405	1,600	<396	<396	7,810	26,400	1,470	3,020	5,070	<1,180	2,540	<256	- -
	12/3/2019	1,327.4	µg/m³	<1,190	<1,480	<230	322	13,300	<203	869	<198	<198	5,060	16,700	980	3,710	9,700	<590	3,630	<128	Duplicate
	12/3/2019	1,327.4	µg/m³	<1,190 R6	<1,480	<230	312	13,100	<203	695	<198	<198	4,280	15,000	804	3,340	8,880	<590	3,270	<128	- -
MW-11																					
	3/21/2019	1,165.1	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	<11.8	6.66	<2.56	- -
	3/21/2019	1,165.1	µg/m³	25.0	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	<11.8	6.01	<2.56	Duplicate
	6/6/2019	1,165.1	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	15.3	<11.8	14.7	<2.56	Duplicate
	6/6/2019	1,165.1	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	17.0	<11.8	13.3	<2.56	- -
	10/3/2019	1,165.1	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	341	<39.6	<39.6	77.6	130	869	<139	<136	<118	1,900	<25.6	- -
MW-12																					
	3/19/2019	1,183.6	µg/m³	38.7	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	18.2	19.9	<2.56	- -
	6/6/2019	1,183.6	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	<11.8	<5.37	<2.56	- -
	9/19/2019	1,183.6	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	<11.8	<5.37	<2.56	- -
	12/5/2019	1,183.6	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	<11.8	<5.37	<2.56	- -
MW-12-S																					
	3/19/2019	1,727.6	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	9.33	19.4	196	<13.9	60.3	<11.8	37.1	<2.56	- -
	6/6/2019	1,727.6	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	7.08	12.7	101	<13.9	89.5	<11.8	63.5	<2.56	- -

Table 6. Soil Vapor Analytical Results - Wellhead TO-15 Analysis Data

Cave Creek Landfill, Maricopa County

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chlorobenzene	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comments
MW-12-S																					
	9/20/2019	1,727.6	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	7.64	15.0	128	<13.9	69.3	<11.8	30.9	<2.56	- -
	12/5/2019	1,727.6	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	7.98	16.4	69.2	<13.9	60.7	<11.8	25.2	<2.56	- -
MW-12-M																					
	3/19/2019	1,527.6	µg/m³	<476	<590	<92.0	<97.6	<81.0	<81.0	<79.4	<79.2	<79.2	461	992	7,450	<278	363	<236	<107	<51.2	- -
	6/6/2019	1,527.6	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	<39.7	<39.6	<39.6	123	245	1,470	<139	157	<118	59.1	<25.6	- -
	9/20/2019	1,527.6	µg/m³	57.4	46.8	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	177	<5.37	<2.56	- -
	12/5/2019	1,527.6	µg/m³	<23.8	<29.5	<4.60	<4.88	19.4	<4.05	<3.97	<3.96	<3.96	173	271	1,160	<13.9	466	<11.8	24.9	<2.56	- -
MW-12-D																					
	3/19/2019	1,327.6	µg/m³	316	<73.8	<11.5	<12.2	37.3	<10.1	<9.93	<9.90	<9.90	319	679	296	<34.7	223	<29.5	19.1	<6.40	- -
	6/6/2019	1,327.6	µg/m³	258	<73.8	<11.5	<12.2	<10.1	<10.1	<9.93	<9.90	<9.90	<14.1	<24.8	36.8	<34.7	41.4	<29.5	26.6	<6.40	- -
	12/5/2019	1,327.6	µg/m³	32.8	<29.5	<4.60	<4.88	183	<4.05	7.46	<3.96	<3.96	569	1,350	189	<13.9	623	<11.8	65.2	<2.56	- -
MW-13																					
	3/19/2019	1,193.0	µg/m³	36.7	<29.5	25.2	6.83	26.6	<4.05	763	43.9	<3.96	20.8	103	320	82.2	445	99.4	487	<2.56	- -
	6/5/2019	1,193.0	µg/m³	<11,900	<14,800	<2,300	<2,440	<2,030	<2,030	120,000	7,130	<1,980	<2,810	12,900	74,400	29,300	43,300	<5,900	86,500	<1,280	- -
	9/19/2019	1,193.0	µg/m³	<119	<148	<23.0	<24.4	<20.3	<20.3	378	23.4	<19.8	<28.1	95.0	199	95.4	144	<59.0	258	<12.8	- -
	12/4/2019	1,193.0	µg/m³	<23,800	<29,500	<4,600	<4,880	<4,050	<4,050	316,000	8,240	<3,960	<5,620	20,000	229,000	<13,900	197,000	<11,800	269,000	<2,560	- -
MW-13-S																					
	3/19/2019	1,727.0	µg/m³	<119	<148	<23.0	59.5	<20.3	<20.3	758	41.6	<19.8	30.3	751	111	<69.4	517	<59.0	141	23.6	- -
	6/5/2019	1,727.0	µg/m³	<59.5	<73.8	22.1	15.6	<10.1	<10.1	239	<9.90	<9.90	58.7	1,550	57.8	<34.7	719	<29.5	120	<6.40	- -
	9/19/2019	1,727.0	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	322	96.6	<39.6	94.4	29,300	<76.6	<139	744	<118	169	141	- -
	12/4/2019	1,727.0	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	53.2	96.6	<39.6	<56.2	6,630	<76.6	<139	305	<118	<53.7	<25.6	- -
MW-13-M																					
	3/19/2019	1,527.0	µg/m³	<2,380	<2,950	736	<488	<405	<405	29,600	<396	<396	<562	1,310	4,640	<1,390	6,440	<1,180	2,230	<256	- -

Table 6. Soil Vapor Analytical Results - Wellhead TO-15 Analysis Data

Cave Creek Landfill, Maricopa County

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chlorobenzene	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comments
MW-13-M																					
	6/5/2019	1,527.0	µg/m³	<238	<295	996	69.3	165	<40.5	10,800	76.8	<39.6	156	571	1,650	<139	4,420	<118	1,860	<25.6	- -
	9/19/2019	1,527.0	µg/m³	<23.8	<29.5	323	5.17	7.94	<4.05	165	12.2	<3.96	<5.62	<9.90	12.6	78.3	490	<11.8	237	<2.56	- -
	9/19/2019	1,527.0	µg/m³	<119	<148	384	<24.4	<20.3	<20.3	146	<19.8	<19.8	<28.1	<49.5	<38.3	<69.4	561	<59.0	137	<12.8	Duplicate
	12/4/2019	1,527.0	µg/m³	<59.5	<73.8	226	<12.2	13.6	<10.1	395	<9.90	<9.90	14.6	80.7	114	<34.7	448	<29.5	158	<6.40	- -
MW-13-D																					
	3/19/2019	1,327.0	µg/m³	<238	<295	174	<48.8	56.7	<40.5	3,910	1,150	<39.6	272	532	1,810	1,530	1,940	<118	2,070	<25.6	- -
	6/5/2019	1,327.0	µg/m³	<2,380	<2,950	<460	<488	1,730	<405	19,500	17,800	<396	<562	2,770	3,050	153,000	15,700	<1,180	17,500	292	- -
	9/19/2019	1,327.0	µg/m³	<23,800	<29,500	<4,600	<4,880	<4,050	<4,050	5,080	6,180	<3,960	<5,620	<9,900	<7,660	181,000	<13,600	<11,800	7,300	<2,560	- -
	12/4/2019	1,327.0	µg/m³	<23,800	<29,500	<4,600	<4,880	<4,050	<4,050	12,700	6,180	<3,960	<5,620	<9,900	<7,660	335,000	21,300	<11,800	16,500	<2,560	- -
PW																					
	3/22/2019	1,201.4	µg/m³	<1,190	<1,480	<230	<244	<203	<203	<199	<198	<198	<281	<495	552	<694	<678	<590	5,480	<128	- -
	6/17/2019	1,201.4	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	<39.7	57.0	<39.6	<56.2	<99.0	233	<139	255	<118 R6	2,400	<25.6	- -
	10/7/2019	1,201.4	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	<39.7	50.7	<39.6	<56.2	<99.0	437	<139	304	<118	4,310	<25.6	- -
	12/11/2019	1,201.4	µg/m³	<238	<295	<46.0	53.7	<40.5	<40.5	<39.7	49.1	<39.6	<56.2	<99.0	483	<139	578	<118	4,610	<25.6	- -
SVE-01																					
	3/22/2019	1,762.1	µg/m³	<1,190	<1,480	3,720	332	<203	<203	<199	598	<198	<281	<495	743	<694	861	<590	10,500	<128	- -
	6/17/2019	1,762.1	µg/m³	<238	<295	1,660	136	<40.5	<40.5	47.6	355	<39.6	85.4	<99.0	228	<139	590	<118 R6	3,980	<25.6	- -
	10/7/2019	1,762.1	µg/m³	<238	<295	3,490	304	-	<40.5	54.0	721	<39.6	153	<99.0	440	<139	797	<118	12,900	<25.6	- -
	12/11/2019	1,762.1	µg/m³	<238	<295	2,620	230	<40.5	<40.5	<39.7	493	<39.6	107	<99.0	385	<139	1,230	<118	8,110	<25.6	- -
SVE-01-S																					
	3/22/2019	1,702.1	µg/m³	<2,380	<2,950	616	<488	<405	<405	<397	<396	<396	<562	<990	873	<1,390	1,650	<1,180	16,500	<256	- -
	6/14/2019	1,702.1	µg/m³	<238	<295	178	126	<40.5	<40.5	54.8	80.0	<39.6	116	<99.0	211	<139	689	<118 R6	4,330	<25.6	- -
	10/4/2019	1,702.1	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	<11.8	32.8	<2.56	- -

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chlorobenzene	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comments
SVE-01-S																					
	12/10/2019	1,702.1	µg/m³	<238	<295	1,160	205	<40.5	<40.5	<39.7	213	<39.6	95.5	<99.0	366	<139	1,150	<118	6,010	<25.6	- -
SVE-01-M																					
	3/22/2019	1,522.1	µg/m³	<1,190	<1,480	800	<244	<203	<203	<199	230	<198	<281	<495	620	<694	773	<590	8,000	<128	- -
	6/14/2019	1,522.1	µg/m³	<238	<295	984	149	<40.5	<40.5	64.3	283	<39.6	138	<99.0	294	<139	681	<118 R6	4,400	<25.6	- -
	10/4/2019	1,522.1	µg/m³	<23.8	<29.5	4.97	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	<11.8	21.4	<2.56	- -
	12/10/2019	1,522.1	µg/m³	<238	<295	958	132	<40.5	<40.5	<39.7	166	<39.6	70.8	<99.0	254	<139	723	<118	5,330	<25.6	- -
SVE-01-D																					
	3/22/2019	1,402.1	µg/m³	<1,190	<1,480	1,030	<244	<203	<203	<199	218	<198	<281	<495	590	<694	786	<590	8,060	<128	- -
	6/14/2019	1,402.1	µg/m³	<238	<295	1,130	143	<40.5	<40.5	57.2	271	<39.6	132	<99.0	267	<139	728	<118 R6	4,170	<25.6	- -
	10/4/2019	1,402.1	µg/m³	<23.8	<29.5	23.9	5.08	<4.05	<4.05	<3.97	4.28	<3.96	<5.62	<9.90	11.5	<13.9	23.3	<11.8	216	<2.56	- -
	12/10/2019	1,402.1	µg/m³	<238	<295	1,570	198	<40.5	<40.5	<39.7	269	<39.6	107	<99.0	385	<139	1,190	<118	6,280	<25.6	- -
SVE-02																					
	3/22/2019	1,500.4	µg/m³	<1,190	<1,480	<230	351	<203	<203	<199	317	<198	<281	<495	1,020	<694	1,740	<590	13,300	<128	- -
	6/17/2019	1,500.4	µg/m³	<238	<295	<46.0	181	<40.5	<40.5	46.8	169	<39.6	91.0	186	322	<139	1,200	<118 R6	6,770	44.5	- -
	10/7/2019	1,500.4	µg/m³	<1,190	<1,480	<230	303	<203	<203	<199	242	<198	<281	<495	996	<694	1,240	<590	13,600	<128	- -
	10/7/2019	1,500.4	µg/m³	<1,190	<1,480	<230	278	<203	<203	<199	234	<198	<281	<495	965	<694	895	<590	12,100	<128	Duplicate
	12/11/2019	1,500.4	µg/m³	<238	<295	<46.0	206	<40.5	<40.5	<39.7	133	<39.6	118	197	525	<139	1,620	<118	6,770	63.5	- -
SVE-02-S																					
	3/22/2019	1,750.4	µg/m³	<1,190	<1,480	<230	<244	<203	<203	<199	3,830	<198	<281	<495	<383	<694	685	<590	854	681	- -
	10/7/2019	1,750.4	µg/m³	<238	<295	54.3	<48.8	<40.5	<40.5	<39.7	4,950	<39.6	284	736	<76.6	<139	556	<118	688	700	- -
	12/10/2019	1,750.4	µg/m³	277	<295	57.0	<48.8	<40.5	<40.5	<39.7	2,020	<39.6	109	226	<76.6	<139	447	<118	493	218	Duplicate
	12/10/2019	1,750.4	µg/m³	397	<295	<46.0	<48.8	<40.5	<40.5	<39.7	2,670	<39.6	143	258	<76.6	<139	439	<118	567	316	- -

Table 6. Soil Vapor Analytical Results - Wellhead TO-15 Analysis Data

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chlorobenzene	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comments
SVE-02-M																					
	3/22/2019	1,600.4	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	<39.7	196	<39.6	199	453	<76.6	<139	618	<118	919	221	- -
	10/7/2019	1,600.4	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	9.27	<3.96	<5.62	<9.90	<7.66	<13.9	14.9	<11.8	24.0	<2.56	- -
	12/10/2019	1,600.4	µg/m³	<119	<148	36.3	51.7	<20.3	<20.3	<19.9	769	<19.8	212	327	39.1	<69.4	938	<59.0	1,120	154	- -
SVE-03																					
	3/21/2019	1,375.1	µg/m³	<5,950	<7,380	<1,150	<1,220	<1,010	<1,010	5,320	5,500	<990	2,980	7,130	21,000	<3,470	4,540	<2,950	77,300	<640	- -
	6/17/2019	1,375.1	µg/m³	<2,380	<2,950	<460	<488	<405	<405	2,040	3,800	<396	1,770	4,200	8,270	<1,390	4,680	<1,180 R6	44,900	<256	- -
	10/7/2019	1,375.1	µg/m³	<2,380	<2,950	<460	<488	632	<405	3,080	4,320	<396	2,630	6,240	13,600	<1,390	3,760	<1,180	67,700	<256	- -
	12/11/2019	1,375.1	µg/m³	<4,760	<5,900	2,370	<976	<810	<810	2,330	3,220	<792	2,230	4,610	12,000	<2,780	6,210	<2,360	60,100	<512	- -
SVE-03-S																					
	10/7/2019	1,725.1	µg/m³	<59.5	<73.8	<11.5	<12.2	<10.1	<10.1	<9.93	18.6	<9.90	34.3	149	47.9	<34.7	333	<29.5	149	<6.40	- -
	12/10/2019	1,725.1	µg/m³	<23.8	<29.5	<4.60	9.47	<4.05	<4.05	<3.97	43.5	<3.96	32.7	73.4	45.5	<13.9	644	<11.8	212	<2.56	- -
SVE-03-M																					
	3/21/2019	1,525.1	µg/m³	<238	<295	<46.0	88.8	<40.5	<40.5	<39.7	<39.6	<39.6	588	600	297	628	545	<118	644	<25.6	- -
	6/17/2019	1,525.1	µg/m³	<59.5	<73.8	44.2	95.2	19.6	<10.1	<9.93	26.3	<9.90	262	239	134	281	1,060	79.2 R6	771	<6.40	- -
	10/7/2019	1,525.1	µg/m³	<59.5	<73.8	<11.5	119	17.8	<10.1	<9.93	<9.90	<9.90	143	255	118	239	1,350	<29.5	937	<6.40	- -
	12/10/2019	1,525.1	µg/m³	<23.8	<29.5	<4.60	83.1	11.5	<4.05	<3.97	4.67	<3.96	81.9	90.4	84.4	142	582	<11.8	504	<2.56	- -
SVE-04																					
	3/21/2019	1,376.8	µg/m³	<23,800	<29,500	<4,600	<4,880	<4,050	<4,050	166,000	23,000	<3,960	<5,620	<9,900	86,600	239,000	42,000	<11,800	198,000	<2,560	- -
	6/17/2019	1,376.8	µg/m³	<11,900	<14,800	5,570	<2,440	<2,030	<2,030	86,500	19,500	<1,980	<2,810	<4,950	47,900	128,000	31,800	<5,900	121,000	<1,280	- -
	10/7/2019	1,376.8	µg/m³	<23,800	<29,500	<4,600	<4,880	<4,050	<4,050	73,000	18,100	<3,960	<5,620	<9,900	46,600	184,000	20,900	<11,800	172,000	<2,560	- -
	10/7/2019	1,376.8	µg/m³	<23,800	<29,500	<4,600	<4,880	<4,050	<4,050	28,700	5,390	<3,960	<5,620	<9,900	18,400	69,400	10,400	<11,800	58,500	<2,560	Duplicate
	12/11/2019	1,376.8	µg/m³	<23,800	<29,500	9,750	<4,880	<4,050	<4,050	52,400	11,100	<3,960	<5,620	<9,900	37,800	108,000	50,700	<11,800	181,000	<2,560	- -
	12/11/2019	1,376.8	µg/m³	<23,800	<29,500	<4,600	<4,880	<4,050	<4,050	44,900	6,180	<3,960	<5,620	<9,900	32,000	90,600	22,600	<11,800	106,000	<2,560	Duplicate

Table 6. Soil Vapor Analytical Results - Wellhead TO-15 Analysis Data

Cave Creek Landfill, Maricopa County

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chlorobenzene	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comments
SVE-04-S																					
	3/21/2019	1,725.8	µg/m³	104	<73.8	343	19.5	<10.1	<10.1	<9.93	97.8	<9.90	429	81.2	110	<34.7	292	<29.5	691	<6.40	- -
	10/7/2019	1,725.8	µg/m³	<59.5	<73.8	101	<12.2	<10.1	<10.1	<9.93	14.5	<9.90	279	50.2	51.7	<34.7	147	<29.5	495	<6.40	- -
	12/10/2019	1,725.8	µg/m³	<23.8	<29.5	179	14.7	<4.05	<4.05	<3.97	24.6	<3.96	<5.62	22.7	73.2	<13.9	415	<11.8	810	<2.56	- -
SVE-04-M																					
	6/17/2019	1,525.8	µg/m³	<1,190	<1,480	14,100	<244	<203	<203	<199	2,340	<198	292	<495	<383	<694	3,510	<590	4,170	<128	- -
	10/7/2019	1,525.8	µg/m³	<2,380	<2,950	10,700	<488	<405	<405	<397	2,270	<396	<562	<990	<766	<1,390	1,780	<1,180	3,440	<256	- -
	12/10/2019	1,525.8	µg/m³	<4,760	<5,900	31,300	<976	<810	<810	<794	3,340	<792	<1,120	<1,980	<1,530	<2,780	10,100	<2,360	13,900	<512	- -
TSSV-01-S																					
	3/18/2019	1,731.0	µg/m³	<2,380	<2,950	<460	<488	<405	<405	<397	<396	<396	<562	<990	1,200	<1,390	1,570	<1,180	14,900	<256	- -
	6/14/2019	1,731.0	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	<39.7	<39.6	<39.6	<56.2	<99.0	98.0	<139	<136	<118 R6	1,350	<25.6	- -
	10/3/2019	1,731.0	µg/m³	<238	<295	<46.0	106	<40.5	<40.5	<39.7	51.5	<39.6	<56.2	<99.0	480	<139	839	<118	6,660	<25.6	- -
	12/9/2019	1,731.0	µg/m³	<238	<295	<46.0	184	<40.5	<40.5	<39.7	96.6	<39.6	<56.2	<99.0	758	<139	1,160	<118	8,700	<25.6	- -
TSSV-01-M																					
	3/18/2019	1,531.0	µg/m³	<2,380	<2,950	12,000	1,320	-	<405	<397	515	<396	<562	<990	873	<1,390	3,280	<1,180	28,400	<256	- -
	3/18/2019	1,531.0	µg/m³	<2,380	<2,950	12,800	1,380	<405	<405	<397	523	<396	<562	<990	827	<1,390	3,440	<1,180	28,800	<256	Duplicate
	6/14/2019	1,531.0	µg/m³	<476	<590	1,060	213	<81.0	<81.0	<79.4	91.9	<79.2	<112	<198	<153	<278	499	264 R6	4,740	<51.2	- -
	6/14/2019	1,531.0	µg/m³	<1,190	<1,480	3,170	659	<203	<203	<199	313	<198	<281	<495	<383	<694	1,460	1,250	13,300	<128	Duplicate
	10/3/2019	1,531.0	µg/m³	<238	<295	2,970	1,130	<40.5	<40.5	44.5	447	<39.6	139	<99.0	475	<139	1,710	645	18,700	<25.6	- -
	10/3/2019	1,531.0	µg/m³	<1,190	<1,480	6,440	1,320	<203	<203	<199	424	<198	<281	<495	659	<694	4,080	<590	22,700	<128	Duplicate
	12/9/2019	1,531.0	µg/m³	<2,380	<2,950	1,130	1,170	<405	<405	<397	<396	<396	<562	<990	<766	<1,390	2,100	<1,180	26,800	<256	- -
TSSV-01-D																					
	3/18/2019	1,332.0	µg/m³	<2,380	<2,950	2,710	1,600	<405	<405	627	4,990	<396	<562	<990	3,770	1,590	4,200	<1,180	47,300	<256	- -
	6/14/2019	1,332.0	µg/m³	<1,190	<1,480	547	1,020	<203	<203	286	3,370	<198	<281	<495	766	<694	1,430	<590	19,000	<128	- -

Table 6. Soil Vapor Analytical Results - Wellhead TO-15 Analysis Data

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chlorobenzene	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comments
TSSV-01-D																					
	10/3/2019	1,332.0	µg/m³	<1,190	<1,480	1,170	1,170	<203	<203	250	2,480	<198	<281	<495	475	<694	2,050	<590	25,800	<128	- -
	12/9/2019	1,332.0	µg/m³	<476	<590	469	615	<81.0	<81.0	<79.4	1,540	<79.2	<112	<198	202	<278	1,160	<236	9,770	<51.2	- -
TSSV-02-S																					
	3/22/2019	1,731.2	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	<39.7	<39.6	<39.6	<56.2	<99.0	130	<139	393	172	3,250	<25.6	- -
	6/10/2019	1,731.2	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	35.2	37.9	<2.56	- -
	10/4/2019	1,731.2	µg/m³	25.3	<29.5	8.92	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	69.9	38.7	<2.56	- -
	12/9/2019	1,731.2	µg/m³	<238	<295	<46.0	82.0	-	<40.5	<39.7	<39.6	<39.6	<56.2	<99.0	156	<139	1,400	<118	8,490	<25.6	- -
TSSV-02-M																					
	3/22/2019	1,531.2	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	4.84	4.36	<3.96	<5.62	<9.90	<7.66	<13.9	15.3	262	100	<2.56	- -
	6/10/2019	1,531.2	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	<39.7	<39.6	<39.6	<56.2	<99.0	<76.6	<139	<136	<118	1,200	<25.6	- -
	10/4/2019	1,531.2	µg/m³	37.9	53.7	5.06	12.0	<4.05	<4.05	8.34	5.31	<3.96	<5.62	<9.90	18.4	<13.9	65.9	310	687	<2.56	- -
	12/9/2019	1,531.2	µg/m³	<238	<295	<46.0	68.3	<40.5	<40.5	122	69.7	<39.6	<56.2	<99.0	362	<139	1,110	4,990	7,890	<25.6	- -
TSSV-02-D																					
	3/22/2019	1,331.9	µg/m³	<238	<295	144	127	<40.5	<40.5	40.5	1,280	<39.6	<56.2	<99.0	446	<139	239	<118	4,530	<25.6	- -
	6/10/2019	1,331.9	µg/m³	<1,190	<1,480	<230	<244	<203	<203	<199	1,090	<198	<281	<495	513	<694	<678	<590	6,870	<128	- -
	10/4/2019	1,331.9	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	<39.7	225	<39.6	<56.2	<99.0	214	<139	<136	1,100	1,870	<25.6	- -
	12/9/2019	1,331.9	µg/m³	<2,380	<2,950	524	625	<405	<405	<397	6,970	<396	6,970	<990	<766	<1,390	2,320	<1,180	35,200	<256	- -
TSSV-02-PZ																					
	3/22/2019	1,181.9	µg/m³	29.9	<29.5	<4.60	<4.88	<4.05	<4.05	44.3	290	<3.96	<5.62	<9.90	48.9	<13.9	84.9	<11.8	269	<2.56	- -
	6/10/2019	1,181.9	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	61.9	1,070	<39.6	<56.2	<99.0	<76.6	<139	<136	<118	542	<25.6	- -
	10/4/2019	1,181.9	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	77.0	668	<39.6	<56.2	<99.0	<76.6	<139	<136	<118	324	<25.6	- -
	12/9/2019	1,181.9	µg/m³	<1,190	<1,480	<230	386	<203	<203	3,730	24,300	<198	1,470	<495	<383	<694	2,670	<590	24,000	<128	- -

Table 6. Soil Vapor Analytical Results - Wellhead TO-15 Analysis Data

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chlorobenzene	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comments
TSSV-03-S																					
	3/20/2019	1,731.3	µg/m³	659	<295	<46.0	<48.8	193	<40.5	<39.7	1,150	<39.6	400	4,250	225	443	964	<118	154	<25.6	- -
	6/7/2019	1,731.3	µg/m³	<238	<295	<46.0	<48.8	406	<40.5	<39.7	871	<39.6	299	4,490	123	495	2,950	<118	477	34.3	- -
	9/20/2019	1,731.3	µg/m³	<238	<295	<46.0	<48.8	164	<40.5	<39.7	121	<39.6	146	3,570	95.0	341	1,260	<118	213	<25.6	- -
	12/5/2019	1,731.3	µg/m³	<119	<148	<23.0	<24.4	110	<20.3	<19.9	108	<19.8	50.6	1,440	<38.3	123	941	<59.0	110	<12.8	- -
TSSV-03-M																					
	3/20/2019	1,531.3	µg/m³	<238	<295	<46.0	69.3	2,790	<40.5	148	1,150	<39.6	5,430	23,900	1,720	2,820	2,310	<118	753	<25.6	- -
	6/7/2019	1,531.3	µg/m³	<238	<295	<46.0	<48.8	1,500	<40.5	69.9	294	<39.6	3,130	8,960	761	1,290	2,280	<118	620	<25.6	- -
	9/20/2019	1,531.3	µg/m³	<1,190	<1,480	<230	<244	2,070	<203	<199	285	<198	2,840	11,300	797	1,690	2,050	<590	634	<128	- -
	12/5/2019	1,531.3	µg/m³	<119	<148	32.7	86.4	3,420	<20.3	79.4	699	<19.8	2,840	9,950	748	2,090	5,910	<59.0	1,010	<12.8	- -
	12/5/2019	1,531.3	µg/m³	<119	<148	34.0	100	3,330	<20.3	83.4	789	<19.8	2,770	9,900	814	2,030	4,690	<59.0	1,210	<12.8	Duplicate
TSSV-03-D																					
	9/20/2019	1,332.3	µg/m³	<238	<295	<46.0	<48.8	212	<40.5	<39.7	<39.6	<39.6	115	172	<76.6	<139	2,000	<118	658	<25.6	- -
	12/5/2019	1,332.3	µg/m³	<23.8	<29.5	<4.60	<4.88	75.1	<4.05	<3.97	<3.96	<3.96	52.7	140	8.73	22.8	93.2	<11.8	19.0	<2.56	- -
TSSV-03-PZ																					
	3/20/2019	1,182.3	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	<11.8	6.87	<2.56	- -
	6/7/2019	1,182.3	µg/m³	<238	<295	<46.0	<48.8	335	<40.5	163	159	<39.6	3,040	3,820	706	<139	1,580	<118	3,340	<25.6	- -
	12/5/2019	1,182.3	µg/m³	<23.8	<29.5	<4.60	<4.88	24.9	<4.05	<3.97	18.6	<3.96	20.8	77.0	<7.66	<13.9	39.9	<11.8	46.5	<2.56	- -
TSSV-04-S																					
	3/21/2019	1,730.9	µg/m³	<59.5	<73.8	<11.5	649	19.6	<10.1	22.6	25.9	<9.90	92.2	196	59.7	<34.7	838	<29.5	269	<6.40	- -
	6/10/2019	1,730.9	µg/m³	<23.8	<29.5	<4.60	86.6	14.0	<4.05	4.05	39.1	<3.96	68.3	193	<7.66	<13.9	319	<11.8	284	<2.56	- -
TSSV-04-M																					
	10/3/2019	1,530.9	µg/m³	<59.5	<73.8	<11.5	49.5	<10.1	<10.1	<9.93	<9.90	<9.90	35.4	54.7	53.6	<34.7	439	<29.5	109	<6.40	- -

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chlorobenzene	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comments
TSSV-04-D																					
	3/21/2019	1,330.0	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	183	774	<39.6	<56.2	163	2,630	<139	419	<118	4,680	<25.6	- -
	6/10/2019	1,330.0	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	114	154	<39.6	<56.2	129	2,150	<139	797	<118	5,090	<25.6	- -
	10/3/2019	1,330.0	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	148	95.0	<39.6	<56.2	203	3,470	<139	434	<118	4,380	<25.6	- -
	12/9/2019	1,330.0	µg/m³	<238	<295	<46.0	51.7	<40.5	<40.5	306	2,400	<39.6	162	578	6,560	<139	835	<118	7,630	<25.6	- -
TSSV-04-PZ																					
	3/21/2019	1,182.2	µg/m³	25.3	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	<13.6	<11.8	7.63	<2.56	- -
	6/10/2019	1,182.2	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	72.9	377	<39.6	<56.2	<99.0	1,450	<139	367	<118 R6	2,750	28.7	- -
	10/3/2019	1,182.2	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	1,670	1,210	<39.6	<56.2	112	3,040	<139	1,280	<118	15,700	43.0	- -
	12/9/2019	1,182.2	µg/m³	<23,800	<29,500	<4,600	<4,880	<4,050	<4,050	74,600	6,180	<3,960	<5,620	<9,900	111,000	<13,900	43,900	<11,800	410,000	<2,560	- -
TSSV-05-S																					
	3/20/2019	1,734.7	µg/m³	<59.5	<73.8	<11.5	32.0	42.3	<10.1	11.3	89.1	<9.90	150	382	116	<34.7	678	<29.5	121	9.73	- -
	9/23/2019	1,734.7	µg/m³	<59.5	<73.8	12.0	35.4	50.4	<10.1	15.3	195	<9.90	111	627	87.7	<34.7	906	<29.5	170	13.1	- -
TSSV-05-M																					
	9/23/2019	1,534.7	µg/m³	<238	<295	<46.0	<48.8	90.7	<40.5	<39.7	93.5	<39.6	697	1,960	216	270	1,630	<118	175	34.3	- -
	12/6/2019	1,534.7	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	6.63	16.2	<7.66	<13.9	26.3	<11.8	7.95	<2.56	- -
TSSV-05-D																					
	3/20/2019	1,335.1	µg/m³	<238	<295	<46.0	<48.8	1,340	<40.5	307	1,150	<39.6	9,100	22,200	1,150	310	1,960	<118	914	<25.6	- -
	6/7/2019	1,335.1	µg/m³	<238	<295	<46.0	146	3,490	<40.5	610	1,320	<39.6	7,530	20,200	2,580	1,010	5,610	<118	2,640	<25.6	- -
	9/23/2019	1,335.1	µg/m³	<238	<295	<46.0	<48.8	311	<40.5	143	154	<39.6	982	2,950	239	165	773	<118	484	<25.6	- -
	12/6/2019	1,335.1	µg/m³	34.8	<29.5	<4.60	<4.88	39.9	<4.05	5.40	14.2	<3.96	101	197	22.5	24.4	94.8	<11.8	35.5	<2.56	- -
TSSV-05-PZ																					
	3/20/2019	1,185.1	µg/m³	<238	<295	<46.0	122	54.3	<40.5	505	1,150	<39.6	4,040	11,100	2,040	<139	1,230	<118	23,800	<25.6	- -
	3/20/2019	1,185.1	µg/m³	<238	<295	<46.0	126	47.8	<40.5	540	1,150	<39.6	4,320	9,550	2,110	<139	1,380	<118	17,900	<25.6	Duplicate

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chlorobenzene	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comments
TSSV-05-PZ																					
	6/7/2019	1,185.1	µg/m³	<238	<295	<46.0	<48.8	89.9	<40.5	75.4	101	<39.6	962	1,830	331	<139	719	<118	5,140	<25.6	Duplicate
	6/7/2019	1,185.1	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	66.7	81.6	<39.6	681	1,120	291	<139	500	<118	3,670	<25.6	- -
	9/23/2019	1,185.1	µg/m³	<238	<295	<46.0	51.7	43.7	<40.5	172	184	<39.6	1,660	3,860	669	<139	910	<118	6,230	<25.6	- -
	12/6/2019	1,185.1	µg/m³	34.8	<29.5	<4.60	<4.88	39.9	<4.05	5.40	14.2	<3.96	101	197	22.5	24.4	94.8	<11.8	35.5	<2.56	- -
TSSV-06-S																					
	3/14/2019	1,726.5	µg/m³	<238	<295	<46.0	95.6	<40.5	<40.5	<39.7	<39.6	<39.6	<56.2	<99.0	804	<139	597	<118	4,120	<25.6	- -
	6/5/2019	1,726.5	µg/m³	<238	<295	<46.0	69.3	<40.5	<40.5	<39.7	<39.6	<39.6	<56.2	<99.0	446	<139	673	<118	3,820	<25.6	- -
	9/18/2019	1,726.5	µg/m³	<238	<295	<46.0	83.0	<40.5	<40.5	<39.7	<39.6	<39.6	<56.2	<99.0	666	<139	496	<118	4,850	<25.6	- -
	12/3/2019	1,726.5	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	8.27	<13.9	19.9	<11.8	90.8	<2.56	- -
TSSV-06-M																					
	3/14/2019	1,526.5	µg/m³	<59.5	<73.8	<11.5	<12.2	<10.1	<10.1	<9.93	<9.90	<9.90	<14.1	<24.8	<19.2	<34.7	106	<29.5	460	<6.40	- -
	9/18/2019	1,526.5	µg/m³	<238	<295	<46.0	183	<40.5	<40.5	<39.7	116	<39.6	<56.2	<99.0	265	<139	620	<118	6,550	<25.6	- -
	12/3/2019	1,526.5	µg/m³	<23.8	<29.5	<4.60	8.00	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	<9.90	<7.66	<13.9	43.7	<11.8	275	<2.56	- -
TSSV-06-D																					
	3/14/2019	1,326.5	µg/m³	<238	<295	93.8	529	<40.5	<40.5	<39.7	1,150	<39.6	<56.2	<99.0	374	<139	860	<118	4,860	<25.6	- -
	6/5/2019	1,326.5	µg/m³	<238	<295	<46.0	166	<40.5	<40.5	<39.7	413	<39.6	<56.2	<99.0	775	<139	450	<118	3,620	<25.6	- -
	9/18/2019	1,326.5	µg/m³	<238	<295	<46.0	142	<40.5	<40.5	<39.7	193	<39.6	<56.2	<99.0	195	<139	239	<118	2,910	<25.6	- -
	12/3/2019	1,326.5	µg/m³	<23.8	<29.5	<4.60	7.32	<4.05	<4.05	<3.97	7.84	<3.96	<5.62	<9.90	<7.66	<13.9	27.3	<11.8	172	<2.56	- -
TSSV-07-S																					
	6/5/2019	1,729.5	µg/m³	<59.5	<73.8	<11.5	50.3	<10.1	<10.1	<9.93	<9.90	<9.90	483	71.5	34.1	<34.7	150	<29.5	566	<6.40	- -
	12/4/2019	1,729.5	µg/m³	<23.8	<29.5	<4.60	<4.88	<4.05	<4.05	<3.97	<3.96	<3.96	12.9	<9.90	<7.66	20.5	16.0	<11.8	38.4	<2.56	- -
TSSV-07-M																					
	3/18/2019	1,529.5	µg/m³	<238	<295	821	<48.8	<40.5	<40.5	362	310	<39.6	413	2,080	138	248	513	<118	1,590	<25.6	- -

Table 6. Soil Vapor Analytical Results - Wellhead TO-15 Analysis Data

Well Name	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chlorobenzene	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comments
TSSV-07-M																					
	9/19/2019	1,529.5	µg/m³	<238	<295	808	<48.8	<40.5	<40.5	111	149	<39.6	294	317	78.1	<139	473	<118	1,270	<25.6	- -
	12/4/2019	1,529.5	µg/m³	<23.8	<29.5	141	<4.88	<4.05	<4.05	<3.97	6.02	<3.96	7.42	<9.90	<7.66	<13.9	74.3	<11.8	115	<2.56	- -
TSSV-07-D																					
	3/18/2019	1,329.5	µg/m³	<23,800	<29,500	<4,600	<4,880	<4,050	<4,050	41,300	4,280	<3,960	<5,620	<9,900	21,000	<13,900	<13,600	<11,800	125,000	<2,560	Duplicate
	3/18/2019	1,329.5	µg/m³	<11,900	<14,800	<2,300	<2,440	<2,030	<2,030	51,600	5,430	<1,980	<2,810	<4,950	24,500	<6,940	<6,780	<5,900	158,000	<1,280	- -
	6/5/2019	1,329.5	µg/m³	<11,900	<14,800	<2,300	<2,440	<2,030	<2,030	55,600	8,120	<1,980	<2,810	<4,950	23,100	<6,940	9,290	<5,900	185,000	<1,280	- -
	6/5/2019	1,329.5	µg/m³	<11,900	<14,800	<2,300	<2,440	<2,030	<2,030	46,800	6,810	<1,980	<2,810	<4,950	18,100	<6,940	9,900	<5,900	156,000	<1,280	Duplicate
	9/19/2019	1,329.5	µg/m³	<11,900	<14,800	<2,300	<2,440	<2,030	<2,030	18,200	3,490	<1,980	<2,810	<4,950	5,750	<6,940	<6,780	<5,900	114,000	<1,280	- -
	12/4/2019	1,329.5	µg/m³	<238	<295	<46.0	<48.8	<40.5	<40.5	94.5	41.2	<39.6	<56.2	<99.0	<76.6	<139	<136	<118	2,120	<25.6	- -
TSSV-07-PZ																					
	3/18/2019	1,179.0	µg/m³	<5,950	<7,380	<1,150	<1,220	1,360	<1,010	84,200	37,400	<990	<1,410	3,710	54,200	<3,470	22,400	<2,950	103,000	3,480	- -
	6/6/2019	1,179.0	µg/m³	<2,380	<2,950	<460	<488	<405	<405	10,200	5,940	<396	<562	<990	5,870	<1,390	7,730	<1,180	22,200	374	- -
	9/19/2019	1,179.0	µg/m³	<47,600	<59,000	<9,200	<9,760	<8,100	<8,100	370,000	130,000	<7,920	<11,200	<19,800	216,000	<27,800	102,000	<23,600	455,000	7,070	- -
	9/19/2019	1,179.0	µg/m³	<47,600	<59,000	<9,200	<9,760	<8,100	<8,100	464,000	127,000	<7,920	<11,200	<19,800	230,000	<27,800	129,000	<23,600	478,000	8,090	Duplicate
	12/4/2019	1,179.0	µg/m³	<238	<295	<46.0	<48.8	77.8	<40.5	3,290	1,310	<39.6	<56.2	212	1,570	<139	2,170	<118	4,600	<25.6	- -
	12/4/2019	1,179.0	µg/m³	<238	<295	<46.0	<48.8	67.2	<40.5	2,940	1,130	<39.6	<56.2	189	1,420	<139	1,910	<118	4,210	<25.6	Duplicate

Notes: Grey text indicates a non-detected compound
µg/m³ - micrograms per cubic meter
ft amsl - feet above mean sea level
- = data not applicable or not available
R6 = Blank Spike/Blank Spike Duplicate Relative Percent Difference exceeded the method detection limit. Recovery met acceptance criteria.

Table 7. Soil Vapor Analytical Results - Process Sample TO-15 Analysis Data

Cave Creek Landfill, Maricopa County

Sample Location Identifier	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chloroform	Chlorobenzene	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comment
SP-01																					
	1/16/2019	-	µg/m³	<23,800	<29,500	<4,880	<4,600	<4,050	<4,050	145,000	29,500	<3,960	<5,620	<9,900	100,000	195,000	65,100	<11,800	343,000	<4,050	- -
	3/4/2019	-	µg/m³	<23,800	<29,500	<4,880	<4,600	<4,050	<4,050	118,000	26,300	<3,960	<5,620	<9,900	81,200	168,000	95,600	<11,800	249,000	<2,560	- -
	3/20/2019	-	µg/m³	<23,800	<29,500	<4,880	<4,600	<4,050	<4,050	71,100	12,500	<3,960	<5,620	<9,900	42,300	99,900	<13,600	<11,800	94,000	<2,560	- -
	4/17/2019	-	µg/m³	<23,800	<29,500	<4,880	<4,600	<4,050	<4,050	77,800	19,900	<3,960	<5,620	<9,900	54,400	113,000	49,100	<11,800	215,000	<2,560	- -
	5/15/2019	-	µg/m³	<23,800	<29,500	<4,880	<4,600	<4,050	<4,050	68,300	13,300	<3,960	<5,620	<9,900	37,300	88,500	29,800	<11,800	136,000	<2,560	- -
	6/19/2019	-	µg/m³	<23,800	<29,500	<4,880	<4,600	<4,050	<4,050	36,600	8,000	<3,960	<5,620	<9,900	29,600	59,300	18,400	<11,800	97,700	<2,560	- -
	7/17/2019	-	µg/m³	<23,800	<29,500	<4,880	<4,600	<4,050	<4,050	56,400 R6	14,000	<3,960	<5,620	<9,900	42,000	92,600	33,100	<11,800	169,000	<2,560	- -
	8/21/2019	-	µg/m³	<23,800	<29,500	<4,880	<4,600	<4,050	<4,050	64,300	14,100	<3,960	<5,620	<9,900	42,000	130,000	16,400	<11,800	131,000	<2,560	- -
	9/18/2019	-	µg/m³	<23,800	<29,500	<4,880	<4,600	<4,050	<4,050	45,300	11,600	<3,960	<5,620	<9,900	34,200	86,400	21,600	<11,800	142,000	<2,560	- -
	10/18/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	29,100	6,020	<1,980	<2,810	<4,950	19,300	66,600	<6,780	<5,900	50,800	<1,280 L5	- -
	11/22/2019	-	µg/m³	<2,380 R6	<2,950	<488	<460	<405	<405	1,350	1,910	<396	922	2,600	3,820	3,070	2,620	<1,180	36,700	<256	- -
	12/18/2019	-	µg/m³	<23,800	<29,500	<4,880	4,970	<4,050	<4,050	25,500	5,780	<3,960	<5,620	<9,900	25,300	54,100	25,200	<11,800	104,000	<2,560	- -
SP-02																					
	1/16/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990	<1,980	<1,980	<2,810	6,290	<3,830	143,000	<6,780	<5,900	<2,690	<1,280	- -
	3/4/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	10,600	<1,980	<1,980	<2,810	7,620	<3,830	221,000	<6,780	<5,900	<2,690	<1,280	- -
	3/20/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	59,200	<1,980	<1,980	<2,810	8,020	<3,830	175,000	<6,780	<5,900	<2,690	<1,280	- -
	4/17/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	5,520	<1,980	<1,980	<2,810	5,690	<3,830	151,000	<6,780	<5,900	<2,690	<1,280	- -
	5/15/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	1,990	<1,980	<1,980	<2,810	5,540	<3,830	99,900	<6,780	<5,900	2,740	<1,280	- -
	6/19/2019	-	µg/m³	<476	<590	<97.6	<92.0	<81.0	<81.0	<79.4	<79.2	<79.2	<112	1,940	<153	86,400	<271	<236	<107	95.2	- -
	7/17/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	16,200 R6	<1,980	<1,980	<2,810	<4,950	<3,830	74,600	<6,780	<5,900	<2,690	<1,280	- -
	8/21/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990	<1,980	<1,980	<2,810	4,950	<3,830	113,000	<6,780	<5,900	<2,690	<1,280	- -
	9/18/2019	-	µg/m³	<23,800	<29,500	<4,880	<4,600	<4,050	<4,050	<3,970	<3,960	<3,960	<5,620	<9,900	<7,660	145,000	<13,600	<11,800	<5,370	<2,560	- -

Table 7. Soil Vapor Analytical Results - Process Sample TO-15 Analysis Data

Cave Creek Landfill, Maricopa County

Sample Location Identifier	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chloroform	Chlorobenzene	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comment
SP-02																					
	10/18/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990	<1,980	<1,980	<2,810	5,540	<3,830	142,000	<6,780	<5,900	<2,690	<1,280 L5	- -
	11/22/2019	-	µg/m³	<11,900 R6	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990	<1,980	<1,980	<2,810	<4,950	<3,830	78,100	<6,780	<5,900	<2,690	<1,280	- -
	12/18/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990	<1,980	<1,980	<2,810	<4,950	<3,830	43,400	<6,780	<5,900	5,910	<1,280	- -
SP-03																					
	1/16/2019	-	µg/m³	<5,950	<7,380	<1,220	<1,150	<1,010	<1,010	<993	<990	<990	<1,410	8,470	<1,920	35,400	<3,390	<2,950	2,550	1,280	- -
	3/4/2019	-	µg/m³	<2,380	<2,950	<488	<460	<405	<405	<397	<396	<396	<562	6,530	<766	172,000	<1,360	<1,180	<537	742	- -
	3/20/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990	<1,980	<1,980	<2,810	8,220	<3,830	138,000	<6,780	<5,900	<2,690	<1,280	- -
	4/17/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990	<1,980	<1,980	<2,810	<4,950	<3,830	82,200	<6,780	<5,900	<2,690	<1,280	- -
	5/15/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990	<1,980	<1,980	<2,810	6,040	<3,830	105,000	<6,780	<5,900	6,340	<1,280	- -
	6/19/2019	-	µg/m³	<238	<295	<48.8	<46.0	<40.5	<40.5	<39.7	<39.6	<39.6	<56.2	2,840	<76.6	<139	<136	<118	<53.7	147	- -
	7/17/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990 R6	<1,980	<1,980	<2,810	<4,950	<3,830	104,000	<6,780	<5,900	<2,690	<1,280	- -
	8/21/2019	-	µg/m³	<238	<295	<48.8	<46.0	<40.5	<40.5	<39.7	<39.6	<39.6	<56.2	2,850	<76.6	<139	<136	<118	<53.7	167	- -
	9/18/2019	-	µg/m³	<23.8	<29.5	<4.88	<4.60	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	173	<7.66	<13.9	<13.6	<11.8	<5.37	<2.56	- -
	10/18/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990	<1,980	<1,980	<2,810	8,760	<3,830	116,000	<6,780	<5,900	<2,690	<1,280 L5	- -
	11/22/2019	-	µg/m³	<23.8 R6	<29.5	<4.88	<4.60	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	48.5	<7.66	<13.9	<13.6	<11.8	<5.37	<2.56	- -
	12/18/2019	-	µg/m³	<23.8	<29.5	<4.88	<4.60	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	1,870	<7.66	1,240	<13.6	<11.8	<5.37	55.3	- -
SP-04																					
	1/16/2019	-	µg/m³	<5,950	<7,380	<1,220	<1,150	<1,010	<1,010	<993	<990	<990	<1,410	8,270	<1,920	32,300	<3,390	<2,950	<1,340	794	- -
	3/4/2019	-	µg/m³	<2,380	<2,950	<488	<460	<405	<405	<397	<396	<396	<562	7,970	<766	220,000	<1,360	<1,180	<537	773	- -
	3/20/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	4,170	<1,980	<1,980	<2,810	8,070	<3,830	170,000	<6,780	<5,900	11,200	<1,280	- -
	4/17/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990	<1,980	<1,980	<2,810	6,440	<3,830	108,000	<6,780	<5,900	<2,690	<1,280	- -
	5/15/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990	<1,980	<1,980	<2,810	6,830	<3,830	96,500	<6,780	<5,900	8,380	<1,280	- -

Table 7. Soil Vapor Analytical Results - Process Sample TO-15 Analysis Data

Cave Creek Landfill, Maricopa County

Sample Location Identifier	Sample Date	Sample Elevation (ft amsl)	Units	Acetone	2-Butanone (MEK)	Chloroform	Chlorobenzene	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Freon 11	Freon 12	Freon 113	Methylene chloride	Tetrachloroethene	Tetrahydrofuran	Trichloroethene	Vinyl Chloride	Comment
SP-04																					
	6/19/2019	-	µg/m³	<119	<148	<24.4	<23.0	<20.3	<20.3	<19.9	<19.8	<19.8	<28.1	1,760	<38.3	<69.4	<67.8	<59.0	<26.9	183	- -
	7/17/2019	-	µg/m³	<2,380	<2,950	<488	<460	<405	<405	<397 R6	<396	<396	<562	3,150	<766	53,800	<1,360	<1,180	<537	<256	- -
	8/21/2019	-	µg/m³	<238	<295	<48.8	<46.0	<40.5	<40.5	<39.7	<39.6	<39.6	<56.2	2,770	<76.6	<139	<136	<118	<53.7	148	- -
	9/18/2019	-	µg/m³	<23.8	<29.5	<4.88	<4.60	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	176	<7.66	<13.9	<13.6	<11.8	<5.37	<2.56	- -
	10/18/2019	-	µg/m³	<11,900	<14,800	<2,440	<2,300	<2,030	<2,030	<1,990	<1,980	<1,980	<2,810	7,080	<3,830	93,000	<6,780	<5,900	<2,690	<1,280 L5	- -
	11/22/2019	-	µg/m³	<23.8 R6	<29.5	<4.88	<4.60	<4.05	<4.05	<3.97	<3.96	<3.96	<5.62	44.6	<7.66	18.1	<13.6	<11.8	<5.37	<2.56	- -
	12/18/2019	-	µg/m³	<238	<295	<48.8	<46.0	<40.5	<40.5	<39.7	<39.6	<39.6	<56.2	1,970	<76.6	1,440	<136	<118	<53.7	49.2	- -

Notes: Grey text indicates a non-detected compound
µg/m³ - micrograms per cubic meter
ft amsl - feet above mean sea level
- = data not applicable or not available
L5 = Laboratory fortified blank/blank spike: The associated blank spike recovery was below method acceptance limits.
R6 = Duplicates: lfb/lfbd rpd exceeded the method control acceptance limit. Recovery met acceptance criteria

Date of Reading [Mon-DD-YR]	Blower Hour Meter Reading [hrs]	Time Operated Since Last Reading [hrs]	System Uptime [%]	VOC Concentration in Extracted Soil Vapor [mg/m^3]	SVE Flow Rate [scfm]	Hourly Rate of VOC Mass Extracted [lbs/hr]	VOC Mass Removed Since Last Reading [lbs]	Total VOC Mass Extracted Since Startup [lbs]
9/15/2015	2	---	---	200	482	0.36	0	0
9/29/2015	296	294	87	1,160	492	2.14	106	106
10/13/2015	579	284	84	426	479	0.76	606	712
10/27/2015	917	338	100	1,906	487	3.48	258	971
11/25/2015	1,343	426	61	1,143	497	2.13	1,482	2,452
12/29/2015	2,154	810	99	769	482	1.39	1,724	4,177
1/29/2016	2,738	584	79	875	486	1.59	811	4,988
2/23/2016	3,331	593	99	667	460	1.15	945	5,933
3/23/2016	3,779	448	64	574	459	0.99	514	6,447
4/29/2016	4,454	675	76	790	466	1.38	666	7,114
5/19/2016	4,930	476	99	641	453	1.09	656	7,770
6/17/2016	5,623	693	100	1,217	485	2.21	754	8,524
7/20/2016	6,080	457	58	607	640	1.45	1,011	9,535
8/19/2016	6,775	695	96	646	649	1.57	1,011	10,546
9/15/2016	7,276	501	77	621	656	1.53	787	11,333
10/20/2016	8,114	839	100	649	659	1.60	1,281	12,614
11/18/2016	8,547	432	62	470	665	1.17	692	13,306
12/16/2016	9,212	665	99	413	684	1.06	778	14,085
1/20/2017	10,055	843	100	459	684	1.18	891	14,976
2/16/2017	10,579	524	81	479	678	1.22	617	15,593
3/16/2017	11,248	669	100	396	680	1.01	815	16,408
4/20/2017	12,082	834	99	1,009	679	2.57	841	17,249
5/18/2017	12,750	668	99	398	656	0.98	1,715	18,963
6/16/2017	13,442	692	99	594	646	1.44	676	19,639
7/1/2017			SVE shut down for expansion construction. No sample collected.					
8/1/2017			SVE shut down for expansion construction. No sample collected.					
9/25/2017	14,168	726	30	1,138	682	2.91	1,043	20,682
10/23/2017	14,416	248	37	1,011	956	3.62	720	21,402
11/17/2017	14,899	484	81	900	964	3.25	1,752	23,154
12/20/2017	15,485	585	74	359	974	1.31	1,901	25,055
1/17/2018	15,758	273	41	460	944	1.63	358	25,413
2/23/2018	16,385	627	71	417	932	1.46	1,019	26,432
3/19/2018	16,908	524	91	503	933	1.76	762	27,194
4/23/2018	17,481	573	68	628	918	2.16	1,006	28,200
5/23/2018	18,124	642	89	535	889	1.78	1,387	29,588
6/20/2018	18,353	229	34	398	910	1.36	408	29,996
7/18/2018	18,900	548	81	875	899	2.95	743	30,739
8/15/2018	19,506	606	90	685	914	2.35	1,786	32,524
9/19/2018	20,080	574	68	791	917	2.72	1,346	33,871
10/17/2018	20,607	527	78	466	913	1.59	1,431	35,302
11/14/2018	21,227	620	92	480	913	1.64	989	36,291
12/19/2018	21,845	618	74	584	919	2.01	1,015	37,305
1/16/2019	22,131	286	43	518	934	1.81	574	37,880
3/4/2019	23,039	908	81	396	927	1.38	1,646	39,526
3/20/2019	23,418	379	99	178	932	0.62	521	40,047
4/17/2019	24,082	664	99	313	907	1.06	413	40,460
5/15/2019	24,747	665	99	218	909	0.74	707	41,167
6/19/2019	25,467	720	86	142	901	0.48	534	41,702
7/17/2019	26,135	668	99	239	904	0.81	320	42,022
8/21/2019	26,964	828	99	209	896	0.70	670	42,692
9/18/2019	27,499	536	80	199	899	0.67	376	43,068
10/18/2019	27,860	361	50	86	523	0.17	242	43,310
11/22/2019	28,668	808	96	39	911	0.13	136	43,446
12/18/2019	29,048	380	61	135	923	0.47	50	43,496

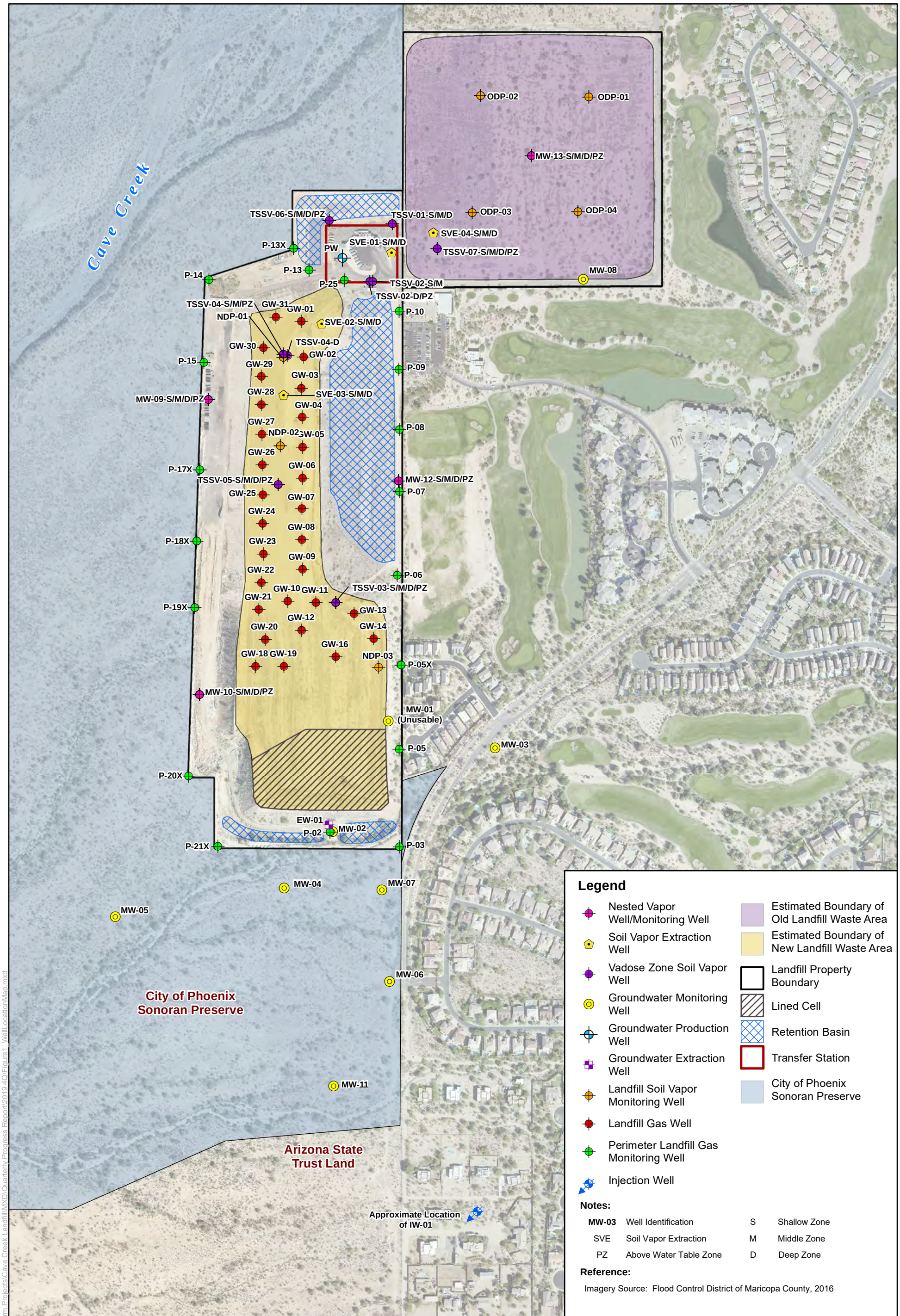
Notes:

Startup of the full-scale SVE system occurred on September 15, 2015. Mass totals presented in this table reflect full-scale SVE operations only.

Acronyms and Abbreviations:

DD - day of the month
hrs - hours
lbs - pounds
lbs/hr - pounds per hour
mg/m^3 - milligrams per cubic meter
Mon - month
scfm - standard cubic feet per minute
YR - year
VOC - Volatile Organic Compound per Maricopa County Air Quality Department Rule 100 Section 200.113

FIGURES



Job No.	1420202004
PM:	DF
Date:	2/28/2020
Scale:	1" = 450'

N

The map shown here has been created with all due and reasonable care and is strictly for use with Wood Environment & Infrastructure Solutions, Inc. Project Number 1420202004. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood Environment & Infrastructure Solutions, Inc. assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

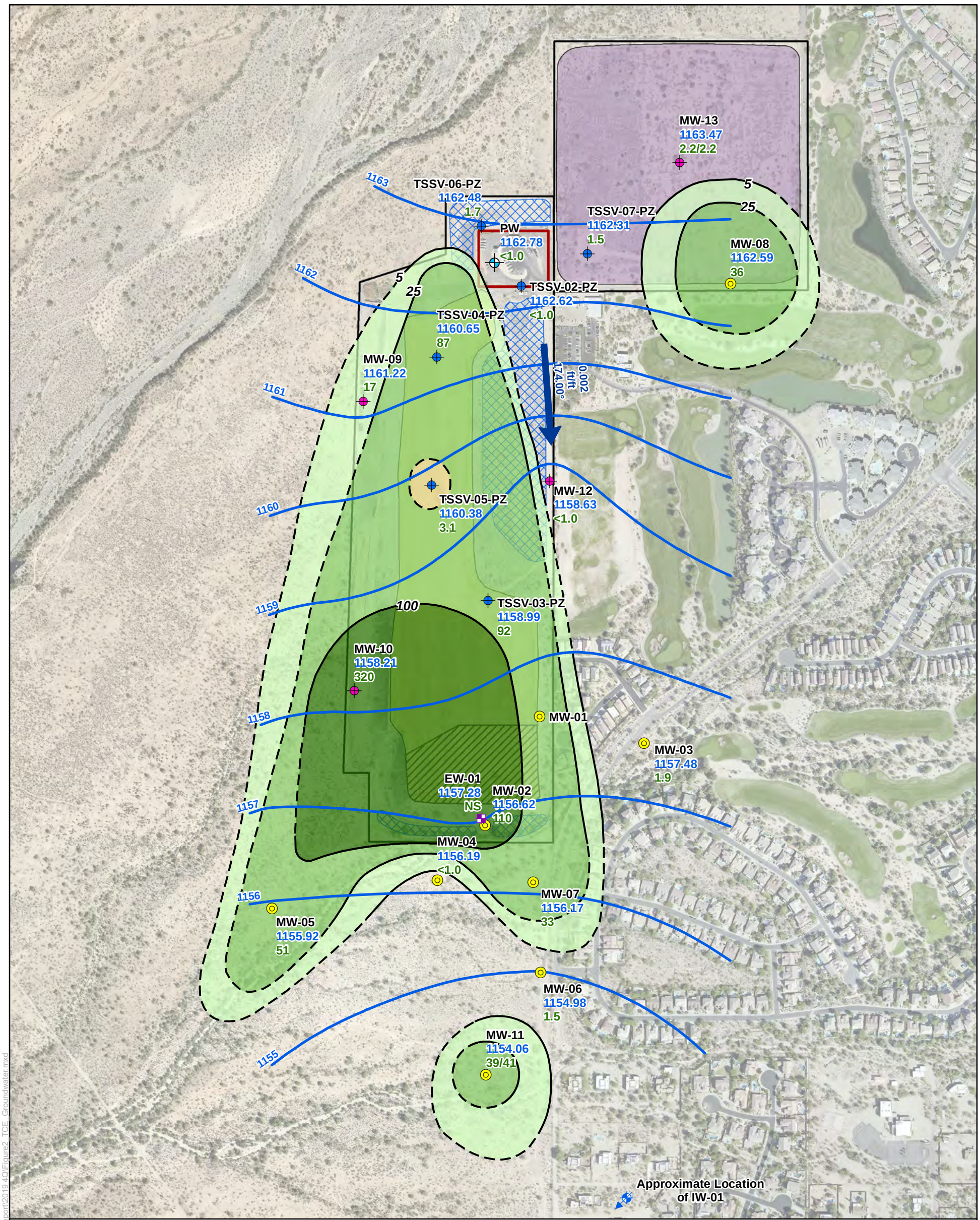
2019 4th Quarter Progress Report
Maricopa County Cave Creek Landfill
Phoenix, Arizona

Well Map

FIGURE
1

wood.

Path: X:\Projects\20-Longterm Projects\Cave Creek Landfill\MXD\Quarterly Progress Report\2019 4Q\Figure1_WellLocationMap.mxd



Legend

TCE Concentrations (µg/L) in Groundwater
(Dashed Where Inferred)

- 5-25
- 25-100
- 100-500

- Nested Vapor Well/ Monitoring Well
- Production Well
- Nested Vapor Well/ Piezometer
- Groundwater Monitoring Well
- Groundwater Extraction Well
- Injection Well

- Groundwater Elevation Contour (ft amsl) based upon May 2019 Data
- Groundwater Flow Direction (degrees) Groundwater Flow Gradient (ft/ft)
- Estimated Boundary of Old Landfill Waste Area
- Estimated Boundary of New Landfill Waste Area
- Landfill Property Boundaries
- Lined Cell
- Retention Basin
- Transfer Station

Notes:

MW-07	Well Identification
1156.17	Groundwater Elevation (ft amsl) collected in August 2019
33	TCE Concentration (µg/L) collected in November 2019
39/41	Original/Duplicate Results
*	EW-01 has a different screen interval and concentrations in this well are not comparable to the others on this figure.
NS	Not Sampled
µg/L	microgram per liter
ft amsl	feet above mean sea level
TCE	Trichloroethene

Reference:
Imagery Source: Flood Control District of Maricopa County, 2016

0 250 500 1,000 Feet

Job No.	1420202004
PM:	DF
Date:	2/28/2020
Scale:	1" = 500'

N

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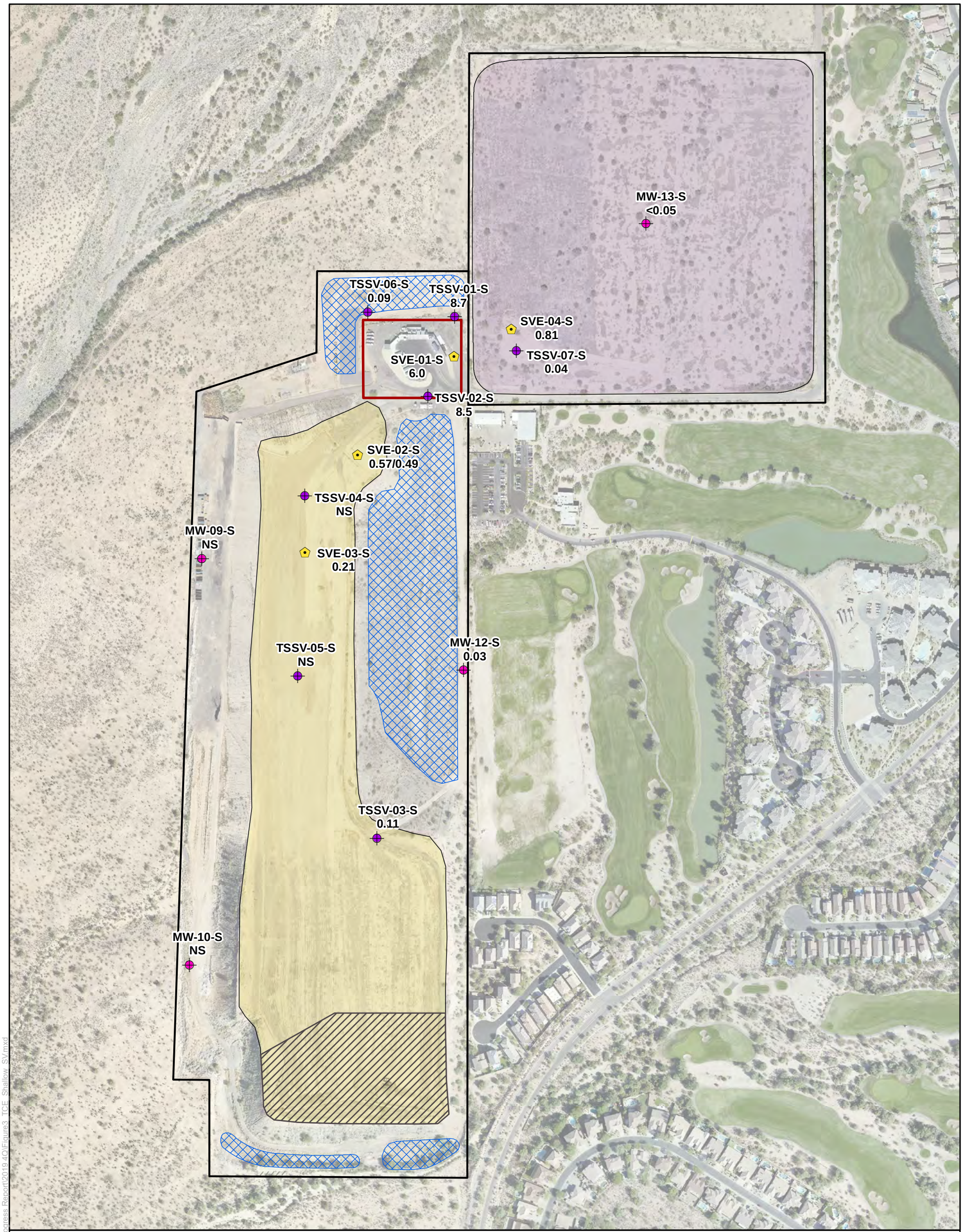
2019 4th Quarter Progress Report
Maricopa County Cave Creek Landfill
Phoenix, Arizona

Estimated Extent of TCE Plume in Groundwater November 2019

FIGURE **2**

wood.

Path: X:\Projects\20-Longterm Projects\Cave Creek Landfill\MXD\Quarterly Progress Report\2019 4Q\Figure2_TCE_Groundwater.mxd



Legend

TCE Concentrations (mg/m³) in Soil Vapor

No concentrations exceeded 10 mg/m³ this quarter

- Nested Vapor Well/Monitoring Well
- Soil Vapor Extraction Well
- Vadose Zone Soil Vapor Well
- Estimated Boundary of Old Landfill Waste Area
- Estimated Boundary of New Landfill Waste Area
- Landfill Property Boundaries
- Lined Cell
- Retention Basin
- Transfer Station

Notes:

TSSV-02-S	Well Identification
8.5	TCE soil gas result (mg/m³) collected December 2019
NS/NS	Duplicate Result
ft amsl	Feet above mean sea level
mg/m³	Milligram per cubic meter
NS	Not Sampled
TCE	Trichloroethene

Range of Vapor Well Screen Intervals: 1702-1750 ft amsl

Reference:

Imagery Source: Flood Control District of Maricopa County, 2016

0 175 350 525 700 Feet

Job No.:	1420202004
PM:	DF
Date:	2/28/2020
Scale:	1" = 350'

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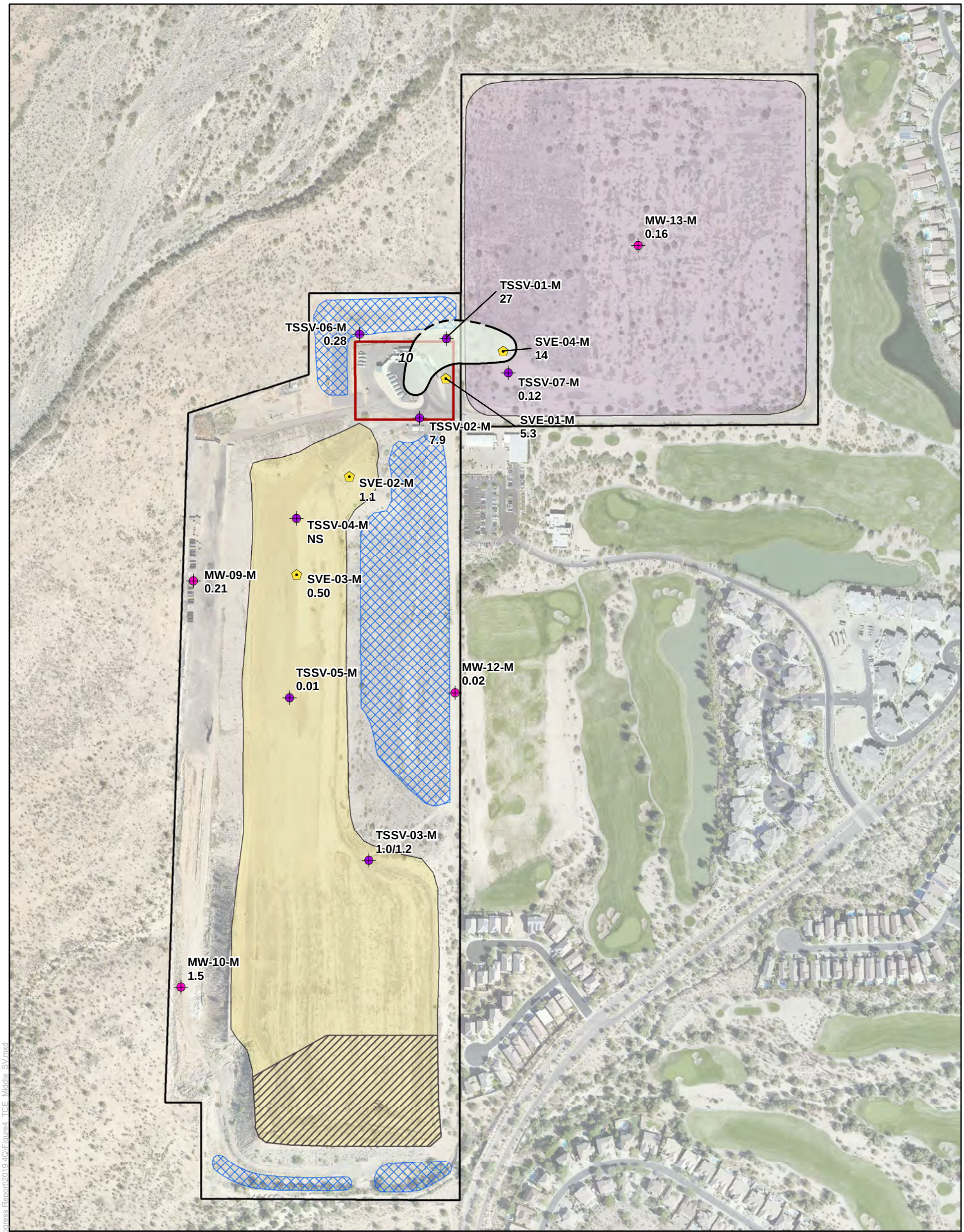
Maricopa County Cave Creek Landfill
Phoenix, Arizona

Shallow Zone TCE Soil Vapor Concentrations December 2019

FIGURE **3**

wood.

Path: X:\Projects\20-Longterm Projects\Cave Creek Landfill\MXD\Quarterly Progress Report\2019 4Q\Figure3_TCE_Shallow_SV.mxd



Legend

TCE Concentrations (mg/m³) in Soil Vapor

(Dashed Where Inferred)

10-100

- Nested Vapor Well/Monitoring Well
- Soil Vapor Extraction Well
- Vadose Zone Soil Vapor Well
- Estimated Boundary of Old Landfill Waste Area
- Estimated Boundary of New Landfill Waste Area
- Landfill Property Boundaries
- Lined Cell
- Retention Basin
- Transfer Station

Notes:

TSSV-07-M	Well Identification
0.12	TCE soil gas result (mg/m³) collected December 2019
1.0/1.2	Duplicate Result
ft amsl	Feet above mean sea level
mg/m³	Milligram per cubic meter
NS	Not Sampled
TCE	Trichloroethene

Range of Vapor Well Screen Intervals: 1522-1600 ft amsl

Reference:

Imagery Source: Flood Control District of Maricopa County, 2016

0 175 350 525 700 Feet

Job No.:	1420202004
PM:	DF
Date:	2/28/2020
Scale:	1" = 350'

N

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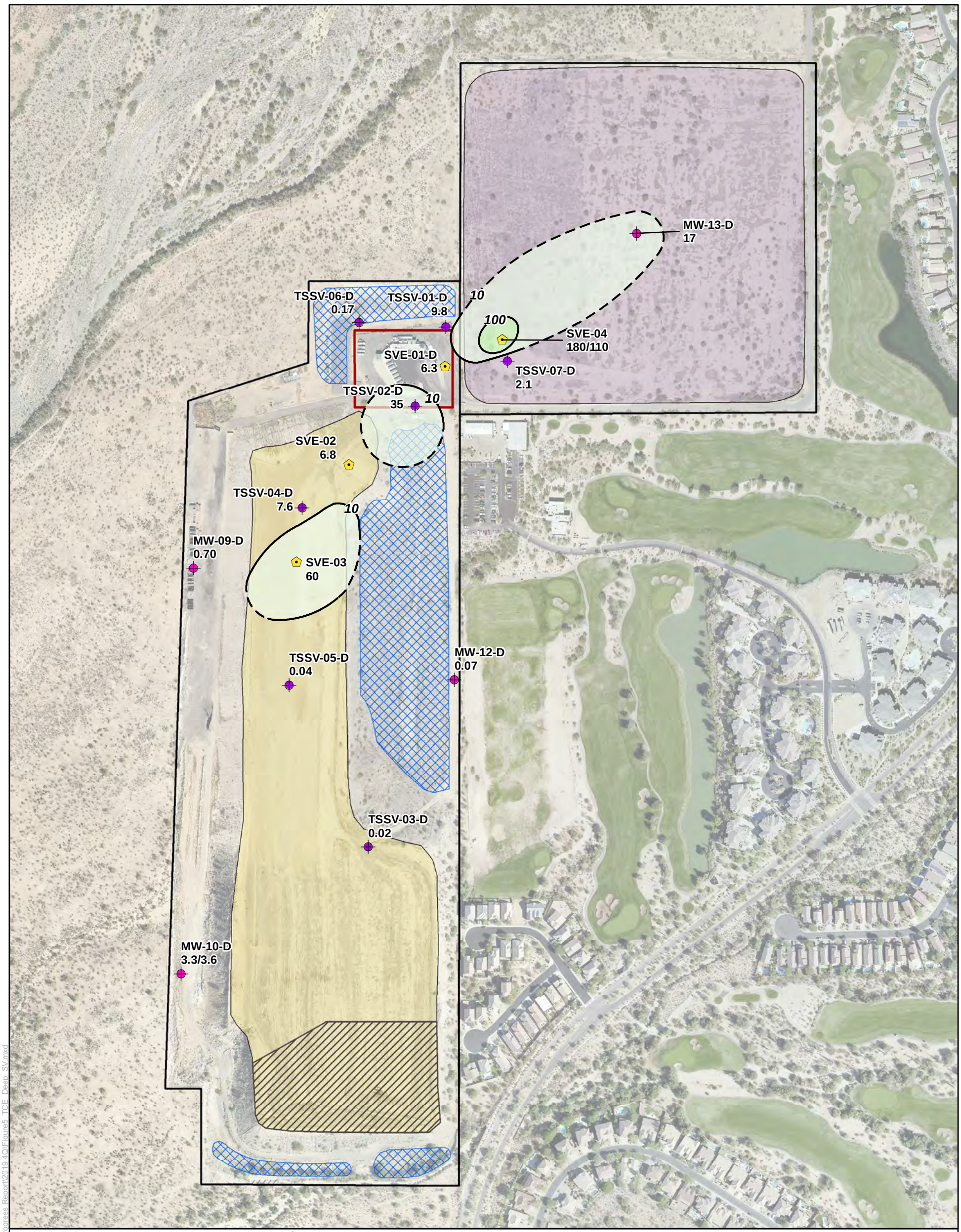
2019 4th Quarter Progress Report
Maricopa County Cave Creek Landfill
Phoenix, Arizona

Middle Zone TCE Soil Vapor Concentrations December 2019

FIGURE **4**

wood.

Path: X:\Projects\20-Longterm Projects\Cave Creek Landfill\MXD\Quarterly Progress Report\2019 4Q\Figure4_TCE_Middle_SV.mxd



Legend

TCE Concentrations (mg/m³) in Soil Vapor
(Dashed Where Inferred)

10-100
100-200

- Nested Vapor Well/Monitoring Well
- Soil Vapor Extraction Well
- Vadose Zone Soil Vapor Well
- Estimated Boundary of Old Landfill Waste Area
- Estimated Boundary of New Landfill Waste Area
- Landfill Property Boundaries
- Lined Cell
- Retention Basin
- Transfer Station

Notes:

TSSV-01-D	Well Identification
9.8	TCE soil gas result (mg/m³) collected December 2019
ft amsl	Feet above mean sea level
mg/m³	Milligram per cubic meter
TCE	Trichloroethene

Range of Vapor Well Screen Intervals: 1327-1500 ft amsl

Reference:

Imagery Source: Flood Control District of Maricopa County, 2016

0 175 350 525 700 Feet

Job No.:	1420202004
PM:	DF
Date:	2/28/2020
Scale:	1" = 350'

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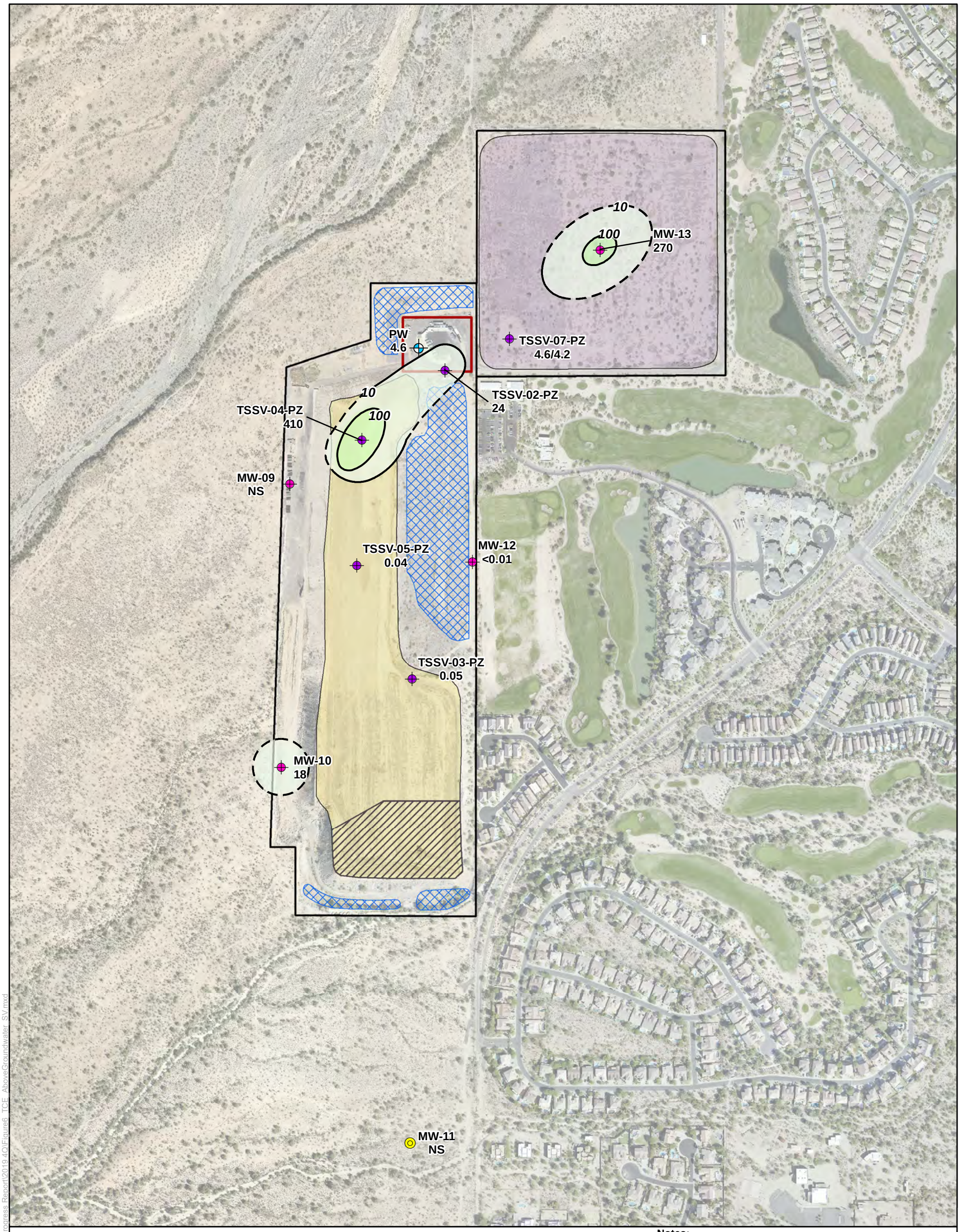
2019 4th Quarter Progress Report
Maricopa County Cave Creek Landfill
Phoenix, Arizona

Deep Zone TCE Soil Vapor Concentrations
December 2019

FIGURE
5

wood.

Path: X:\Projects\20-Longterm Projects\Cave Creek Landfill\MXD\Quarterly Progress Report\2019 4Q\Figure5_TCE_Deep_SV.mxd



Legend

TCE Concentrations (mg/m³) in Soil Vapor
(Dashed Where Inferred)

10-100
100-500

- Nested Vapor Well/Monitoring Well
- Deep Soil Vapor Well
- Groundwater Monitoring Well
- Production Well
- Estimated Boundary of Old Landfill Waste Area
- Landfill Property Boundaries
- Lined Cell
- Retention Basin
- Transfer Station
- Estimated Boundary of New Landfill Waste Area

Notes:

MW-12	Well Identification
<0.01	TCE soil gas result (mg/m³) collected December 2019
4.6/4.2	Duplicate Result
*	Vapor extent based on original sample concentration
ft amsl	Feet above mean sea level
mg/m³	Milligram per cubic meter
NS	Not Sampled
TCE	Trichloroethene

Range of Vapor Well Screen Intervals: 1162-1201 ft amsl

Reference:
Imagery Source: Flood Control District of Maricopa County, 2016

0 250 500 750 1,000 Feet

Job No.:	1420202004
PM:	DF
Date:	2/28/2020
Scale:	1" = 500'

N

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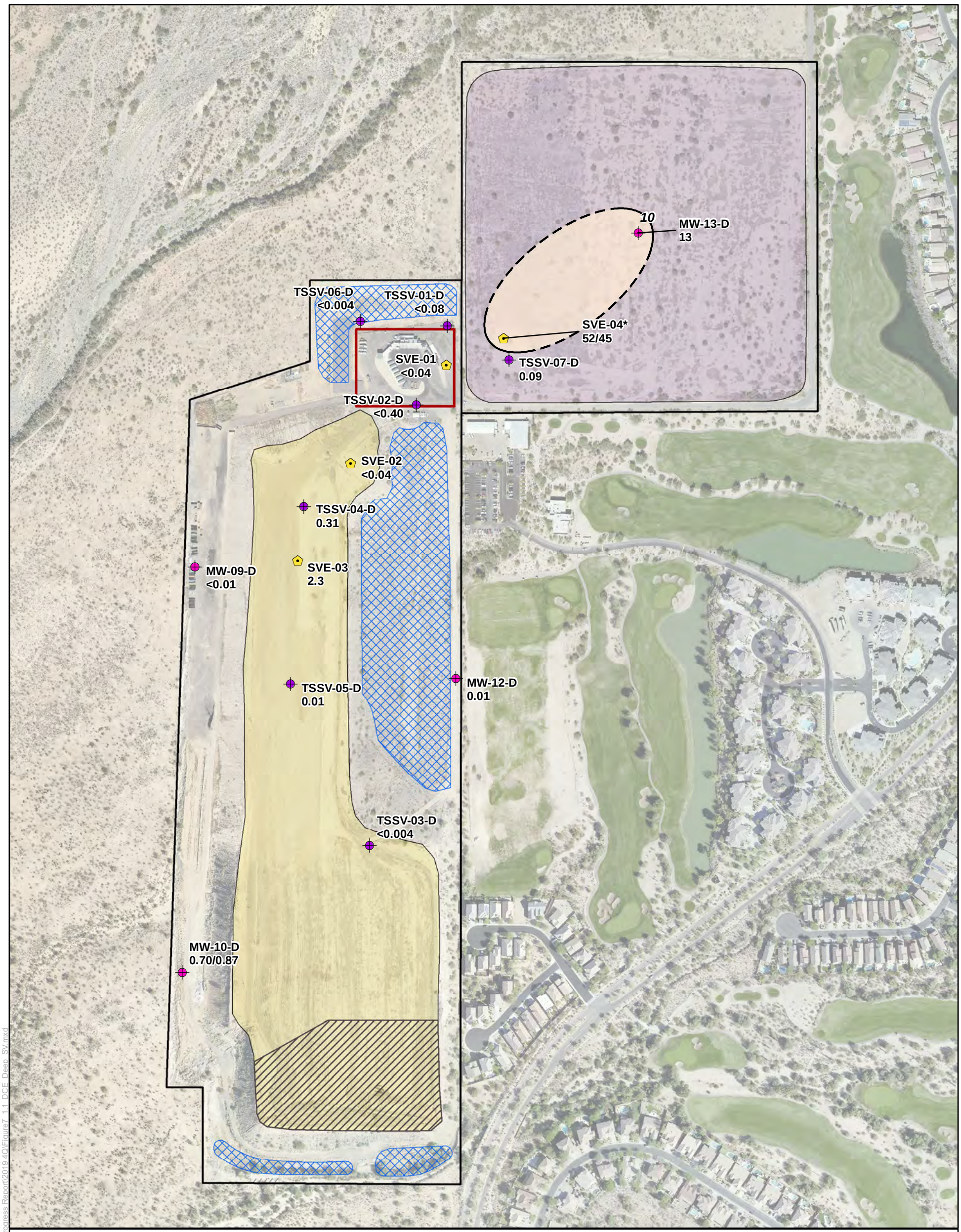
2019 4th Quarter Progress Report
Maricopa County Cave Creek Landfill
Phoenix, Arizona

Above Water Table TCE Soil Vapor Concentrations December 2019

FIGURE **6**

wood.

Path: X:\Projects\20-Longterm Projects\Cave Creek Landfill\MXD\Quarterly Progress Report\2019 4Q\Figure6_TCE_AboveGroundwater_SV.mxd



Legend

1,1-DCE Concentrations (mg/m³) in Soil Vapor

(Dash Where Inferred)

10-100

- Nested Vapor Well/Monitoring Well
- Vadose Zone Soil Vapor Well
- Soil Vapor Extraction Well
- Estimated Boundary of Old Landfill Waste Area
- Estimated Boundary of New Landfill Waste Area
- Landfill Property Boundaries
- Lined Cell
- Retention Basin
- Transfer Station

Notes:

MW-13-D	Well Identification
13	1,1-DCE soil gas result (mg/m³) collected December 2019
52/45	Duplicate Result
*****	Vapor extent based on original sample concentration
ft amsl	Feet above mean sea level
mg/m³	Milligram per cubic meter
NS	Not Sampled
1,1-DCE	1,1-Dichloroethene

Range of Vapor Well Screen Intervals: 1327 -1500 ft amsl

Reference:

Imagery Source: Flood Control District of Maricopa County, 2016

0 175 350 525 700 Feet

Job No.:	1420202004
PM:	DF
Date:	3/2/2020
Scale:	1" = 350'

N

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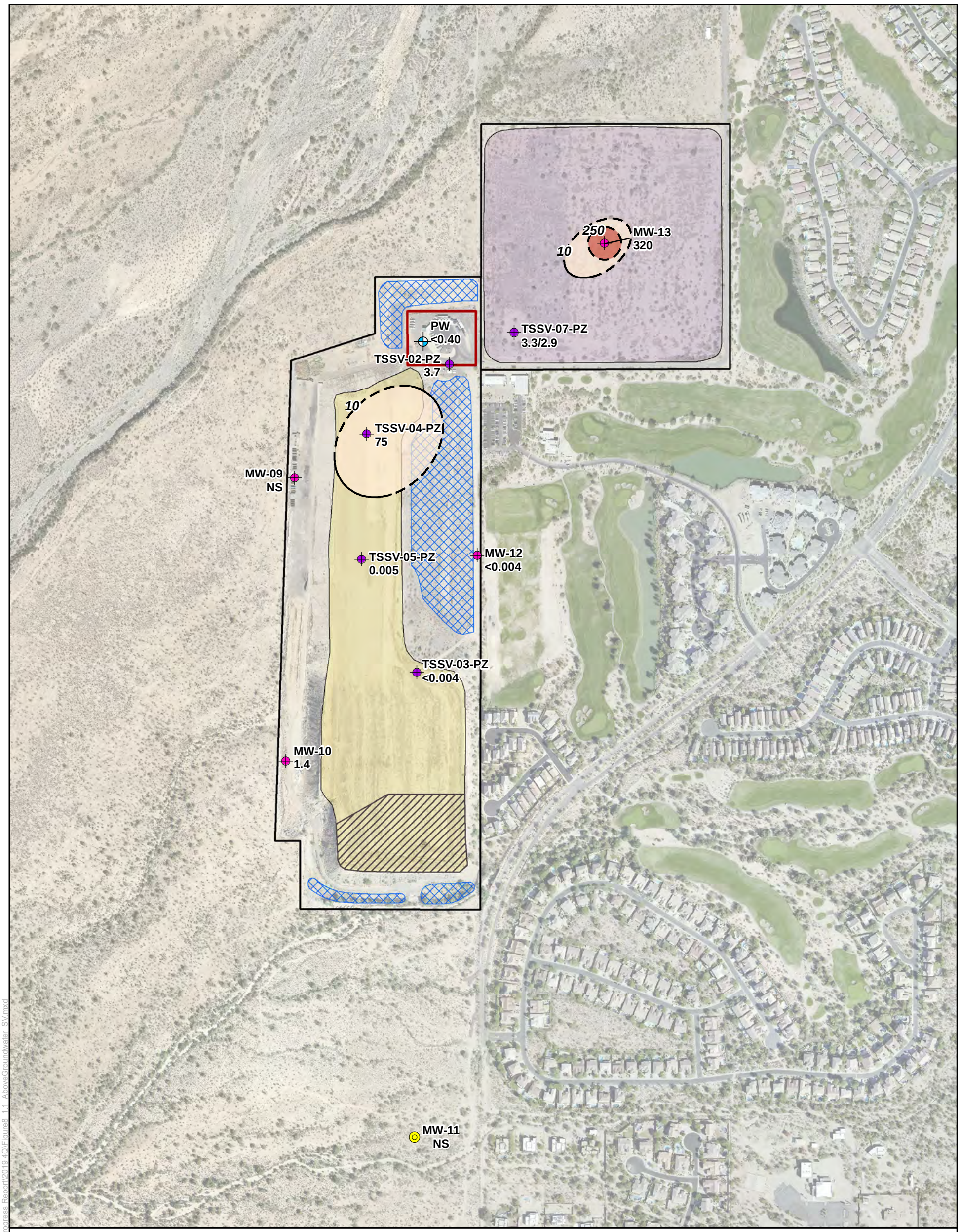
2019 4th Quarter Progress Report
Maricopa County Cave Creek Landfill
Phoenix, Arizona

Deep Zone 1,1-DCE Soil Vapor Concentrations December 2019

FIGURE **7**

wood.

Path: X:\Projects\20-Longterm Projects\Cave Creek Landfill\MXD\Quarterly Progress Report\2019 4Q\Figure7_1,1_DCE_Deep_SV.mxd



Legend

1,1-DCE Concentrations (mg/m³) in Soil Vapor

(Dash Where Inferred)

10-100

250-500

Nested Vapor Well/Monitoring Well

Vadose Zone Soil Vapor Well

Soil Vapor Extraction Well

Estimated Boundary of Old Landfill Waste Area

Estimated Boundary of New Landfill Waste Area

Landfill Property Boundaries

Lined Cell

Retention Basin

Transfer Station

Notes:

MW-13	Well Identification
320	1,1-DCE soil gas result (mg/m³) collected December 2019
3.3/2.9	Duplicate Result
*	Vapor extent based on original sample concentration
ft amsl	Feet above mean sea level
mg/m³	Milligram per cubic meter
1,1-DCE	1,1-Dichloroethene

Range of Vapor Well Screen Intervals: 1327-1500 ft amsl

Reference:

Imagery Source: Flood Control District of Maricopa County, 2016

0 175 350 525 700 Feet

Job No.:	1420202004
PM:	DF
Date:	3/2/2020
Scale:	1" = 350'

N

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2019 4th Quarter Progress Report
Maricopa County Cave Creek Landfill
Phoenix, Arizona

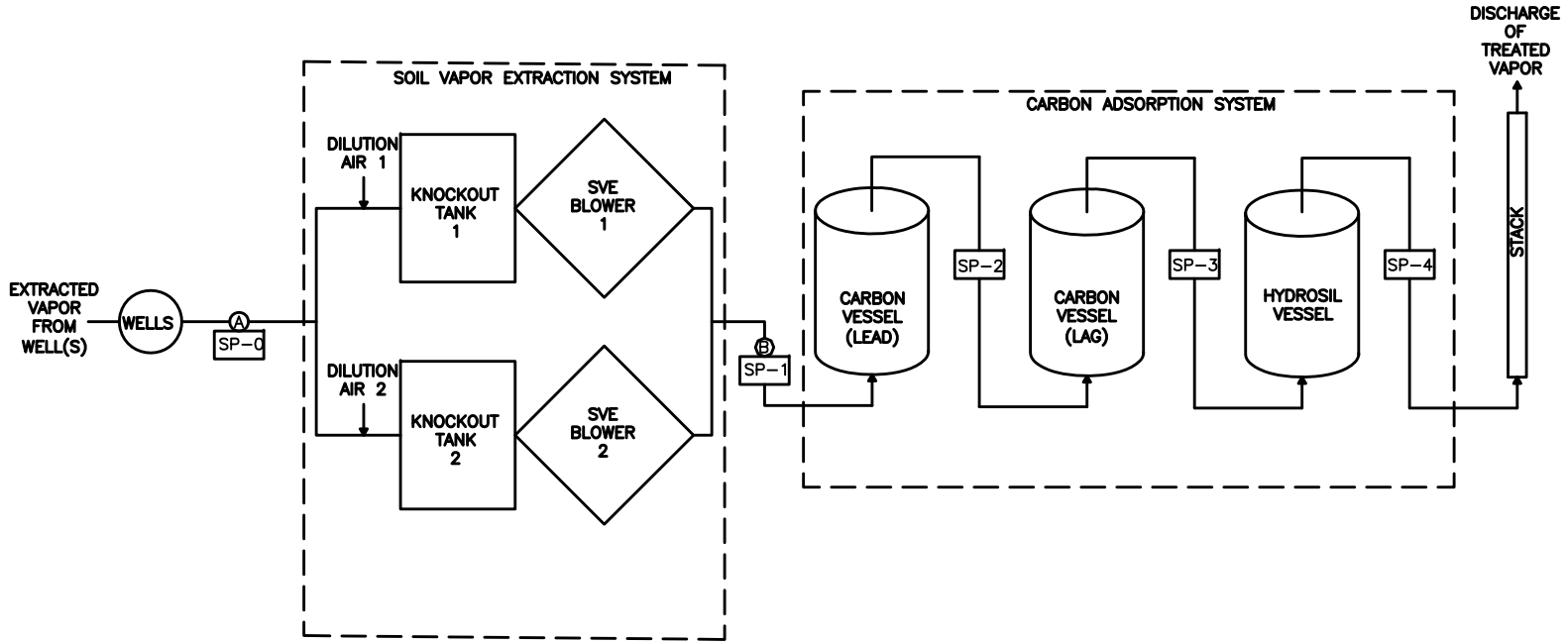
Above Water Table 1,1-DCE Soil Vapor Concentrations December 2019

FIGURE **8**

wood.

Path: X:\Projects\20-Longterm Projects\Cave Creek Landfill\MXD\Quarterly Progress Report\2019 4Q\Figure8_1.1_AboveGroundwater_SV.mxd

PRESSURE FLOW THROUGH CARBON ADSORPTION SYSTEM



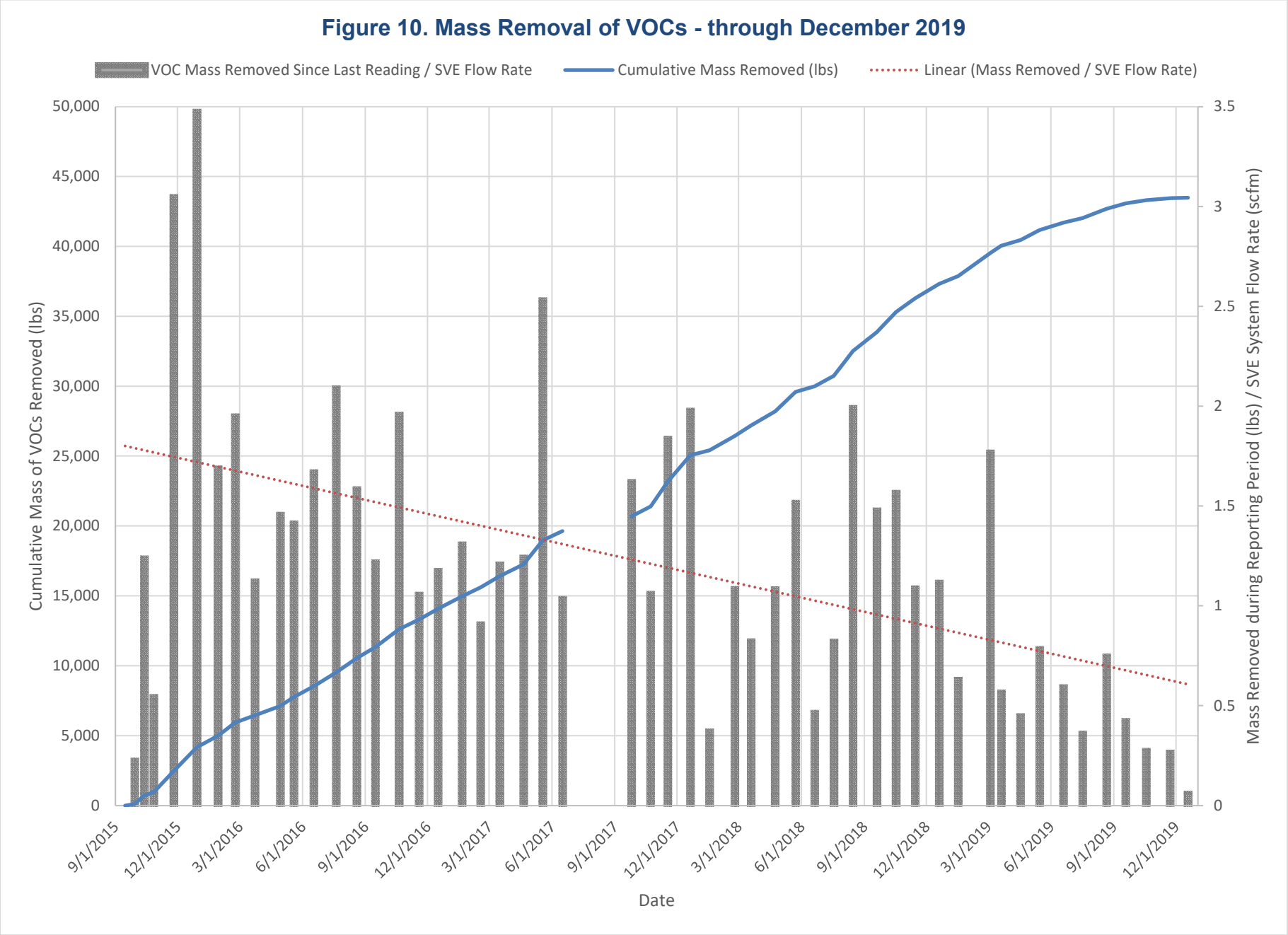
LEGEND

- Ⓐ SYSTEM FLOW MEASUREMENT (PRE-DILUTION LOCATION)
- Ⓑ SYSTEM FLOW MEASUREMENT (POST-DILUTION LOCATION)
- SP-0 SYSTEM INLET SAMPLE LOCATION
- SP-1 CAS INLET SAMPLE LOCATION
- SP-2 CAS LEAD VESSEL OUTLET SAMPLE LOCATION
- SP-3 CAS LAG VESSEL OUTLET SAMPLE LOCATION
- SP-4 CAS OUTLET SAMPLE LOCATION

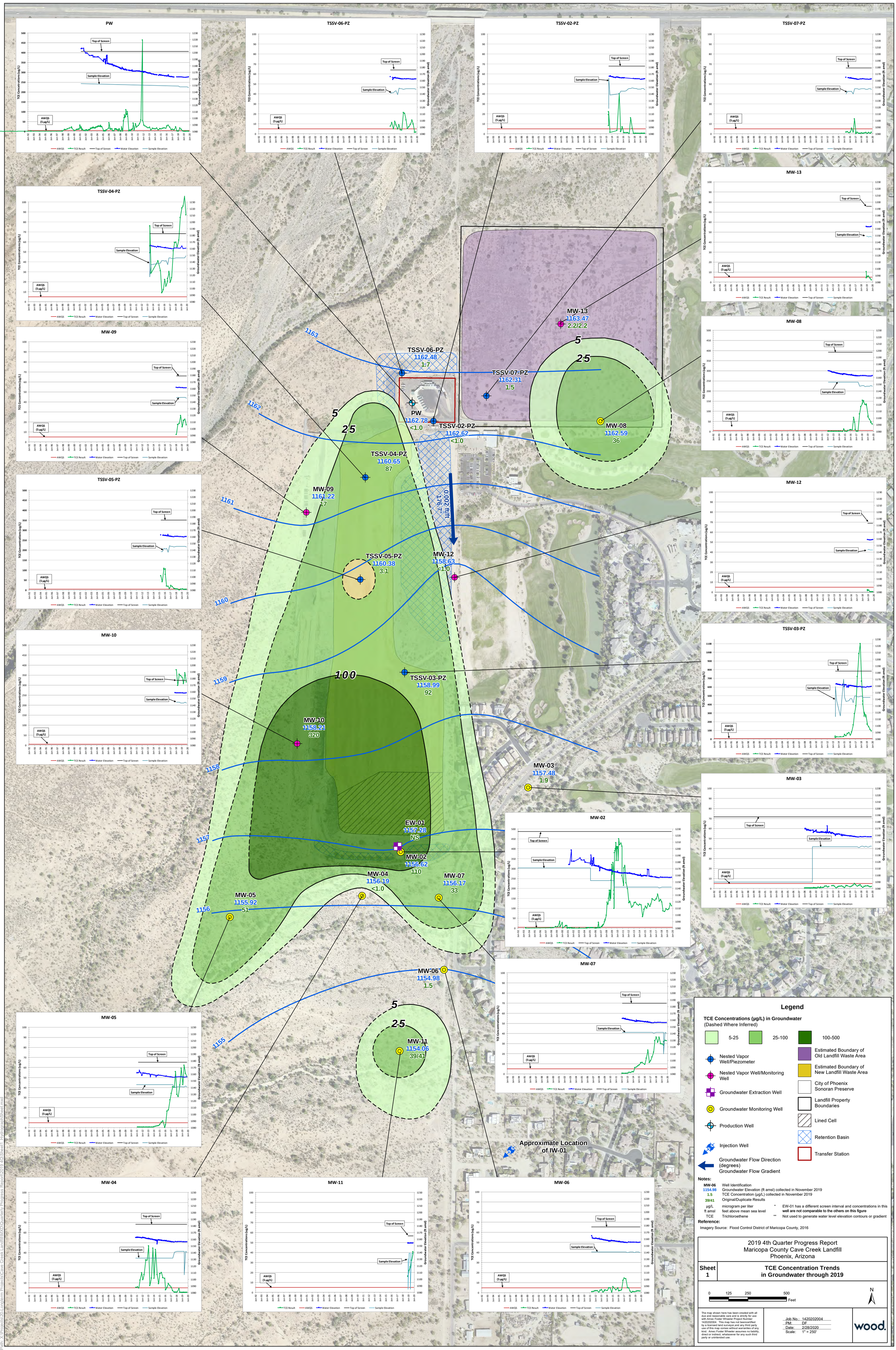
CLIENT	MARICOPA COUNTY				
PROJECT	CAVE CREEK LANDFILL				
TITLE	SVE SYSTEM PROCESS FLOW DIAGRAM – PRESSURE FLOW				
DESIGNED BY	BJN	CHECKED BY	AY	DATE	ISSUED FOR
DRAWN BY	BJN	APPROVED BY	NC	11/15/16	FINAL
FILENAME FIGURE 9		FIGURE No. 9	REV 1	PROJECT NO. 14-2017-2034	

wood.

G:\Environmental-Development\2017 Projects\14-2017-2034 Cave Creek Landfill FY2018\5.0_Technical\5.1_Reports_Deliverables\5.1.27_SVE Expansion OMM\Support-6/5/2017 11:11 AM



G:\Environmental-Development\2017 Projects\14-2017-2034 Cave Creek Landfill FY2018\5.0_Technical\5.1_Reports_Deliverables\QuarterlyReports\2019 Q4\Tables\TABLE 8_SVE Mass Removal


PW
TSSV-06-PZ
TSSV-02-PZ
TSSV-07-PZ
TSSV-04-PZ
MW-13
MW-09
MW-08
TSSV-05-PZ
MW-12
MW-10
TSSV-03-PZ
MW-03
MW-02
MW-07
MW-05
MW-06
MW-11
MW-04
Top of Screen
Sample Elevation
AWQS (5 µg/L)
TCE Concentrations (ug/L)
Groundwater Elevation (ft amsl)
AWQS
TCE Result
Water Elevation
Top of Screen
Sample Elevation
MW-13
1163.47
2.2/2.2
TSSV-06-PZ
1162.48
1.7
TSSV-07-PZ
1162.31
1.5
PW
1162.78
<1.0
TSSV-02-PZ
1162.62
<1.0
MW-08
1162.59
36
TSSV-04-PZ
1160.65
87
MW-09
1161.22
17
0.002 ft/ft
176.7°
TSSV-05-PZ
1160.38
3.1
MW-12
1158.63
<1.0
TSSV-03-PZ
1158.99
92
MW-10
1158.21
320
MW-03
1157.48
1.9
EW-01
1157.28
NS
MW-02
1156.62
110
MW-04
1156.19
<1.0
MW-07
1156.17
33
MW-05
1155.92
51
MW-06
1154.98
1.5
MW-11
1154.06
39/41
Approximate Location of IW-01
1163
1162
1161
1160
1159
1158
1157
1156
1155
5
25
100
Legend
TCE Concentrations (µg/L) in Groundwater
(Dashed Where Inferred)
5-25
25-100
100-500
Nested Vapor Well/Piezometer
Nested Vapor Well/Monitoring Well
Groundwater Extraction Well
Groundwater Monitoring Well
Production Well
Injection Well
Groundwater Flow Direction (degrees)
Groundwater Flow Gradient
Estimated Boundary of Old Landfill Waste Area
Estimated Boundary of New Landfill Waste Area
City of Phoenix Sonoran Preserve
Landfill Property Boundaries
Lined Cell
Retention Basin
Transfer Station
Notes:
MW-06 Well Identification
1154.98 Groundwater Elevation (ft amsl) collected in November 2019
1.5 TCE Concentration (µg/L) collected in November 2019
39/41 Original/Duplicate Results
µg/L microgram per liter
ft amsl feet above mean sea level
TCE Trichloroethene
* EW-01 has a different screen interval and concentrations in this well are not comparable to the others on this figure
** Not used to generate water level elevation contours or gradient
Reference:
Imagery Source: Flood Control District of Maricopa County, 2016
2019 4th Quarter Progress Report
Maricopa County Cave Creek Landfill
Phoenix, Arizona
Sheet 1
TCE Concentration Trends in Groundwater through 2019
0 125 250 500 Feet
N
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Job No.: 1420202004
PM: DF
Date: 2/28/2020
Scale: 1" = 250'
wood.
Path: X:\Projects\20-Longterm Projects\Cave Creek Landfill\MXD\Quarterly Progress Report\2019 4Q\Sheet1_HydrographSheet.mxd

APPENDIX A

Cave Creek Landfill Progress Schedule

ID	Task Name	Duration	Start	Finish	Predecessors
1	**SVE Operations**	1404 days	Tue 9/15/15	Fri 1/29/21	
2	**GWTS Installation**	**1346 days?**	**Fri 12/16/16**	**Fri 2/11/22**	
3	**Phase I (On-Site Infrastructure)**	**876 days**	**Fri 12/16/16**	**Fri 4/24/20**	
4	*Design*	192 days	Fri 12/16/16	Mon 9/11/17	
5	*Permitting*	107 days	Thu 10/5/17	Fri 3/2/18	
6	*Contractor Procurement*	138 days	Fri 6/1/18	Tue 12/11/18	
7	*Construction*	320 days	Mon 2/4/19	Fri 4/24/20	
8	**GWTS Phase 1 Expansion**	**315 days**	**Mon 11/30/20**	**Fri 2/11/22**	**35**
9	*Design*	60 days	Mon 11/30/20	Fri 2/19/21	
10	*Permitting*	45 days	Mon 2/22/21	Fri 4/23/21	9
11	*Contractor Procurement*	60 days	Mon 4/26/21	Fri 7/16/21	10
12	*Construction*	150 days	Mon 7/19/21	Fri 2/11/22	11
13	**Phase 2 (Conveyance Pipeline)**	**747 days**	**Thu 1/11/18**	**Fri 11/20/20**	
14	*Design*	132 days	Thu 1/11/18	Fri 7/13/18	
15	*Permitting*	325 days	Mon 9/24/18	Fri 12/20/19	
16	*Contractor Procurement*	4.05 mons	Sat 6/1/19	Fri 9/20/19	
17	*Construction*	5 mons	Mon 7/6/20	Fri 11/20/20	
18	**Phase 3 (Injection Well Site)**	**701 days**	**Fri 6/1/18**	**Fri 2/5/21**	
19	**Perimeter Wall**	**486 days**	**Fri 6/1/18**	**Fri 4/10/20**	
20	*Design*	132 days	Fri 6/1/18	Mon 12/3/18	
21	*Permitting*	66 days	Mon 9/17/18	Mon 12/17/18	
22	*Contractor Procurement*	45 days	Mon 11/11/19	Fri 1/10/20	21
23	*Construction*	65 days	Mon 1/13/20	Fri 4/10/20	22
24	**Phase 3 Infrastructure**	**220 days**	**Mon 4/6/20**	**Fri 2/5/21**	
25	*Design*	3 mons	Mon 4/6/20	Fri 6/26/20	32
26	*Permitting*	1 mon	Mon 6/29/20	Fri 7/24/20	25
27	*Contractor Procurement*	2 mons	Mon 7/27/20	Fri 9/18/20	26
28	*Construction*	5 mons	Mon 9/21/20	Fri 2/5/21	27
29	**Injection Well (IW-01) Installation**	**205 days**	**Mon 6/24/19**	**Fri 4/3/20**	
30	*Drilling/Installation*	106 days	Mon 6/24/19	Sat 11/16/19	
31	*Testing*	57 days	Fri 11/8/19	Mon 1/27/20	
32	*IW-01 Installation Reporting*	45 days	Mon 2/3/20	Fri 4/3/20	
33	**Extraction Well (EW-02) Installation**	**255 days?**	**Mon 7/27/20**	**Fri 7/16/21**	
34	*Design*	30 days	Mon 7/27/20	Fri 9/4/20	
35	*Contractor Procurement*	60 days?	Mon 9/7/20	Fri 11/27/20	34
36	*Drilling/Installation*	90 days?	Mon 11/30/20	Fri 4/2/21	35
37	*Testing*	30 days	Mon 4/5/21	Fri 5/14/21	36
38	*EW-02 Installation Reporting*	45 days	Mon 5/17/21	Fri 7/16/21	37
39	**GWTS Operations**	**40 days**	**Mon 2/14/22**	**Fri 4/8/22**	
40	*GWTS As-Built Plan Development*	2 mons	Mon 2/14/22	Fri 4/8/22	12
41	*GWTS Operations Planning*	2 mons	Mon 2/14/22	Fri 4/8/22	12
42	**2018 Well Installation Program**	**220 days**	**Sun 8/12/18**	**Fri 6/14/19**	
47	**2020 Well Installtion Program**	**195 days**	**Mon 6/29/20**	**Fri 3/26/21**	
48	MW-16 Drilling/Installation	30 days	Mon 6/29/20	Fri 8/7/20	
49	MW-17 Drilling/Installation	30 days	Mon 8/10/20	Fri 9/18/20	
50	Well Installtion Reporting	135 days	Mon 9/21/20	Fri 3/26/21	49
51	**Site Groundwater Characterization Work Plan (Final)**	**5.05 mons**	Mon 3/18/19	Mon 8/5/19	
52	**Groundwater Model Update**	4 mons	Mon 4/6/20	Fri 7/24/20	32

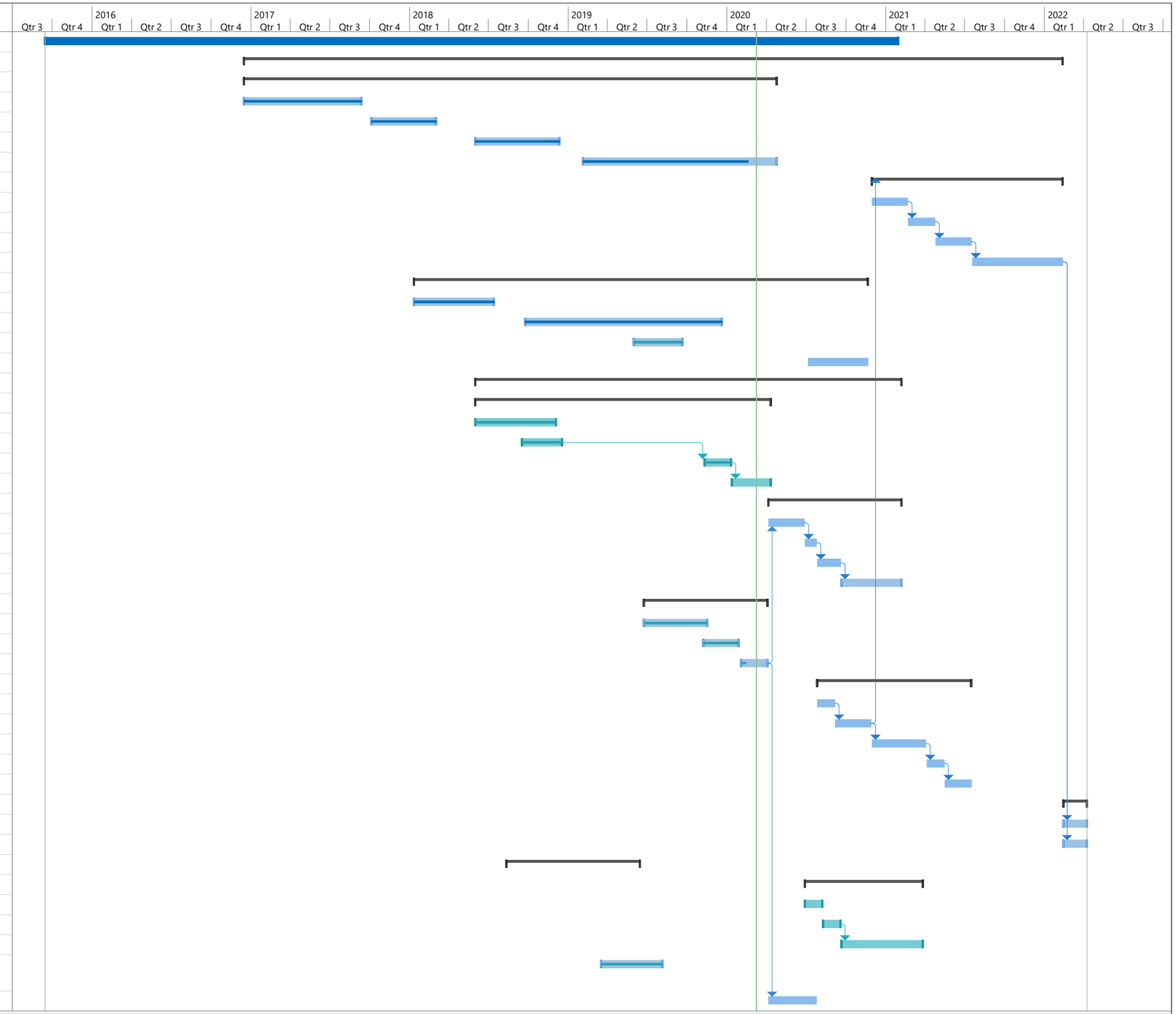
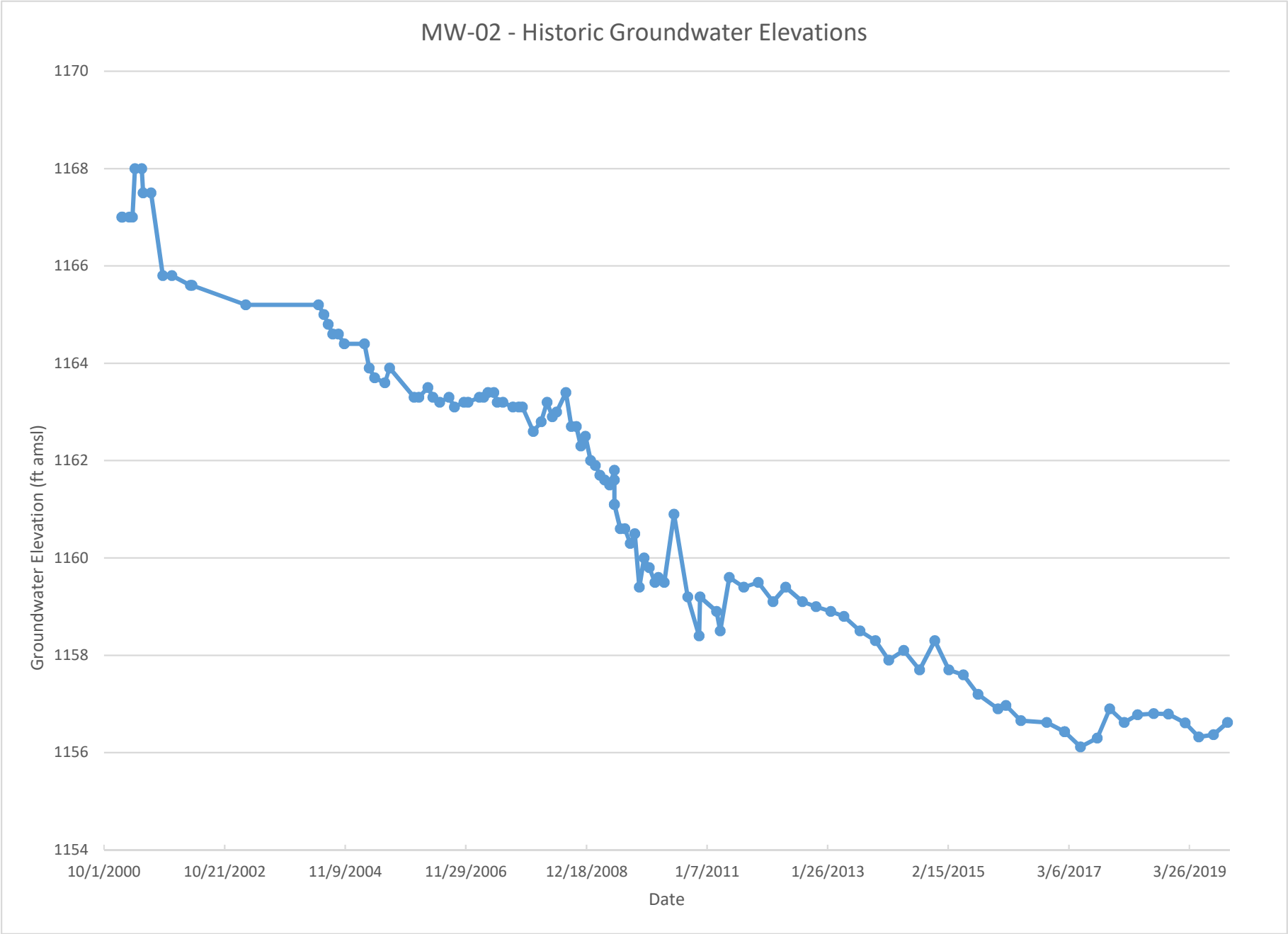


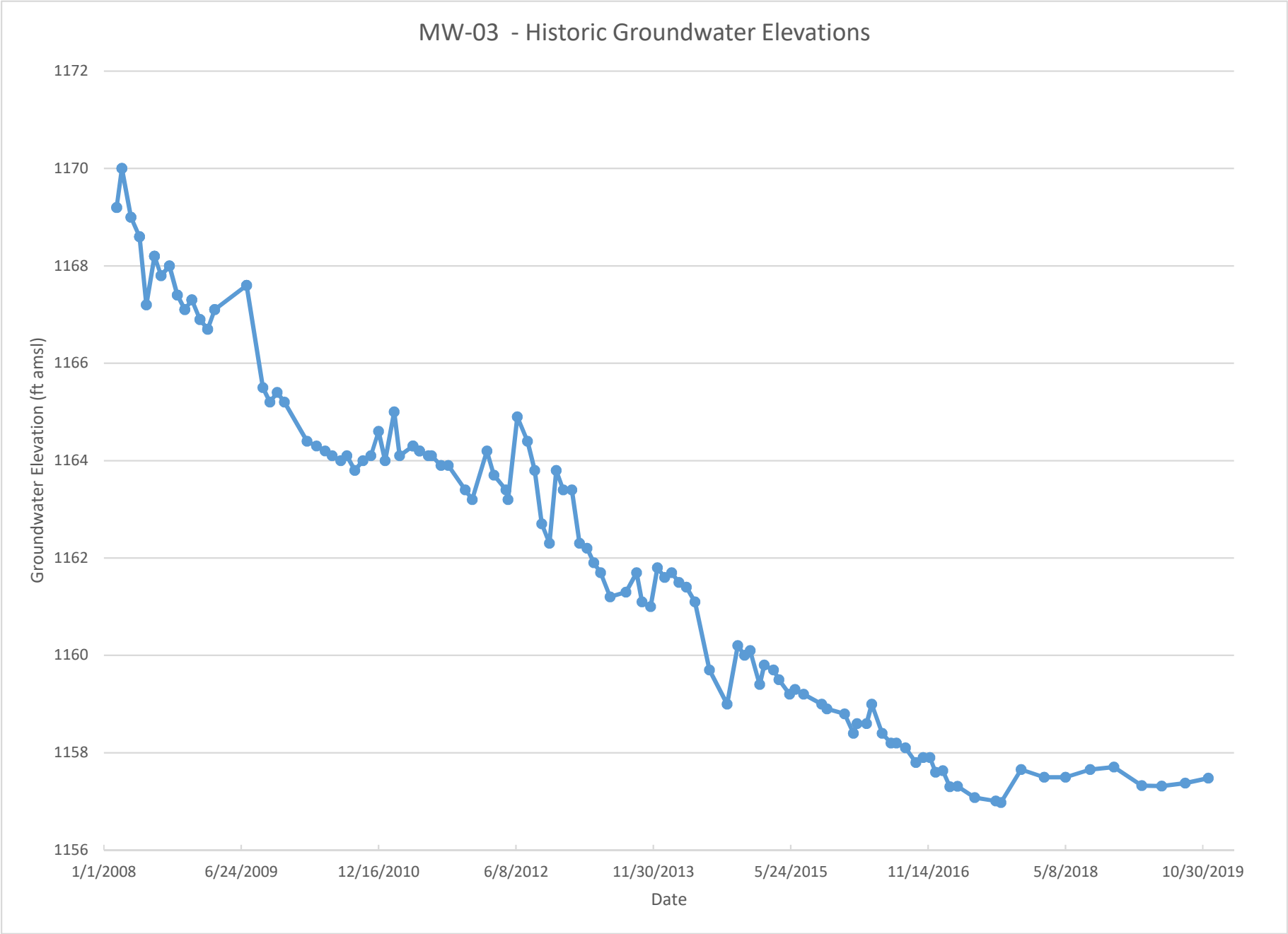
EXHIBIT 1
CCL Project Progress Schedule
Date: Mon 3/9/20

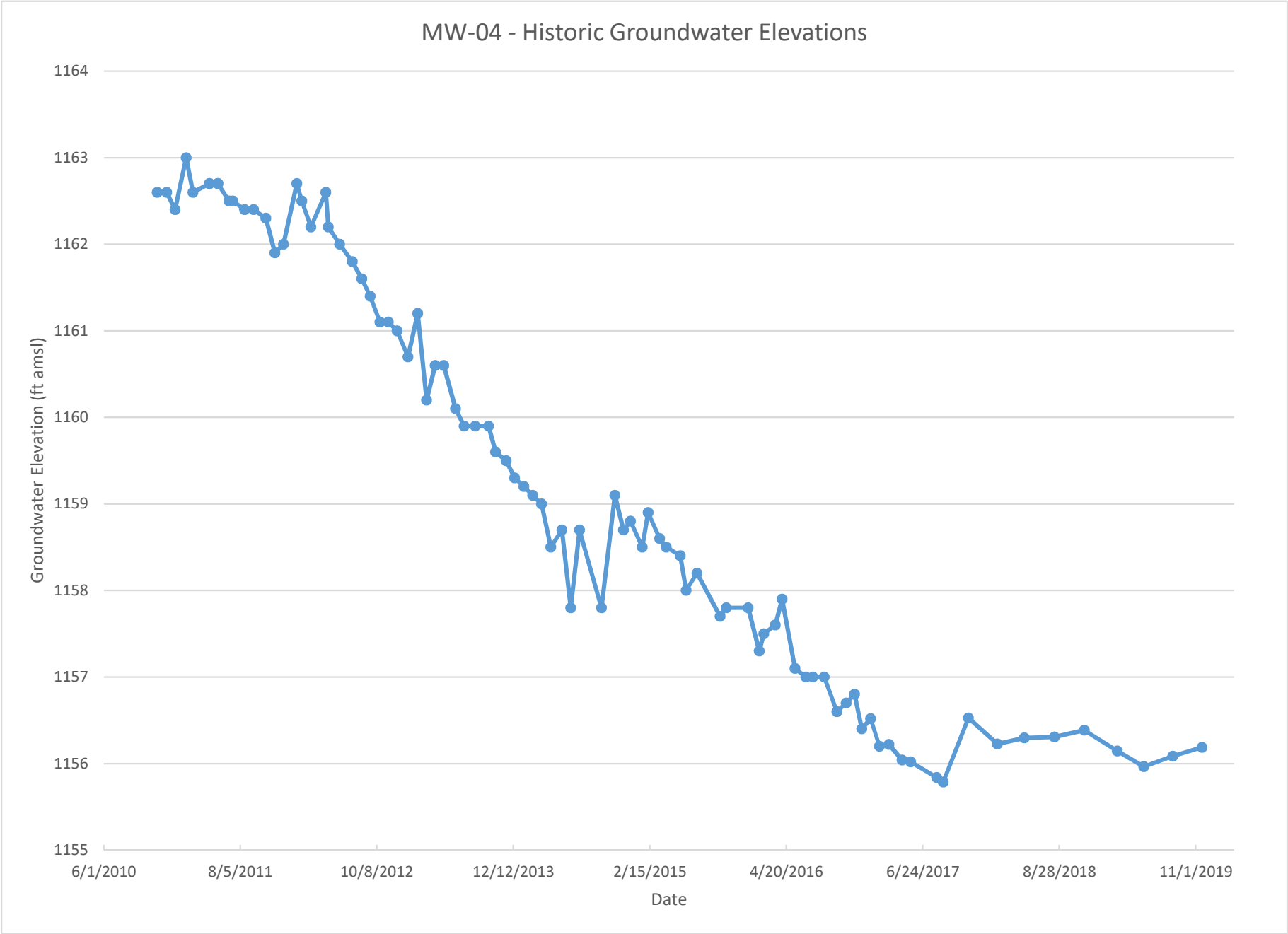
Task | Split | Milestone | Summary | Project Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | External Tasks | External Milestone | Deadline | Progress | Manual Progress

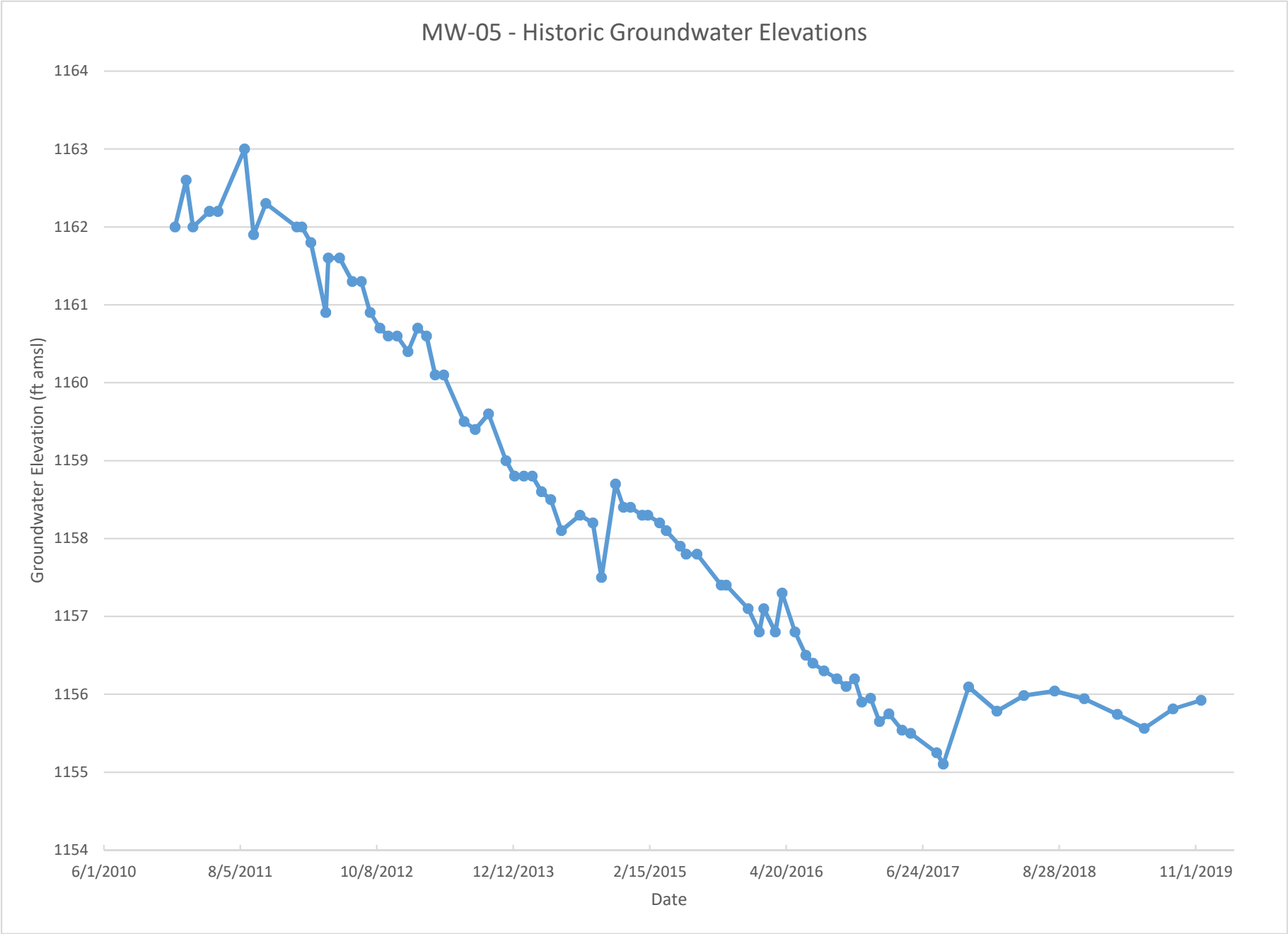
APPENDIX B

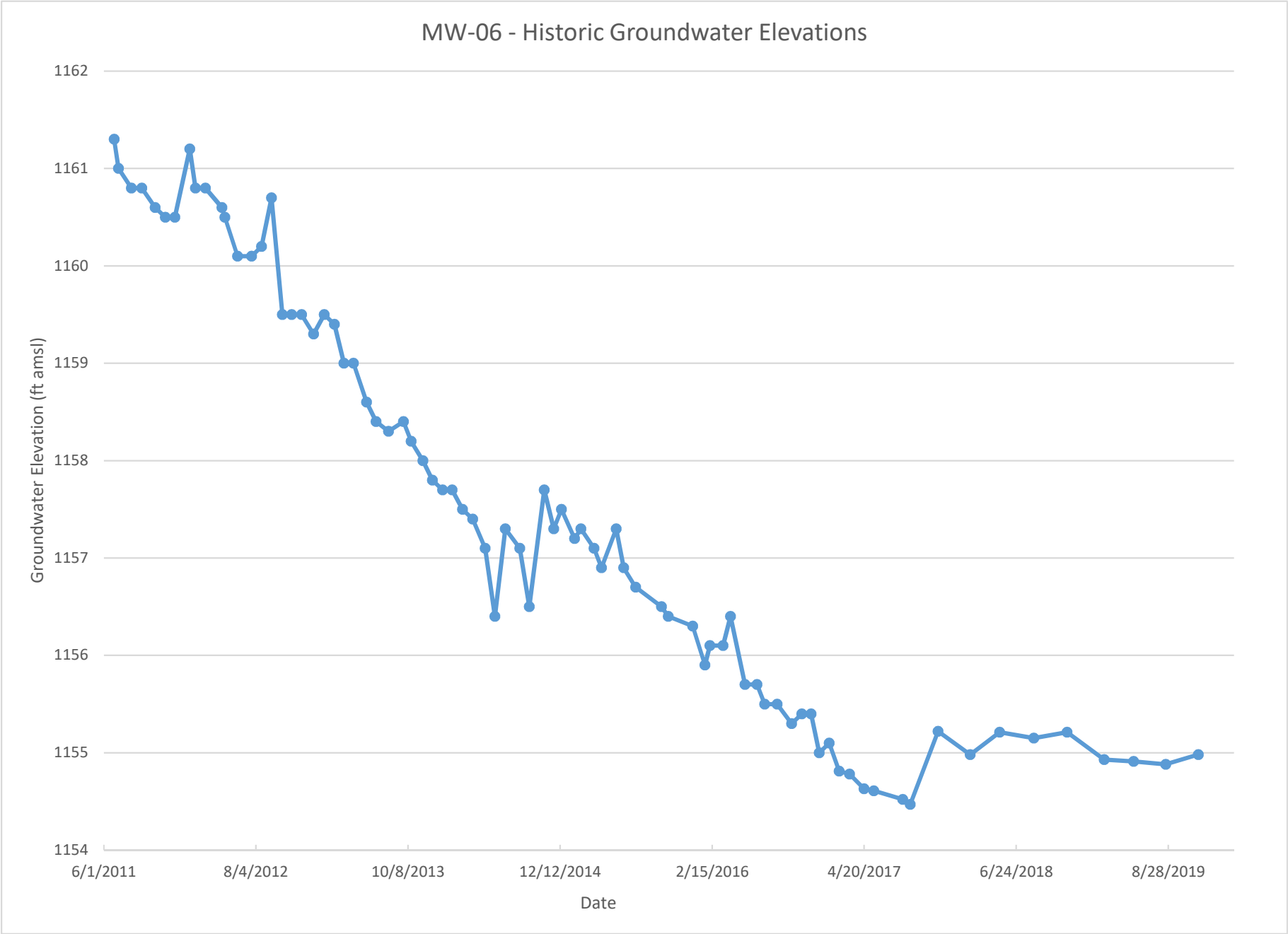
Groundwater Elevation Trend Graphs for Groundwater Wells

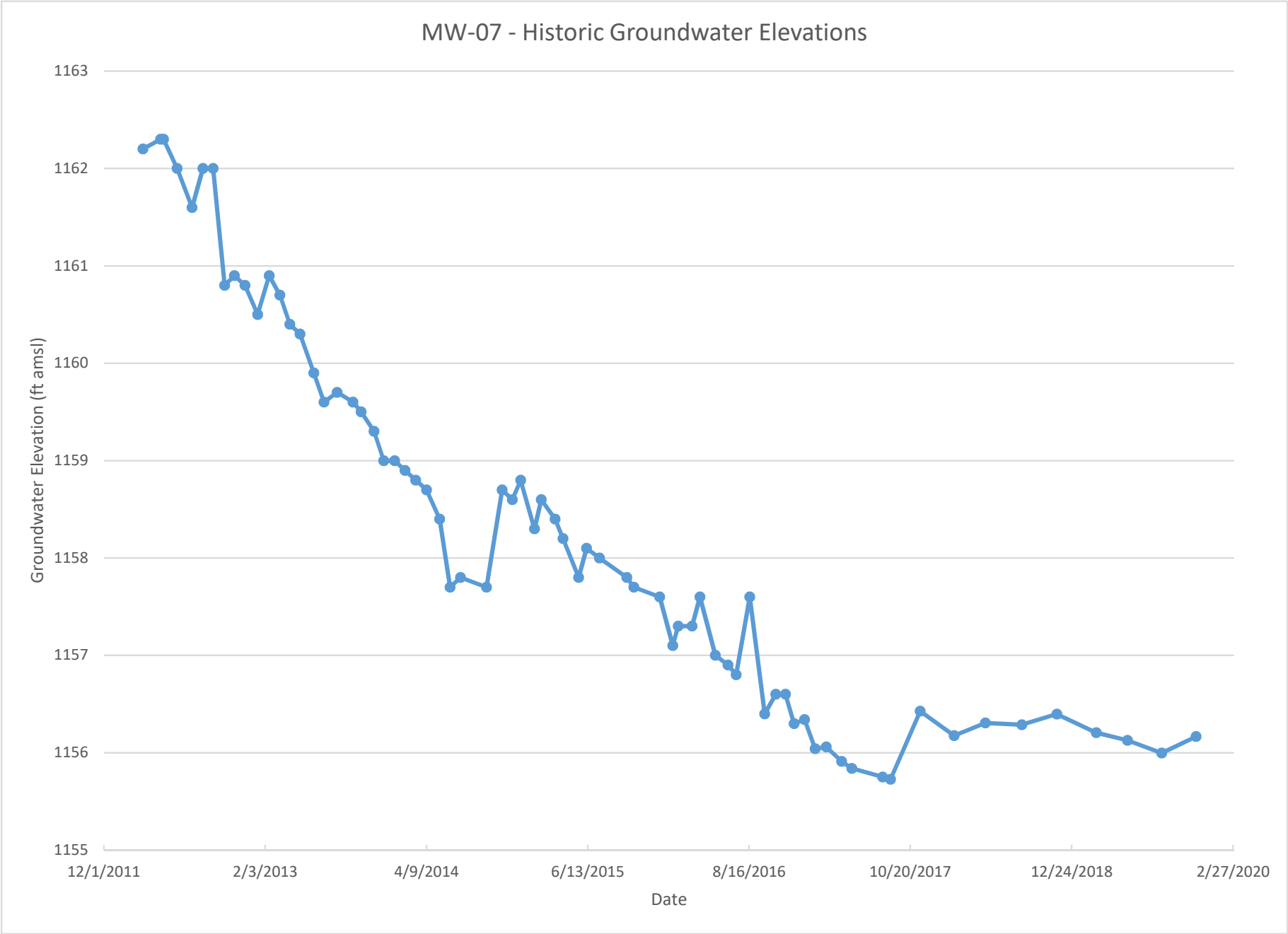

MW-02 - Historic Groundwater Elevations
Groundwater Elevation (ft amsl)
1170
1168
1166
1164
1162
1160
1158
1156
1154
10/1/2000
10/21/2002
11/9/2004
11/29/2006
12/18/2008
1/7/2011
1/26/2013
2/15/2015
3/6/2017
3/26/2019
Date

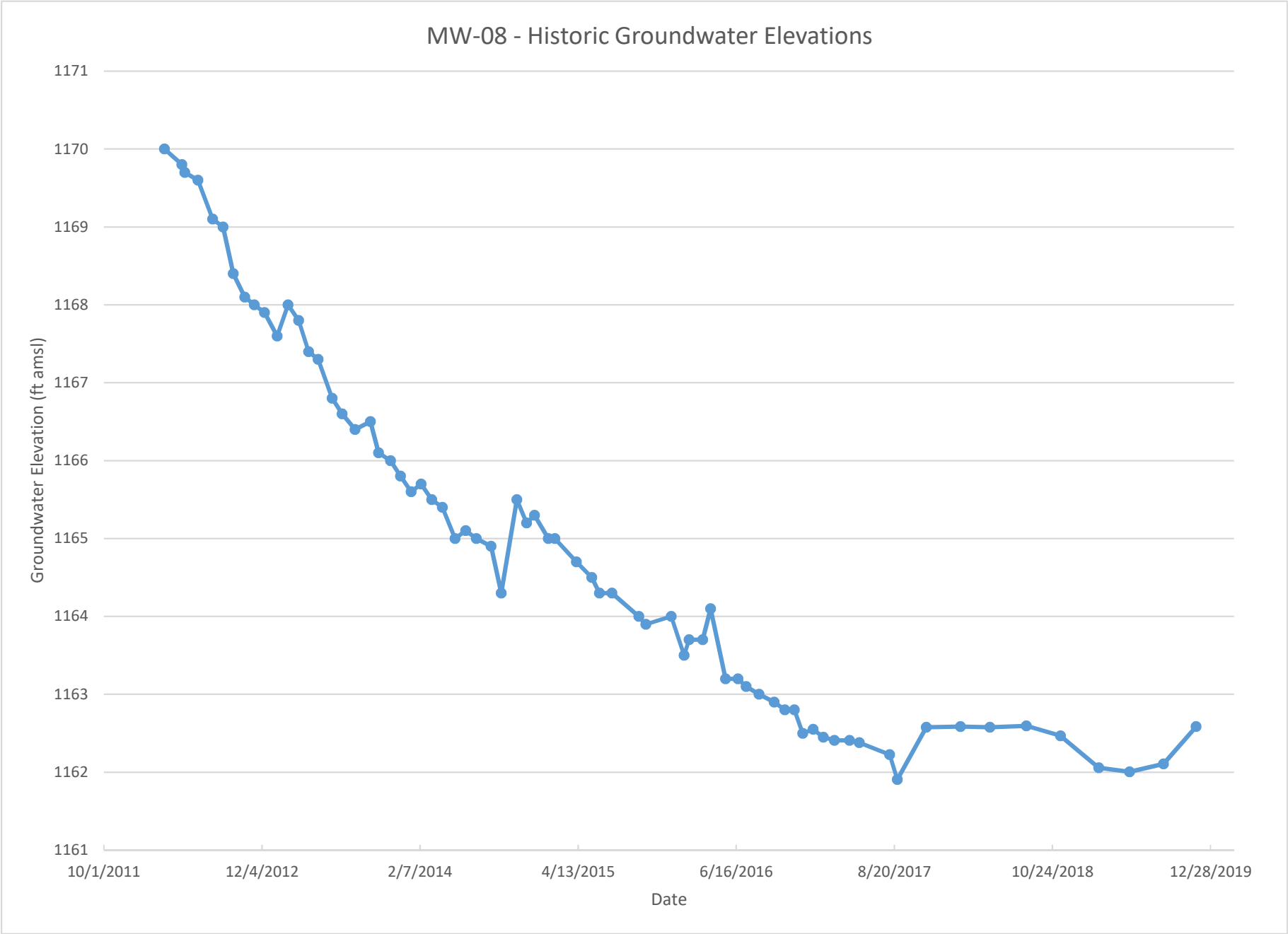

MW-03 - Historic Groundwater Elevations
Groundwater Elevation (ft amsl)
1172
1170
1168
1166
1164
1162
1160
1158
1156
1/1/2008
6/24/2009
12/16/2010
6/8/2012
11/30/2013
5/24/2015
11/14/2016
5/8/2018
10/30/2019
Date

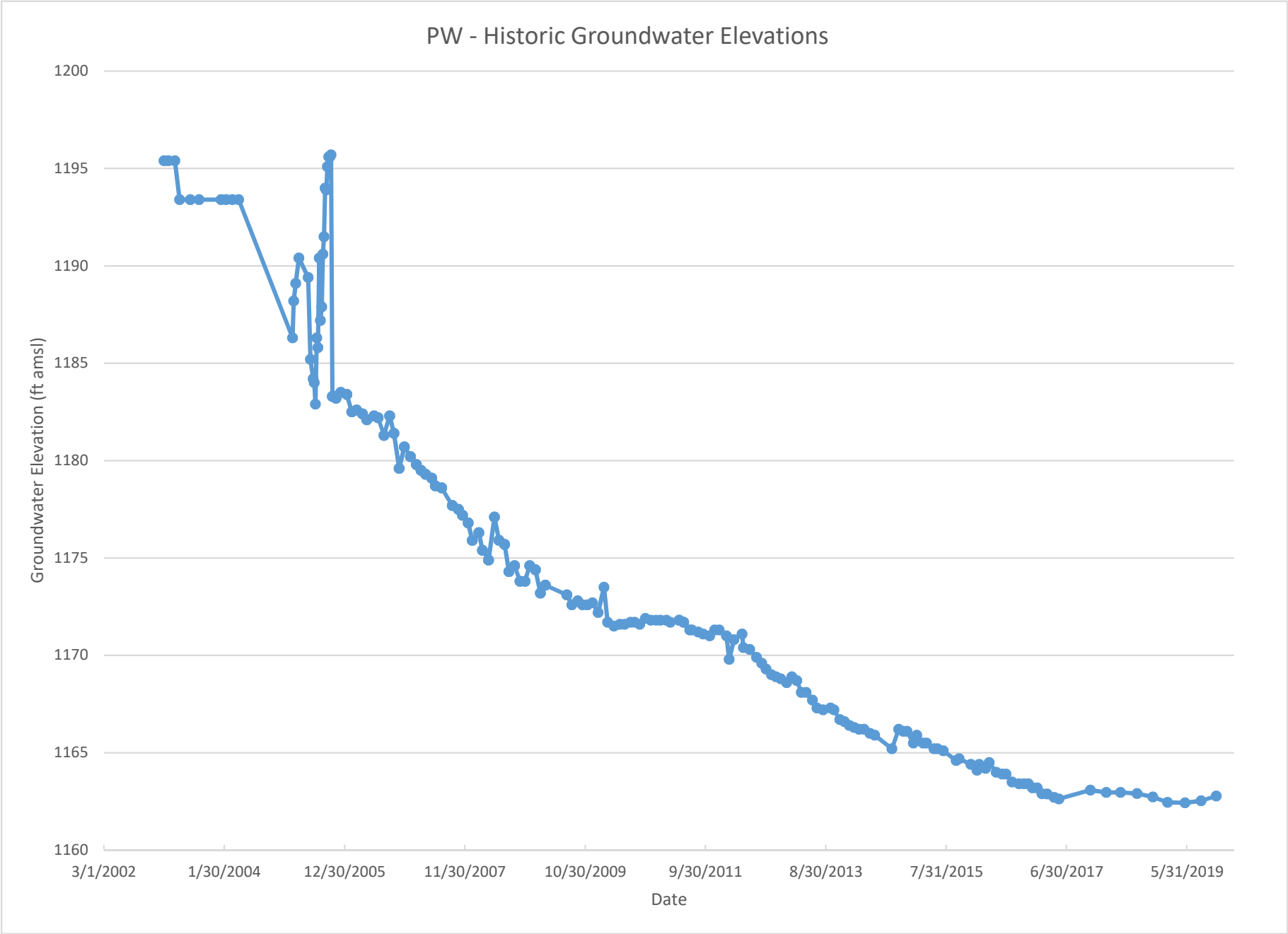

MW-04 - Historic Groundwater Elevations
Groundwater Elevation (ft amsl)
1164
1163
1162
1161
1160
1159
1158
1157
1156
1155
6/1/2010
8/5/2011
10/8/2012
12/12/2013
2/15/2015
4/20/2016
6/24/2017
8/28/2018
11/1/2019
Date

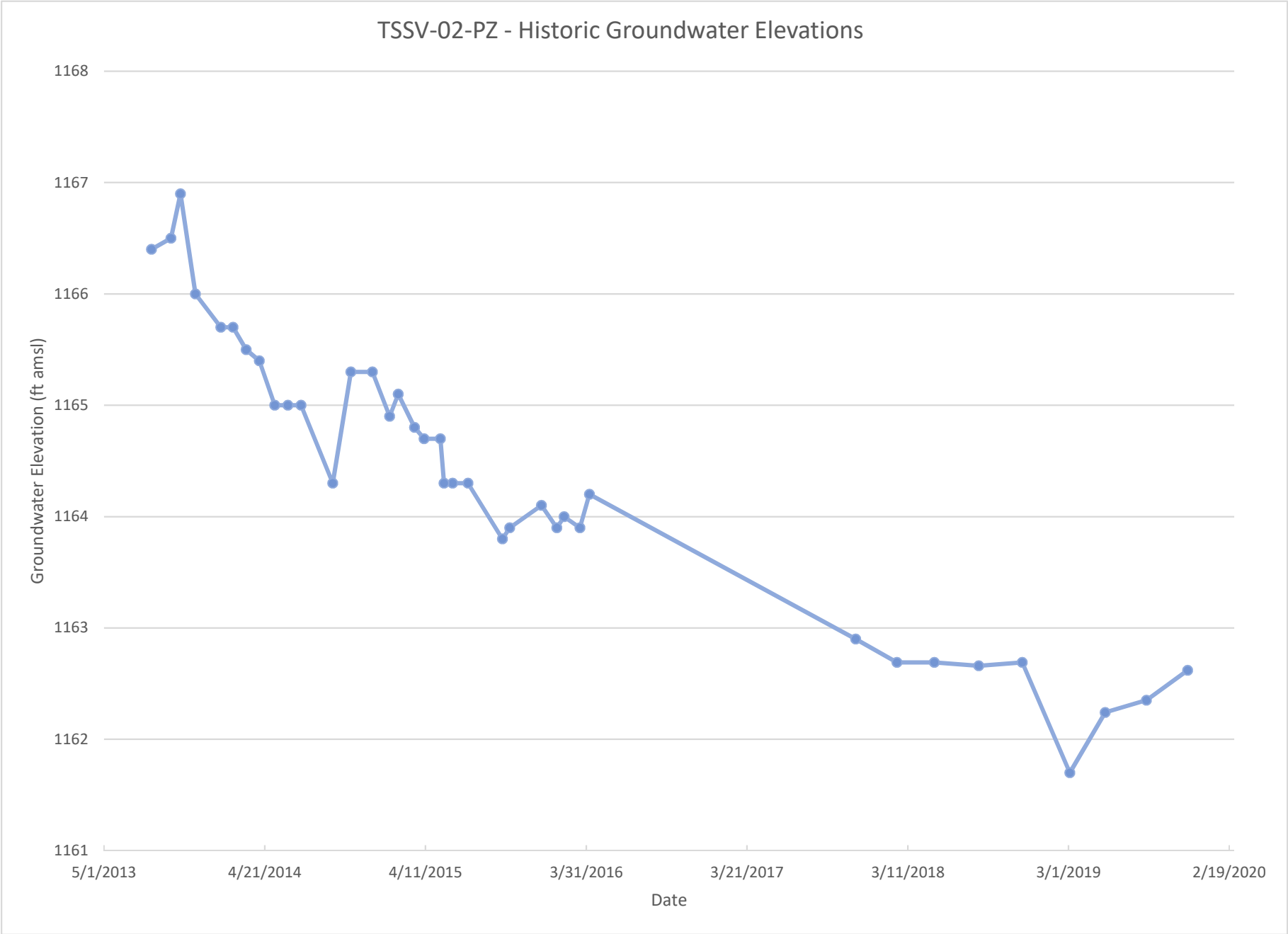

MW-05 - Historic Groundwater Elevations
Groundwater Elevation (ft amsl)
1164
1163
1162
1161
1160
1159
1158
1157
1156
1155
1154
6/1/2010
8/5/2011
10/8/2012
12/12/2013
2/15/2015
4/20/2016
6/24/2017
8/28/2018
11/1/2019
Date

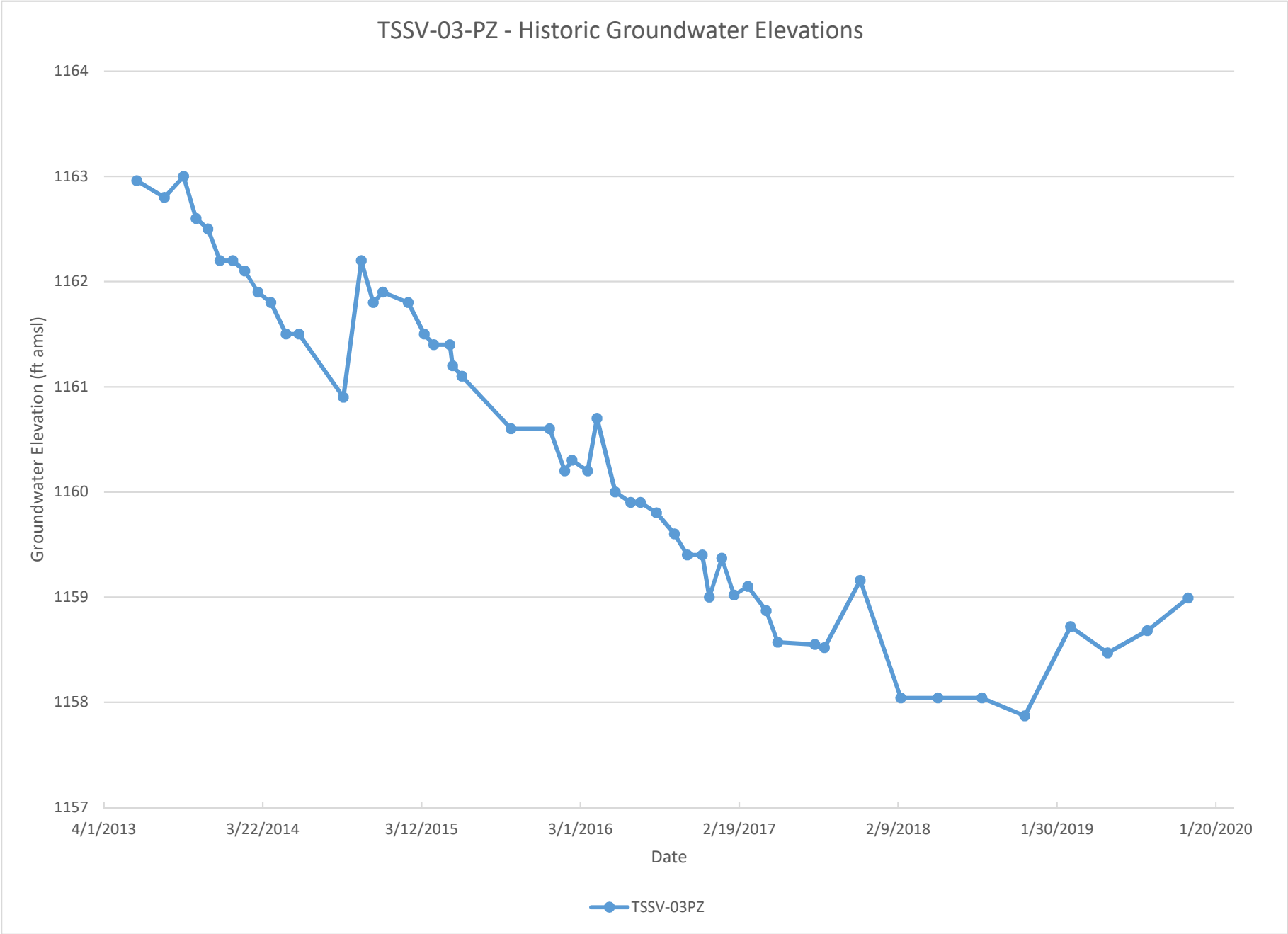

MW-06 - Historic Groundwater Elevations
Groundwater Elevation (ft amsl)
1162
1161
1160
1159
1158
1157
1156
1155
1154
6/1/2011
8/4/2012
10/8/2013
12/12/2014
2/15/2016
4/20/2017
6/24/2018
8/28/2019
Date

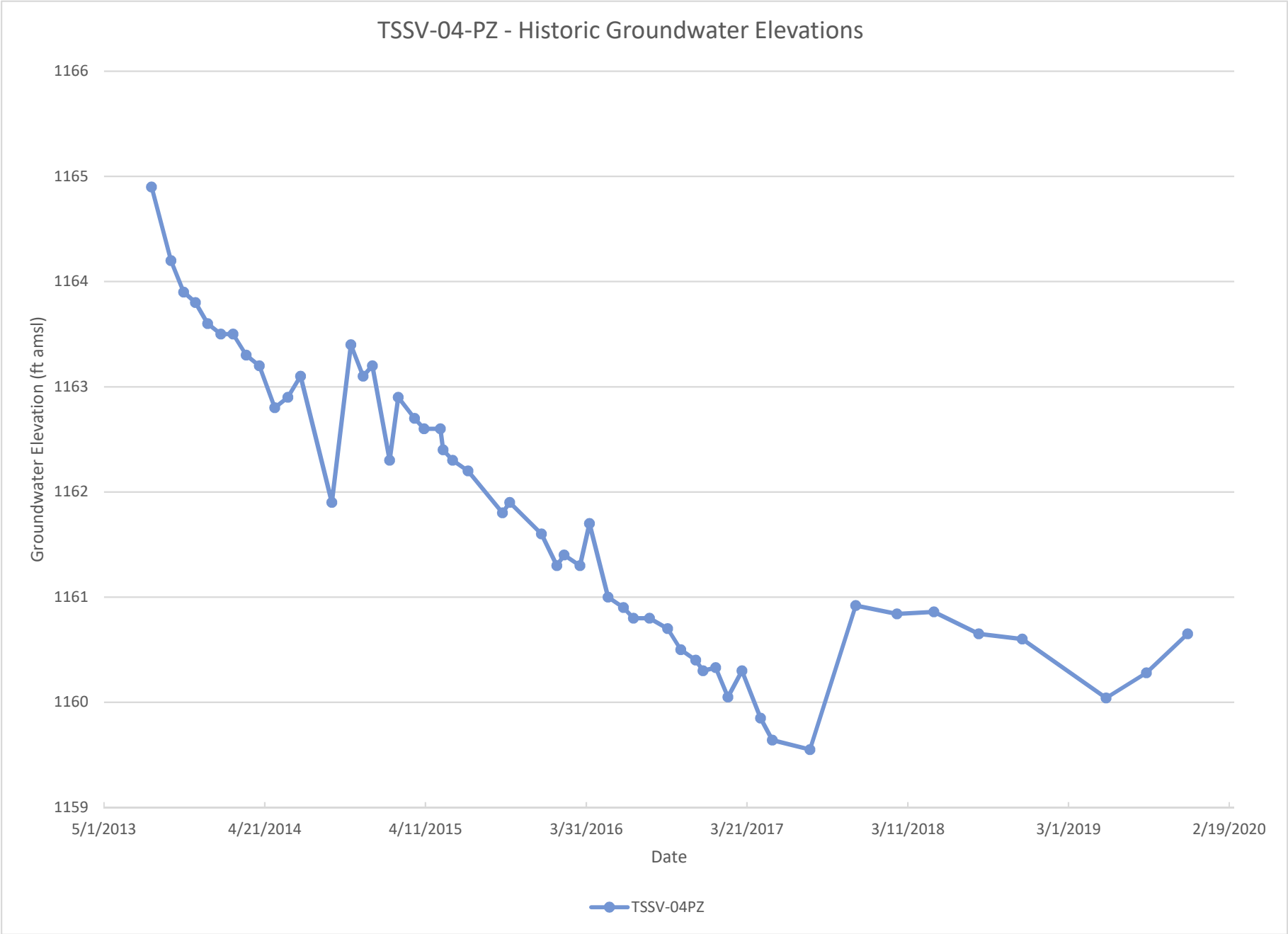

MW-07 - Historic Groundwater Elevations
Groundwater Elevation (ft amsl)
1163
1162
1161
1160
1159
1158
1157
1156
1155
12/1/2011
2/3/2013
4/9/2014
6/13/2015
8/16/2016
10/20/2017
12/24/2018
2/27/2020
Date

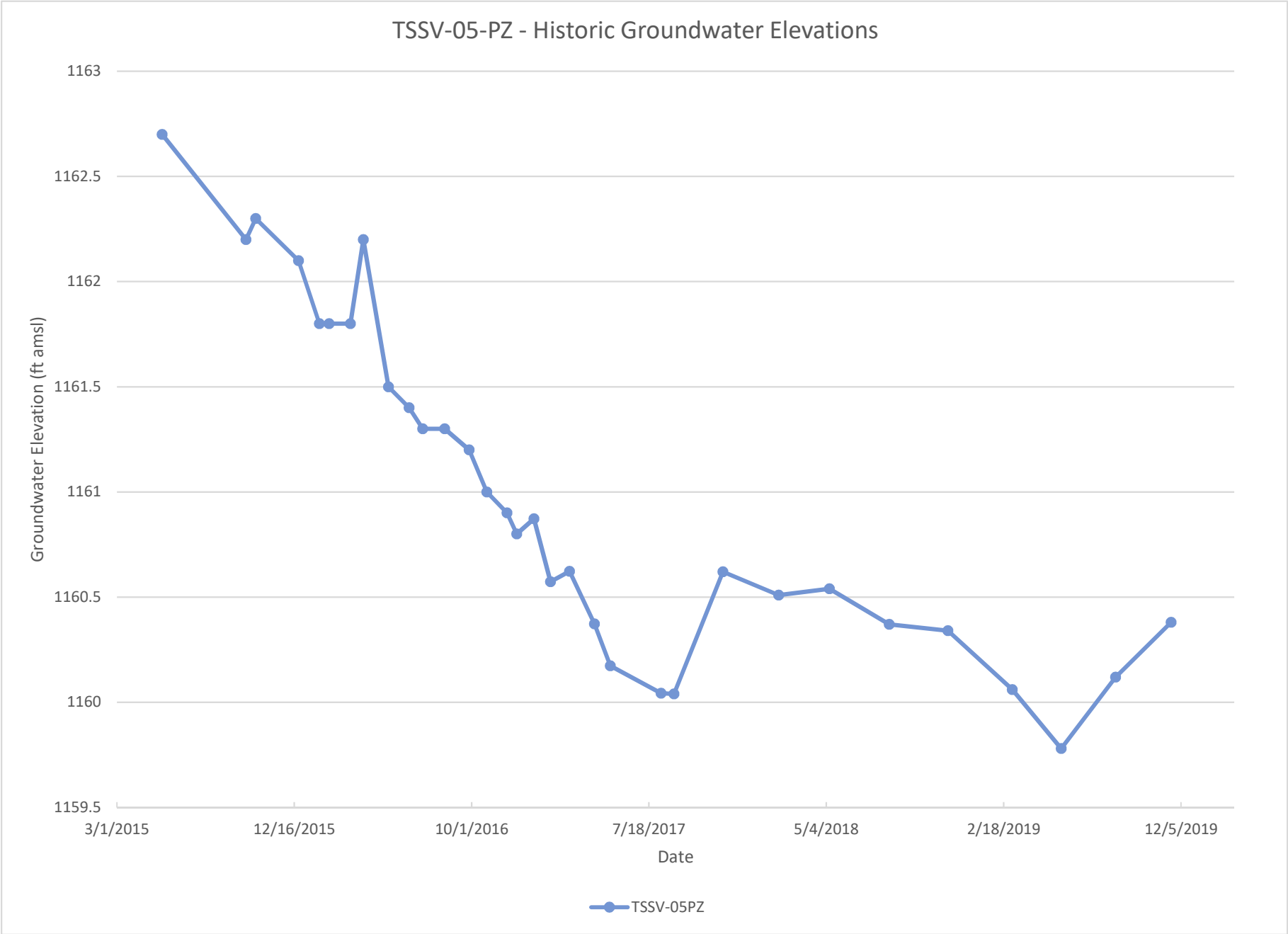

MW-08 - Historic Groundwater Elevations
Groundwater Elevation (ft amsl)
1171
1170
1169
1168
1167
1166
1165
1164
1163
1162
1161
10/1/2011
12/4/2012
2/7/2014
4/13/2015
6/16/2016
8/20/2017
10/24/2018
12/28/2019
Date

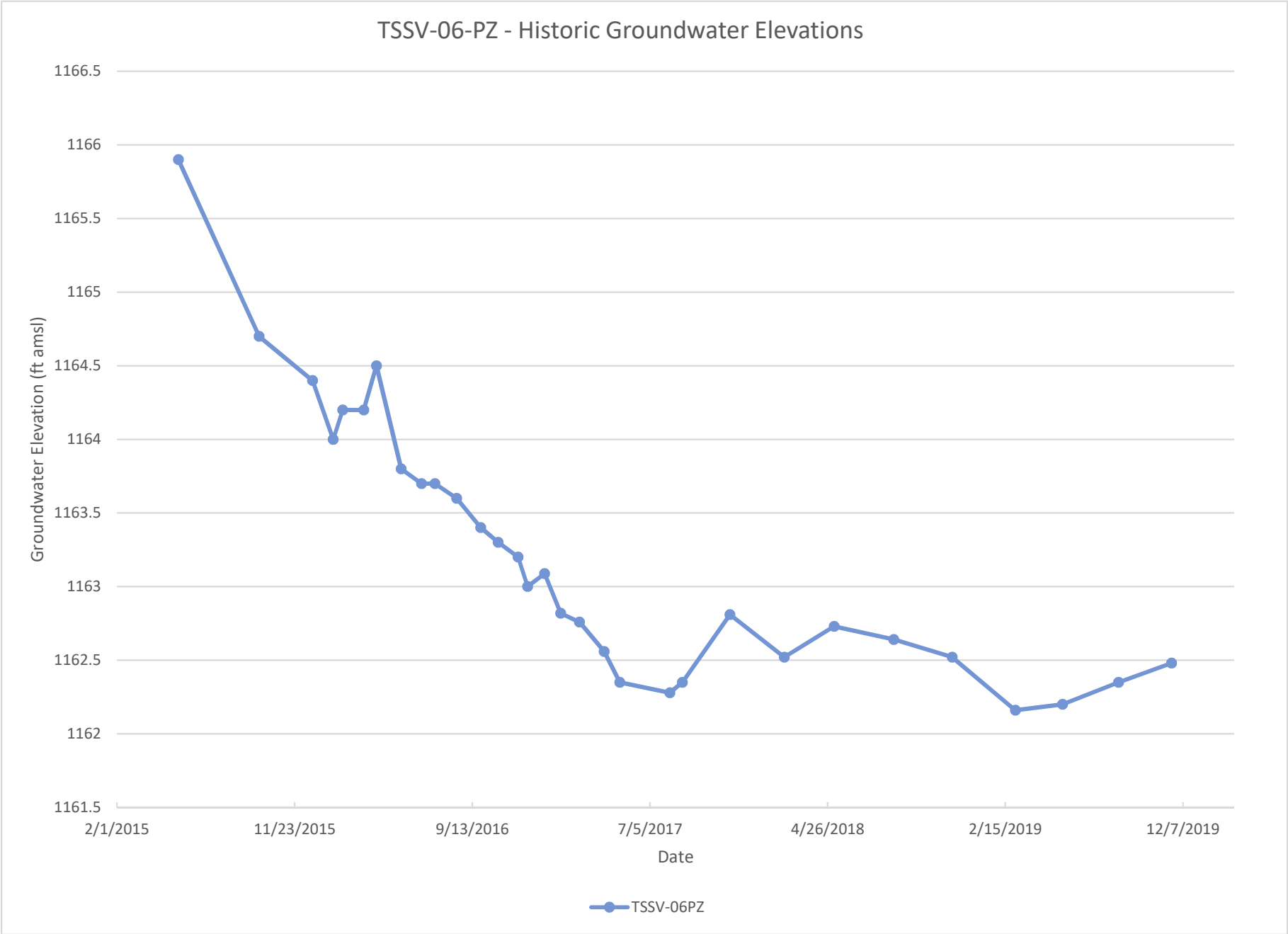

PW - Historic Groundwater Elevations
1200
1195
1190
1185
1180
1175
1170
1165
1160
Groundwater Elevation (ft amsl)
3/1/2002
1/30/2004
12/30/2005
11/30/2007
10/30/2009
9/30/2011
8/30/2013
7/31/2015
6/30/2017
5/31/2019
Date

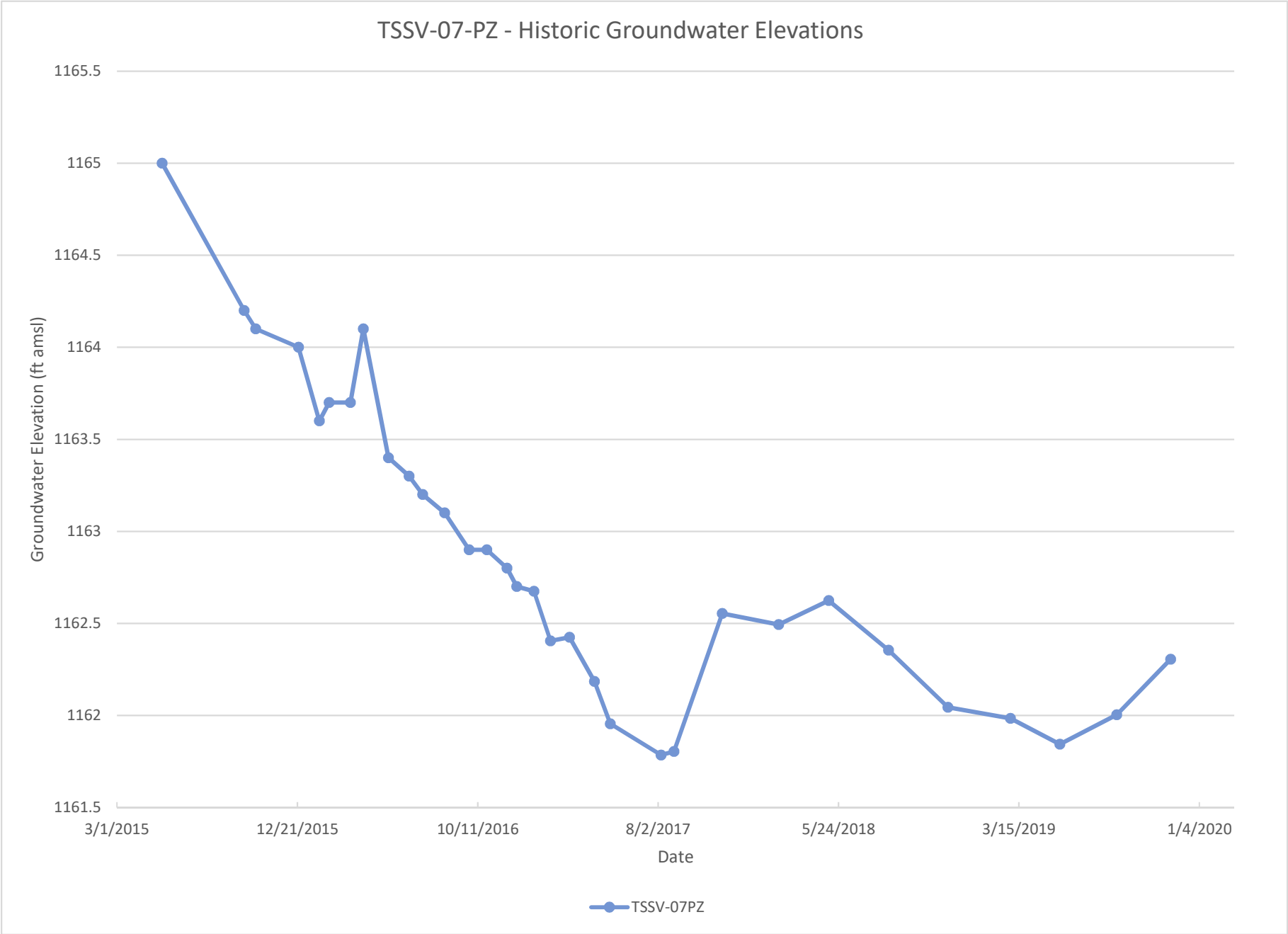

TSSV-02-PZ - Historic Groundwater Elevations
Groundwater Elevation (ft amsl)
1168
1167
1166
1165
1164
1163
1162
1161
5/1/2013
4/21/2014
4/11/2015
3/31/2016
3/21/2017
3/11/2018
3/1/2019
2/19/2020
Date

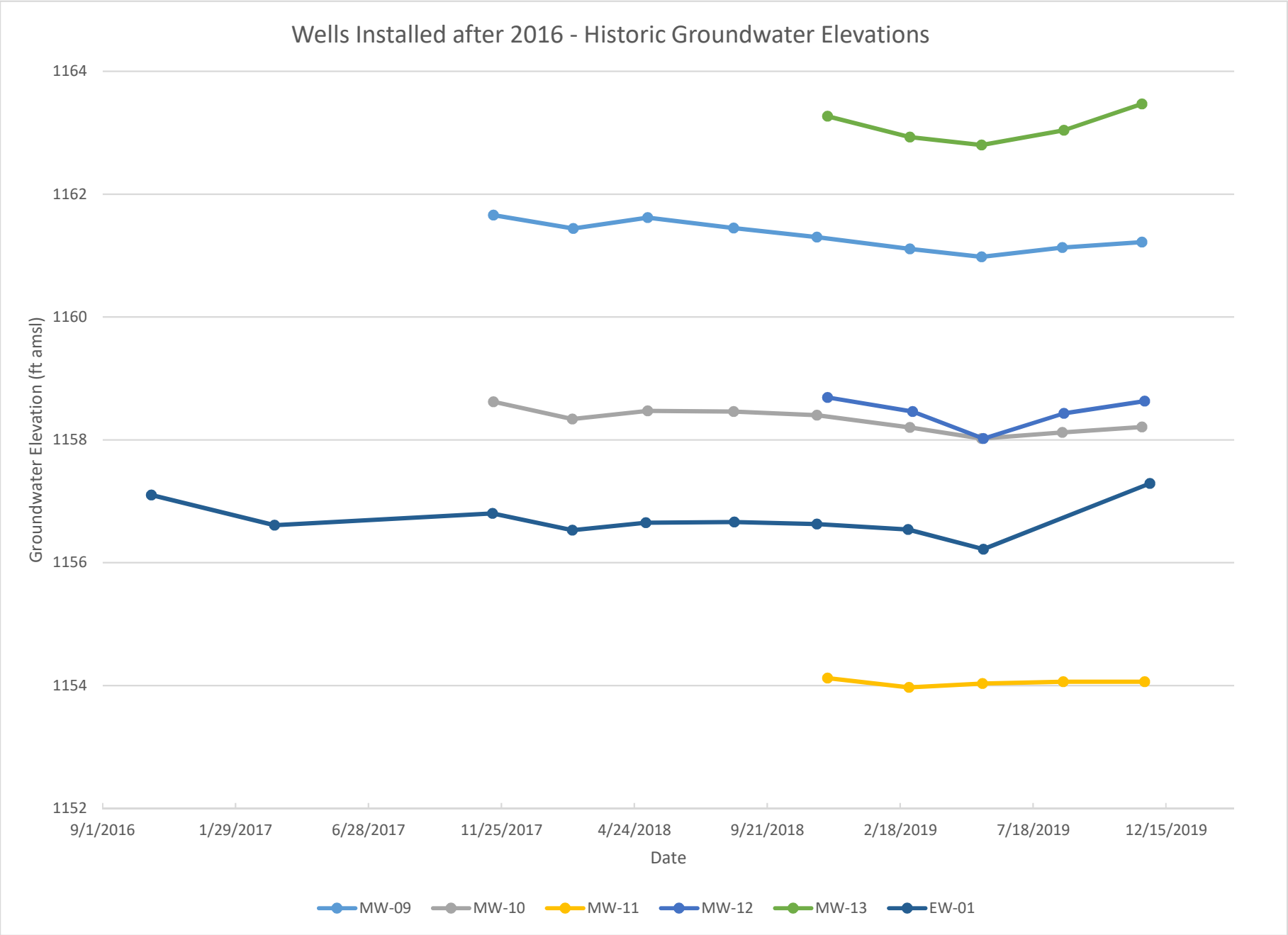

TSSV-03-PZ - Historic Groundwater Elevations
1164
1163
1162
1161
1160
1159
1158
1157
Groundwater Elevation (ft amsl)
4/1/2013
3/22/2014
3/12/2015
3/1/2016
2/19/2017
2/9/2018
1/30/2019
1/20/2020
Date
TSSV-03PZ


TSSV-04-PZ - Historic Groundwater Elevations
1166
1165
1164
1163
1162
1161
1160
1159
Groundwater Elevation (ft amsl)
5/1/2013
4/21/2014
4/11/2015
3/31/2016
3/21/2017
3/11/2018
3/1/2019
2/19/2020
Date
TSSV-04PZ


TSSV-05-PZ - Historic Groundwater Elevations
Groundwater Elevation (ft amsl)
1163
1162.5
1162
1161.5
1161
1160.5
1160
1159.5
3/1/2015
12/16/2015
10/1/2016
7/18/2017
5/4/2018
2/18/2019
12/5/2019
Date
TSSV-05PZ

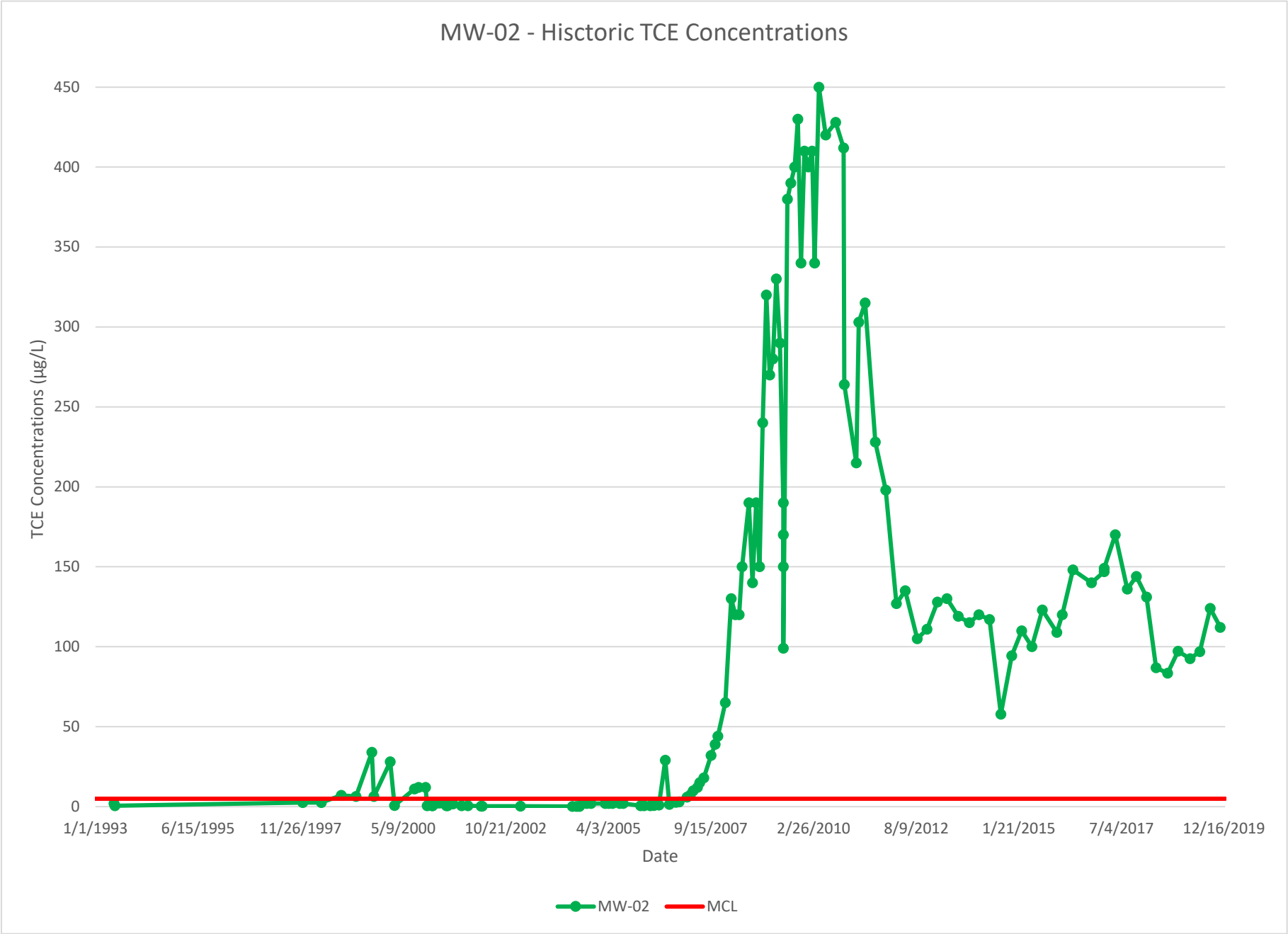

TSSV-06-PZ - Historic Groundwater Elevations
Groundwater Elevation (ft amsl)
1166.5
1166
1165.5
1165
1164.5
1164
1163.5
1163
1162.5
1162
1161.5
2/1/2015
11/23/2015
9/13/2016
7/5/2017
4/26/2018
2/15/2019
12/7/2019
Date
TSSV-06PZ

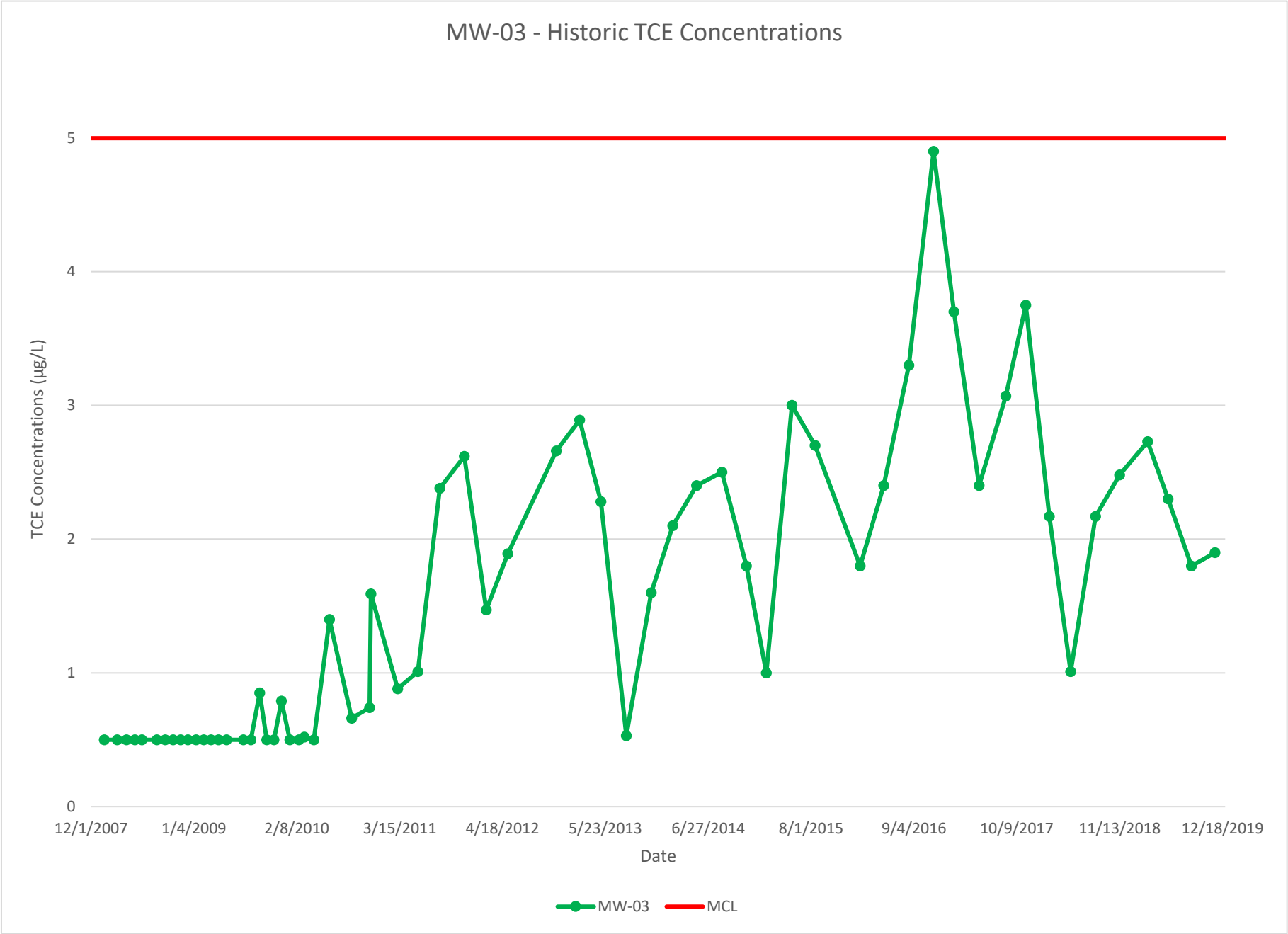

TSSV-07-PZ - Historic Groundwater Elevations
1165.5
1165
1164.5
1164
1163.5
1163
1162.5
1162
1161.5
Groundwater Elevation (ft amsl)
3/1/2015
12/21/2015
10/11/2016
8/2/2017
5/24/2018
3/15/2019
1/4/2020
Date
TSSV-07PZ


Wells Installed after 2016 - Historic Groundwater Elevations
1164
1162
1160
1158
1156
1154
1152
Groundwater Elevation (ft amsl)
9/1/2016
1/29/2017
6/28/2017
11/25/2017
4/24/2018
9/21/2018
2/18/2019
7/18/2019
12/15/2019
Date
MW-09
MW-10
MW-11
MW-12
MW-13
EW-01

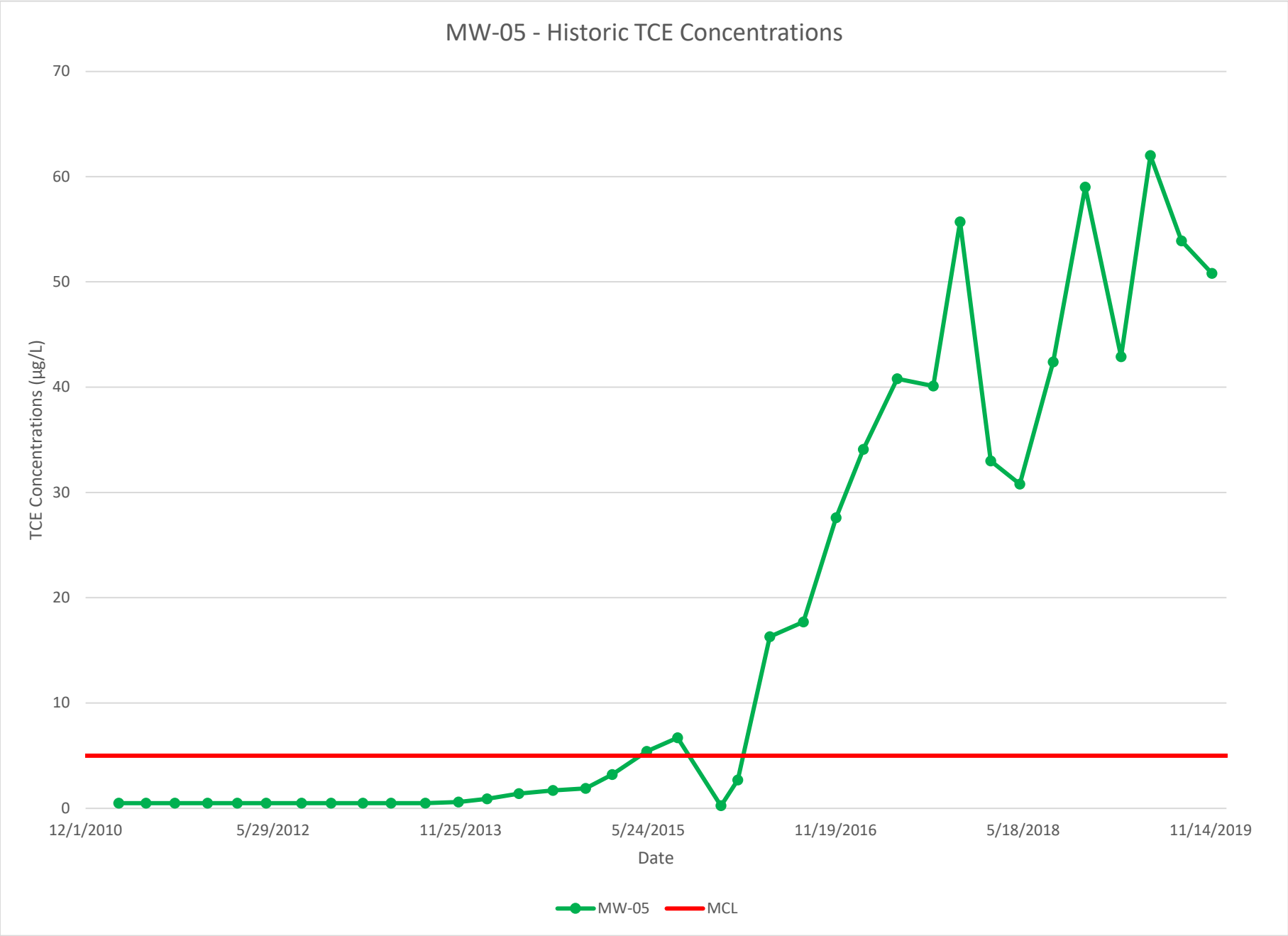
APPENDIX C

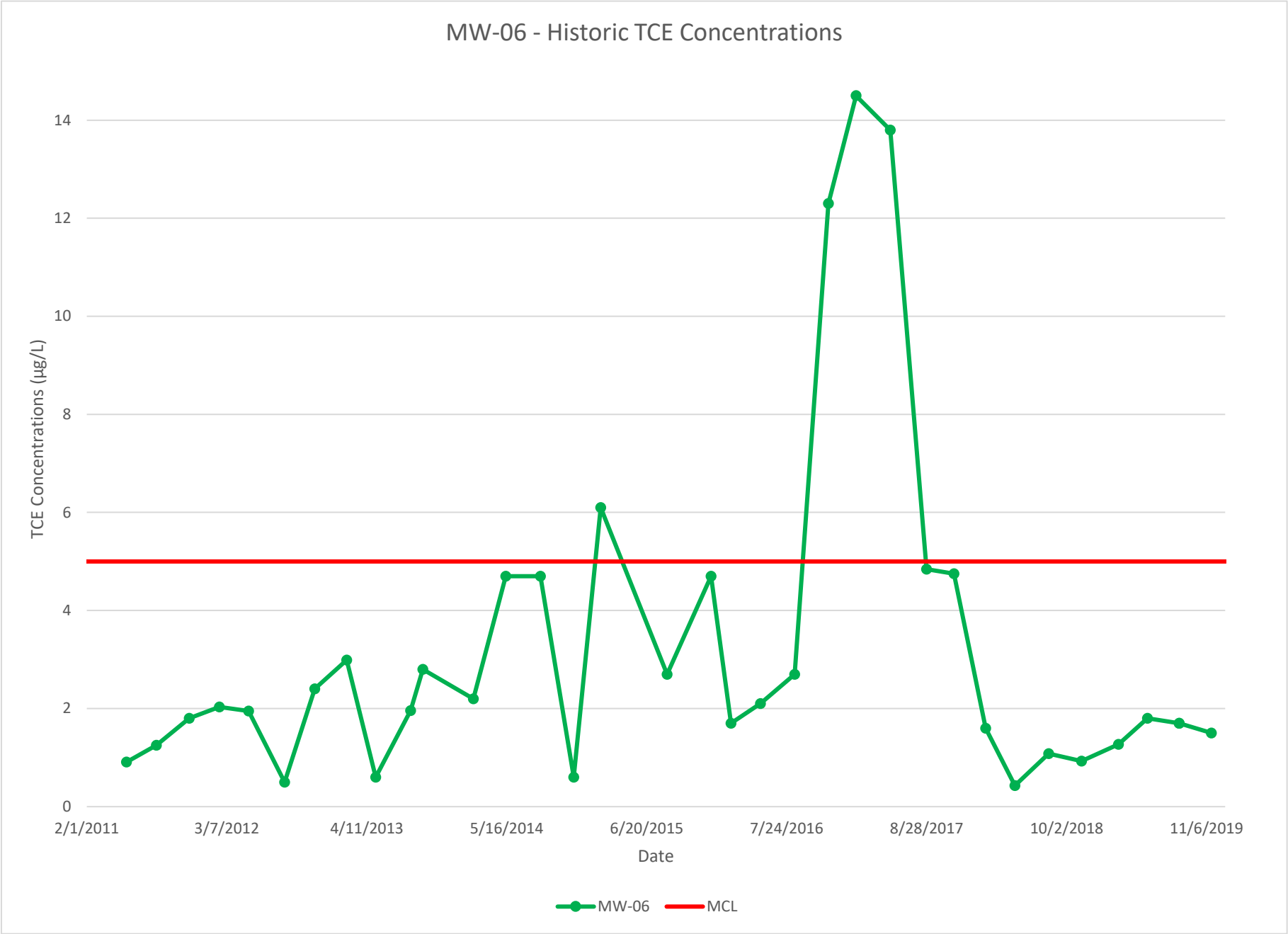
Trend Graphs for TCE Concentrations in Groundwater Wells

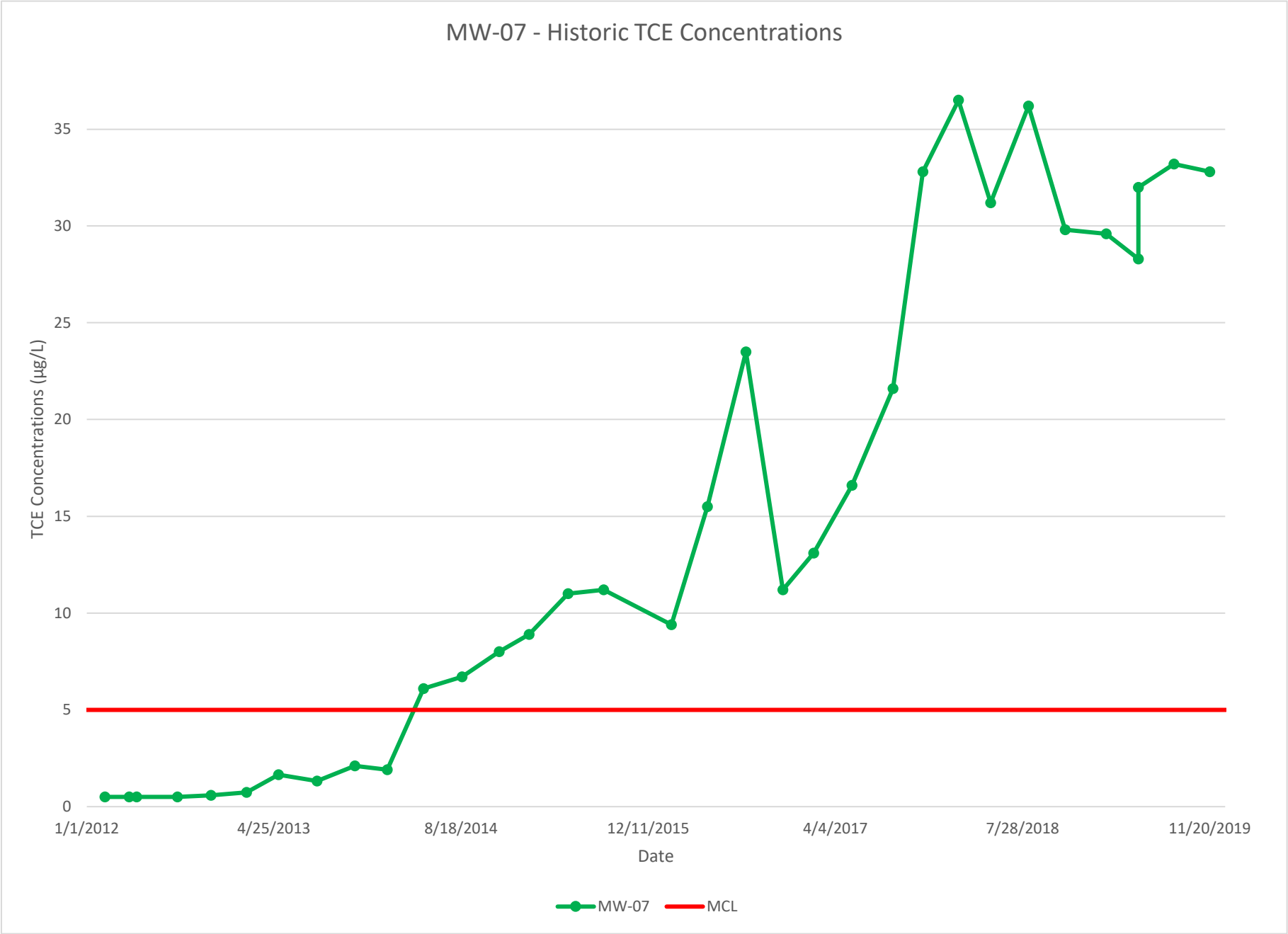

MW-02 - Hisctoric TCE Concentrations
TCE Concentrations (µg/L)
450
400
350
300
250
200
150
100
50
0
1/1/1993
6/15/1995
11/26/1997
5/9/2000
10/21/2002
4/3/2005
9/15/2007
2/26/2010
8/9/2012
1/21/2015
7/4/2017
12/16/2019
Date
MW-02
MCL

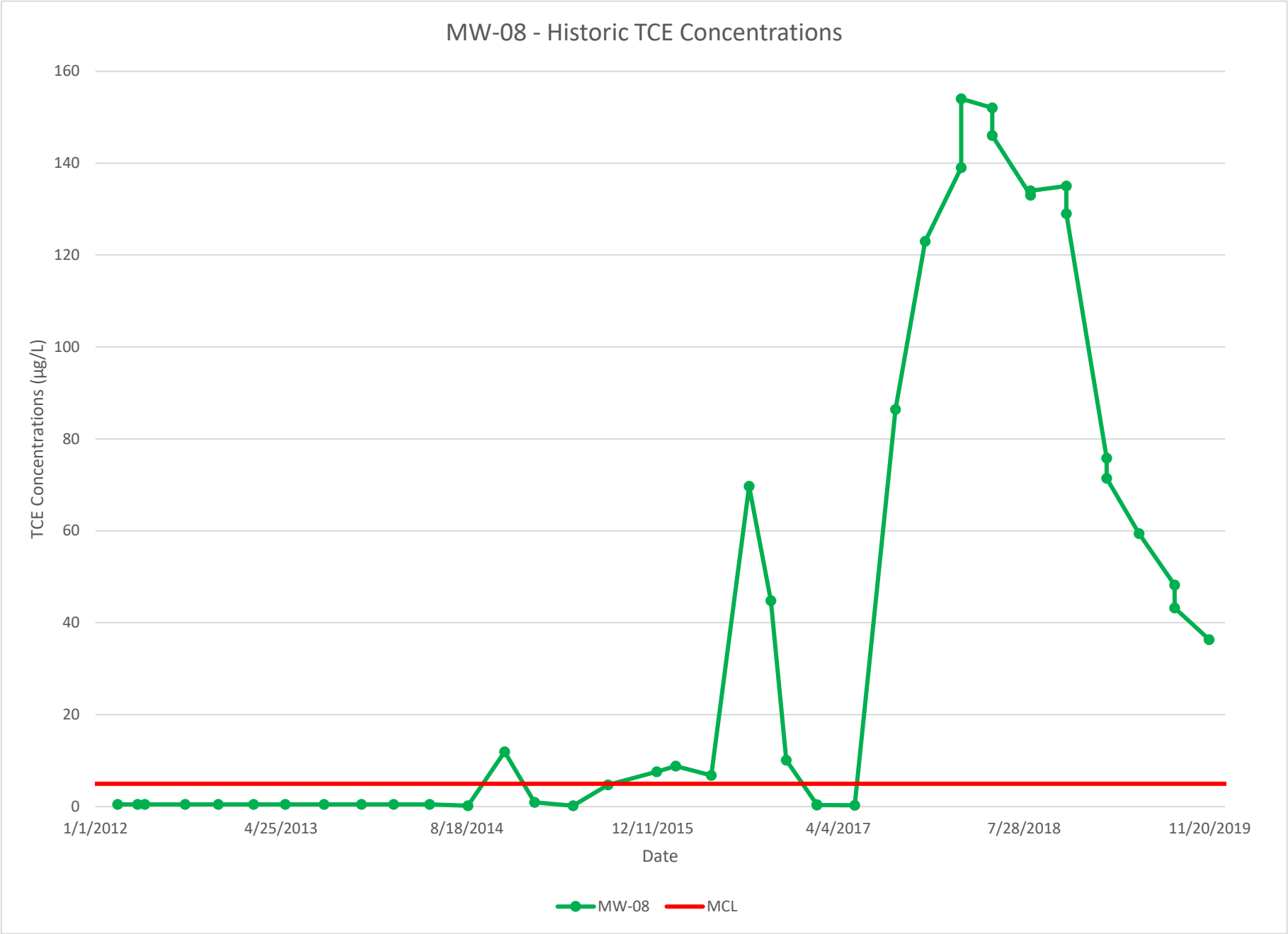

MW-03 - Historic TCE Concentrations
TCE Concentrations (µg/L)
5
4
3
2
1
0
12/1/2007
1/4/2009
2/8/2010
3/15/2011
4/18/2012
5/23/2013
6/27/2014
8/1/2015
9/4/2016
10/9/2017
11/13/2018
12/18/2019
Date
MW-03
MCL

MW-04 - Historic TCE Concentrations
TCE Concentrations (µg/L)
5
4
3
2
1
0
9/1/2010
12/25/2011
4/18/2013
8/11/2014
12/4/2015
3/28/2017
7/21/2018
11/13/2019
Date
MW-04
MCL


MW-05 - Historic TCE Concentrations
70
60
50
40
30
20
10
0
TCE Concentrations (µg/L)
12/1/2010
5/29/2012
11/25/2013
5/24/2015
11/19/2016
5/18/2018
11/14/2019
Date
MW-05
MCL


MW-06 - Historic TCE Concentrations
TCE Concentrations (µg/L)
0
2
4
6
8
10
12
14
2/1/2011
3/7/2012
4/11/2013
5/16/2014
6/20/2015
7/24/2016
8/28/2017
10/2/2018
11/6/2019
Date
MW-06
MCL


MW-07 - Historic TCE Concentrations
TCE Concentrations (µg/L)
35
30
25
20
15
10
5
0
1/1/2012
4/25/2013
8/18/2014
12/11/2015
4/4/2017
7/28/2018
11/20/2019
Date
MW-07
MCL

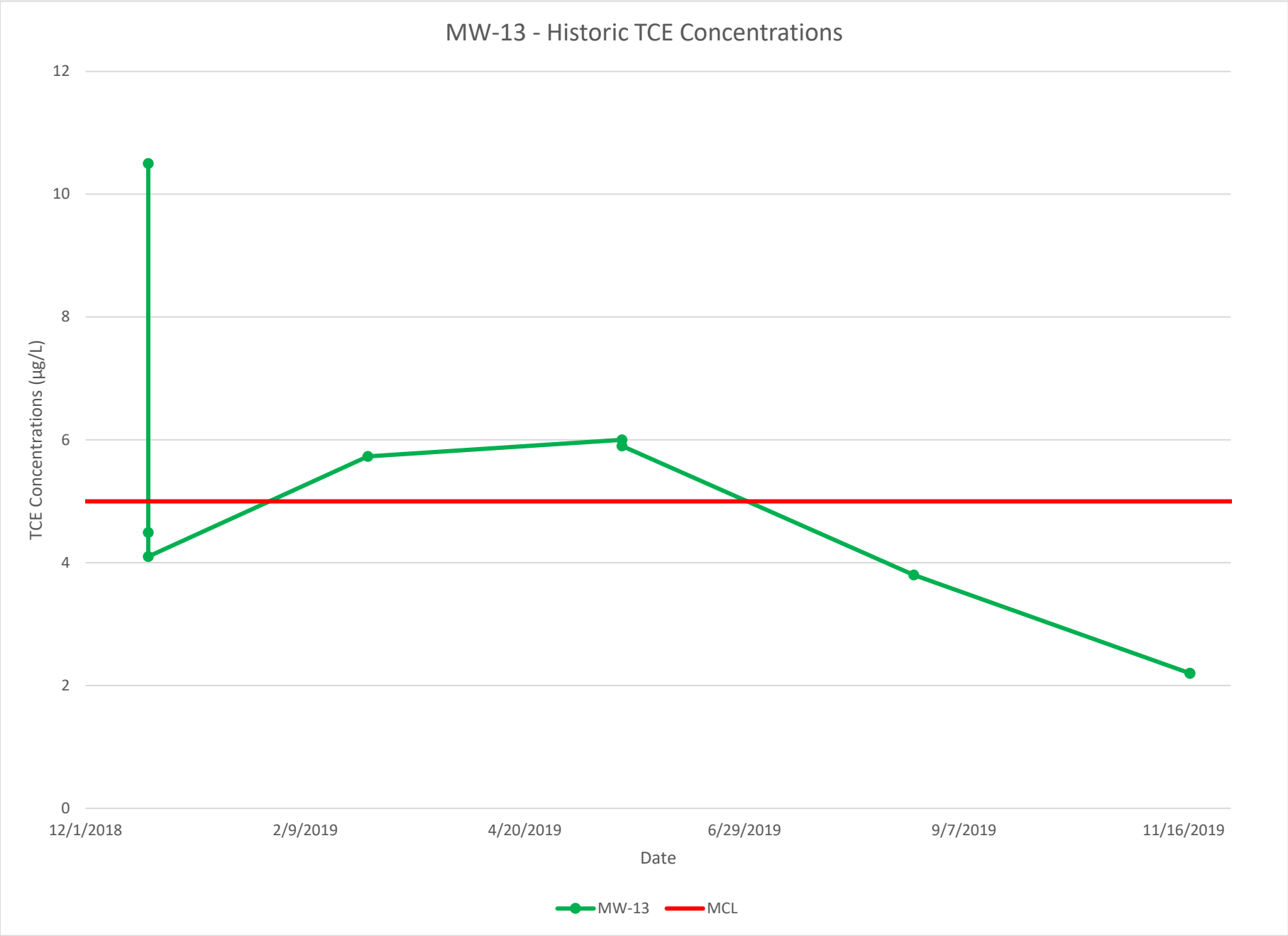

MW-08 - Historic TCE Concentrations
TCE Concentrations (µg/L)
160
140
120
100
80
60
40
20
0
1/1/2012
4/25/2013
8/18/2014
12/11/2015
4/4/2017
7/28/2018
11/20/2019
Date
MW-08
MCL

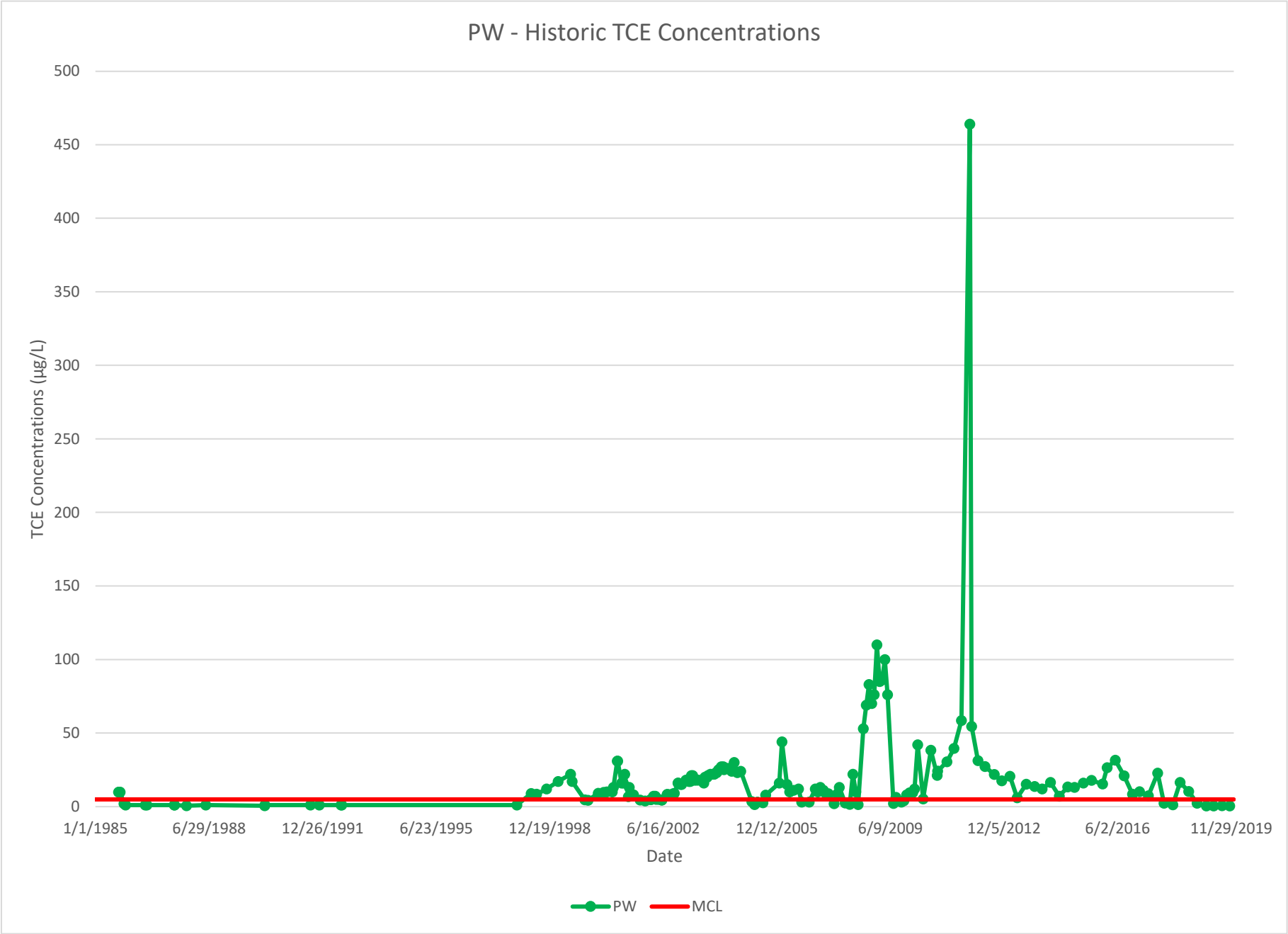
MW-09 - Historic TCE Concentrations
TCE Concentrations (µg/L)
25
20
15
10
5
0
1/1/2018
4/11/2018
7/20/2018
10/28/2018
2/5/2019
5/16/2019
8/24/2019
12/2/2019
Date
MW-09
MCL

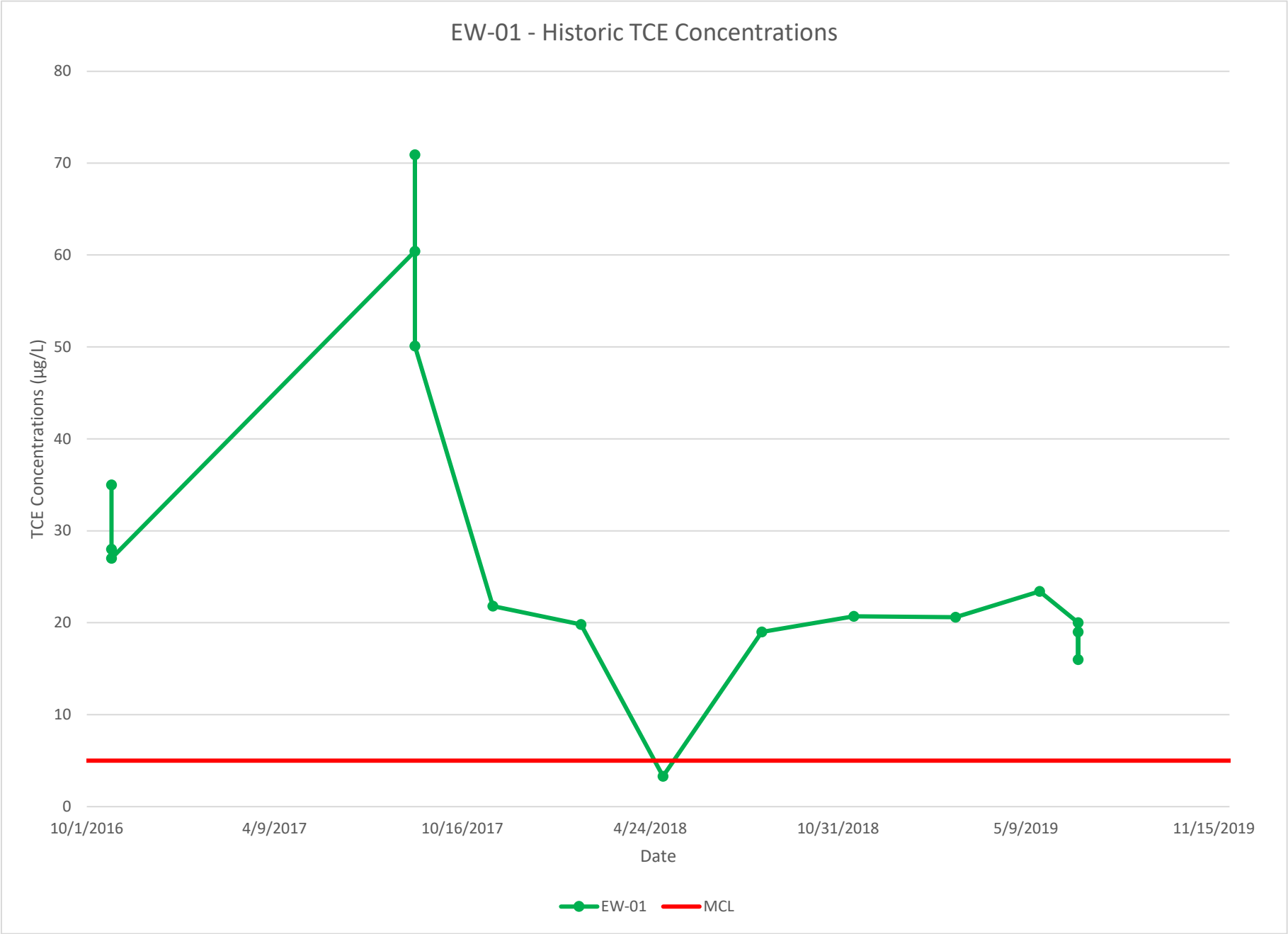
MW-10 - Historic TCE Concentrations
400
350
300
250
200
150
100
50
0
TCE Concentrations (µg/L)
1/1/2018
5/21/2018
10/8/2018
2/25/2019
7/15/2019
12/2/2019
Date
MW-10
MCL

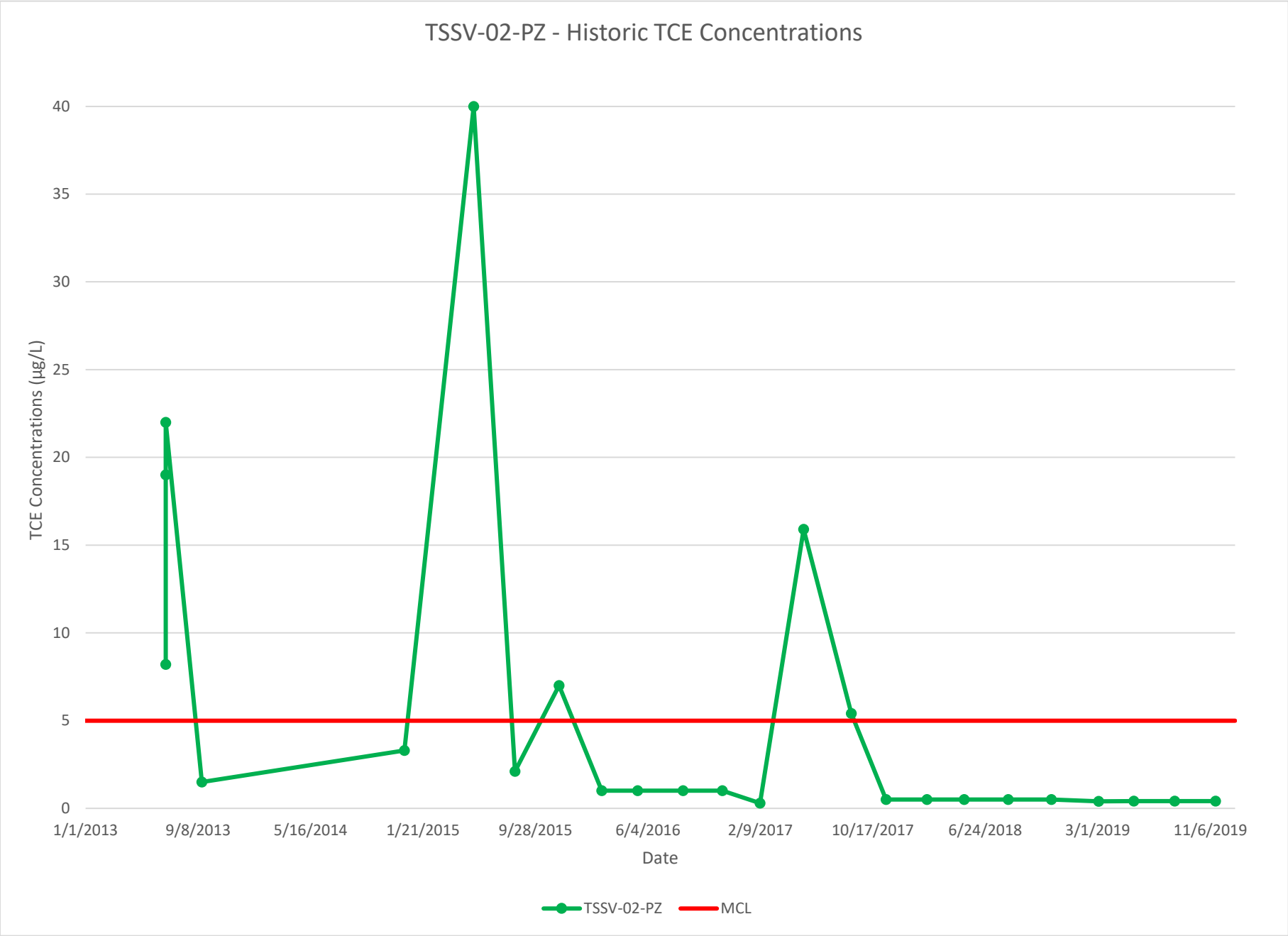
MW-11 - Historic TCE Concentrations
TCE Concentrations (µg/L)
45
40
35
30
25
20
15
10
5
0
12/1/2018
1/25/2019
3/21/2019
5/15/2019
7/9/2019
9/2/2019
10/27/2019
12/21/2019
Date
MW-11
MCL

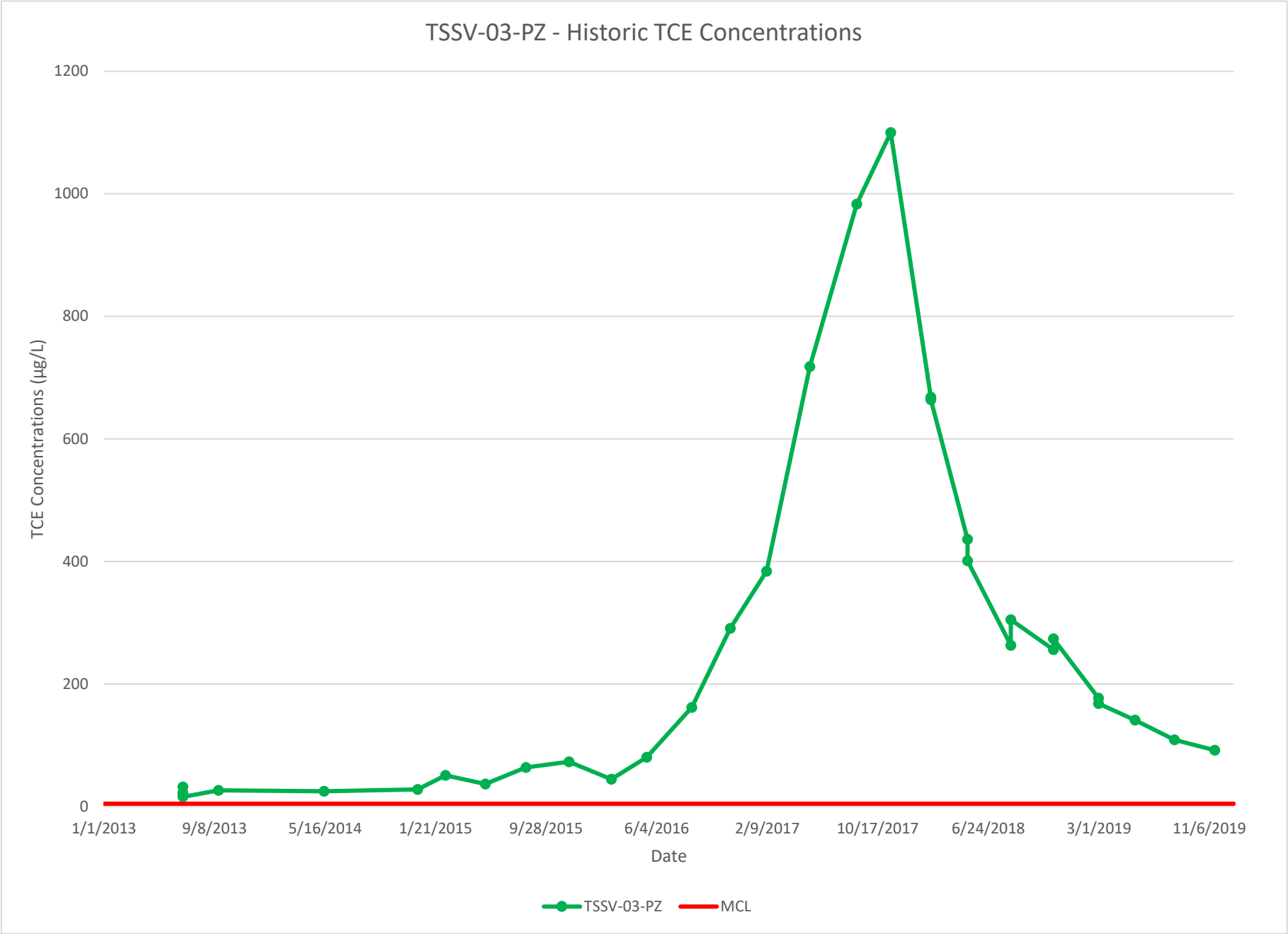
MW-12 - Historic TCE Concentrations
TCE Concentrations (µg/L)
5
4
3
2
1
0
12/1/2018
2/9/2019
4/20/2019
6/29/2019
9/7/2019
11/16/2019
Date
MW-12
MCL

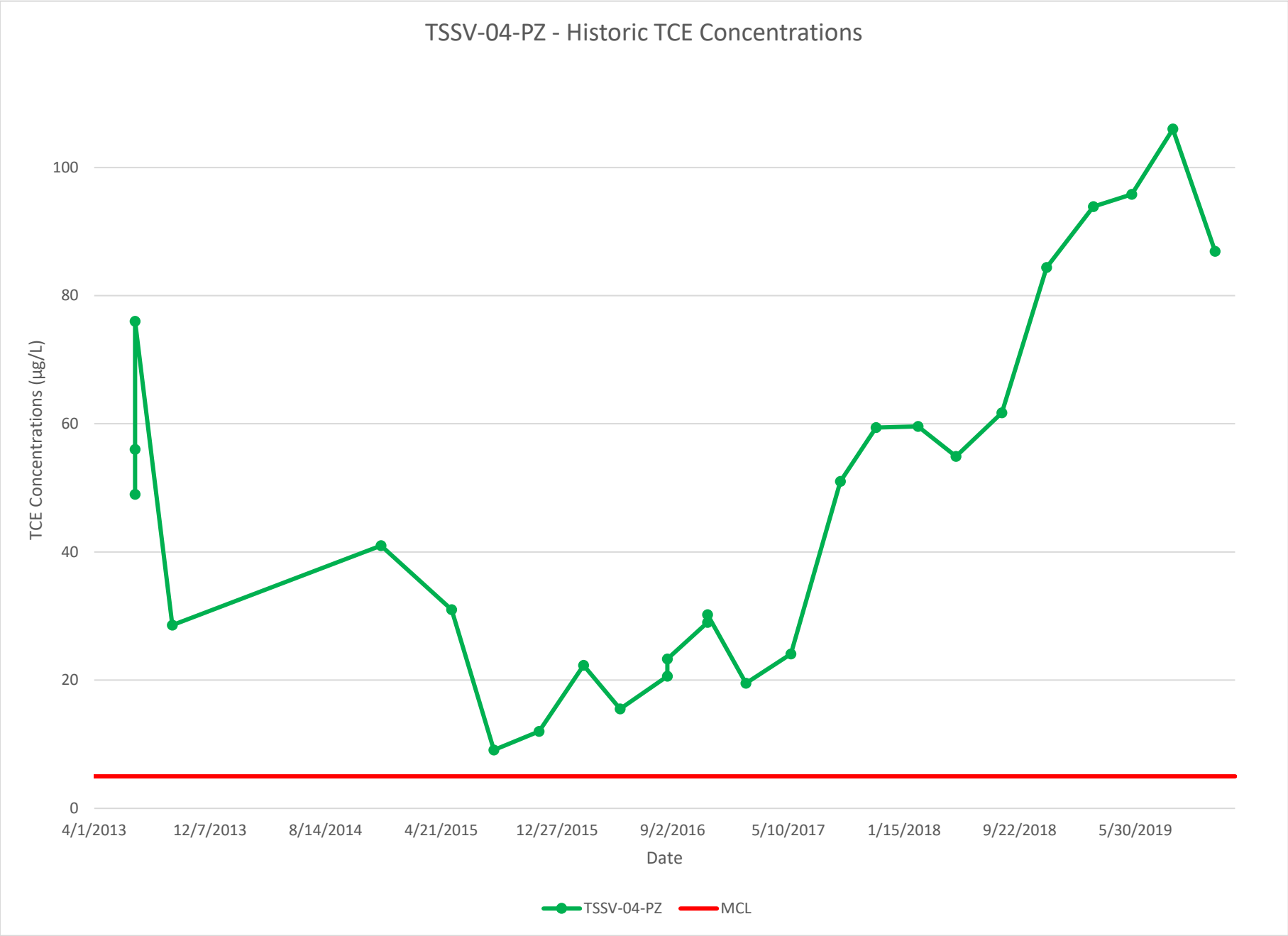

MW-13 - Historic TCE Concentrations
12
10
8
6
4
2
0
TCE Concentrations (µg/L)
12/1/2018
2/9/2019
4/20/2019
6/29/2019
9/7/2019
11/16/2019
Date
MW-13
MCL

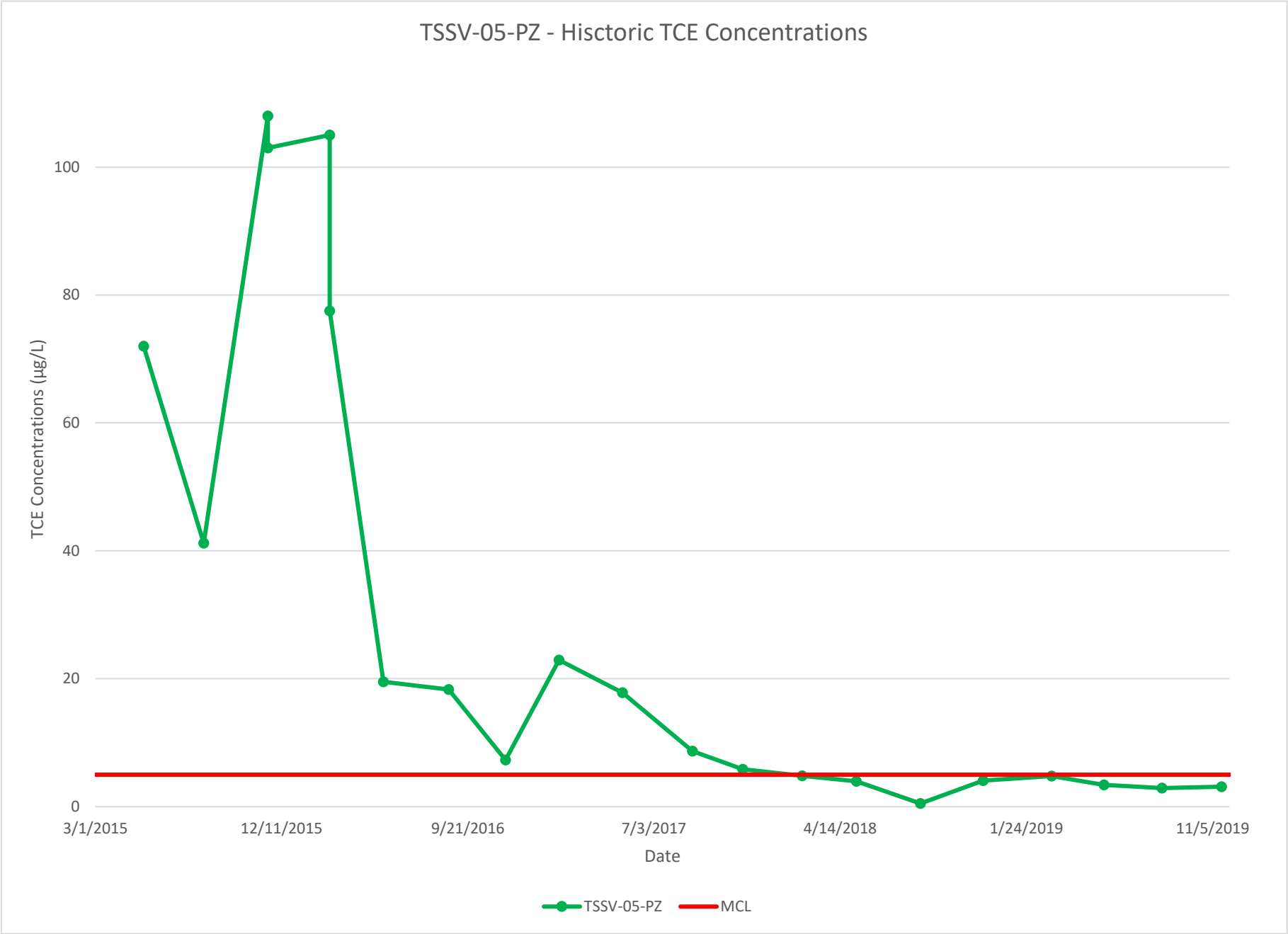

PW - Historic TCE Concentrations
TCE Concentrations (µg/L)
500
450
400
350
300
250
200
150
100
50
0
1/1/1985
6/29/1988
12/26/1991
6/23/1995
12/19/1998
6/16/2002
12/12/2005
6/9/2009
12/5/2012
6/2/2016
11/29/2019
Date
PW
MCL

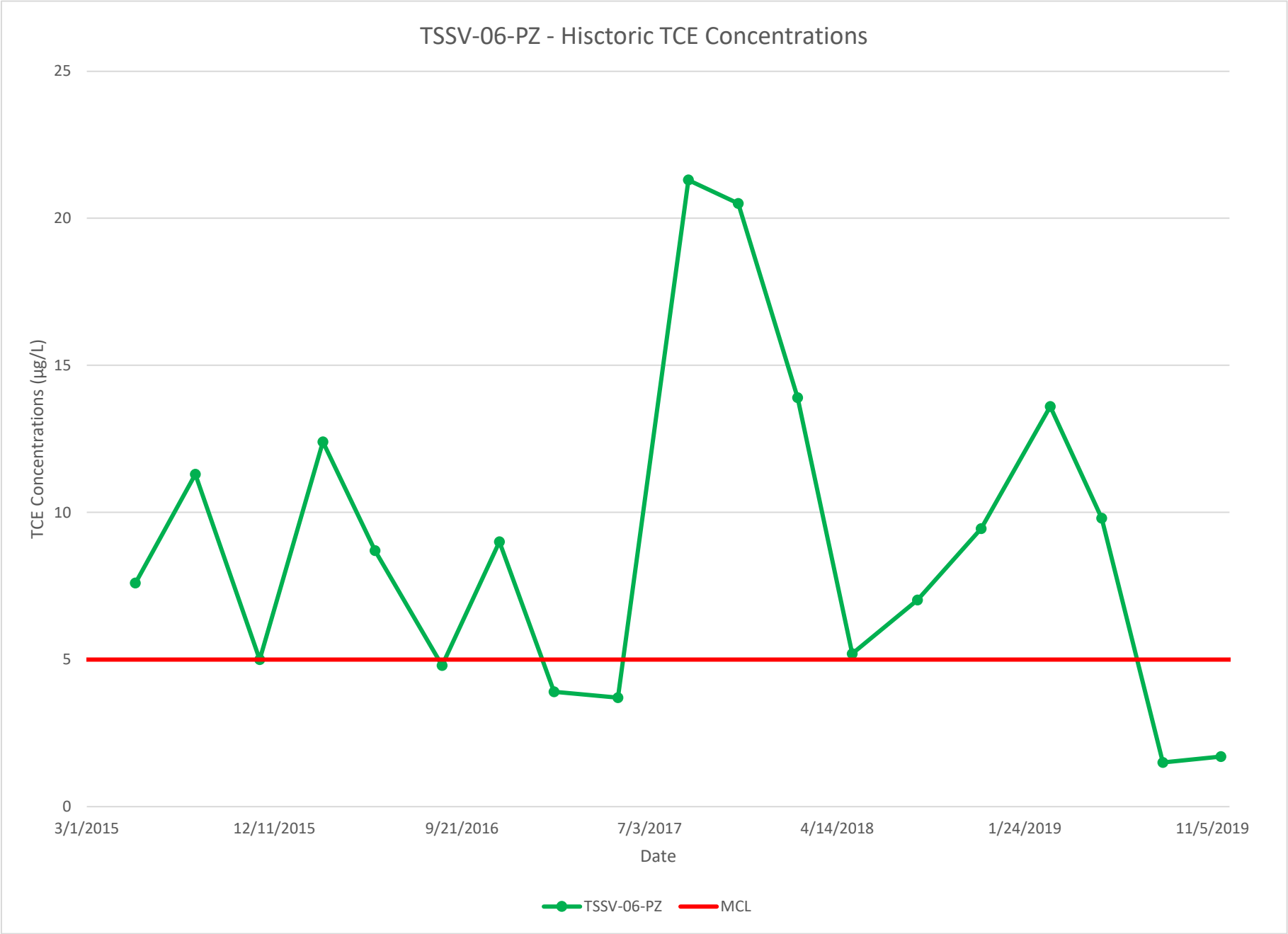

EW-01 - Historic TCE Concentrations
80
70
60
50
40
30
20
10
0
TCE Concentrations (µg/L)
10/1/2016
4/9/2017
10/16/2017
4/24/2018
10/31/2018
5/9/2019
11/15/2019
Date
EW-01
MCL

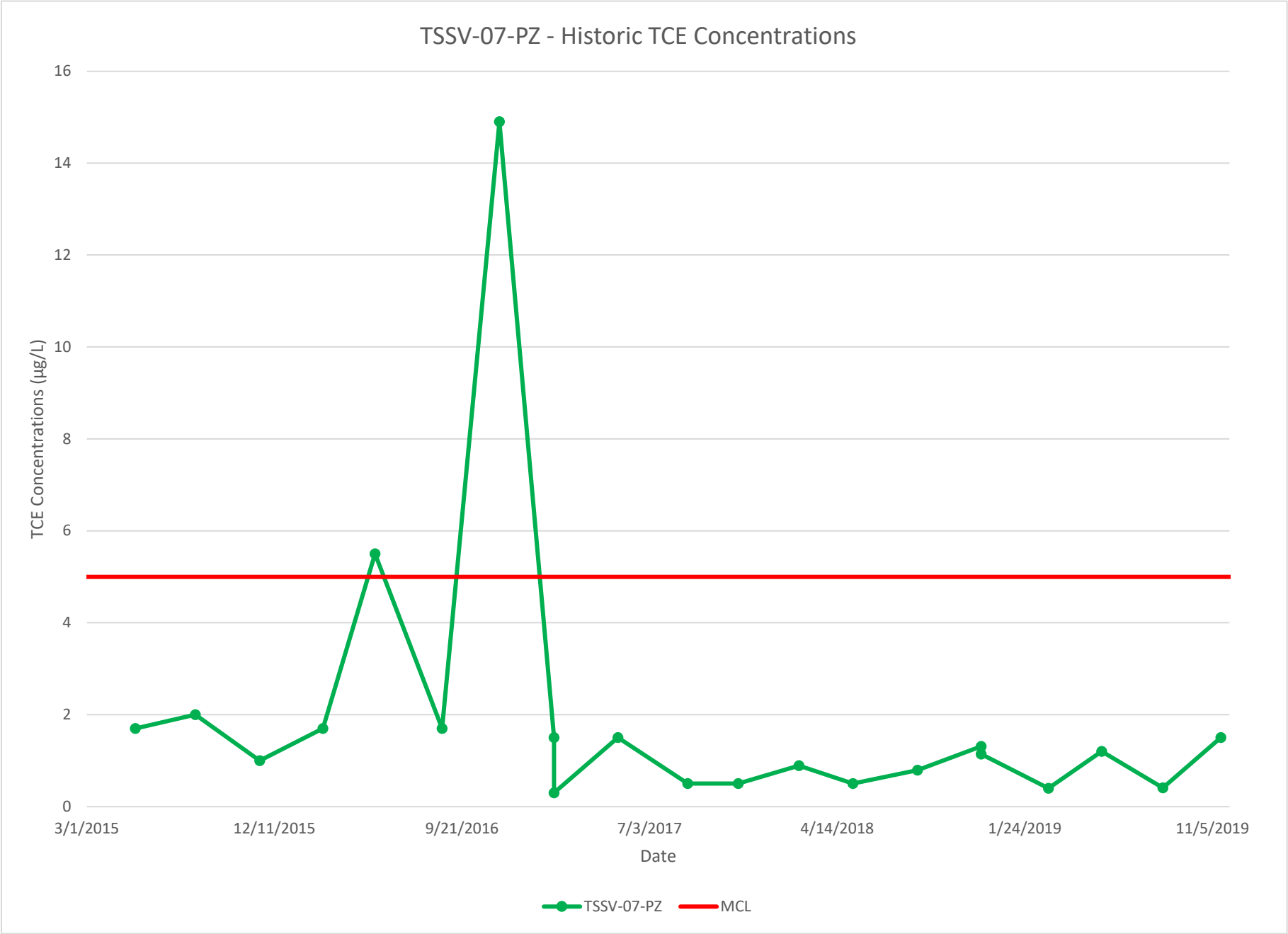

TSSV-02-PZ - Historic TCE Concentrations
TCE Concentrations (µg/L)
40
35
30
25
20
15
10
5
0
1/1/2013
9/8/2013
5/16/2014
1/21/2015
9/28/2015
6/4/2016
2/9/2017
10/17/2017
6/24/2018
3/1/2019
11/6/2019
Date
TSSV-02-PZ
MCL


TSSV-03-PZ - Historic TCE Concentrations
1200
1000
800
600
400
200
0
TCE Concentrations (µg/L)
1/1/2013
9/8/2013
5/16/2014
1/21/2015
9/28/2015
6/4/2016
2/9/2017
10/17/2017
6/24/2018
3/1/2019
11/6/2019
Date
TSSV-03-PZ
MCL


TSSV-04-PZ - Historic TCE Concentrations
TCE Concentrations (µg/L)
100
80
60
40
20
0
4/1/2013
12/7/2013
8/14/2014
4/21/2015
12/27/2015
9/2/2016
5/10/2017
1/15/2018
9/22/2018
5/30/2019
Date
TSSV-04-PZ
MCL


TSSV-05-PZ - Hisctoric TCE Concentrations
TCE Concentrations (µg/L)
100
80
60
40
20
0
3/1/2015
12/11/2015
9/21/2016
7/3/2017
4/14/2018
1/24/2019
11/5/2019
Date
TSSV-05-PZ
MCL


TSSV-06-PZ - Hisctoric TCE Concentrations
25
20
15
10
5
0
TCE Concentrations (µg/L)
3/1/2015
12/11/2015
9/21/2016
7/3/2017
4/14/2018
1/24/2019
11/5/2019
Date
TSSV-06-PZ
MCL


TSSV-07-PZ - Historic TCE Concentrations
TCE Concentrations (µg/L)
16
14
12
10
8
6
4
2
0
3/1/2015
12/11/2015
9/21/2016
7/3/2017
4/14/2018
1/24/2019
11/5/2019
Date
TSSV-07-PZ
MCL

APPENDIX D

Laboratory Reports of Analysis
(Included on CD/DVD only)