Midway Landfill
2015-2019 Remedial Action Status Report

Prepared for

Seattle Public Utilities

July 2020

Prepared by

Parametrix

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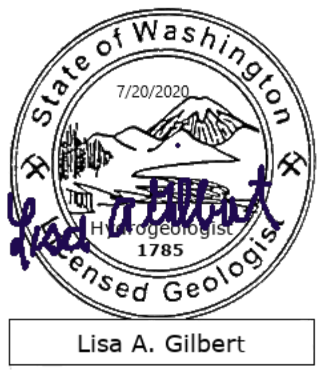
CERTIFICATION

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a professional hydrogeologist licensed to practice as such, is affixed below.



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ACRONYMS AND ABBREVIATIONS

µg/L	Micrograms per liter
1,1 DCA	1,1-dichloroethane
1,1-DCE	1,1-dichloroethene
1,2-DCE	1,2-dichloroethene
1,2-DCA	1,2-dichloroethane
AA	Alluvial Aquifer
AGI	Applied Geotechnology, Inc.
AM-D	AM-Deep
AM-M	AM-Middle
AM-S	AM-Shallow
CAP	Cleanup action plan
CD	Consent Decree
CERCLA	Comprehensive Environmental Response Liability Act
City	City of Seattle
CMP	Compliance Monitoring Plan
Contractor	ST's contractor
COC	Contaminant of concern
COD	Chemical oxygen demand
Corps	U.S. Army Corps of Engineers
CSCSL	Confirmed and Suspected Contaminated Sites List
CSWGP	Construction stormwater general permit
DA	Deep Aquifer
DCA	Dichloroethane
DCE	Dichloroethene
DNAPL	Dense non-aqueous phase liquid
DO	Dissolved oxygen
DOH	Washington State Department of Health
EA	Endangerment Assessment
Ecology	Washington State Department of Ecology
EHSI	EHS-International, Inc.
EIM	Environmental Information Management
EIS	Environmental Impact Statement

ACRONYMS AND ABBREVIATIONS (CONTINUED)

EPA	U.S. Environmental Protection Agency
ESD	Explanation of Significant Difference
FS	Feasibility Study
FWLE	Federal Way Link Extension
GC/MS	Gas chromatography-mass spectrometry
HDPE	High-density polyethylene
IC	Institutional controls
I-5	Interstate 5
LA	Landfill Aquifer
LEL	Lower explosive limit
MCL	Maximum Contaminant Level
MSW	Municipal solid waste
MTCA	Model Toxics Control Act (WAC 173-340)
NGA	Norther Gravel Aquifer
NMOC	Non-methane organic compound
NOCOA	Notice of Construction Order of Approval
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NTU	Nephelometric Turbidity Units
OMF	Operations and Maintenance Facility
O&M	Operations and Maintenance
OMP	Operations and Maintenance Plan
PA	Perched Aquifer
PCE	Tetrachloroethylene
PPM	Parts per million
PSCAA	Puget Sound Clean Air Agency
RCW	Revised Code of Washington
RI	Remedial Investigation
ROD	Record of decision
ROW	Right of way
SA	Sand Aquifer
SEPA	State Environmental Policy Act

ACRONYMS AND ABBREVIATIONS (CONTINUED)

SGA	Southern Gravel Aquifer
SG/SR	Saturated gravel/saturated refuse
SIM	Selected ion monitoring
SPU	Seattle Public Utilities
SSM	Startup shutdown and malfunction
ST	Sound Transit
TCA	1,1,1-trichloroethane
TCE	Trichloroethylene
TESC	Temporary erosion and sediment control plan
TOC	Total organic carbon
UCMR 3	The Third Unregulated Contaminant Monitoring Rule
UGA	Upper Gravel Aquifer
VCP	Voluntary Cleanup Program
VOC	Volatile organic compounds
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation

1. BACKGROUND

1.1 Introduction

Reporting Period: 2015 through 2019

Name of Site: Midway Landfill

Address: 24808 Pacific Highway S, Kent, Washington 98032

Facility Site ID: 2043

Project Contacts: Jeff Neuner and Min-Soon Yim

This remedial action status report presents a summary of remedial action system changes and events, and monitoring programs and results conducted at the Seattle Public Utilities (SPU) Midway Landfill (Facility Site ID #2043) for 2015 through 2019, in preparation for the Fourth Periodic Review to be conducted by the U.S. Environmental Protection Agency (EPA). In addition, this report identifies modifications and changes planned for the next five-year review period.

1.2 Regulatory Status

When the City of Seattle (City) closed the Midway Landfill in 1983, extensive testing for landfill gas and analysis of groundwater in and around the landfill began. The presence of contaminants with a potential for off-site migration was indicated, and Washington State Department of Ecology (Ecology) began to investigate the site. In 1986, EPA placed the site on the National Priorities List (NPL) due to groundwater conditions at the site. As required by EPA, the City completed a Remedial Investigation (RI), an Endangerment Assessment (EA), and a Feasibility Study (FS). In May 1990, prior to completion of the RI and FS studies, the City and Ecology entered into a consent decree (CD) pursuant to the State of Washington Model Toxics Control Act (MTCA). This legal agreement set forth Ecology's determination that undertaking certain remedial actions, prior to a Cleanup Action Plan (CAP), would provide immediate protection to human health and the environment.

The remedial actions were completed by 1992 and consisted of the following four landfill closure elements:

- Construction of a landfill cover
- Completion of a landfill gas extraction system
- Completion of a surface water management system
- Preparation of a comprehensive operation and maintenance manual

Under MTCA, the decision document that selects the cleanup action and cleanup levels is called the CAP (similar to an EPA Record of Decision [ROD]). Ecology and the City had been working on a CAP since 1992. In September 2000, the EPA completed a Comprehensive Environmental Response Compensation Liability Act (CERCLA) ROD for the landfill so that a determination of CERCLA construction completion could be made (EPA 2000). Ecology then decided to use the ROD as a CAP for a final MTCA remedy, pursuant to Washington Administrative Code (WAC) 173-340-360 (13).

The Midway Landfill ROD documented and approved the selected remedial action for the site. The selected remedy incorporated elements required in the CD and added some elements to ensure long-term protectiveness of the remedy. The selected remedy consisted of monitoring, continuing to operate and maintain all remedial elements in the CD, and implementing institutional controls. The selected remedy also set cleanup standards for groundwater downgradient of the landfill. In February 2006, Ecology and the City of Seattle signed Amendment No. 1 to the CD to require implementation of the final cleanup action selected in the ROD.

Table 1 lists the groundwater contaminants of concern (COCs) and their respective cleanup levels established in the ROD. EPA plans to prepare an Explanation of Significant Difference (ESD) to add 1,4-dioxane as a COC in the ROD. The proposed cleanup level used in this report for 1,4-dioxane is the MTCA Method B groundwater cleanup standard (0.44 micrograms per liter [µg/L]).

In 2015, a comprehensive status report was prepared documenting the groundwater monitoring results from 2010 to 2014 (Parametrix 2015). EPA conducted the Third 5-Year Review in 2015 (EPA 2015) based on the data collected from 2010 to 2014. Section 2.0 of this report summarizes the findings of the previous-5-Year Review.

Development actions being planned for Midway Landfill include construction of Sound Transit (ST) light rail facilities and Washington State Department of Transportation (WSDOT) highway widening located adjacent to Interstate 5 (I-5) on the eastern boundary of the landfill. These development actions will require waste removal and replacement with structural fill, relocation of the eastern edge of the landfill cap and gas control systems, drainage improvements, and other ancillary actions. In addition, the Midway Landfill is a potential future development site for the Operations and Maintenance Facility South (OMF-South) for ST.

CAP Amendment No. 1 was prepared to allow for the implementation of development actions in a manner that continues to protect human health and the environment (Ecology 2020a), and it will be implemented by Amendment No. 2 to the CD (Ecology 2020b). The CAP Amendment supplements the requirements defined in the ROD. All requirements for site cleanup, monitoring, and maintenance defined in the CD as amended through Amendment No. 1 and the 2000 ROD remain in effect. This CAP Amendment is important for understanding the redevelopment expected to occur and the impacts on the next 5-Year Review (2020 to 2024).

1.3 Site Description

The City operated the Midway Landfill from 1966 to 1983. The closed landfill is located in King County, Washington, between I-5 and Highway 99, and between South 252nd Street and South 246th Street in Kent, Washington 98032 (Figure 1). The landfill occupies a former gravel pit that was filled with refuse located within the Des Moines Drift Plain between Puget Sound to the west and the Green River Valley to the east.

Land use in the site vicinity includes commercial operations and residential housing. Commercial establishments, light industry, and manufacturing facilities border both sides of Highway 99 with residential housing typically located behind the commercial strip. Two elementary schools, Sunnycrest Elementary School and Parkside Elementary School, and a city park, Linda Heights Park, are within a half-mile radius of the landfill. Most of the nearby residences are detached single-family dwellings, with some multi-unit residential developments. Several mobile home parks are also nearby. A 6-acre wetland, the Parkside Wetland, located east of Parkside Elementary School and west of the landfill, is a naturally occurring detention basin for local surface water runoff, primarily from the west side of Highway 99.

SPU performs compliance monitoring, cap maintenance, surface water monitoring, and landfill gas controls on behalf of the City. A brief description of the hydrogeologic setting, surface water, landfill gas control, and landfill cover are provided in the following sections.

1.3.1 Hydrogeologic Setting

The groundwater conditions beneath the closed landfill are complex and as identified by the RI involve six different aquifers/water bearing units (Applied Geotechnology Inc. [AGI] 1988, 1990; Parametrix 1988a). Groundwater movement within and below the landfill has been characterized to an approximate depth of 300 to 350 feet below ground surface. A list of the identified aquifers monitored by the landfill is presented below, from shallowest to deepest. Flow directions in these aquifers were recently updated, and they are further discussed in Section 2.3.1.5 (Parametrix and EHS-International [EHSI] 2019).

- Perched Aquifer (PA; also referred to as Shallow Groundwater)
- Landfill Aquifer (also referred to as Saturated Refuse)
- Upper Gravel Aquifer (UGA)
- Sand Aquifer (SA)
- Southern Gravel Aquifer (SGA)
- Northern Gravel Aquifer (NGA)

The PA was initially identified as shallow, discontinuous lenses of groundwater perched above low permeability sediments above the UGA. However, subsequent characterization has shown the groundwater is not always perched, and it generally occurs north of the landfill.

The Landfill Aquifer (LA; also referred to as Saturated Refuse) consists of leachate within the landfill occupying the former gravel pit. Leachate from the saturated refuse discharges vertically into the UGA and SA, with the majority of flow occurring within the south-central area of the former gravel pit. The bottom of the LA extends below elevation 287 feet above sea level (AGI 1988).

The UGA is composed of silty and sandy gravel and is limited in horizontal extent. The aquifer is underlain by a discontinuous layer of silt, clayey silt, and silty sand known as the Upper Silt Aquitard. Groundwater flow in the UGA flows inwards towards the southern end of the landfill where groundwater vertically discharges into the underlying SA where the Upper Silt Aquitard is relatively thin, coarser-grained, or absent.

The SA is an area-wide aquifer composed of interbedded sands and silt below the Upper Silt Aquitard. Groundwater flow in the SA near the landfill is generally from northwest to southeast and south to north towards the southern end of the landfill, where groundwater discharges into a hydraulic sink. The hydraulic sink extends several hundred feet east of the landfill where contaminants migrate into the underlying Lower Silt Aquitard and Northern and Southern Gravel Aquifers. Contaminants believed to originate from sources upgradient of the Midway Landfill are present in the SA, and they likely flow towards and under the landfill boundary, creating comingling of plumes.

The SGA and NGA are the deepest stratigraphic units monitored by the landfill, and they occur at approximately the same elevation. The defining characteristic between the two units is that hydraulic heads in the NGA are approximately 100 feet higher in elevation than the SGA. The updated hydrogeologic assessment for the area surrounding the landfill (Parametrix and EHSI 2019), summarized in Section 2.3.1.5, indicated that the NGA and SGA were the same aquifer despite the head difference (Figure 13 attached in Appendix A1).

The NGA occurs below the northern half of the landfill, and it extends further north and northeast with groundwater flow generally from north to south towards the SGA. The SGA occurs below the southern end of the landfill, and it extends further east, south, and west. The SGA composes an apparent groundwater saddle below the southern end of the landfill formed by likely discharge from the hydraulic sink in the SA and lower level of confinement of the SGA. Groundwater then flows westerly and easterly away from the landfill, discharging to Puget Sound (west) and the Green River Valley (east), which contains Quaternary alluvial deposits serving as an Alluvial Aquifer (AA). Some lesser amount of discharge also occurs vertically into deeper aquifers including the Deep Aquifer (DA).

Groundwater monitoring wells have been installed in 30 locations both upgradient and downgradient of the Midway landfill with 56 different screen completions. Figure 2 displays the locations of the monitoring wells, and Table 2 displays their well completion details. Currently there are 47 operable monitoring wells, although four of those wells are usually dry, and five others are either obstructed or inaccessible.

Three spring-fed creeks surround the landfill: Smith Creek and McSorley Creek to the west and Midway Creek to the east. These are natural discharge points of upland aquifers (Parametrix 1988a), particularly where the source aquifers are exposed at land surface.

1.3.2 Surface Water Discharge

The major components of Midway Landfill's surface water collection, conveyance, detention, and discharge systems are described in Chapters 8 through 10 of the O&M Manual (Parametrix 1992), and they include the on-site drainage systems, detention pond, pipelines, and flow control systems. A map showing the configuration of the collection and discharge pipeline systems was presented in the O&M Manual. It is included here as Figure 3.

A lined detention pond was constructed to the north of the landfill between 1988 and 1989. The detention pond is a 3-acre structure lined with a 60-millimeter high-density polyethylene (HDPE) membrane to eliminate infiltration. In addition to runoff from the landfill, the detention pond receives runoff from off-site sources located east of I-5 in the Linda Heights residential area and along Highway 99 west of the landfill. The detention pond discharges to the North Fork of McSorley Creek through a flow control structure located near the southwest corner of the detention pond that allows the City to shut off discharge if water quality limits are exceeded.

Discharge to McSorley Creek is through a baffled outlet structure constructed with reinforced concrete and an aluminum grate located at the downstream end of the discharge pipeline system approximately 1 mile west of Midway Landfill. The locations of the stormwater conveyance, detention pond, discharge pipeline system, and the baffled outlet structure are shown on Figure 3.

The bottom of the detention pond was constructed below localized groundwater. Therefore, a permanent dewatering system was also installed. Perched groundwater under the detention pond is collected and conveyed to a pump station at the northern edge of the pond, then pumped into the pond.

1.3.3 Landfill Gas Control

An active gas control system was installed at the Midway Landfill as described in Chapter 14 of the O&M Manual. The system originally included 88 gas extraction wells, 31 of which were located outside of the refuse and in native soil. 19 of the extraction wells located outside of the refuse have since been abandoned or capped because gas has been removed from the off-site locations and is currently being effectively controlled and removed by the on-site wells.

Landfill gas is currently extracted through 69 active extraction wells and routed to a permanent blower/flare system located in the northwest corner of the landfill site. The motor blower/flare facility is described in Chapter 15 of the O&M Manual. It consists of an enclosed John Zinc flare to incinerate the landfill gas in a controlled environmental manner. The locations of the active and inactive gas extraction wells are displayed on Figure 4.

In addition, 127 off-landfill gas monitoring probes were installed to confirm that the system is controlling the migration of subsurface landfill gas. Approximately 69 of these probes have since been abandoned. Fifty-eight off-landfill gas probes and eight off-landfill monitoring wells are observed for landfill gas migration control verification. The locations of the current actively monitored gas probes and wells are shown on Figure 5.

1.3.4 Landfill Cap/Cover

The final landfill cover is described in Chapter 12 of the O&M Manual. It consists of the following layers from bottom to top: a 12-inch-thick layer of low permeability soil/clay material, a 50 millimeter HDPE flexible membrane, a drainage net, filter fabric, a 12-inch-thick drainage layer, and a 12-inch-thick topsoil layer.

2. PREVIOUS 5-YEAR REVIEW ISSUES AND RESOLUTIONS

The Third Periodic Review (EPA 2015) for 2010 to 2014 identified the issues and actions outlined below to be addressed during the reporting period for the 2015 to 2019 periodic review. The status of the actions conducted are summarized in Sections 2.1 through 2.6.

Issue	Action
Upgradient sources of VOCs in groundwater will continue to limit the potential for the chemicals of concern in the SGA to decrease below the ROD cleanup levels, especially because the concentrations of volatile organic compounds in upgradient well MW-21B are not decreasing.	Ecology will notify property owners with potential upgradient sources of contamination, including current COCs and 1,4-dioxane, by September 2016. Ecology will advise the property owners on cleanup requirements. By September 2018, property owners need to take substantive action on the upgradient source.
1,4-dioxane has been found in several wells at concentration that exceed regulatory levels. The ROD contains no cleanup level for 1,4-dioxane. Additionally, the first 5-year review identified a change to the vinyl chloride cleanup level.	EPA will write an Explanation of Significant Difference (ESD) to add 1,4-dioxane as a COC to the ROD. EPA will consider whether the vinyl chloride cleanup level established in the ROD should be changed, and if so, it will be documented in an ESD.
The extent of the 1,4-dioxane plume has not been delineated.	Ecology will do a search to determine the location of any wells constructed within a 1-mile radius of Midway Landfill and 1) identify the status of those wells (active, inactive) 2) determine the use (water supply/irrigation/monitoring/etc.) 3) compile well construction logs as available. Based on the well construction logs, Ecology will determine if any of these wells are constructed in a manner that would allow for water quality sampling that would allow further characterization and delineation of the contaminant plume downgradient of the site.
The extent of the 1,4-dioxane plume is unknown. It is therefore uncertain whether or not the Institutional Controls (ICs) prohibiting water supply well drilling in "the affected area" are protective.	Ecology will send out letters to all properties in a 1-mile radius from Midway Landfill to determine if they contain a well, if that that well is being used, and for what purpose (e.g. drinking water, irrigation, etc.). In the event that a property owner is actively using a well, Ecology will notify the owner of the potential risks immediately.
The Midway Landfill O&M Manual has not been updated since 1992.	The O&M Manual should be updated to include the current landfill gas sampling locations and schedule and location of operational gas extraction wells.
Update Annual Notice to drillers, water districts, and local health districts	The annual notice should include a map of the area with the area of known contamination shaded-in, or otherwise clearly visually identified by a boundary. Notice should clearly state uncertainties associated with the boundary and the potential for additional areas of risk (to be determined with additional plume characterization).

Issue	Action
The AM gas probe is outside the influence of the current gas extraction system.	If concentrations of methane persist near the lower explosive limit (LEL) or indicate an increasing trend, passive venting methods may be necessary to reduce the potential for gas migration in this location.

2.1 Upgradient Sources of VOCs in Groundwater

The City provided Ecology with a database of sites upgradient of the Midway Landfill in 2015. Ecology has not acted on this to date. Section 2.3.1.3 includes additional sites of known or suspected chlorinated solvents that were identified during the 1,4 dioxane evaluation.

2.2 Explanation of Significant Differences

The EPA has not acted on this to date. 1.4-Dioxane has not been added as a COC, and the revised cleanup level for vinyl chloride of 0.29 µg/L (current MTCA Method B cleanup level) has not been formally changed from the cleanup level established in the ROD of 0.02 µg/L (the MTCA Method B cleanup level in 2000) .

2.3 1,4-Dioxane Investigation

A report entitled *Hydrogeologic Assessment for Compliance of 1,4-Dioxane* was prepared for the Midway Landfill addressing the third and fourth issues identified in the Third 5-Year Review related to 1,4-dioxane (Parametrix and EHSI 2019). Conclusions and recommendations presented in the report are summarized in this section. Tables and Figures from the report are attached as Appendix A1.

2.3.1 Conclusions

2.3.1.1 Information for the Chemical 1,4-Dioxane

1,4-Dioxane is a synthetic industrial chemical and likely human carcinogen (EPA 2017a,b). It is often found at chlorinated solvent sites because it was used in the past as a stabilizer in certain solvents, paint strippers, greases, and waxes. 1,4-Dioxane is an emerging contaminant with limited background information on its extent in the environment, and it has not been fully characterized at many historical cleanup sites.

The dense miscible properties of 1,4-dioxane lead to its rapid transport ahead of other contaminants. Due to its rapid transport, 1,4-dioxane may become depleted in high permeability aquifers, but it may be released over the longer term from secondary sources formed by its absorption into underlying low permeability layers.

Evaluating the occurrence of 1,4-dioxane in the environment is complicated by the fact that, historically, detection limits were high using standard analytical methodology. Current methodology, EPA Method 522, using a solid-phase extraction with gas chromatography-mass spectrometry (GC/MS) and selected ion monitoring (SIM) can provide detection levels as low as 0.02 µg/L.

A federal or state MCL has not been established for 1,4-dioxane. The Washington state water quality standard for groundwaters in the state of Washington (Chapter 173-200-040 WAC) for 1,4-dioxane is 7.0 µg/L. However, Ecology has established a MTCA Method B cleanup level of 0.44 µg/L for 1,4-dioxane at cleanup sites such as the landfill. Compliance for the Midway Landfill is currently being evaluated using the more conservative MTCA Method B cleanup level of 0.44 µg/L, although EPA has not formally added 1,4-dioxane as a COC through the ESD process.

2.3.1.2 1,4-Dioxane in Groundwater Near the Midway Landfill

Concentrations of 1,4-dioxane are currently above the MTCA Method B cleanup level of 0.44 µg/L in 8 of the currently sampled 12 wells at the Midway Landfill (upgradient wells MW-17B and MW-21B, and downgradient wells MW-7B, MW-14B, MW-20B, MW-23B, MW-29B, and MW-30C), with the highest concentrations occurring in the SGA. The 1,4-dioxane concentrations at the Midway Landfill show decreasing trends, particularly in well MW-20B on the west side of the landfill where concentrations decreased from 53 µg/L in 2011 to less than 13 µg/L in 2019.

Concentrations of 1,4-dioxane are being tested at a limited number of sites in Washington, but some of the available historical data had detection limits higher than the cleanup criteria. Concentrations of 1,4-dioxane have been detected at two other landfill sites within the state of Washington (the Colbert Landfill in Spokane County and the Sisco Landfill in Snohomish County), with observed 1,4-dioxane concentrations of less than 100 µg/L that are in a comparable range of those at the Midway Landfill.

The 1996 Safe Drinking Water Act amendments require that EPA issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems once every five years. The Third Unregulated Contaminant Monitoring Rule (UCMR 3) was published in 2012; it required monitoring for 28 contaminants and 2 viruses between 2013 and 2015 (EPA 2012a, 2016). 1,4-Dioxane was included in the assessment monitoring (List 1 Contaminants) on the UCMR 3 list.

Current data indicate that no neighboring solvent release sites or Group A or Group B drinking water wells have been tested for 1,4-dioxane. The three Group A water systems closest to the landfill (the Kent Riverbend Well, King County Water District 54, and the Logandale Water Association; Appendix A1, Figure 7) were not tested during the Department of Health's (DOH) UCMR 3 data collection period. However, the two wells being used for drinking water (King County Water District 54 and Logandale) are not located downgradient of the landfill. All other Group A water systems in the area surrounding the landfill that were tested per EPA's UCRM 3 requirements from 2013 to 2015 had no detections of 1,4-dioxane (lower than 0.07 µg/L), and DOH does not appear to require ongoing testing for 1,4-dioxane at wells where it was not detected.

2.3.1.3 Potential Other Sources of 1,4-Dioxane Near Midway Landfill

Concentrations of 1,4-dioxane are found as stabilizers at dry cleaning facilities, in automotive degreasers at auto repair facilities, and as by-products of plastic manufacturing. A number of sites upgradient of Midway Landfill were historically used for these functions, including a cluster of several documented chlorinated solvent release sites located immediately northwest of the Midway Landfill near the intersection of S 246th Street and Pacific Highway South (Appendix A1 Figure 8). Seven of the sites (Northwest Powder Coatings, Hauser Property, Japanese Auto Sales and Service, Midway Cleaners, Cleaners 1, Floyd R Hunt, and Davis Construction) have documented releases of chlorinated solvents (tetrachloroethylene [PCE], trichloroethylene [TCE], 1,1,1-trichloroethane [TCA], and vinyl chloride) into the environment. Midway Cleaners is on Ecology's Confirmed and Suspected Contaminated Sites List (CSCSL) and has chlorinated solvent impacts known to soil and groundwater. Two of the sites have "No Further Action" status from Ecology (Floyd R Hunt and Davis Construction). Available Ecology records suggest that 1,4-dioxane has not been studied at any of these five remaining active chlorinated solvent release sites.

Chlorinated solvents have been detected in monitoring wells MW-17B and MW-21B upgradient of the Midway Landfill, and the presence of these confirmed and suspected solvent release sites complicates the determination of the nature and extent of releases of chlorinated solvents and 1,4-dioxane from the Midway Landfill. There may be undocumented comingling of contaminant plumes, complicating analysis of compliance for the landfill with 1,4-dioxane and ROD contaminants. Further testing for 1,4-dioxane at these other release sites may be necessary to differentiate and identify 1,4-dioxane sources.

2.3.1.4 Updated Well Inventory

Parametrix completed a previous water well inventory as part of the Midway Landfill Remedial Investigation (Parametrix 1988b). The well inventory was updated (Parametrix and EHSI 2019) for the area within approximately 1 mile of the Midway Landfill and the locations are shown on Appendix A1 Figure 9. Public water supply has increased in the area surrounding the Midway Landfill since the RI, but there are limited areas where properties remain disconnected from large public water supplies (e.g., Frager Road and east of Lake Fenwick Road).

Active water use from private and domestic wells is primarily east of the landfill. The wells were identified according to their use (Revised Code of Washington [RCW] 70.119A.020). Group A water supply wells provide drinking water to 15 or more connections, or more than 25 people, and Group B water supply wells provide drinking water to 15 or fewer connections, and no more than 25 people.

Only five sites within 1 mile of Midway Landfill have resource protection wells completed deeper than 100 feet below ground. Therefore, most of these monitoring wells are completed within shallow perched aquifers (UGA) and likely would not be useful to characterize the contaminant migration extent downgradient of the landfill specifically in the SA or SGA. However, some wells could be useful to characterize the UGA upgradient of the landfill, especially surrounding confirmed or suspected solvent release sites.

Twelve wells are believed to be operable or potentially operable within 1 mile of Midway Landfill (Table 3). Of the eight wells in-use or potentially in-use, one is the Group A Kent Riverbend Well (22J2; in use for irrigation), two are domestic wells used for drinking water (22A2 and 22H1), and five are domestic wells used for irrigation (21P1, 22Q1, 22Q2, 22Q3, and 29A2). Another four domestic wells (21C1, 21F1, 27A3, and 28G6) are potentially operable. Two new wells were installed near the 1-mile radius of the landfill in 2016: a domestic water well (Stearns well 22A2) and a Group A irrigation well (Kent Riverbend Well 22J2).

2.3.1.5 Updated Groundwater Flow Analysis

Migration pathways for contaminants in groundwater in the UGA, SA, and SGA were revised using the updated well inventory of wells within a 2-mile radius of the landfill. The updated groundwater potentiometric surface maps for the three aquifers (UGA, SA, SGA) (Appendix A1 Figures 11 through 13) were used to evaluate the suitability of potential additional sampling locations at either existing Midway Landfill monitoring wells or existing in-use/potentially in-use and operable water wells within the area surrounding the landfill, as discussed in the recommendations summarized in Section 2.3.2.

The migration pathways are generally consistent with previous determinations presented in the RI as summarized in Section 1.3.1. There is a lower hydraulic head saddle in all three aquifers near the southern end of the landfill where groundwater then migrates west and east across the upland groundwater divide towards either Puget Sound or the Green River Valley. However, the updated gradients show stronger westerly components of groundwater flow than previously considered.

The location of the groundwater divide within the SGA/NGA is known to occur near MW-14 and MW-23 along I-5. However, the location of the groundwater divide within the SA remains to be delineated. Previous analysis by AGI showed the groundwater divide west of the landfill within the SA with all flow towards the hydraulic sink. However, the divide is not likely to occur this far to the west because natural springs from the SA drain the aquifer into McSorley Creek. This hydraulic feature places the north-south groundwater divide within the SA likely between MW-20 and MW-7, or around the center of the landfill.

2.3.2 Recommendations

Recommendations were provided for potential additional sampling of downgradient and cross-gradient locations. They included evaluating upgradient sources of 1,4-dioxane.

2.3.2.1 Additional Sampling of Downgradient and Cross-Gradient Locations

Substantial decreases have been observed in the concentrations of 1,4-dioxane observed in the Midway Landfill monitoring wells. In addition to continued monitoring of these trends in the current monitoring well network, the City plans to pursue an incremental approach to further investigate the extent of 1,4-dioxane in groundwater downgradient of the landfill. The planned approach will initially consist of a one-time initial sampling event for 1,4-dioxane at the following locations: 1) selected currently unused Midway Landfill monitoring wells completed in the SA and SGA to further evaluate flow pathways and 2) available water well(s) completed in the SGA and located further downgradient of monitoring wells MW-20B, MW-29B, and MW-30C where 1,4-dioxane exceeds regulatory criteria. If the results of the initial investigation show that 1,4-dioxane is present in further downgradient wells in the SA or SGA, or if no wells are available for sampling, additional wells may be selected or installed if concentrations remain above regulatory criteria.

In addition, owners of domestic wells that are in-use or potentially in-use for domestic purposes within 1 mile of the Midway Landfill and are located in hydraulically downgradient or cross-gradient locations from the landfill will be contacted to determine if their well is being used. The City will offer to sample their wells.

Appendix A1 Figure 14 displays the location of additional sampling points that could be used to characterize groundwater quality surrounding the landfill in the SA and SGA and downgradient discharge points (AA or DA wells). The following unused wells within the existing Midway Landfill monitoring well network are recommended for sampling during the one-time initial event:

- MW-27C is completed in the NGA/SGA system northwest of the landfill. The well is located near other potential solvent release sites, and it may provide useful information on the extent of 1,4 -dioxane and other chlorinated solvents downgradient of those locations and confirm historical migration pathway interpretations.
- MW-30A and MW-30B are located downgradient of the landfill to the southeast. Both wells are reportedly completed in the SA, with the MW-30A completion anticipated to be more reflective of aquifer conditions. Monitoring of both wells for water quality, in addition to currently monitored well MW-30C, would provide information regarding both horizontal and vertical contamination migration pathways within the SA upgradient of potential discharge points within Midway Creek.
- MW-15B and MW-24A are completed in the SA south and southeast of the landfill in the area of the lower hydraulic head saddle where the SA discharges into the SGA. These wells would provide additional water quality data in that direction to help define the extent of the contamination plume and to verify the interpretation of contaminant flow. Since well MW-15A

is already part of the monitoring program, well MW-15B would provide information regarding horizontal and vertical contamination migration pathways within the SA upgradient of potential discharge points within Midway Creek.

Of the 12 operable or potentially operable water wells located within 1 mile of the Midway Landfill, only 4 are downgradient of the landfill, 1 in the AA (22J2), 1 in the SGA (22Q1), and 2 in the SA (22Q2 and 22Q3). Initially, the City proposes to sample the closest downgradient well completed in the SGA that is believed to be potentially operable.

- The Riefschnider Well (22Q1) is located east and downgradient of MW-30, and it is completed in the SGA. We recommend further assessment to confirm the availability of this well.

Two domestic wells are in-use or potentially in-use for domestic purposes within 1 mile of the Midway Landfill. These two wells are in hydraulically cross-gradient or downgradient positions with respect to the landfill.

- The Eckland Well (22H1) is an in-use domestic well of unknown depth from a land surface elevation of approximately 75 feet above sea level. The well is likely completed in the SGA, and it is northeast of Well 29B.
- The Stearns Well (22A2) is a newly completed well drilled in 2016. The property was recently redeveloped with a residence in 2018. The well is completed in the shallow AA within the Kent Valley west of the Green River, which is near the natural discharge of the SGA to the AA.

The City will approach the owners of these wells to determine whether their wells are operational. An advisory letter discussing the various aspects of this report will be drafted to provide to owners of potential in-use and/or operable wells to prepare for potential sampling. The intent of the letter will be informational, and it will also ask the owner to provide further information regarding the well(s). If the wells are determined to be in use for drinking water, the City will offer to sample the wells.

2.3.2.2 Possible Future Investigations

The Riefschnider well (22Q1) has been identified as a possible sampling location in the southeast of the landfill, but it is unknown whether this well is available. Another option could be the Kent Riverbend Well that located approximately 1 mile east of the landfill and completed in a lower zone of the AA. The NGA/SGA system likely discharges to upper portions of the AA in this area.

Two additional water wells (22Q1 and 22Q2) completed in the SA in downgradient locations could be considered for sampling if SA monitoring wells MW-30A and/or MW-30B indicate elevated concentrations of 1,4-dioxane. Current use and operability of these water wells would have to be confirmed.

There are no wells completed in the SGA west or southwest of MW-20B, although monitoring well MW-8B does monitor the SA in this direction. This is a likely downgradient direction based on the location of the groundwater saddle observed in the UGA, SA, and SGA/NGA. An alternative would be to determine the location of springs within McSorley Creek that are correlated to the source aquifer deposits mapped in the lower stretches of the creek. However, sampling the springs at their source sites may not provide suitable locations for sampling compared to withdrawing samples from wells.

2.3.2.3 Evaluation of Upgradient Sources

Currently, only three monitoring wells completed in the UGA upgradient of Midway Landfill are routinely tested for 1,4-dioxane. The additional testing conducted in 2012 at five additional upgradient monitoring wells completed in the UGA was not successful in further delineating upgradient sources. It may be necessary for Ecology to perform further testing for 1,4-dioxane at other release sites upgradient of the Midway Landfill to differentiate and identify other sources of 1,4-dioxane. For sites enrolled in Ecology's Voluntary Cleanup Program (VCP), it may be necessary for Ecology to require analysis of 1,4-dioxane to confirm that they are not contributing or comingling with the Midway Landfill groundwater contamination plume.

2.4 Update O&M Manual

Due to the significant activities expected to be associated with the upcoming development actions described in Section 3.2, the O&M Manual will be updated during the next five-year period. The updated O&M Manual will reflect changes due to the FWLE/SR 509 Midway Project described in CAP Amendment No. 1 (Ecology 2020a) and Amendment No. 2 to the CD (Ecology 2020b). In accordance with CAP Amendment 1, following completion of the FWLE/SR 509 Midway Project construction, a revised or new Operations and Maintenance Plan (OMP) and a revised Compliance Monitoring Plan (CMP) will be submitted for Ecology review and approval. The revised or new plans will include all relevant elements in the existing plans, and any new element associated with ST or WSDOT operations or with construction changes.

Maps showing the locations of current groundwater monitoring wells, gas extraction wells, and gas probes have been updated for this report. Pertinent sections of the O&M Manual relating to monitoring, operations, or maintenance procedures are cited in this report, and substantial key differences are noted.

2.5 Annual Notice

A map documenting the location of wells with COC concentrations above ROD cleanup levels was included in annual notices beginning in 2017. The 2019 annual notice is presented in Appendix A4 of this report.

2.6 AM Gas Probe

The AM gas probe data have not exceeded the LEL (5 percent by volume) since 2012. The AM probe is discussed further in Section 6.2 of this report. This probe will be decommissioned during the upcoming development actions described in Section 3.2.

3. LAND USE CHANGES

3.1 Remedial Action System Changes and Events

Changes in land use are shown in a comparison between the 2013 and 2019 aerial photographs presented in Figure 6. No significant land use changes are apparent on the Midway Landfill or immediately adjacent properties.

3.2 Modifications or Changes Planned for the Next Five-year Period

Land use changes planned for the next five-year period include the Federal Way Link Extension and I-5 widening projects and a potential future operations and maintenance facility. These changes are discussed in the CAP amendment (Ecology 2020a) and summarized in the following sections.

3.2.1 Federal Way Link Extension and I-5 Widening Projects

WSDOT and ST have transportation projects planned along the I-5 Corridor, portions of which are located within the Midway Landfill. The WSDOT SR 509 Completion Project will add additional lanes to I-5, and the ST Federal Way Link Extension (FWLE) will extend light rail from the existing Angle Lake Station at S 200th Street to the Federal Way Transit Center. The two projects are adjacent at the site, and the FWLE will be constructed in the WSDOT I-5 right of way (ROW) on the east edge of the landfill, as shown on Figure 7.

Municipal solid waste (MSW) is present in the WSDOT ROW, and the City of Seattle has an obligation to remove it as necessary to accommodate the WSDOT project. The three agencies have decided that there are advantages to implementing a combined project that meets the needs of all three agencies and provides best value to the public.

ST's contractor (Contractor) will remove enough landfill material to accommodate both the WSDOT lane widening and the construction of an at-grade alignment for the FWLE, as shown in the plan view on Figure 7 and conceptually in the cross-section on Figure 8. Removing the landfill material will create an excavation that will be backfilled with structural fill. Remedial elements associated with the Midway Landfill Site will then be reconstructed. At the completion of construction, no MSW will remain on the property to be acquired by ST or on the WSDOT property to the east. As described below, screened Landfill Soils will remain on the ST property. This scope of work is referred to in the CAP Amendment as the "FWLE/SR 509 Midway Project."

The excavation backfill will be imported from a WSDOT or ST source and from soils obtained on the Midway Landfill property. The WSDOT source is located within WSDOT ROW in areas of Federal Way, Des Moines, and Sea Tac that are currently under ST control according to agreements between WSDOT and ST.

WSDOT will specify backfill requirements for its SR 509 project, and ST will establish its own backfill requirements for the FWLE project. This construction will remove waste that the City is obligated to remove, and it will allow for an FWLE alignment that will provide greater schedule certainty during construction and result in lower long-term maintenance costs than an elevated guideway.

At some point during or after the completion of the FWLE/SR 509 Midway Project, the City, ST, and WSDOT will engage in property ownership transfers. Through the transfers, ST will become owner of the rail alignment property currently held by WSDOT, and the City will likely take ownership of all "orphaned" property currently owned by WSDOT that lies to the west of the FWLE alignment (subject to City Council approval).

FWLE/SR 509 Midway Project construction will impact landfill remedial infrastructure within the limits of work on the eastern border of the landfill. It will impact the landfill cap, gas collection infrastructure, surface water management system, and monitoring network (gas probes and groundwater monitoring wells).

3.2.2 Potential OMF-South

ST is currently implementing a systemwide expansion of its Link light rail system throughout its service area in the Puget Sound region. This expansion is part of the Sound Transit 3 (ST3) Plan for transit investments approved by the voters in 2016. To accommodate the ST3 light rail fleet expansion, two new OMFs are required—one in the north service area and one in the south service area.

The Midway Landfill property is one of three potential OMF locations currently under consideration in the south service area. OMF South sites are being evaluated through a State Environmental Policy Act (SEPA) Environmental Impact Statement (EIS) process. A preferred OMF South location is expected to be identified by the ST Board in late 2020 If the ST Board were to select the Midway Landfill property as the project to construct, an additional CD and CAP Amendment would be required to define remedial requirements for the work.

SPU submitted a letter to ST encouraging the agency to continue to consider the Midway Landfill as a potential site for the OMF-South Facility. SPU indicated that the site could likely be redeveloped and restored to productive use without compromising remediation or worker safety. The letter had attachments with supporting information including EPA's 2007 Landfill Reuse Report, EPA's Record of Decision for the Midway Landfill, and the 2015 EPA 5-Year Review of the Midway Landfill. SPU offered other information regarding the landfill, noting that the west edge of the landfill has a relatively shallow layer of waste and could be less prone to settlement, which could make it a good location for the maintenance structure. SPU noted that the rates of settlement have slowed as the closed landfill has aged. SPU offered to share studies with ST, including work underway for the development of new facilities on the South Park Landfill, which is at the 60 percent design level. The utility offered to work with ST to further evaluate the engineering feasibility of the site. SPU suggested an intensive workshop (Facilitated Technical Design Charette) with participants including technical staff from ST, Ecology, EPA, the City of Kent, and SPU to develop solutions to the site challenges (ST 2019).

4. GROUNDWATER

4.1 Remedial Action System Changes and Events

No significant changes were made to the groundwater monitoring program during this period.

4.2 Remedial Action Monitoring Program and Results

Groundwater monitoring includes groundwater hydraulic monitoring and groundwater quality monitoring. It was conducted in accordance with the Midway Landfill Monitoring Plan (Parametrix 2000), except as noted.

4.2.1 Groundwater Hydraulic Monitoring

Groundwater hydraulic monitoring includes fluid level monitoring and groundwater level monitoring.

4.2.1.1 Fluid Level Monitoring

Fluid level monitoring includes collection of groundwater levels within the saturated portion of Midway Landfill (termed Shallow Groundwater/Saturated Refuse [SG/SR]), as well as groundwater levels in the shallow groundwater surrounding the landfill (see locations in Figure 9). The purpose of the fluid level monitoring is to evaluate the effectiveness of the selected remedy. Fluid level monitoring has also been referred to as performance monitoring in previous documents, and it also includes measuring the presence and thickness of free-floating petroleum product.

The fluid level monitoring program was initiated in December 1989. It was conducted monthly, quarterly, and semi-annually, and it is currently conducted annually in May. Fluid level monitoring was initially conducted at 68 monitoring stations, 21 of which were also monitored for oil thickness.

Due to decreasing fluid levels, many of the monitoring points became dry over time or stabilized to a level near the bottom of the well. In 2002, recommendations were presented to reduce the frequency and number of monitoring points, and representative wells were identified within key hydraulic areas (Parametrix 2002). Some of the monitoring points along I-5 east of the landfill were subsequently decommissioned in 2006 as part of the highway construction, including those in the East Side Wells hydraulic area.

Beginning in 2009, the present fluid level monitoring program was implemented. This program consists of collecting annual fluid level measurements of 22 wells (at 20 locations) most of which are within the seven key hydraulic areas of the site as shown on Figure 9 (Appendix H, 2006 Annual Report; Parametrix 2007).

The 2015 through 2019 fluid level measurements are presented in Appendix A2, Table A2-1. Fluid level trends in one representative well from each key hydraulic area (Figure A2-1) and hydrographs for all the wells in each of the seven areas (Figures A2-2 through A2-8) are presented in Appendix A2 and summarized in Table 4. The hydrographs show data measured during second quarter monitoring events to remove seasonal variability.

No free product was detected in any of the wells except in Central Mound Area well GW-43D where the product thickness ranged from 0.18 to 0.84 foot. These data are shown on Appendix A2 Table A2-1 and are consistent with historical measurements of free product in well GW-43D at approximate thicknesses of 1 foot or less.

In general, fluid levels measured since the RI have been stable or have decreased. Some of the West Side, South End, Central Mound, and Hydraulic Sink (Appendix A2 Figures A2-2, A2-5, A2-6, and A2-7) fluid levels have shown the greatest overall decreases since the RI, with nearly 29 feet of decrease in the Central Mound at GP-47D. Fluid levels in the Linda Heights Area wells (Appendix A2 Figure A2-4) showed initial decreases after the RI. However, fluid levels in this area increased in 2003 through 2013 but they stabilized and decreased in 2015. The fluid levels rose initially in 2016 and 2017, then decreased by as much as 6 feet over 2018 and 2019, with an overall decrease of 0.12 to 2.14 feet during the past five years. This area will be affected by light rail land use changes over the next five-year period as described in Section 3.2, including changes to the surface water collection system as described in Section 5.3.

Over the last five years, fluid levels increased in 10 of the 22 wells measured ranging from 0.01 to 0.84 feet (with many of the increases being within the margin of error for barometric effects). Twelve of the twenty-two measured wells showed decreasing fluid levels over the last five years, in amounts ranging from 0.12 to 4.79 feet. The north end shallow wells (GP-AO-M and GP-AR-M) showed the greatest decreases in fluid levels over the last five years. Well GP-AR may also be affected by the light rail land use changes. Fluid levels will continue to be evaluated and the results discussed in the next five-year report.

4.2.1.2 Groundwater Level Monitoring

As part of the groundwater quality monitoring event, City staff measured groundwater levels in 31 wells completed in the UGA, SA, and the SGA at the locations shown on Figure 10. Groundwater level data are presented in Appendix A2 Table A2-2.

Three of the wells that have been historically monitored are no longer available for measuring water levels. MW-19B and MW-19C have obstructions within the wells, and MW-9A is on private property and cannot be accessed. These wells should be removed from the list of wells to be routinely monitored. Four of the monitoring wells were routinely dry including MW-2, MW-7A, MW-20A, and MW-23A. MW-2 was measured and had water in 2017; it was dry in the other four events. Overall, the groundwater levels were relatively stable over the five-year period.

4.2.2 Groundwater Quality Monitoring

Groundwater quality monitoring includes collecting and analyzing groundwater samples from monitoring wells located upgradient and downgradient of the landfill. Groundwater quality monitoring has also been referred to as “compliance monitoring” in previous documents. Groundwater quality monitoring was initiated in February 1990 with Round 1 (QM-1), and it was conducted monthly, quarterly, and semi-annually. It is currently conducted annually in April or May.

In the second quarter of each year, SPU staff collected groundwater samples from monitoring wells completed in the UGA, SA, and SGA (Figure 11). The current groundwater quality monitoring program consists of annual sampling of 15 wells screened in the three aquifers, although 3 of the wells have routinely been dry due to declining water levels.

Upper Gravel Aquifer - The monitoring network in the UGA includes two upgradient wells (MW-16 and MW-21A) and one downgradient well (MW-7A). Groundwater in the UGA flows in two general directions (north and south). It also discharges vertically into the underlying SA. Downgradient monitoring well MW-7A is located where the UGA discharges into the SA, but MW-7A has been dry since 1992 due to declining groundwater levels in the UGA. This suggests that the volume of leachate entering the UGA from the SG/SR has decreased, resulting in lowering of the UGA potentiometric surface. Well MW-19B is also located where the UGA discharges into the SA, but this well is obstructed, and it has been removed from the monitoring program.

Sand Aquifer - The monitoring network in the SA includes three upgradient wells (MW-8B, MW-17B, and MW-21B) and four downgradient wells (MW-7B, MW-15A, MW-20A, and MW-23A). Well MW-7B was added to the monitoring program in 2011 based on recommendations in the Second 5-Year Review (EPA 2010). Since the remedial action, water levels in the SA have declined as a result of decreased discharge from the UGA, and wells MW-20A and MW-23A have routinely been dry.

Southern Gravel Aquifer - The monitoring network in the SGA consists of five downgradient wells (MW-14B, MW-20B, MW-23B, MW-29B, and MW-30C).

4.2.2.1 Comparison of Groundwater Quality Data to Applicable Criteria

Groundwater samples were collected in conformance with the Midway Landfill Monitoring Plan (Parametrix 2000) under guidelines set in the State of Washington Minimum Functional Standards for Solid Waste Handling (Chapter 173-304 WAC). Groundwater samples were analyzed as outlined in Table 5.

Groundwater monitoring for 1,4-dioxane at Midway Landfill began in 2005 at three monitoring wells (SA wells MW-17B and MW-21B and SGA well MW-14B) as requested in the First 5-Year Review (EPA 2005). Beginning in 2011, 1,4-dioxane has also been tested in the other routinely monitored wells as requested in the Second 5-Year Review (EPA 2010).

Groundwater quality data summary tables by aquifer for 2015 through 2019 are presented Appendix A3. The groundwater data for ROD COCs are presented in Table 6. Data for detected parameters not included in the ROD, including 1,4-dioxane, are presented in Table 7.

ROD Contaminants of Concern

The groundwater data for the three COCs (manganese; 1,2-dichloroethane [1,2-DCA]; and vinyl chloride) were compared to the cleanup levels established in the ROD. Groundwater data that exceeded the ROD cleanup levels during at least one event in this five-year period are highlighted in Table 6 and listed below.

Upper Gravel Aquifer

- No exceedances reported.

Sand Aquifer

- Manganese exceedances were reported in downgradient well MW-7B.

Southern Gravel Aquifer

- One manganese exceedance was reported in downgradient well MW-20B.
- Vinyl chloride exceedances were reported in downgradient wells MW-20B and MW-29B.

Groundwater Quality Parameters Not Included in the ROD

The groundwater data for the remaining tested parameters were compared to applicable regulatory standards per the ROD. The applicable regulatory standards selected for this post-ROD monitoring were federal MCLs for drinking water, and MTCA Method B cleanup levels for groundwater. Groundwater data that exceeded the MCLs and/or MTCA Method B cleanup levels during at least one event in this five-year period are highlighted in Table 7 and listed below.

Upper Gravel Aquifer

- No exceedances reported.

Sand Aquifer

- Iron exceedances were reported in upgradient well MW-8B and downgradient well MW-7B.
- 1,1-Dichloroethane (1,1-DCA) exceedances were reported in upgradient well MW-17B.
- TCE and PCE exceedances were reported in upgradient well MW-21B.

Southern Gravel Aquifer

- Iron exceedances were reported in downgradient wells MW-14B, MW-20B, MW-23B, MW-29B, MW-30C.

1,4-Dioxane

Groundwater data that exceeded the MTCA Method B cleanup level are highlighted in Table 7 and listed below. The locations of wells with concentrations above the MTCA Method B cleanup level are shown on Figure 12.

Upper Gravel Aquifer

- No exceedances reported.

Sand Aquifer

- 1,4-Dioxane exceedances were reported in upgradient wells MW-17B and MW-21B and downgradient well MW-7B; the highest concentrations in the SA were detected in upgradient well MW-21B.

Southern Gravel Aquifer

- 1,4-Dioxane exceedances were reported in downgradient wells MW-14B, MW-20B, MW-23B, MW-29B, and MW-30C; the highest concentrations in the SGA were measured at well MW-20B on the west side of the landfill, followed by well MW-29B on the east side of the landfill.

4.2.2.2 Time-Series Analysis

Time-series plots of the groundwater data are presented to detect changes in parameter values over time (Appendix A3). Plots were created for the three ROD COCs and for groundwater quality parameters showing substantial detections that are not included in the ROD. For conventional and field parameters, time-series plots are presented for each individual well, and they are also grouped by aquifer. ROD cleanup levels, applicable regulatory standards, and average concentrations measured during the RI (Parametrix 1988a) are shown on the plots for comparison purposes.

ROD Contaminants of Concern

Time-series plots for ROD COCs in groundwater are presented in Appendix A3-1 and discussed below for each aquifer. In general, concentrations of COCs have decreased over time and are currently below the average RI concentrations, except as noted below.

Upper Gravel Aquifer

- Manganese in upgradient well MW-16 remained slightly above the average RI concentration.

Sand Aquifer

- Manganese in upgradient well MW-8B was found above the average RI concentration in 2018 and 2019.
- Manganese in upgradient well MW-21B remained above the average RI concentration.
- 1,2-DCA in upgradient well MW-17B remained above the average RI concentration.

Southern Gravel Aquifer

- Vinyl chloride in downgradient well MW-29B was found above the average RI concentration in 2017.

Groundwater Quality Parameters Not Included in the ROD

Time series plots for groundwater quality parameters not included in the ROD in groundwater samples are presented in Appendix A3-2 and discussed below for each aquifer. Groundwater quality over the history of monitoring has remained stable or decreased over the history of monitoring and is currently below the average RI concentrations, except as noted below. Some of the 2018 specific conductivity measurements were atypical, but these results were not confirmed in 2019.

Upper Gravel Aquifer:

- In upgradient well MW-16, specific conductivity has decreased over the last approximately 10 years. Specific conductivity, sulfate and iron concentrations remained above the average RI concentrations.

Sand Aquifer:

- In upgradient well MW-8B, sulfate and specific conductivity concentrations have increased over time and were above the average RI concentrations. COD increased during the period between 2013 and 2016 and concentrations were above the average RI but have been below the reporting limit since that time.
- Three VOCs (1,1-DCE, PCE, and TCE) have shown increasing trends in upgradient well MW-21B since 1993-1994, with concentrations above the applicable regulatory standards and the average RI value. Although concentrations of 1,1-DCE and PCE have stabilized or decreased slightly over the past approximate 10 years, TCE concentrations are continuing to increase, indicative of a potential off-site continuing source.

Southern Gravel Aquifer

- Specific conductivity measurements were above the average RI concentration in well MW-29B but lowering to near average RI concentrations in 2017 and 2018.
- Iron concentrations were above the average RI concentrations in wells MW-20B, MW23B, and MW-29B.
- Sulfate concentrations were above the average RI concentrations in wells MW-14B, MW-20B, MW-23B, and MW-29B.

1,4-Dioxane

Time series plots of 1,4-dioxane in Midway Landfill wells showing the data collected from 2005 through 2019 by aquifer is included in Figure 12. The plots show data since 2005 for wells MW-17B and MW-21B screened within the SA and upgradient of the Midway Landfill and for well MW-14B screened within the SGA and downgradient of the Midway Landfill. The plots also include data for the other sampled wells beginning in 2011. Trends in all the wells indicate overall decreasing concentrations, although the concentrations in some SA and SGA wells have stabilized during the last few years.

4.3 Modifications or Changes Planned for the Next Five-year Period

4.3.1 Groundwater Monitoring Program Modifications

Three of the wells that have been historically monitored are no longer available for measuring water levels. MW-19B and MW-19C have obstructions within the well, and MW-9A is on a private property and cannot be accessed. It These wells should be removed from the list of routinely monitored wells.

Three of the wells (MW-7A, MW-20A, and MW-23A) that are part of the water quality monitoring program are dry. These wells should be removed from the list of wells to be monitored.

The list of volatile organic parameters to be tested in the monitoring program should be reduced to the ROD COCs and those that have been routinely detected (trichlorofluoromethane, 1,1-DCE, 1,1-DCA, cis-1,2-dichloroethene (DCE), 1,1,1-TCA, TCE, and PCE.

Additional one-time sampling events are also likely to be implemented over the next five years following the recommendations outlined in the 1,4-dioxane evaluation.

An independent field observation of the fluid level, groundwater level, and water quality monitoring should be implemented during one event over the next five years. This independent observation would add additional quality assurance/quality control to the groundwater monitoring program, highlight any issues, and provide independent verification of the data collection methods.

4.3.2 FWLE/SR 509 Midway Project

Modifications to the groundwater monitoring system and monitoring plan due to the FWLE/SR 509 Midway Project will occur during the next five-year period.

4.3.2.1 Monitoring Plan Update

The Monitoring Plan will be updated to reflect changes to the groundwater monitoring program due to the FWLE/SR 509 Midway Project. The changes are described in CAP Amendment No. 1 (Ecology 2020a) and CD Amendment No. 2 (Ecology 2020b).

4.3.2.2 Monitoring Well Decommissioning

The FWLE/SR 509 Midway Project will avoid disturbance of groundwater monitoring wells where possible. Where disturbance of groundwater monitoring wells is unavoidable, groundwater monitoring wells will be protected, and modified surface completion will be performed by a licensed well driller.

If a groundwater monitoring well cannot be protected, it must be formally decommissioned by a licensed well driller, in accordance with WAC 173-160-381. Ecology's project manager must be notified of the need for monitoring well decommissioning. Ecology will determine whether a replacement monitoring well must be installed, and if so, Ecology will provide details for its construction. Any new monitoring well must be installed by a licensed well driller in accordance with WAC 173-160.

The City has evaluated monitoring wells that will be impacted by the FWLE/SR 509 Midway Project construction and has determined that well decommissioning will not adversely affect the groundwater monitoring program since alternative well locations are available and some of the potentially impacted wells are currently inactive (SPU 2020). A summary of the monitoring wells that are likely to be impacted and recommended alternatives are provided below.

4.3.2.3 Downgradient Wells

MW-14A and MW-14B

These wells are located in a hydraulically downgradient position with respect to the landfill and are both completed within the SGA. MW-14A is inactive. MW-14B is currently used for water level and water quality monitoring.

In well MW-14B, concentrations of the monitored parameters have generally been stable or decreasing since the RI, and ROD COCs (manganese, vinyl chloride, and 1,2-DCE) are below ROD cleanup levels. 1,4-Dioxane has been monitored since 2005, and the concentration is above the cleanup level, but it has decreased from a high of 22 µg/L to currently around 10 µg/L. Concentrations of other conventional and field parameters (chloride, TOC, COD, sulfate, pH, specific conductivity, and iron) are below applicable regulatory standards per the ROD, with the following exceptions (sulfate above average in the RI and iron above MCL). The only other VOCs detected in MW-14B during the past five years are 1,1-DCA (once in the last five years), and cis-1,2-DCE, detected in low and decreasing concentrations below MTCA Method B criteria.

Alternative: Further downgradient wells MW-23B and MW-29B are completed in the SGA, and they are currently monitored for water quality. Water quality in these two wells is generally comparable to concentrations and trends observed in well MW-14B. We recommend substituting MW23B and MW-29B for the loss of MW-14.

4.3.2.4 Upgradient Wells

MW-26

This well is located in a hydraulically upgradient position with respect to the landfill and is completed within the UGA. It is currently used for water level monitoring.

Alternative: Cross-gradient wells MW-13A to the east and MW-21A to the west are completed in the UGA. MW-13A is currently monitored for water levels, and MW-21A is currently monitored for water quality. We believe that the loss of MW-26 will not impact the UGA gradient mapping.

MW-11A and MW-11B

These wells are located in a hydraulically upgradient position with respect to the landfill. MW-11A is completed in the SA, and MW-11B is completed in the NGA. MW-11A is currently used for water level monitoring, and 1,4-dioxane was tested for in 2012, but it was not detected. MW-11B is inactive.

Alternatives: MW-11A: MW-13B located further downgradient and MW-21B located cross-gradient to the west are completed in the SA, and they are currently monitored for water levels. MW-11B: MW-21C located cross-gradient to the west is completed in the NGA; this well is currently inactive. We believe that the loss of MW-11A 6 will not impact the SA gradient mapping.

4.3.3 Potential OMF-South

If Midway Landfill is selected for the OMF-South, an additional CD and CAP Amendment would be required to define remedial requirements for the work. Modifications to the groundwater monitoring program would likely not be major as most of the wells used for groundwater monitoring are off the site. Modifications to the fluid level monitoring program would be likely, as all the wells and probes in the current fluid level monitoring program are on the site.

5. SURFACE WATER

5.1 Remedial Action System Changes and Events

No significant changes were made to the surface water collection or discharge system or monitoring program during this period.

5.2 Remedial Action Monitoring Program and Results

5.2.1 Surface Water Monitoring Program

Normal operation and routine maintenance of the surface water drainage and detention pond, dewatering pump station, and I-5 pump station were conducted as described in Chapters 8 through 10 of the O&M Manual. Routine maintenance and inspection of the surface water management facilities were conducted as described in Table 8-3 of the O&M Manual. Routine maintenance and inspection of the dewatering pump station and the I-5 pump station were conducted as described in Tables 9-2 and 10-3 of the O&M Manual.

Inspections of the surface water collection pipelines using a TV camera are conducted in accordance with Table 8-3 of the O&M Manual, although the frequency has been changed to every three years. The most recent inspection was performed in August 2017, and the report is provided in Appendix B1. No abnormalities or defects were noted in the piping. The next TV inspection will take place in 2020.

The City has an agreement with Ecology that allows the detention pond water to be discharged to McSorley Creek. Surface water monitoring is described in Section 4.2.4 of the O&M Manual and Chapter 3 of the Monitoring Plan (Parametrix 2000). To verify that these requirements are sufficient, the City Attorney reviewed relevant project documents in light of current regulatory requirements and confirmed that a National Pollution Discharge Elimination System (NPDES) Permit is not required for corrective actions at solid waste handling facilities performed to comply with a state and/or federal cleanup order (Appendix B2).

The detention pond is monitored five days per week. If the water level in the pond exceeds 1.0 foot, samples are collected at the three inlet locations (inflows from the landfill, Highway 99, and I-5) and discharge at the detention pond outlet and tested in the field for pH, temperature, dissolved oxygen (DO), turbidity and conductivity. The results are compared to the acceptable levels for discharge to McSorley Creek based on the *Water Quality Standards for the State of Washington* (Chapter 173-201A WAC), as specified in Table 3-1 of the O&M Manual. The detention pond and surface water monitoring locations are shown on Figure 13 (Figure 6 of the Monitoring Plan).

5.2.2 Surface Water Monitoring Results

Results of the monitoring are maintained in a file on the site. Examples of the surface water data monitoring form showing the types of data recorded are presented in Appendix B3. SPU has recently established a database of surface water quality data, and the data collected during this five-year period are presented in Appendix B4. The data are summarized in Table 8. Time-series plots of the data along with detention pond level and precipitation are provided in Appendix B5.

Three hundred seventy observations were made between 2015 through 2019 when the detention pond level exceeded 1.0 foot. Most of the data were collected from October through early May during the wet season. Most of the data for the detention pond discharge samples collected at the pond outlet were within compliance criteria. The exceptions were: 38 of the 353 measurements for DO (criteria >8.0 mg/L), 23 of the 368 measurements for pH (criteria to be within 6.5 to 8.5 units), and four of the 355 measurements for turbidity (criteria 29 Nephelometric Turbidity Units (NTU)). pH measurements were observed both above and below the criteria range. There were no exceedances at the discharge for temperature (criteria <18 degrees Celsius) or conductivity (criteria <400 µs/cm).

Some of the 2015 through 2019 measurements for these parameters were also out of compliance in the inflow samples. In general, conductivity and turbidity were higher in the inflow from Highway 99 and I-5 than in the detention pond discharge, which was comparable to the landfill inflow.

The pH of the I-5 and Highway 99 inflow samples was generally higher than the pH of the pond discharge, which was comparable to the landfill inflow. Measurements of pH exceeding 8.5 units were observed in detention pond discharge samples between 2015 through 2017, but were not observed during 2018 and 2019.

Plots showing the DO data and pH data for only the detention pond discharge samples do not reveal any discernable correlation between the out-of-compliance measurements and the pond level or precipitation measurements. It is possible that lower DO measurements and the exceedances of pH may be related to the presence of wildlife such as waterfowl.

After exiting the detention pond, the water flows through over 1 mile of discharge pipe, undergoing a substantial gradient drop, and it passes through a baffled outlet structure prior to discharging into the north fork of McSorley Creek. Over the course of this piped flow, the water is expected to undergo substantial aeration that would increase its DO to above 8.0 mg/L and deposit excess sediment load to reduce turbidity.

5.3 Modifications or Changes Planned for the Next Five-year Period

5.3.1 Surface Water Monitoring Program Modifications

Table 8-4 of the O&M Manual contains recommendations for addressing poor discharge quality. Possible causes for the types of water quality problems noted include light blockage by excessive plant growth in the detention pond and contaminated surface water runoff. Ideas presented to deal with these problems are to remove plant growth at regular intervals, to determine sources of runoff contamination, and to implement measures to stop further contamination.

Surface quality should continue to be monitored during the next five-year period to evaluate the effects of potential changes in the I-5 inflow caused by the FWLE/SR509 project on water quality in the detention pond discharge.

5.3.2 FWLE/SR 509 Midway Project

Modifications to the surface water management system and monitoring plan due to the FWLE/SR 509 Midway Project will occur during the next five-year period. The inflow from I-5 will be changing as a result of the FWLE/SR 509 Midway Project. The FWLE/SR509 project may involve modifications to the detention pond on the north side of the landfill. This may be an opportunity to modify the surface water monitoring program and to remedy potential sources of historical exceedances.

5.3.2.1 Monitoring Plan Update

The Monitoring Plan will be updated to reflect changes to the surface water monitoring program due to the FWLE/SR 509 Midway Project described in CAP Amendment No. 1 (Ecology 2020a) and CD Amendment No. 2 (Ecology 2020b). The revised Monitoring Plan will include a recommendation that the TV inspection be conducted at a minimum frequency of five years.

5.3.2.2 Surface Water Management Improvements

All construction will be conducted under the requirements of an Ecology NPDES construction stormwater general permit (CSWGP). A site-specific Temporary Erosion and Sediment and Erosion Control Plan (TESC) must be developed for the FWLE/SR 509 Midway Project area. This plan will specify stormwater controls that minimize entry of stormwater run-on into waste handling areas and areas where the landfill cap has been removed. Stormwater that contacts waste must be collected, treated, and discharged in accordance with requirements of permits applicable to the discharge location.

The FWLE/SR 509 Midway Project will be designed and constructed to prevent stormwater from the project areas infiltrating into the landfill following construction completion. Stormwater from the project area will not accumulate on the infiltration barrier or be allowed to infiltrate the landfill.

Surface water management improvements will be constructed as part of the FWLE/SR 509 Midway Project to collect all surface runoff from the eastern portion of the landfill and the property between the landfill and I-5 for discharge from the project area in accordance with all applicable regulations regarding water quality and quantity. Subsurface drainage from above the landfill cap and low permeability barriers will be similarly collected and conveyed.

In addition, the FWLE/SR 509 Midway Project is anticipated to demolish two existing 24-inch-diameter pipes that drain across the project area into the North Pond. The FWLE/SR 509 Midway Project will replace these pipes with ones that meet or exceed current conveyance and are capable of conveying the new peak design flow.

5.3.3 Potential OMF-South

If Midway Landfill were to be chosen as the selected for the OMF-South, an additional CD and CAP Amendment would be required to define remedial requirements for the surface water work. Modifications to the surface water infrastructure and monitoring program would be likely due to the significant land use changes.

6. LANDFILL GAS CONTROL

6.1 Remedial Action System Changes and Events

The following improvements were implemented at the flare system during this five-year period:

- Montrose Air Quality Services source tested the flare on December 14, 2016. The final report for this source test, dated January 24, 2017, was submitted to the Puget Sound Clean Air Agency (PSCAA). The average non-methane organic compounds (NMOC), as hexane, were 5.5 ppm, and when corrected to 3 percent O2, were 10.6 parts per million. The flare temperature, averaged over the period of the test, was 1,245 °F.

- A Notice of Construction Application for Permit Modification (Parametrix 2017) was prepared and delivered to PSCAA on June 5, 2017, to supporting modifications to the previous Notice of Construction Order of Approval (NOCOA) 8517 issued on June 20, 2001. The NOCOA 10440 modifications include lowering the operating temperature restriction based on the most recent successful source test results and allowing the injection of natural gas into the landfill gas stream to ensure stable flare operation. PSCAA awarded Order of Approval 11400 on October 11, 2017, and it is presented in Appendix C1.
- In the first quarter of 2018, the Startup, Shutdown, and Malfunction (SSM) Plan for the Landfill Flare Supplemented with Natural Gas (SPU 2018) was completed to comply with Condition 10 of NOCOA No. 11400 and the requirements of 40 Code of Federal Regulations (CFR) 63.6(e)(3). The final plan is posted at the flare station.

6.2 Remedial Action Monitoring Program and Results

Inspection, maintenance, and monitoring for the landfill gas collection and transmission system were conducted as described in Chapter 14 (Table 14-2) of the O&M Manual (Parametrix 1992). Monitoring of the gas extraction system was conducted as described in Section 14.7 of the O&M Manual, and it includes daily manifold monitoring and monthly extraction well monitoring. Static pressures measured in gas extraction wells between 2015 and 2019 are summarized in Appendix C2 Table C2-1. The locations of the gas extraction wells are shown on Figure 4.

Inspection, maintenance, and monitoring for the motor blower/flare facility were conducted as described in Chapter 15 (Table 15-2) of the O&M Manual and the NOCOA 11400. The flare is continuously monitored to ensure that the mechanical systems are operating properly. Landfill staff routinely inspect the facility five days a week and respond to off-hour system alarms such as flame failure or temperatures out of permitted range on the enclosed flare.

Landfill gas probe monitoring was conducted as described in Chapter 4 of the Monitoring Plan (Parametrix 2000) and Section 13.3 of the O&M Manual. The locations of the landfill gas probes are shown on Figure 5. Landfill gas compliance probes are monitored weekly, monthly, or quarterly, depending on the compliance status of the probe. Methane data measured in the gas probes during 2015 through 2019 are summarized in Appendix C2, Table C2-2. There were 5,648 landfill gas measurements between 2015 and 2019. Methane was detected on 214 occurrences. No methane above 5 percent by volume was detected in any of the probes and the site remained in compliance for the five-year period

Gas probe AM is located in the northeast portion of the Midway Landfill site and is outside of the influence of the current gas extraction system. This gas probe has three completions, AM-Shallow (AM-S), AM-Middle (AM-M), and AM-Deep (AM-D). Past data for samples collected from AM-S were above the regulatory value for methane (5 percent, LEL) from 2010 through 2012. However, data collected since 2012 in AM-S have been below the regulatory value as presented in Figure 14, and Appendix C2 Table C2-3 ranging from 0 to 4.9 percent methane.

Data collected from AM-M ranged from 0 to 0.6 percent methane and AM-D ranged from 0 to 0.1 percent methane. These probes have not historically exceeded the regulatory value.

6.3 Modifications or Changes Planned for the Next Five-year Period

6.3.1 Flare Station Operation

The following activities will be conducted at the flare station during the next five-year period:

- The flare station will be operated using a supplemental natural gas system under the PSCAA permit for landfill gas to accommodate lower-temperature operation.
- The PSCAA permit for landfill gas will be renewed as long as the flare continues to control emissions at less than 20 parts per million (ppm) of NMOCs at 3 percent oxygen.
- A new landfill alarm monitoring system for the combined Kent Highlands and Midway Landfills will be installed at the Kent Highlands Landfill main office.

6.3.2 Landfill Gas Monitoring Program Modifications

An independent field observation of the landfill gas probe monitoring should be implemented during one event over the next five years. This independent observation would add additional quality assurance/quality control to the landfill gas monitoring program, highlight any issues, and provide independent verification of the data collection methods.

6.3.3 FWLE/SR 509 Midway Project

Modifications to the landfill gas control and monitoring system due to the FWLE/SR 509 Midway Project will occur during the next five-year period.

6.3.3.1 Monitoring Plan Update

The Monitoring Plan will be updated to reflect changes to the landfill gas probe monitoring program due to the FWLE/SR 509 Midway Project. The changes are described in CAP Amendment No. 1 (Ecology 2020a) and CD Amendment No. 2 (Ecology 2020b).

6.3.3.2 Gas System Modifications

The FWLE/SR 509 Midway Project will be designed and constructed in a manner that maintains or improves the current ability to capture and monitor gas within the project area. The project will avoid disturbance of gas collection infrastructure where possible and will replace gas collection infrastructure in kind where disturbance is unavoidable. At the completion of construction, all landfill gas collection infrastructure will be located on property currently owned by or to be acquired by the City of Seattle.

In addition, the FWLE/SR 509 Midway Project will install a north-south perimeter gas collection pipe at the edge of waste, below the landfill cover system, to minimize the potential for gas migration past the landfill boundary (Figure 8). This gas collection pipe will be equipped with laterals to connect to the existing extraction system at the west edge of the FWLE/SR 509 Project limits. The perimeter gas collection trench will extend approximately 100 feet farther north than the existing gas system. This will allow the gas system to influence the area near gas probe GP-AM where methane gas has historically been observed.

Other gas system elements may have to be constructed to achieve the same level of gas control as currently exists. Replacement and new gas collection infrastructure will address management of condensate, using details compatible with the existing landfill systems.

During construction, the FWLE/SR 509 Midway Project Contractor will coordinate closely with the City's landfill operations staff to provide detailed project schedule and sequencing information. During all periods in which the landfill cover is removed, waste is being excavated, and there is the potential for increase in oxygen within landfill waste, existing landfill gas systems will be monitored to ensure against potentially dangerous levels of air flow through waste that could lead to spontaneous combustion. All electrical infrastructure constructed as part of the FWLE/SR 509 Midway Project will include protection details and code compliance appropriate to the presence of flammable landfill gas.

6.3.3.3 Gas Probe Decommissioning

Gas probes GP-AM, GP-AR, and gas well PD-1 are within the area impacted by the FWLE/SR 509 Midway Project. Therefore, these probes will be decommissioned. The City has determined that decommissioning of these gas probes will not adversely affect the landfill gas monitoring program or the fluid level monitoring program (SPU 2020).

Multiple completion gas probes GP-AM and GP-AR are located in the northeast portion of the Midway Landfill site and are outside of the influence of the current gas extraction system. These probes are also used for annual fluid level monitoring.

During the past five years, methane has been detected sporadically in GP-AR at concentrations below the LEL (5 percent by volume). Past data for samples collected from GP-AM-S were above the LEL from 2010 through 2012. However, data collected since 2012 in GP-AM-S have been below the LEL. PD-1 is located on the southeastern edge of the landfill and is currently inactive. For fluid level monitoring, GP-AR is in the North-End shallow key hydraulic area, but it can be replaced with GP-AQ. GP-AM is not within any of the key hydraulic areas.

6.3.4 Potential OMF-South

If Midway Landfill were to be selected for the OMF-South, an additional CD and CAP Amendment would be required to define remedial requirements for the work. Modification of landfill gas control systems and monitoring programs would be among the most important elements of the redevelopment work. This likely would include newly constructed buildings having explosive gas detection alarms, monitoring systems, and other safety measures to ensure protectiveness to the public and site workers.

7. LANDFILL CAP/COVER INTEGRITY

7.1 Remedial Action System Changes and Events

A Midway Landfill general inspection and maintenance monthly log sheet was established in 2016 to document the activities required in the O&M Manual. The log was submitted to Ecology for review and is now in use (Appendix D).

7.2 Remedial Action Monitoring Program and Results

Inspection, routine maintenance and care, and troubleshooting were conducted as described in Chapter 12 of the O&M Manual. Several localized areas east of the flare facility were noted to have experienced minor settlement that resulted in temporary pooling of standing water during periods of high rainfall in the winter of 2020.

7.3 Modifications or Changes Planned for the Next Five-year Period

7.3.1 Site Improvements

The localized areas that have experienced minor settlement will be investigated. Repairs will be conducted in accordance with Section 12.4 of the O&M Manual.

7.3.2 FWLE/SR 509 Midway Project

During the FWLE/SR 509 Midway Project, the landfill cover system will be protected, removed, and replaced in a manner that meets the original objectives of the landfill cover system to prevent infiltration, stop direct contact with waste, enable gas collection, and manage surface water runoff in areas that will contain landfill material after the FWLE/SR 509 Project is complete. Where the landfill cover is removed and replaced, the replacement cover system will match the existing cover system construction details, or it will be constructed of substitute materials and details to provide equivalent protection.

Where the existing landfill cover system is cut, the areas to remain will be protected in a manner to prevent damage and to allow overlap and secure connection with the new replacement materials. As part of the FWLE/SR 509 Midway Project, a landfill cover system will be replaced on the new easterly landfill slope, constructed to match the original cover design or equivalent system, with Ecology approval. There must be a two-year guarantee for plant establishment.

The new membrane will be connected to the existing membrane with a welded connection and with overlaps, welding specifications, and welding construction quality assurances that meet geomembrane manufacturer requirements. If the slope of the landfill cover is increased from the maximum slope allowed by the original construction details, documentation will be provided demonstrating that the proposed slope and construction detail will be acceptable for membrane tension, plant establishment, and operations and maintenance. Ecology will approve the final cover design.

A low-permeability infiltration barrier must be constructed above any areas of the planned WSDOT and ST properties containing landfill waste, landfill soils (Section 4.4.2.), or surface water infiltration that must be controlled as part of the landfill remedy. Essentially the infiltration barrier must replicate the current area of coverage, extending from the eastern edge of the proposed excavation area to the western edge of the existing I-5 shoulder. An effective infiltration barrier must be designed that is consistent with backfill specifications for the road and rail projects, including one or more of the following elements: pavement, low permeability soil, and/or geomembrane approved by Ecology.

7.3.3 Potential OMF-South

As discussed above, the Midway Landfill property is one of three potential OMF locations currently under consideration in the south service area under ST3. Multiple subsurface design construction methods are being considered for the Midway Landfill that would require substantial removal and replacement of the landfill cap system or include installation of pile-supported structures. If the ST Board were to select the Midway Landfill property as the project to construct, an additional CD and a CAP Amendment would be required to define remedial requirements for the work. These measures would ensure that any changes to the landfill cap would be equivalent to the current level of protectiveness for the landfill.

8. OTHER FEATURES (FENCING, ALARMS, LANDSCAPING)

8.1 Remedial Action System Changes and Events

No substantial events or changes to site features occurred during this five-year period.

8.2 Remedial Action Monitoring Program and Results

Inspection and maintenance of the alarm system for the dewatering pump station and the I-5 pump station were conducted as described in Table 9-2 and Table 10-3 of the O&M Manual, respectively. Inspection and maintenance of the alarm system for the flare system were conducted as described in Table 15-2 of the O&M Manual. Inspection and maintenance of fencing and landscaping were conducted as described in Chapter 12 of the O&M Manual. Results of monthly inspections are now being documented on the Midway Landfill general inspection and maintenance monthly log sheet established in 2016 (Appendix D1). General repairs were made due to vandalism of neighboring properties.

8.3 Modifications or Changes Planned for the Next Five-year Period

8.3.1 Site Improvements

A new landfill alarm monitoring system for the combined Kent Highlands and Midway Landfill gas system will be installed at the Kent Highlands Landfill main office (See Section 6.3.1).

8.3.2 FWLE/SR 509 Midway Project

During construction for the FWLE/SR 509 Midway Project, public access to the landfill property must be prevented at all times, unless entry has been authorized. During construction, it is particularly important that public access to waste excavation and support activity areas be restricted. Design for the FWLE/SR 509 Midway Project will include replacement of the perimeter fence, in kind or equivalent, as approved by Ecology.

8.3.3 Potential OMF South

As discussed above, the potential OMF South facility would involve construction of on-site buildings. Preliminary discussions with SPU and ST indicated that the western side of the landfill has shallower refuse and is less prone to settlement. If buildings are constructed on the landfill, they would likely be equipped with explosive gas alarms that could be included in the alarm monitoring system.

9. ACCIDENTS OR UPSETS

9.1 Remedial Action System Changes and Events

No accidents or upsets occurred during this five-year period.

9.2 Remedial Action Monitoring Program and Results

Emergency response procedures are described in Chapter 7 of the O&M Manual.

9.3 Modifications or Changes Planned for the Next Five-year Period

No modifications or changes to emergency management procedures are planned during the next five-year period. However, some specifically related to the FWLE/SR509 Midway Project and the OMF-South Project may have to be modified. These emergency management procedures are likely to be developed in the future, and they will be coordinated with SPU as the redevelopment designs are finalized.

10. CONCLUSIONS

Specific conclusions based on the data presented in this report are listed below:

10.1 Land Use

- The City is actively coordinating with WSDOT, Sound Transit, EPA, and Ecology to obtain approval for waste removal for both the FWLE and I-5 projects. Coordination activities also include the potential OMF that will maintain the landfill remedy.

10.2 Groundwater

- Twelve wells are operable or potentially operable within 1 mile of the Midway Landfill. Of the eight wells in-use or potentially in-use, one is the Group A Kent Riverbend Well (22J2; in use for irrigation as discussed in Section 3.4.3), two are domestic wells used for drinking water (22A2 and 22H1), and five are domestic wells used for irrigation (21P1, 22Q1, 22Q2, 22Q3, and 29A2). Another four domestic wells (21C1, 21F1, 27A3, and 28G6) are potentially operable.
- Two new wells were installed near the 1-mile radius of the landfill in 2016: a domestic water well (Stearns well 22A2) and a Group A irrigation well (Kent Riverbend Well 22J2).
- ROD cleanup levels for COCs were exceeded in groundwater samples from one downgradient well in the SA (MW-7B, manganese), and two downgradient wells in the SGA (MW-20B, manganese and vinyl chloride; MW-29B, vinyl chloride).
- MCLs and/or MTCA Method B cleanup levels were also exceeded in groundwater samples from one upgradient well (MW-8B, iron) and one downgradient well (MW-7B, iron) in the SA, five downgradient wells in the SGA (MW-14B, MW-20B, MW-23B, MW-29B, MW-30C, iron), and two upgradient wells in the SA (MW-17B, 1,1-DCA; and MW-21B (TCE and PCE).
- The time-series plots show that concentrations for most of the tested parameters are stable or decreasing over time. A notable exception was the increasing trend in TCE concentrations in SA upgradient well MW-21B.
- The source or sources of contamination upgradient of the Midway Landfill in the SA were still present as indicated by the presence of VOCs in wells MW-17B and MW-21B. In well MW-21B, concentrations of 1,1-DCE, TCE, and PCE increased in MW-21B beginning in the 1990s. Although concentrations of 1,1-DCE and PCE appear to have stabilized, TCE concentrations have continued to increase. Concentrations of VOCs, including 1,1-DCA, 1,1-DCE, and chloroethane in MW-17B, have been decreasing since the mid-1990s. Downgradient groundwater concentrations of VOCs in the SA and the SGA continue to be affected by these contaminant sources.
- The concentration of 1,4 dioxane in samples from two upgradient wells (MW-17B and MW-21B) and one downgradient well (MW-7B) in the SA, as well as all five downgradient wells in the SGA (MW 14B, MW 20B, MW-23B, MW-29B, and MW-30C), exceeded the MTCA Method B cleanup level. Concentrations in the SGA were higher than in the SA, and the highest concentrations were observed in SGA well MW-20B, followed by well MW-29B. Trends in all the wells indicate overall decreasing concentrations, although concentrations in some SA and SGA wells have stabilized during the past few years.

- Free product was not detected in any of the wells monitored during this period, except in Central Mound Area well GW-43D, where less than 1 foot of free product was measured. These data are consistent with historical measurements.
- In general, fluid levels measured since the RI have been stable or have decreased. Some of the West Side, South End, Central Mound, and Hydraulic Sink have shown the greatest overall fluid level decreases since the RI. Fluid levels in the Linda Heights Area wells (Appendix A2, Figure A2-4) showed initial decreases after the RI. However, fluid levels in this area increased in 2003, but they have stabilized during the past five years. This area will be affected by the FWLE/SR 509 Midway Project over the next five-year period as described in Section 3, including changes to the surface water collection system as described in Section 5.3.
- Groundwater monitoring wells that are within the waste removal area of the FWLE/SR 509 Midway Project (MW-11A, MW-11B, MW-14A, MW-14B, and MW-26) will be decommissioned. However, removal of these wells is not expected to have an adverse effect on the groundwater monitoring program since alternative well locations are available, and some of the potentially impacted wells are currently inactive.

10.3 Surface Water

Most of the surface water monitoring data for the detention pond discharge measured between 2015 and 2019 were within compliance criteria, with the exception of 38 of the 370 measurements for DO, 23 measurements for pH, and 4 measurements for turbidity. However, it is likely that the water becomes oxygenated prior to discharging into McSorley Creek as it flows through more than 1 mile of discharge piping and the outlet baffle structure.

Surface quality should continue to be monitored during the next five-year period to evaluate the effects of potential changes in the I-5 inflow caused by the FWLE/SR509 project on water quality in the detention pond discharge.

10.4 Landfill Gas

The landfill is operating under a new permit, the landfill gas control system is functioning, and there have been no exceedances of the LEL in gas probes. Methane in gas probe AM has been below the LEL since 2012.

Gas probes GP-AM, GP-AR, and gas well PD-1 are within the area impacted by the FWLE/SR 509 Midway Project. Therefore, these probes will be decommissioned. The City has determined that decommissioning of these gas probes and the gas well will not adversely affect the landfill gas monitoring program or the fluid level monitoring program (SPU 2020).

Many gas probes surrounding Midway Landfill are not actively used, as the landfill gas control system has been effective. A review of the inventory of the inactive gas probes may be useful to highlight potential probes for decommissioning.

Several historical gas extraction wells that are inactive are within the FWLE/SR 509 Midway Project. These wells will be decommissioned. Gas extraction well PD-1 is currently active to remove landfill gas surrounding GP-AM. The FWLE/SR509 project involves extending the landfill gas extraction piping further north to within 100 feet of GP-AM. This will allow for more control in the area surrounding GP-AM. The landfill gas extraction piping will run the entire length along the future light-rail line at the edge of refuse.

The removal of waste along the FWLE/SR509 Midway project along the east side of the landfill may alter the behavior of the landfill gas extraction system. Coordination between the projects will be tightly controlled to ensure maximum protectiveness during the land-use changes, as identified in the CAP amendment.

11. RECOMMENDATIONS

In consideration of these conclusions, the City recommends the following modifications or changes to the Midway Landfill monitoring program during the next five-year period:

- Ecology should investigate upgradient sources of VOC contamination and encourage upgradient property owners to voluntarily clean up contamination. The list of suspect properties was updated in the 1,4-dioxane evaluation (Parametrix and EHSI 2019).
- EPA should write an Explanation of Significant Difference to add 1,4-dioxane as a COC to the ROD. EPA should consider whether the vinyl chloride cleanup level established in the ROD of 0.02 µg/L should be changed to the current MTCA Method B cleanup level of 0.29 µg/L, and, if so, document the change in the ESD.
- The City should pursue an incremental approach to further investigate the extent of 1,4-dioxane in groundwater downgradient of the landfill. The planned approach initially will consist of a one-time initial sampling event for 1,4-dioxane at the following locations: 1) selected currently unused Midway Landfill monitoring wells completed in the SA and SGA (MW-27C, MW-30A, MW-30B, MW-15B, and MW-24A) to further evaluate flow pathways and 2) available water well(s) completed in the SGA and located further downgradient of monitoring wells MW-20B, MW-29B, and MW-30C where 1,4-dioxane exceeds regulatory criteria (initially the closest well, Riefschnider 22Q1). If the results of the initial investigation show that 1,4-dioxane is present in further downgradient wells in the SA or SGA, or if no wells are available for sampling, additional wells may be selected or installed if concentrations remain above regulatory criteria.
- The City should contact owners of domestic wells that are in-use or potentially in-use for domestic purposes within 1 mile of the Midway Landfill and that are located in hydraulically downgradient or cross-gradient locations from the landfill to determine if their wells are being used. The City will offer to sample their wells. These include the Eckland Well (22H1) and the Stearns Well (22A2).
- An independent field observation of fluid level, groundwater sampling, and landfill gas monitoring events should be conducted once every five years.
- The fluid levels in the Linda Heights area wells should be further evaluated following completion of the FWLE/SR 509 Midway Project. The results should be presented in the next five-year summary report.
- Monitoring wells, gas wells, and gas probes that are impacted by the FWLE/SR 509 Midway Project should be decommissioned in accordance with Ecology guidelines.
- The Monitoring Plan and the O&M Manual should be updated after the FWLE/SR 509 Midway Project construction is completed.
- Monitoring wells MW-9A, MW-19B, and MW-19C are not accessible for water-level monitoring. They should be removed from the list of routinely monitored wells.
- Monitoring wells MW-7A, MW-20A, and MW-23A have been dry for at least 10 years. These wells should be removed from the list of wells to be monitored.

- The list of volatile organic parameters to be tested should be reduced to the COCs and those that have been routinely detected (trichlorofluoromethane, 1,1-DCE, 1,1-DCA, cis-1,2-DCE, 1,1,1-TCA, TCE, and PCE.
- Surface quality should continue to be monitored during the next five-year period to evaluate the effects of potential changes in the I-5 inflow caused by the FWLE/SR509 project on water quality in the detention pond discharge.
- Methane gas observed in the area around GP-AM will be reevaluated following the FWLE/SR509 Midway Project. The perimeter gas collection trench will extend approximately 100 feet farther north than the existing gas control system. This will allow the gas system to influence the area near gas probe GP-AM where methane gas has been observed.
- Several monitoring wells and gas extraction wells are within the FWLE/SR509 Midway Project work area. The wells should be properly decommissioned before beginning project work. Decommissioning of these wells should be thoroughly designed and reviewed to ensure protectiveness of the subsurface aquifers.
- If the Midway Landfill is the chosen facility for ST OMF-South, continue with the planned Facilitated Technical Design Charette and outline impacts on the facility. Indicate the protections inherent in revisions to the CD and additional CAP amendments.

12. REFERENCES

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Figures

Prepared by Parametrix: \\parametrix.com\pmx\PSO\Projects\ConfidClients\1550-CityofSeattle\553-1550-063 KentHighMidwyLFPost99Svcs\GIS\Midway_5yrRvw_Fig1_SiteMap.mxd, 6/3/2020

Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

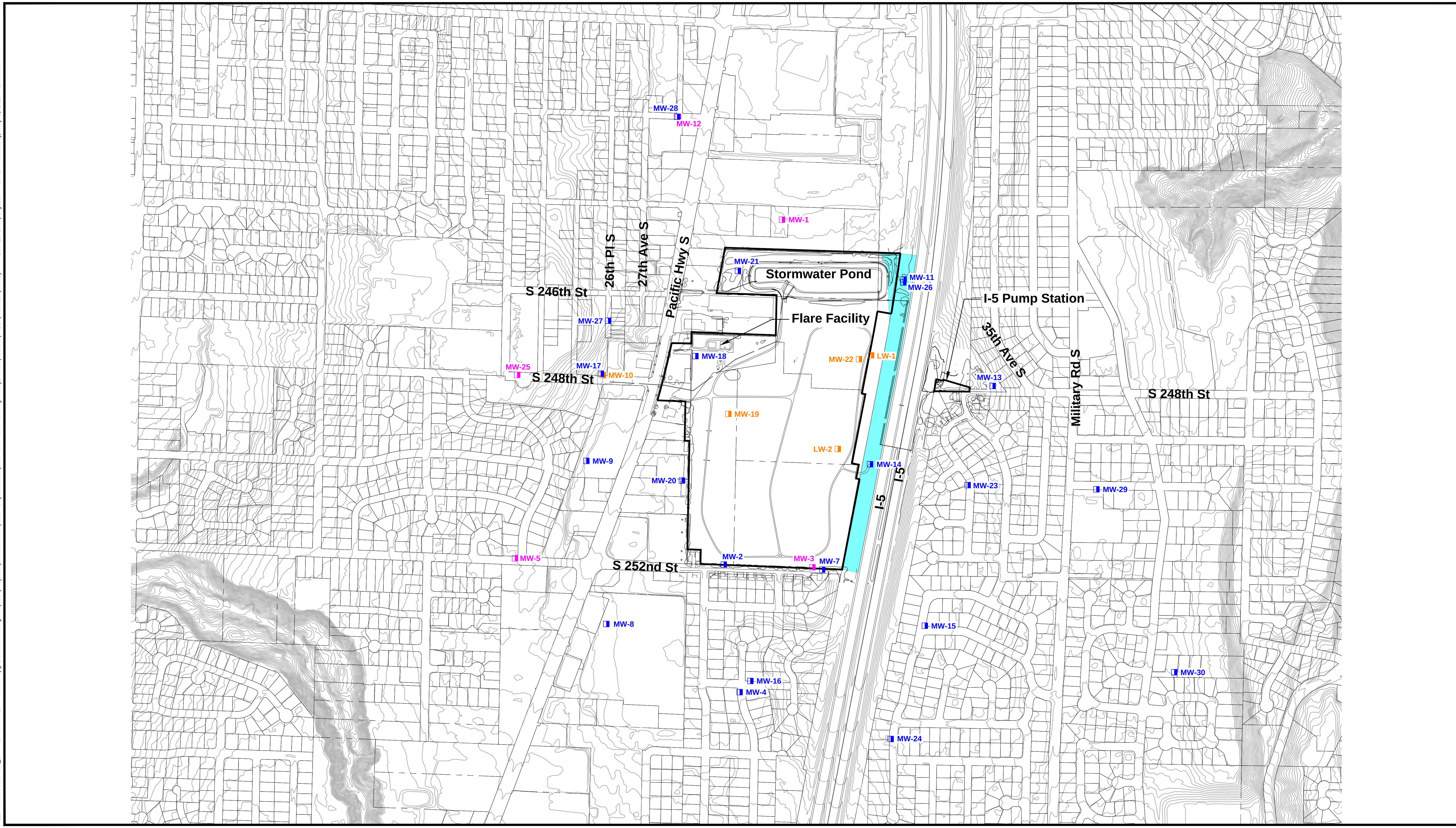
N

0 250 500 750

Feet

City of Seattle, Seattle Public Utilities Owned Parcel Boundary That Includes Midway Landfill

Figure 1
Site Location Map
Midway Landfill



Parametrix DATE: July 8, 2020 FILE: PS1550063F-01_M

N

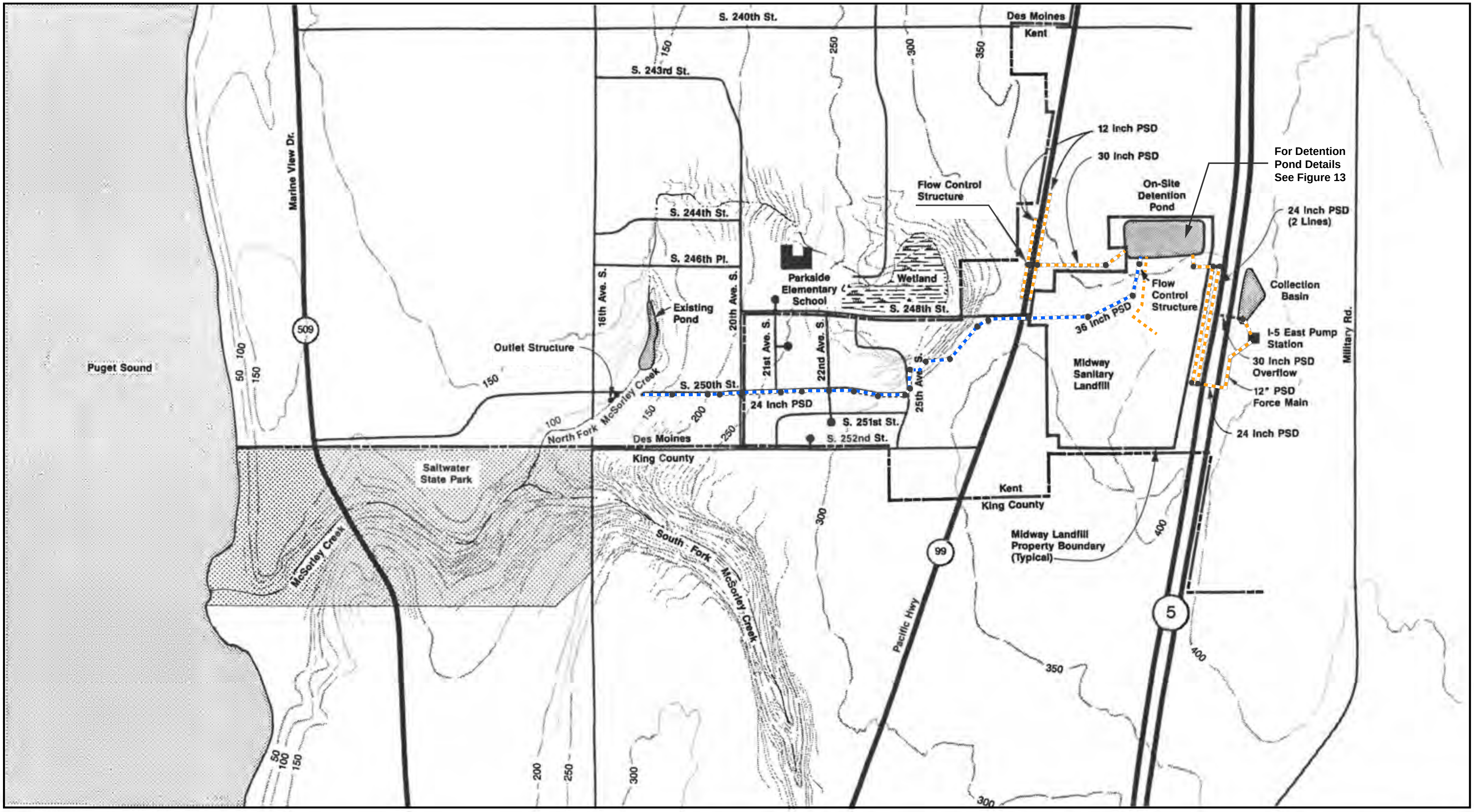
0 650

1 INCH = 650 FT

Legend:

- Active Groundwater Monitoring Well (MW)
- Inactive Groundwater Monitoring Well (MW)
- Abandoned Groundwater Monitoring Well (MW)
  MW-6 (Abandoned) Not on Map
- City of Seattle, Seattle Public Utilities Owned Parcel Boundary That Includes Midway Landfill
- Approximate Extent of Landfill Material Removal Due to FWLE/SR509 Midway Project

Figure 2
Groundwater Monitoring Well Locations
Midway Landfill



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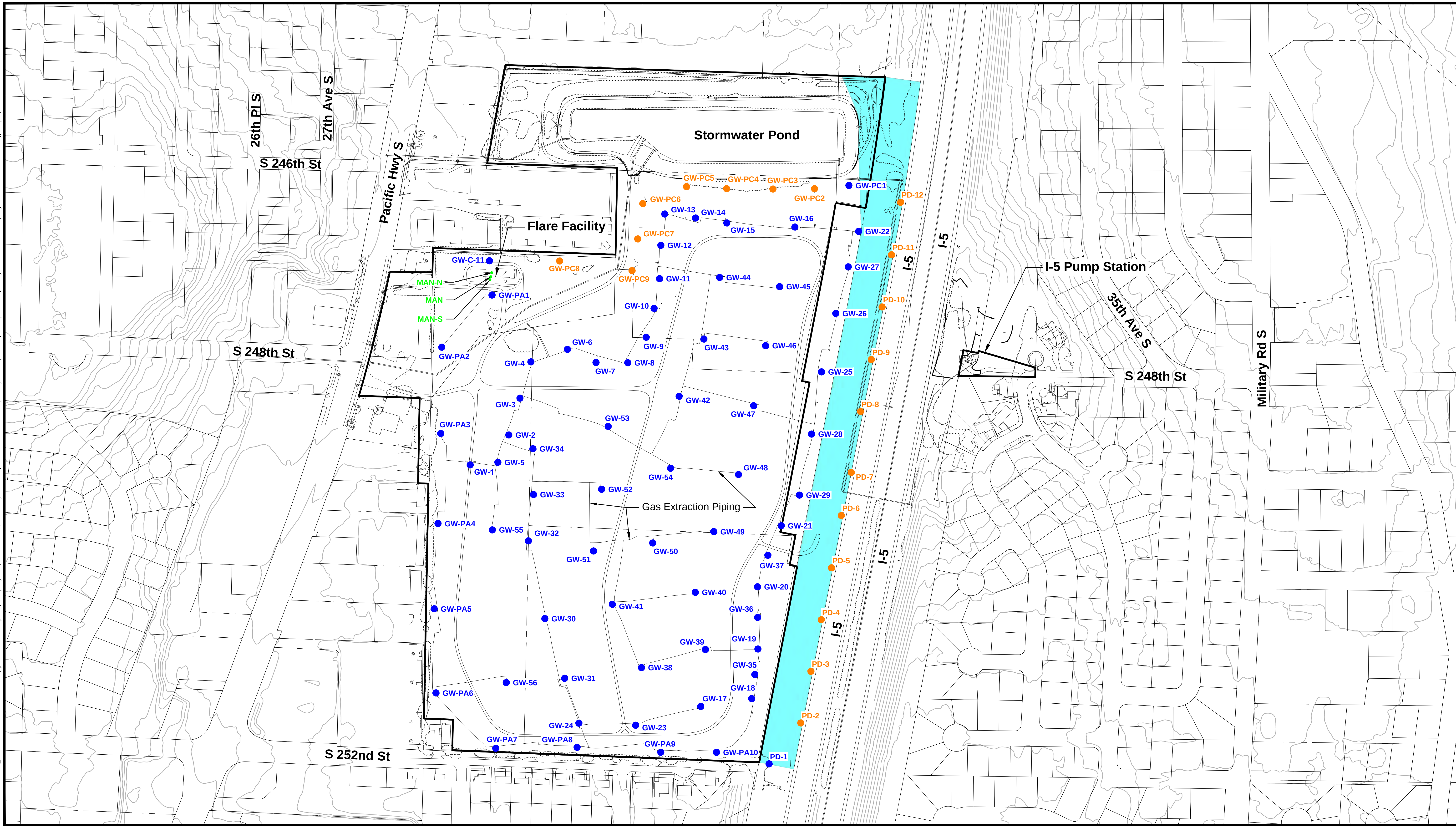
SCALE IN FEET
0 400 800

N

Surface Water Inflow
Surface Water Discharge

Source: Operations and Maintenance Manual, Parametrix, 1992

Figure 3
Surface Water Collection and Discharge System
Midway Landfill



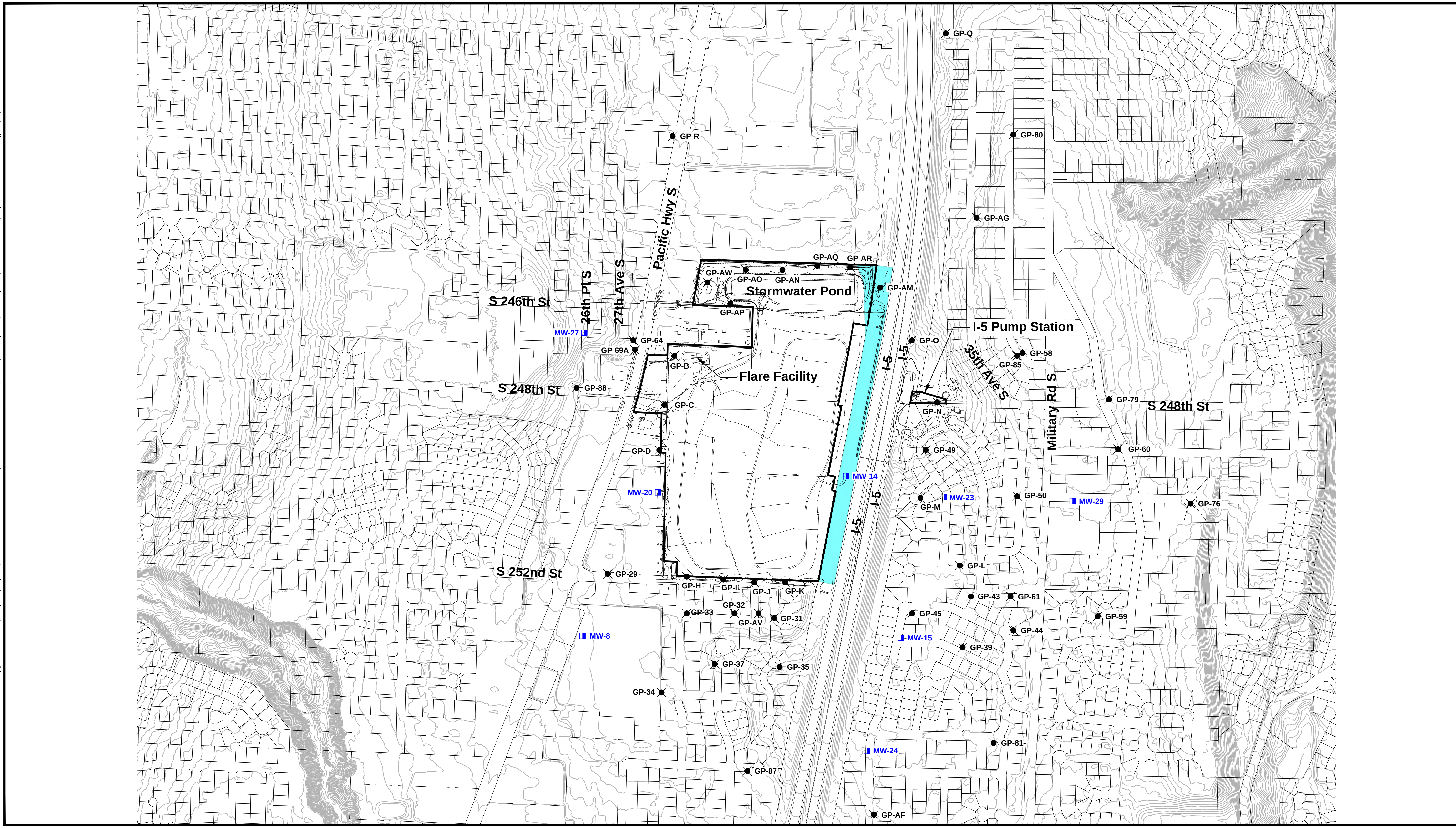
Parametrix DATE: July 8, 2020 FILE: PS1550063F-01_M

0 300
1 INCH = 300 FT.

Legend:

- Active Gas Extraction Well
- Inactive Gas Extraction Well
- Gas Extraction Manifold Sampling Location
- City of Seattle, Seattle Public Utilities Owned Parcel Boundary That Includes Midway Landfill
- Approximate Extent of Landfill Material Removal Due to FWLE/SR509 Midway Project

Figure 4
Gas Extraction Well Locations
Midway Landfill



Parametrix DATE: July 8, 2020 FILE: PS1550063F-01_M

N

0 650

1 INCH = 650 FT

Legend:

Gas Probe (GP) - Only Actively Tested Shown

Groundwater Monitoring Well (MW) - Used for Gas Monitoring

City of Seattle, Seattle Public Utilities Owned Parcel Boundary That Includes Midway Landfill

Approximate Extent of Landfill Material Removal Due to FWLE/SR509 Midway Project

Figure 5
Gas Probe Locations
Midway Landfill

Figure 6
Changes in Land Use Between 2013 and 2019
Midway Landfill

City of Seattle, Seattle Public Utilities Owned Parcel Boundary That Includes Midway Landfill

N

0 250 500 750
Feet

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Prepared by Parametrix: U:\PSO\Projects\Clients\1550-CityofSeattle\553-1550-063 KentHighMidwyLFPost99Svcs\GIS\Midway_5yrRvw_Fig6_LandUseChange2013-19.mxd, 5/13/2020

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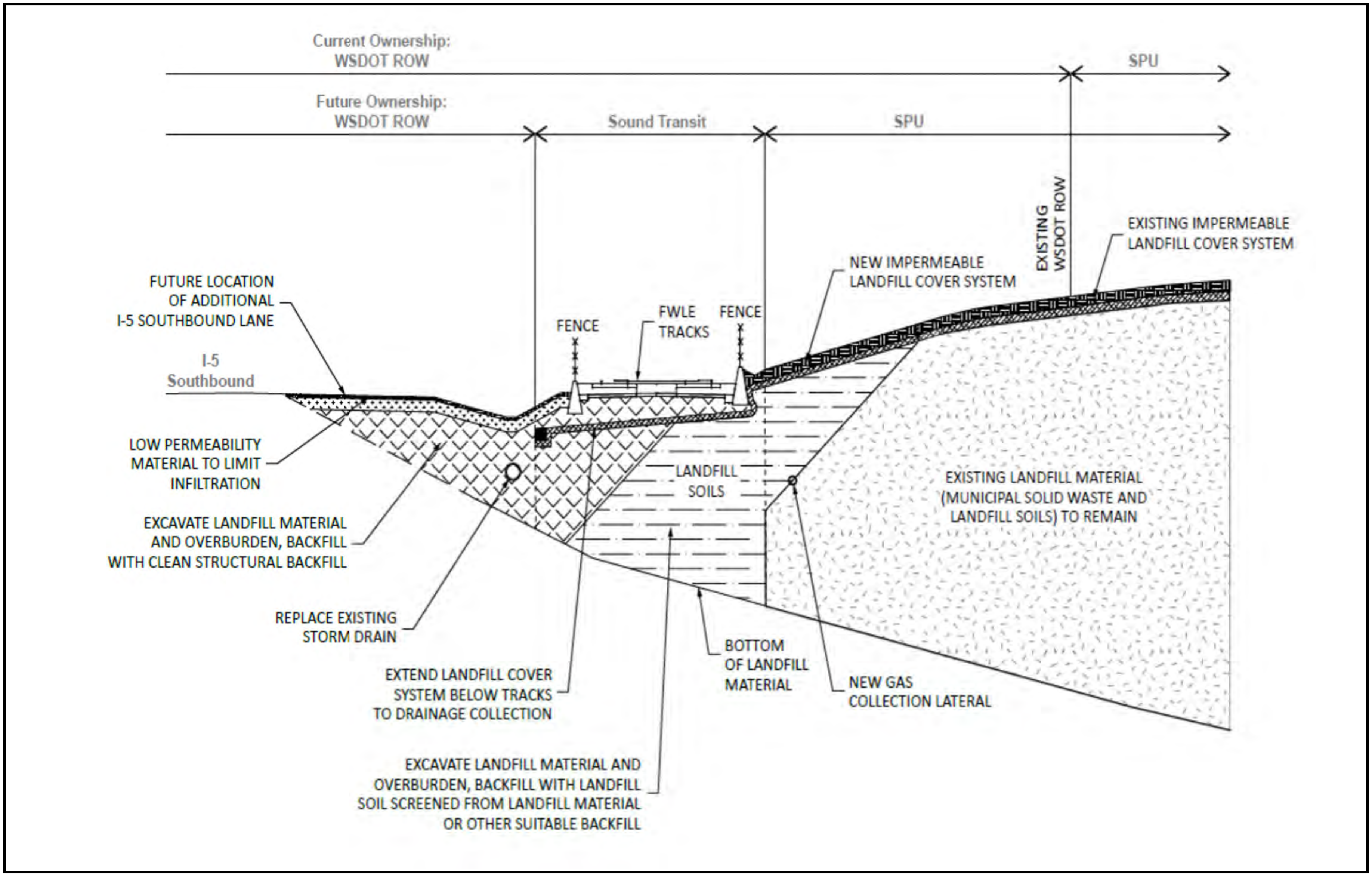
Source: Cleanup Action Plan Amendment No.1, Ecology 2020

Figure 7
Federal Way Link Extension/SR-509
Midway Project Components
Midway Landfill



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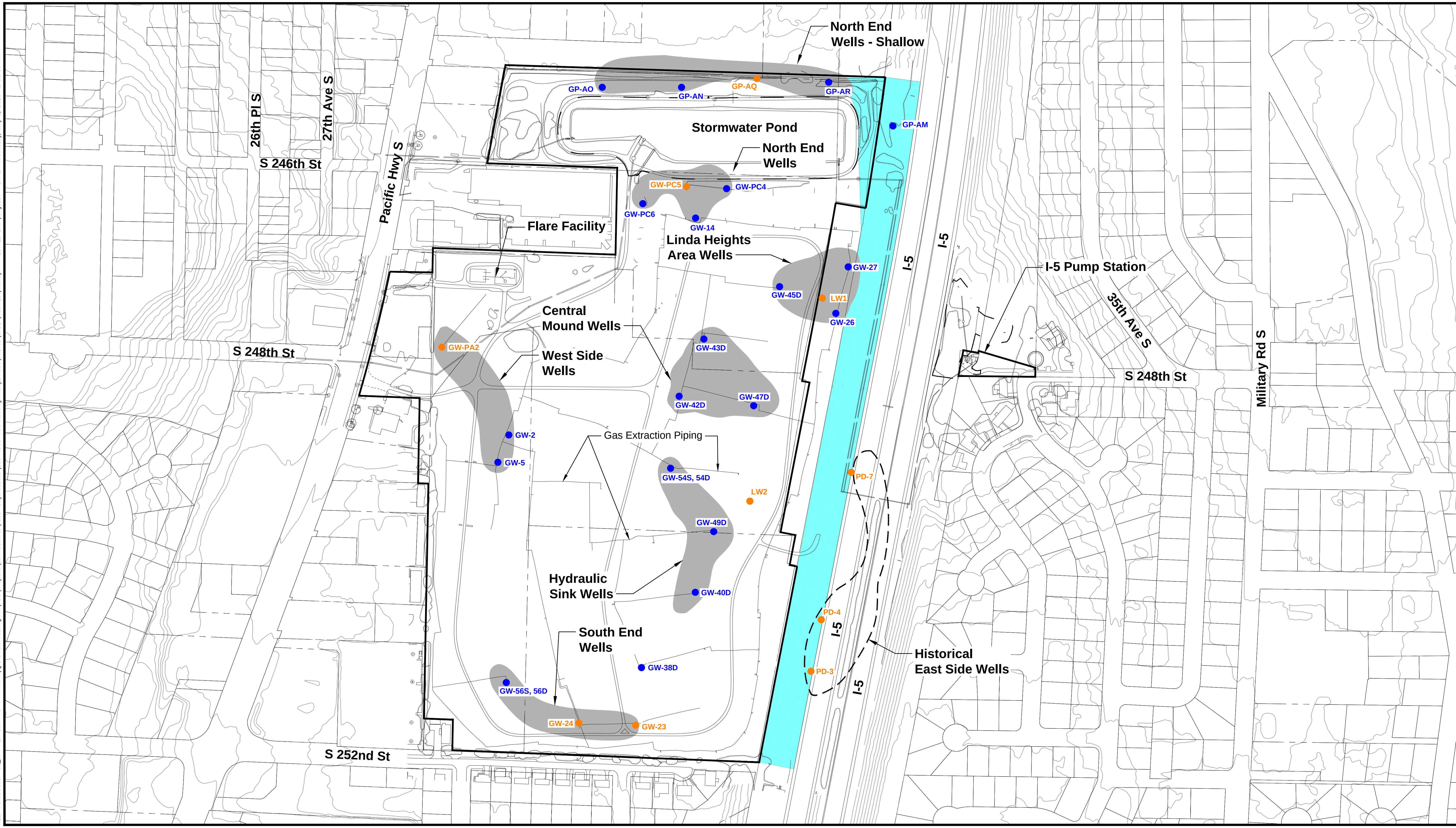
Source: Cleanup Action Plan Amendment No.1, Ecology 2020

Figure 8
Conceptual Waste Removal and Backfill Cross Section, Federal Way Link Extension/SR-509 Midway Project
Midway Landfill



FILE: PS1550063F-01_M LAYOUT: F9 PATH: \\parametrix.com\pmx\PSO\Projects\ConfidClients\1550-CityofSeattle\553-1550-063 KentHighMidwayLFPost\99Svcs\CADD\FIGURES\Midway PLOTTED BY: purgabut DATE: Wednesday, July 8, 2020 12:38:00 PM

Parametrix DATE: July 8, 2020 FILE: PS1550063F-01_M

Legend:

N

0 300

1 INCH = 300 FT.

- ● Gas probe, gas extraction well, or groundwater monitoring well number and location. Included in monitoring network. Annual monitoring frequency.
- ● Gas probe, gas extraction well, or groundwater monitoring well number and location. Not included in monitoring network.
- Key Hydraulic Areas as Outlined by Parametrix, 2002, Evaluation of Performance Monitoring Program
- Historical Key Hydraulic Areas No Longer Monitored
- City of Seattle, Seattle Public Utilities Owned Parcel Boundary That Includes Midway Landfill
- Approximate Extent of Landfill Material Removal Due to FWLE/SR509 Midway Project

Figure 9
Shallow Groundwater/Saturated Refuse Fluid Level Monitoring Network
Midway Landfill

Service Layer Credits: EagleViewTechnologies, Inc.

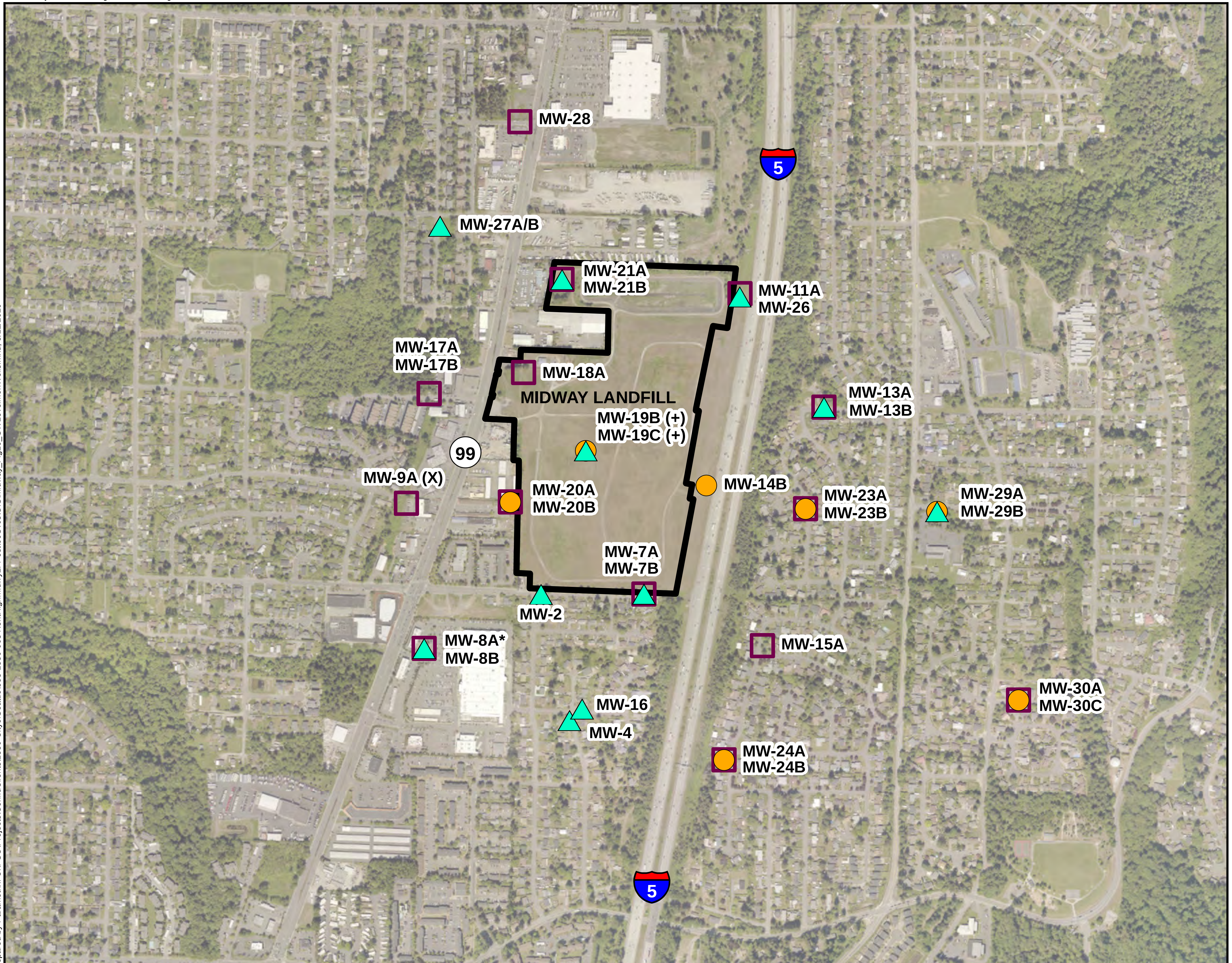


Figure 10
Upper Gravel Aquifer, Sand Aquifer and Southern Gravel Aquifer Groundwater Level Monitoring Network
Midway Landfill

- Upper Gravel Aquifer Monitoring Well
- Sand Aquifer Monitoring Well
- Southern Gravel Aquifer Monitoring Well
- (+) Not Monitored (Obstructed)
- (X) Not Monitored (No Access)

* MW-8A is screened at the contact between the UGA and SA. Fluid levels in this well are considered representative of the UGA and the SA.

N

0 350 700 1,050
Feet

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Prepared by Parametrix: U:\PSO\Projects\ConfidClients\553-1550-063 KentHighMidwyLFPost\99Svcs\GIS\Midway_Fig10_GWLevelMonWells.mxd, 5/12/2020

Service Layer Credits: EagleView Technologies, Inc.

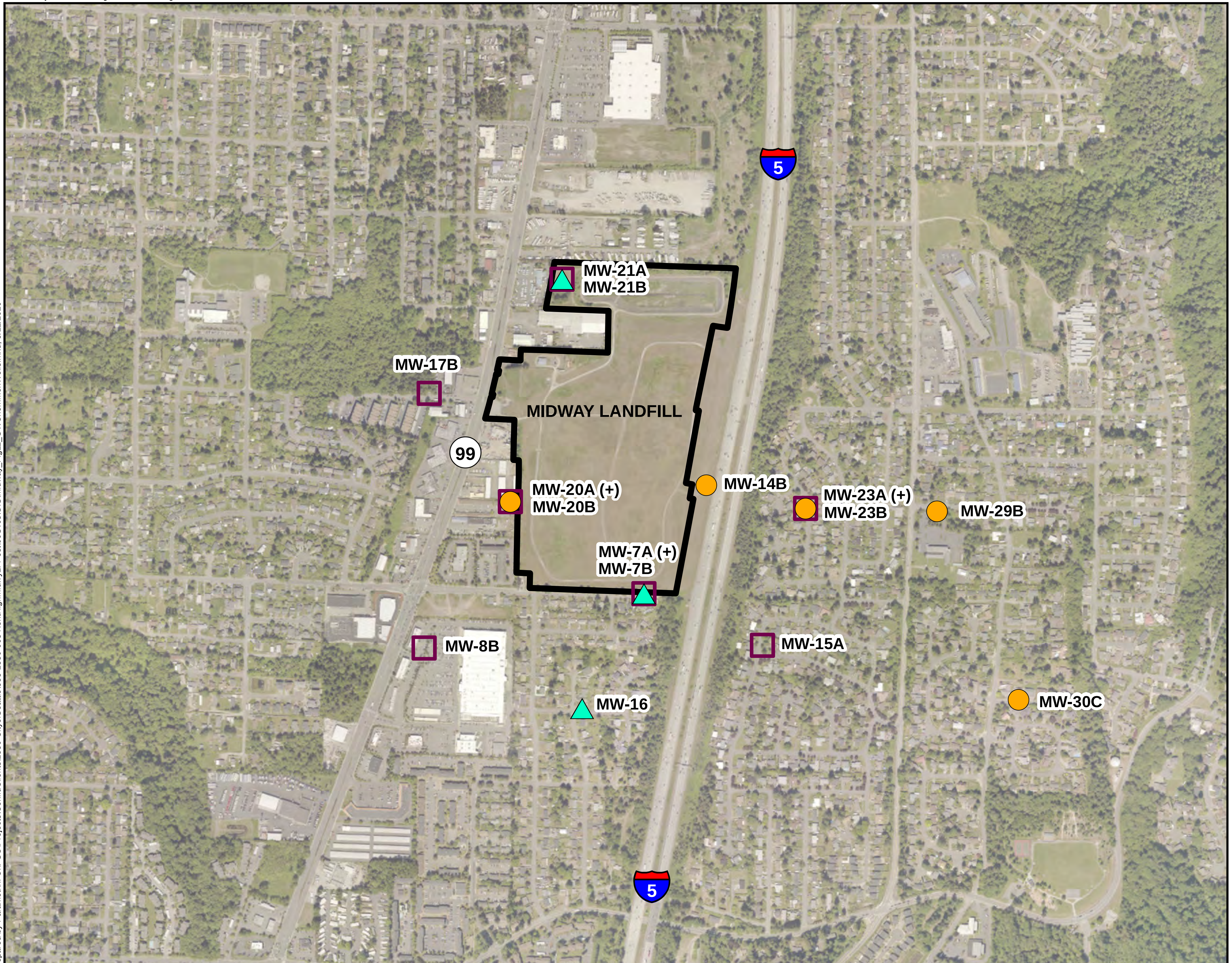

Figure 11
Well Locations for Groundwater Quality Monitoring
Midway Landfill

MW-16 Upper Gravel Aquifer Monitoring Well Number and Approximate Location

MW-17B Sand Aquifer Monitoring Well Number and Approximate Location

MW-14B Southern Gravel Aquifer Monitoring Well Number and Approximate Location

(+) Dry

N

0 350 700 1,050

Feet

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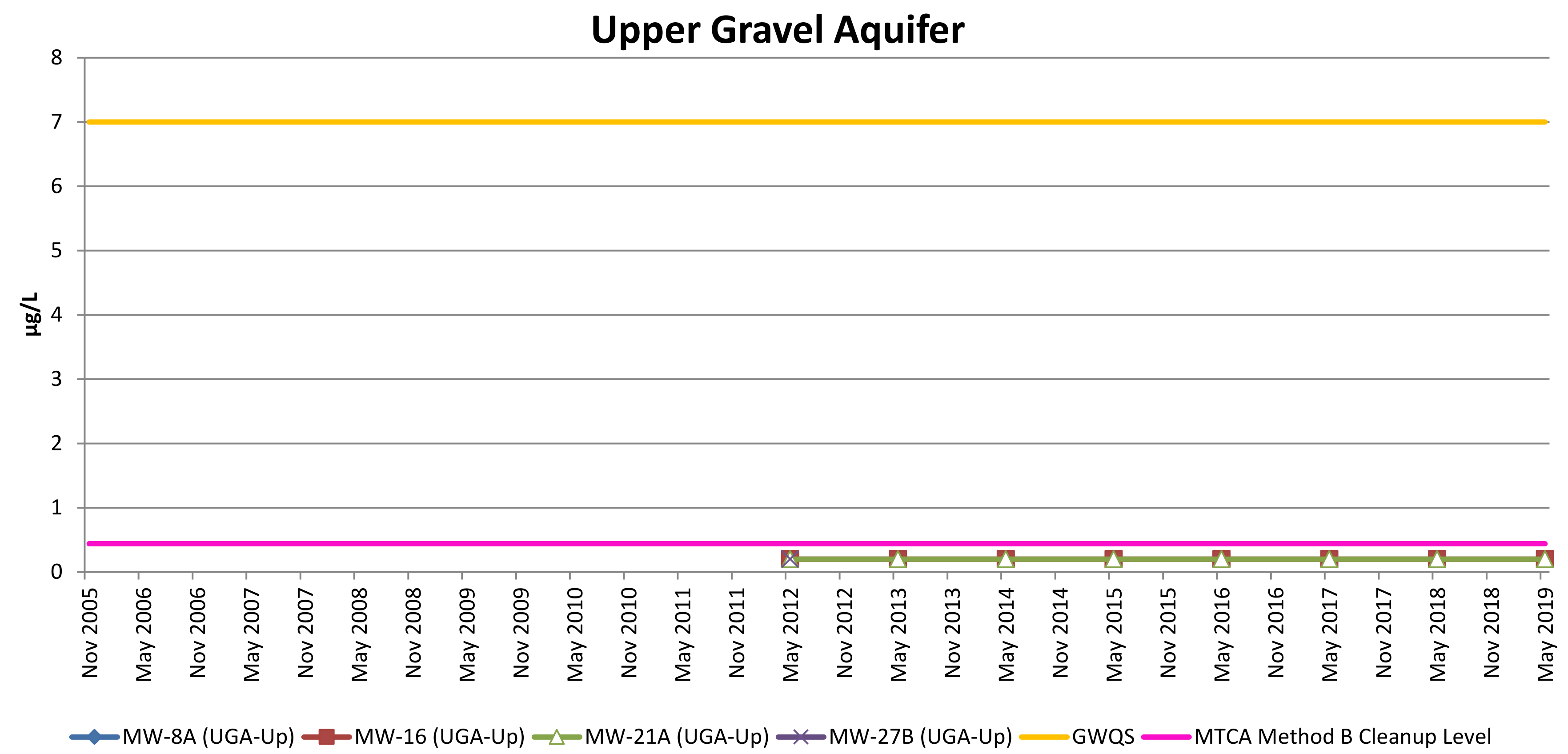
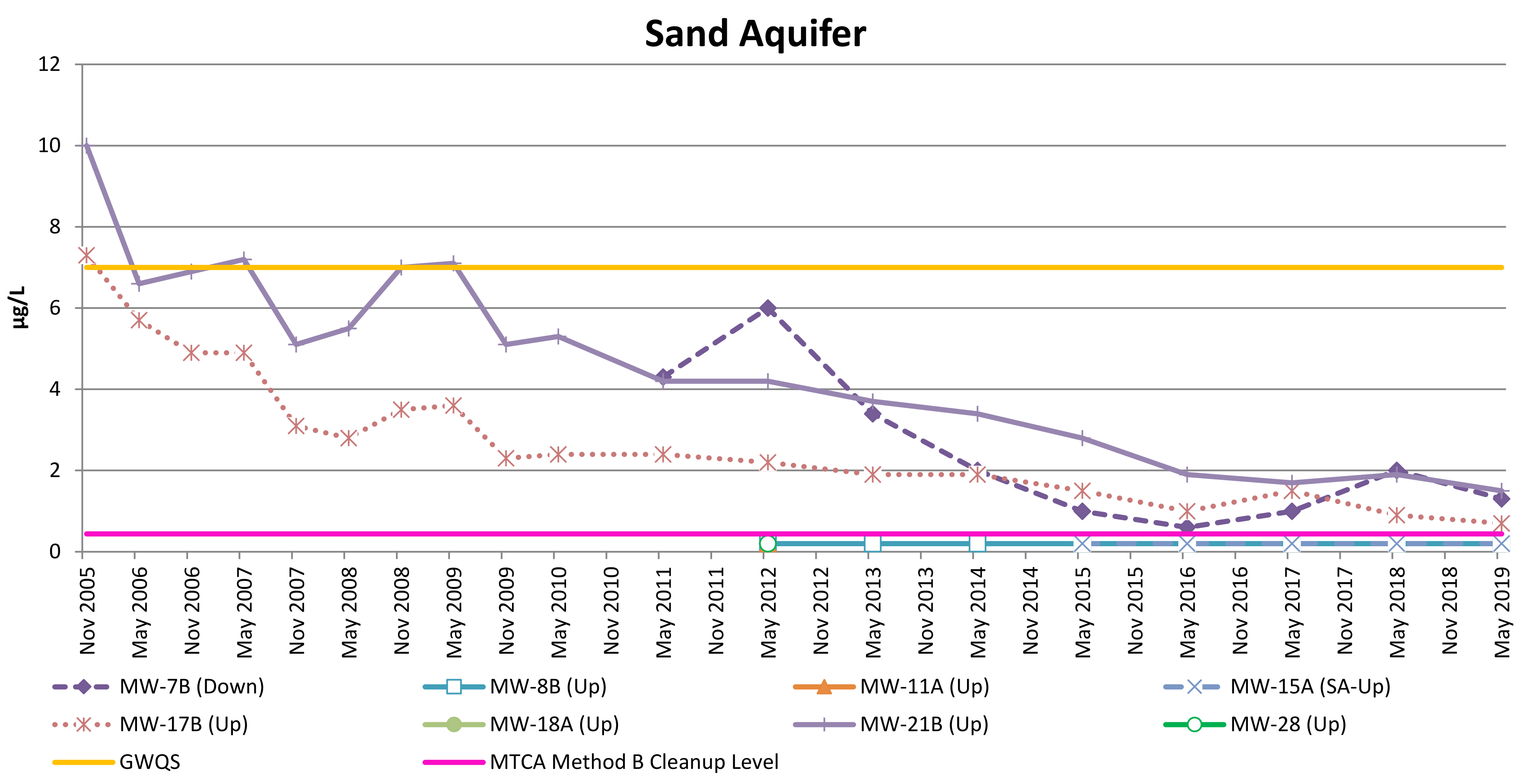
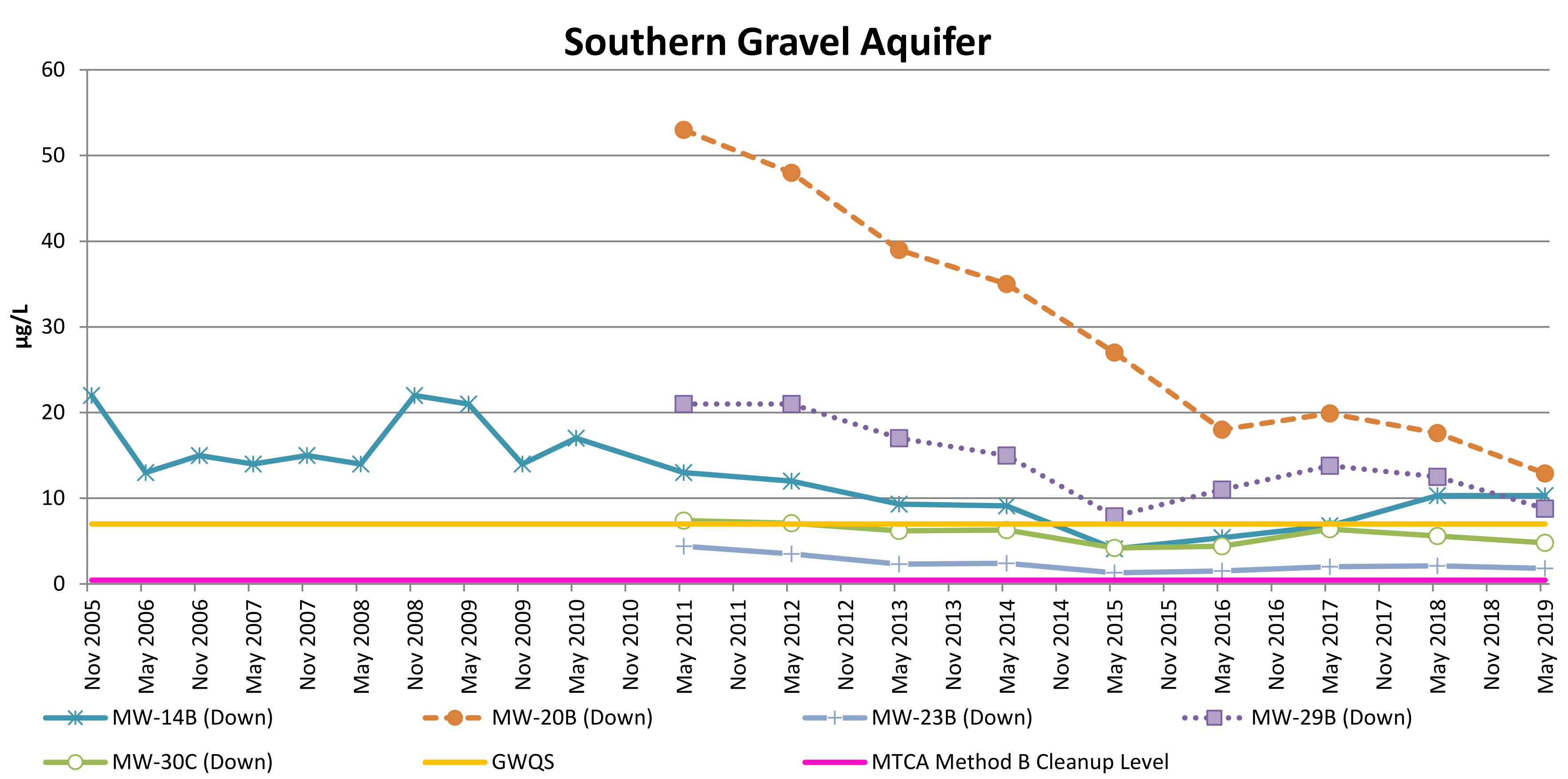
Prepared by Parametrix: U:\PSO\Projects\ConfidClients\1550-CityofSeattle\553-1550-063 KentHighMidwyLFPost99Svcs\GIS\Midway_Fig11_GWChemMonWells.mxd, 5/12/2020







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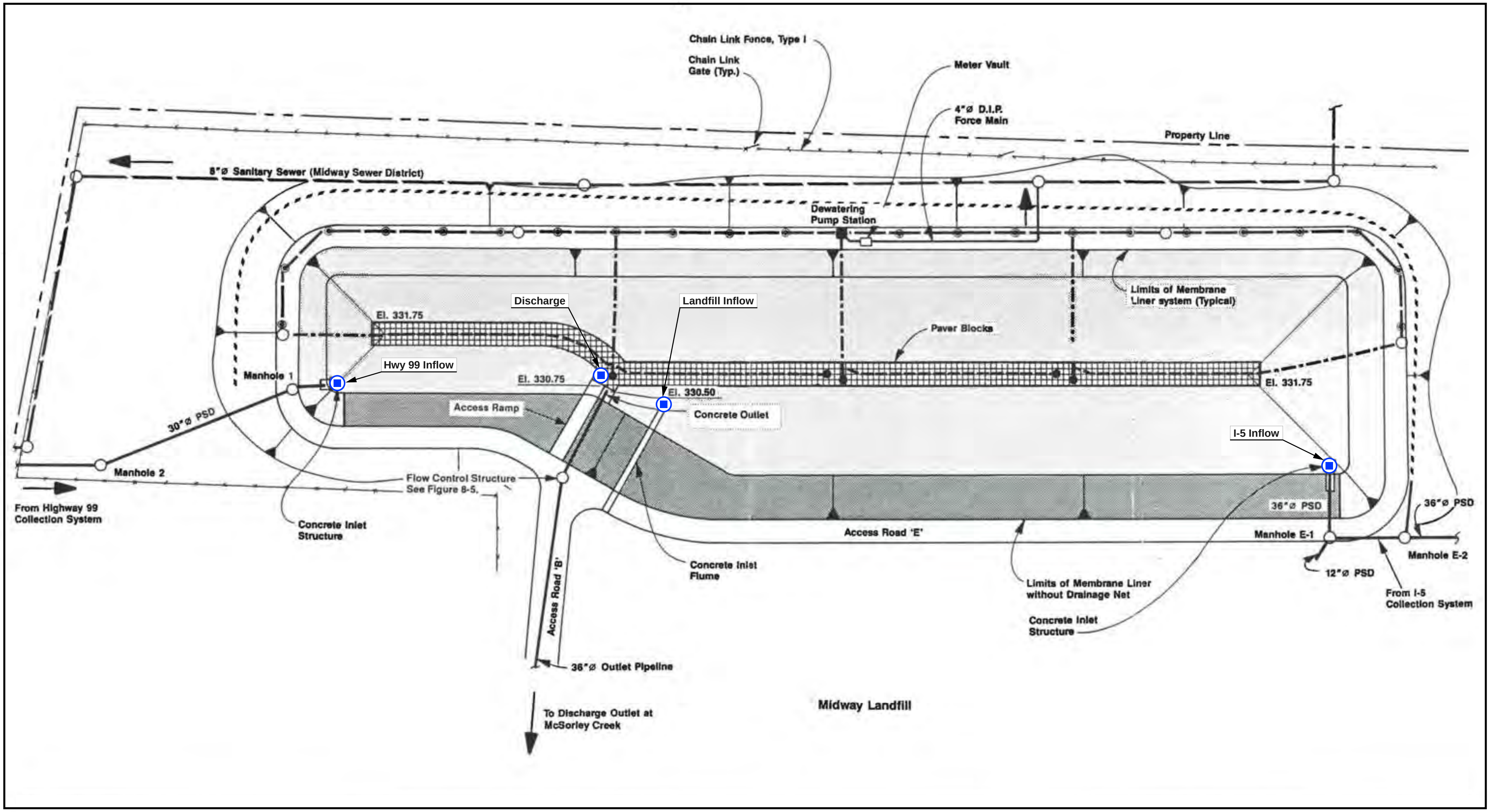
Midway Landfill 553-1550-063 (01/02) 07/2019

Figure 12
1,4-Dioxane Results by Aquifer
Midway Landfill

Notes: Non-detected values are shown as 1/2 the detection limit.
Non-detected values are not shown for the May 2011 event for wells MW-8B, MW-16, and MW-21A due to a high reporting limit (2.0).



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SCALE IN FEET
0 40 80
N

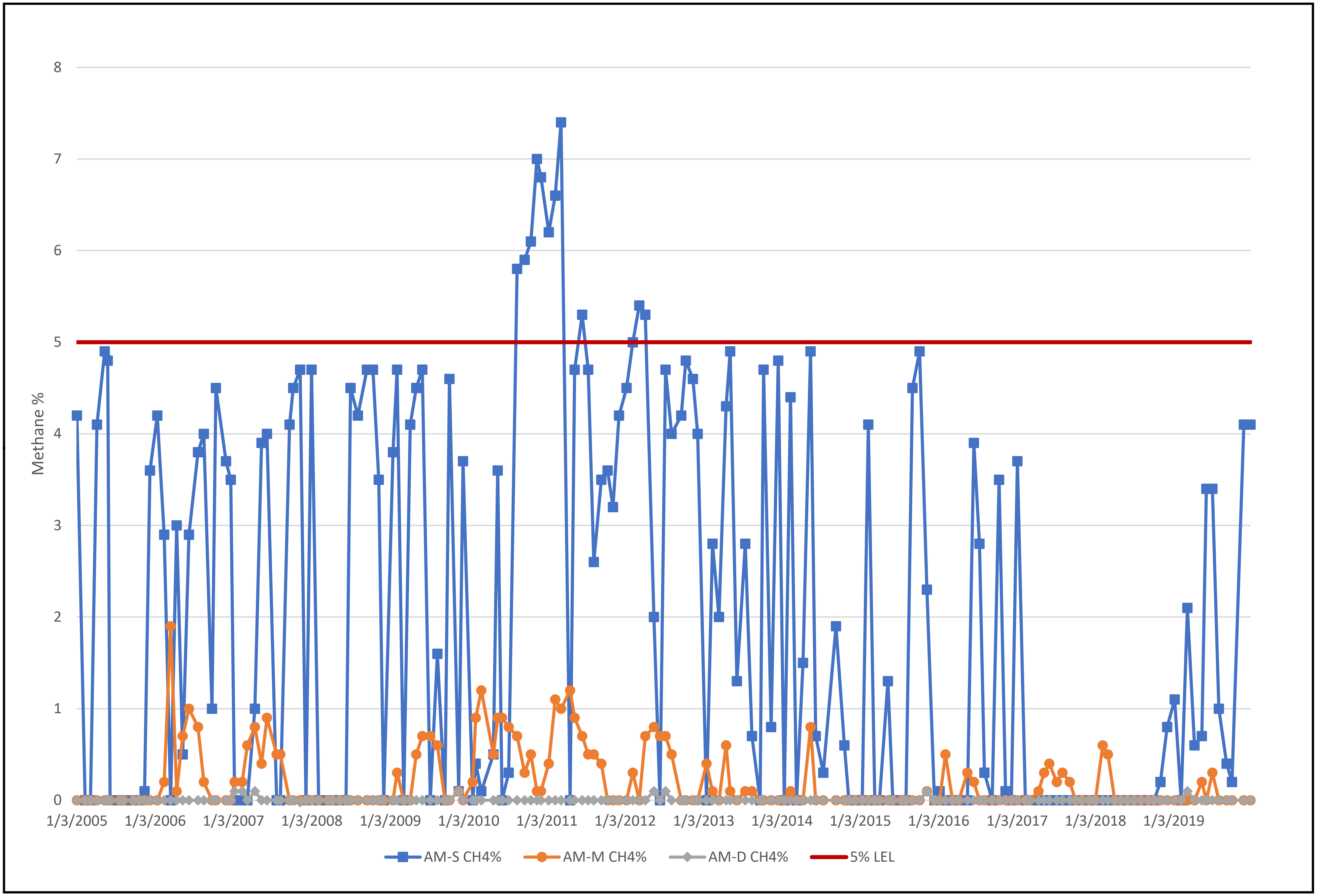
Pressure Relief Well
Manhole
Cleanout
Pump Station
Surface Water Sampling Locations

6" PVC Perforated French Drain
6" PVC Perforated Slope Drain
6" PVC Perforated Collector Sump
6" Collector Pipe

8" Sanitary Sewer
Concrete Storm Drain (PSD)

Figure 13
Surface Water Monitoring Locations
Midway Landfill

Source: Operations and Maintenance Manual, Parametrix, 1992



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Midway Landfill 553-1550-063 (01/02) 01/2020

Figure 14
Gas Probe AM Methane Concentrations
Midway Landfill

Tables

Table 1. Groundwater Contaminants of Concern and Cleanup Levels Established in the ROD, Midway Landfill

Contaminant	Cleanup Level	Basis of Cleanup Level
1,2-dichloroethane (1,2-DCA)	5.0 µg/L	Federal Drinking Water Standard (Maximum Contaminant Level [MCL])
Vinyl chloride	0.29 µg/L*	MTCA Method B
Manganese	2.2 mg/L	MTCA Method B

Source: EPA (2000).

* = The revised cleanup level for vinyl chloride is 0.29 µg/L, using the MTCA adjusted cancer risk of $1e^{-5}$ (EPA 2005).

Table 2. Midway Landfill Monitoring Well Details

Well ID	Meas Pt Elev (ft)	North	East	Screen (ft bgs)	Screen Elevation (ft)	Depth to GW (ft)	SWL Elevation (ft)	Aquifer	Water Level Monitoring	Water Quality Monitoring	Notes on Well
MW-1	365.99	143013.536	1278389.298	86 - 122	280.4 - 244.4	59.6	306.4	UGA			Abandoned
MW-2	384.39	140563.222	1277975.286	126 - 156	256.0 - 226.0	149.6	234.8	UGA	x		Well is usually dry
MW-3	416.11	140544.170	1278604.942	152.8 - 184.7	260.0 - 228.1	-	-	UGA			Well is dry
MW-4	362.82	139657.189	1278087.942	110.5 - 144.25	252.8 - 219.1	107.1	255.7	UGA	x		
MW-5	321.94	140608.626	1276491.779	47.6 - 77.5	274.8 - 244.9	61.3	260.6	UGA			Could not locate in September 2017
MW-6	271.76	137174.122	1281951.569	96.0 - 113.7	176.1 - 158.4	85.85	185.91	SA			Could not locate in September 2017
MW-7A	412.73	140527.411	1278674.548	188.3 - 197.8	225.0 - 215.5	182.82	229.91	UGA	x		Well is usually dry
MW-7B	412.73	140527.411	1278674.548	222.7 - 225.7	190.6 - 187.6	195.15	217.58	SA	x	x	
MW-8A	351.35	140101.288	1277096.707	168.5 - 179.0	183.3 - 172.8	106.8	244.6	UGA	x		
MW-8B	351.35	140101.288	1277096.707	200.9 - 206.3	150.9 - 145.5	132.4	219.0	SA	x	x	
MW-9A	353.79	141300.120	1276999.163	127.6 - 138.0	226.9 - 216.5	94.4	259.4	SA			New fencing, no access to well
MW-9B	353.79	141300.120	1276999.163	164.7 - 170.1	189.8 - 184.4	118.4	235.4	SA			New fencing, no access to well
MW-10A	338.77	141909.154	1277116.788	192.5 - 202.2	146.7 - 137.0	81.73	257.04	SA			
MW-10B	338.77	141909.154	1277116.788	222.9 - 231.9	116.3 - 107.3	81.83	256.94	SA			
MW-11A	370.41	142588.826	1279129.305	200.3 - 210.3	169.4 - 159.4	110.13	260.28	SA	x		
MW-11B	370.41	142588.826	1279129.305	265.8 - 271.2	103.9 - 98.5	110.13	260.28	NGA			
MW-12A	374.8	143744.753	1277650.303	233.8 - 239.2	141.4 - 136.0	112.6	262.2	SA			Abandoned, new building and pavement 2015
MW-12B	374.8	143744.753	1277650.303	255.4 - 258.4	119.8 - 116.8	112.7	262.1	SA			Abandoned, new building and pavement 2015
MW-13A	382.68	141832.070	1279884.978	109.0 - 111.9	274.2 - 271.3	106.51	276.17	UGA	x		
MW-13B	382.68	141832.070	1279884.978	196.3 - 206.8	186.9 - 176.4	128.5	254.2	SA*	x		
MW-14A	381.85	141513.128	1278951.790	277.6 - 283.0	103.4 - 98.0	208.15	173.70	SGA			
MW-14B	381.85	141513.128	1278951.790	302.0 - 307.5	79.0- 73.5	213.12	168.73	SGA	x	x	
MW-15A	438.54	140128.828	1279403.432	224.1 - 234.3	214.8 - 204.6	228.16	210.38	SA	x	x	
MW-15B	438.54	140128.828	1279403.432	260.2 - 265.7	178.7 - 173.2	229.43	209.11	SA			
MW-16	362.8	139736.588	1278164.235	161.5 - 166.9	201.7 - 196.3	121.2	241.6	UGA	x	x	
MW-17A	337.08	141918.618	1277102.356	87.8 - 98.2	249.6 - 239.2	66.83	270.3	SA	x		
MW-17B	337.08	141918.618	1277102.356	126.0 - 133.0	211.4 - 204.4	69.9	267.2	SA	x	x	
MW-18A	343.91	142044.335	1277773.804	119.0 - 129.5	223.6 - 213.1	71.98	271.9	SA	x		
MW-18B	343.91	142044.335	1277773.804	281.3 - 297.7	61.3 - 50.9	117.85	226.1	NGA			
MW-19A	370.2	141633.365	1278007.927	72.5 - 82.5	295.9 - 285.9	75.8	294.4	LA			
MW-19B	370.2	141633.365	1278007.927	168.2 - 173.2	200.2 - 195.2	151.5	218.7	UGA			Well is partially obstructed at 53 feet below ground
MW-19C	370.2	141633.365	1278007.927	292.4 - 297.6	76.0 - 70.8	232.0	138.2	SGA			Well is partially obstructed at 53 feet below ground
MW-20A	375.65	141160.550	1277678.225	190.0 - 195.0	183.7 - 178.7	159.0	216.7	SA	x		Well is usually dry
MW-20B	375.65	141160.550	1277678.225	295.0 - 300.0	78.7 - 73.7	238.0	137.7	SGA	x	x	
MW-21A	359.95	142650.909	1278075.791	85.4 - 95.4	273.1 - 263.1	83.58	276.4	UGA	x	x	
MW-21B	359.95	142650.909	1278075.791	170.4 - 180.4	188.1 - 178.1	86.79	273.2	SA	x	x	
MW-21C	359.95	142650.909	1278075.791	290.5 - 295.5	68.0 - 63.0	100.46	259.5	NGA			
MW-22A	378.28	142022.661	1278936.216	268.8 - 273.0	108.0 - 103.8	121.0	257.3	NGA			
MW-22B	378.28	142022.661	1278936.216	300.2 - 310.2	76.6 - 66.6	141.2	237.1	NGA			
MW-23A	424.42	141127.672	1279707.900	230.0 - 240.0	195.0 - 185.0	222.4	202.0	SA	x		Well is usually dry
MW-23B	424.42	141127.672	1279707.900	320.3 - 330.3	104.7 - 94.7	256.5	167.9	SGA	x	x	
MW-24A	418.58	139324.276	1279160.852	205.5 - 215.5	213.6 - 203.6	192.4	226.2	SA	x		
MW-24B	418.58	139324.276	1279160.852	350.5 - 355.5	68.6 - 63.6	247.6	171.0	SGA	x		Well is partially obstructed
MW-25A	260.84	141910.832	1276507.653	14.5 - 19.5	246.7 - 241.7	3.0	257.8	PA			Abandoned, road widening in 2009
MW-25B	260.84	141910.832	1276507.653	40.1 - 45.1	221.1 - 216.1	8.0	252.8	PA			Abandoned, road widening in 2009
MW-25C	260.84	141910.832	1276507.653	69.2 - 74.2	192.0 - 187.0	4.3	256.5	SA			Abandoned, road widening in 2009
MW-26	370.58	142610.219	1279133.869	112.0 - 117.0	257.4 - 252.4	90.3	280.3	UGA	x		
MW-27A	330.05	142983.208	1277178.173	76.9 - 87.3	253.5 - 243.1	60.57	269.5	UGA	x		
MW-27B	330.05	142983.208	1277178.173	147.6 - 153.0	182.8 - 177.4	61.02	269.0	UGA	x		
MW-27C	330.05	142983.208	1277178.173	260.0 - 265.0	70.4 - 65.4	79.85	250.2	NGA			
MW-28	374.15	143745.216	1277643.333	108.0 - 113.0	267.2 - 262.2	88.6	285.6	SA	x		
MW-29A	428.5	141098.127	1280622.620	208.1 - 218.1	220.8 - 210.8	189.8	238.7	UGA	x		
MW-29B	428.5	141098.127	1280622.620	370.0 - 377.0	58.9 - 51.9	293.9	134.6	SGA	x	x	
MW-30A	407.91	139798.650	1281175.819	182.9 - 192.9	224.6 - 214.6	168.0	239.9	SA	x		
MW-30B	407.91	139798.650	1281175.819	274.1 - 284.1	133.4 - 123.4	246.2	161.7	SA			
MW-30C	407.91	139798.650	1281175.819	345.7 - 350.7	61.8 - 56.8	266.2	141.7	SGA	x	x	
LW-1	377.25	142050.109	1279022.478	61.0 - 86.0	314.6 - 289.6	71.7	305.6	LA			
LW-2	382.1	141384.365	1278785.194	100.5 - 110.8	281.6 - 271.3	103.4	278.7	LA			

Notes:

= Active wells used for water level or water quality monitoring

= Inactive Wells not used for water level or water quality monitoring

Pumps set 2 feet above screen except for MW-13A, MW-23A, and MW-24A

Water levels from 1987 - 1989

PA = Perched Aquifer
UGA = Upper Gravel Aquifer
SA = Sand Aquifer
NGA = Northern Gravel Aquifer
SGA = Southern Gravel Aquifer
LA = Landfill Aquifer
* = Well originally reported completed in the NGA by AGI (1990)
ft = feet
bgs = below ground surface

Sources:

Hydrogeology Technical Memorandum, Appendix A for the Midway Landfill Remedial Investigation (AGI 1988)
Supplemental Hydrogeologic and Hydrochemical Investigation, Midway Landfill Feasibility Study (AGI 1990)

Table 3. Operable or Potentially Operable Water Wells within 1-Mile of Midway Landfill

Well	Name	Well Type	Likely Aquifer	Use	Operable?	Hydraulic Position with Respect to Landfill
21C1	Stoner	Group D	SA	Not in use	Covered but operable	Cross-gradient
21F1	Marcus Whitman Church	Group D	SA	Not in use	Covered but operable	Cross-gradient to Downgradient
21P1	Strange	Group D - Irrigation	UGA	Potentially in use	Likely	Upgradient
22A2	Stearns	Group D	AA	Potentially in use	New well	Cross-gradient to Downgradient
22H1	Eckland	Group D	SGA	In use	Yes	Cross-gradient to Downgradient
22J2	Kent Riverbend 1R	Group A - Irrigation	AA	In use	Yes	Downgradient
22Q1	Riefschnider	Group D - Irrigation	SGA	Potentially in use	Unknown	Downgradient
22Q2	Kraft	Group D - Irrigation	SA	Potentially in use	Unknown	Downgradient
22Q3	Book	Group D - Irrigation	SA	Potentially in use	Likely	Downgradient
27A3	Huddleston	Group D - Irrigation	SGA	Not in use	Yes	Cross-gradient to Downgradient
28G6	Rost	Group D	UGA	Not in use	Yes	Upgradient
29A2	Meeker	Group D - Irrigation	UGA	In use	Yes	Upgradient

Table 4. Fluid Level Data Trends for Shallow Groundwater/Saturated Refuse Monitoring Wells through May 2019, Midway Landfill

Area	Well #	Comments
North End Shallow	GP-AM-M*	Stable within historical range
	GP-AN-M	Stable within historical range
	GP-AO-M	Variable with overall decreasing trend since RI; stable within historical range
	GP-AR-M	Variable with overall decreasing trend since RI; slight increasing trend since 2007, but within historical range
North End	GW-14	Stable
	GW-PC4S	Stable
	GW-PC6S	Variable with slight decreasing trend since RI; slight increasing trend since 2008, but within historical range
Linda Heights Area	GW-26	Decreasing trend between RI and 2002; slight increasing trend since 2003, but within historical range; stable since 2014
	GW-27	Decreasing trend between RI and 2002; slight increasing trend since 2003, but within historical range; stable since 2014
	GW-45D	Decreasing trend between RI and 2002; slight increasing trend since 2003, but within historical range; stable since 2014
West Side	GW-2	Overall decreasing trend since RI; dry since 2003
	GW-5	Overall decreasing trend since RI; stable since 2004
Hydraulic Sink	GW-40D	Continued decreasing trend since RI
	GW-49D	Slight increasing trend between RI and 1995; decreasing trend since 1995
	GW-54D	Dry since 1997
	GW-54S	Dry since 2003
Central Mound	GW-42D	Overall decreasing trend since RI; stable since 2004
	GW-43D	Overall decreasing trend since RI
	GW-47D	Overall decreasing trend since RI; dry since 2009
South End	GW-38D*	Decreasing trend since RI; stable since 2000
	GW-56S	Dry since 1997
	GW-56D	Decreasing trend since RI; stable since 2000

Notes:

* = Well not in a specific hydraulic area; located between areas listed in the table.

Table 5. Groundwater Quality Analytical Schedule, Midway Landfill

Annual Event[1]	
Temperature	Manganese (dissolved)
Specific conductivity	Chemical oxygen demand (COD)
pH	Total organic carbon (TOC)
Chloride	Volatile organic compounds (VOCs)
Sulfate	Vinyl chloride
Iron (dissolved)	1,4-dioxane[2]

1 Annual event monitoring wells = MW-7A, MW-7B, MW-8B, MW-14B, MW-15A, MW-16, MW-17B, MW-20A, MW-20B, MW-21A, MW-21B, MW-23A, MW-23B, MW-29B and MW-30C. In 2008, due to budget constraints and stable and/or decreasing trends in concentrations, the City reduced the frequency of groundwater sampling and reporting to annually, with a comprehensive groundwater status report every five data sets to be prepared the year prior to the 5-Year Review reporting.

2 Tested by EPA 8270 (semi-volatile organic compounds) in groundwater samples collected from MW-17B, MW-21B, and MW-14B beginning in 2005 (EPA 2005), and in the other wells beginning in 2011.

Table 6. Comparison of Contaminants of Concern in Groundwater to ROD Cleanup Levels, 2015-2019 Data Summary, Midway Landfill

				Upper Gravel Aquifer		Sand Aquifer						Southern Gravel Aquifer									
		Cleanup		MW-16 (UP)	MW-21A (UP)	MW-7B (DOWN)	MW-8B (UP)		MW-15A (DOWN)	MW-17B (UP)	MW-21B (UP)	MW-14B (DOWN)		MW-20B (DOWN)		MW-23B (DOWN)		MW-29B (DOWN)		MW-30C (DOWN)	
Compound	Units	Level[a]						Dup					Dup		Dup		Dup		Dup		
Manganese	mg/L	2.2	R-62	0.092	0.001	**2.48**	0.087	- -	0.002	0.046	0.372	0.861	- -	**2.27**	- -	0.121	0.121	0.858	0.861	0.678	- -
			R-63	0.142	0.026	**2.44**	0.047	0.049	0.002	0.044	0.342	0.837	- -	2.11	- -	0.123	- -	0.830	- -	0.638	0.639
			R-64	0.101	0.0274	**2.47**	0.0614	- -	0.0010 U	0.0425	0.346	0.834	- -	1.92	- -	0.118	0.115	0.820	0.817	0.663	- -
			R-65	0.0943	0.0241	**2.29**	0.351	- -	0.00273	0.0315	0.341	0.867	- -	1.70	1.71	0.105	- -	0.805	- -	0.644	0.691
			R-66	0.0950	0.0010 U	**2.32**	0.275	- -	0.0010 U	0.0330	0.345	0.884	0.877	1.61	- -	0.109	- -	0.812	0.801	0.669	- -
Vinyl Chloride	µg/L	0.29*	R-62	0.020 U	0.020 U	0.17	0.020 U	- -	0.020 U	0.11	0.031	0.24	- -	0.29	- -	0.098	0.099	**0.48**	**0.44**	0.20	- -
			R-63	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	- -	**0.33** M	- -	0.20 U	- -	**0.49** M	- -	0.21 M	0.20 M
			R-64	0.20 U	0.20 U	0.20 MU	0.20 U	- -	0.20 U	0.20 U	0.20 MU	0.20 MU	- -	**0.346**	- -	0.20 MU	0.20 MU	**0.516**	**0.450**	0.241	- -
			R-65	0.020 U	0.020 U	0.0954	0.020 U	- -	0.020 U	0.0375	0.0299	0.104	- -	0.257	0.266	0.0866	- -	**0.335**	- -	0.172	0.173
			R-66	0.200 U	0.200 U	0.200 U	0.200 U	- -	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	- -	- -	- -	**0.337**	**0.33**	0.200 U	- -
1,2-Dichloroethane	µg/L	5	R-62	1.0 U	1.0 U	1.0 U	1.0 U	- -	1.0 U	2.8	1.0 U	1.0 U	- -	1.0 U	- -	1.7	1.7	3.8	3.9	1.0 U	- -
			R-63	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.6	1.0 U	1.0 U	- -	1.0 U	- -	2.2	- -	3.9	- -	1.0 U	1.0 U
			R-64	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	2.11	1.00 U	1.00 U	- -	1.00 U	- -	1.56	1.49	3.54	3.52	1.00 U	- -
			R-65	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	2.10	1.00 U	1.00 U	- -	1.00 U	1.00 U	1.48	- -	3.37	- -	1.00 U	1.00 U
			R-66	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	2.14	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.81	- -	3.92	3.91	1.03	- -

Notes:

ROD = Record of Decision
R-62 = Round 62, May 2015
R-63 = Round 63, May 2016
R-64 = Round 64, May 2017
R-65 = Round 65, May 2018
R-66 = Round 66, May 2019
[a] = Cleanup levels established in the Final EPA ROD for the Midway Landfill Site, September 6, 2000.
(shaded) = Exceeds cleanup level established in the Final ROD for the Midway Landfill Site, September 6, 2000.
U = Indicates the compound was undetected at the reported concentration.
M = Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
DUP = Duplicate.
* = The revised cleanup level for vinyl chloride is 0.29 µg/L using the MTCA adjusted cancer risk of 1e-5 (updated May 2019).
Up or Down in column title denotes whether the well is located upgradient or downgradient of the landfill's influence.

Table 7. Summary of Detected Groundwater Quality Parameters Not Included in the ROD and Comparision to Regulatory Standards, 2015-2019 Data Summary, Midway Landfill

					Upper Gravel Aquifer		Sand Aquifer						Southern Gravel Aquifer									
					MW-16 (UP)	MW-21A (UP)	MW-7B (DOWN)	MW-8B (UP)		MW-15A (DOWN)	MW-17B (UP)	MW-21B (UP)	MW-14B (DOWN)		MW-20B (DOWN)		MW-23B (DOWN)		MW-29B (DOWN)		MW-30C (DOWN)	
Compound	**Units**	**MCL[a]**	**MTCA B[b]**	**Round**					**Dup**					**Dup**		**Dup**		**Dup**		**Dup**		**Dup**
Field Parameters																						
pH	s.u.	6.5-8.5		R-62	7.73	6.73	6.73	6.54	- -	6.64	6.77	6.99	6.62	- -	6.89	- -	6.55	- -	6.60	- -	7.10	- -
				R-63	7.74	6.71	6.68	6.77	- -	6.58	6.85	6.99	6.66	- -	6.88	- -	6.50	- -	6.59	- -	7.06	- -
				R-64	7.79	6.74	6.75	6.83	- -	6.70	6.90	7.02	6.63	- -	6.91	- -	6.53	- -	6.63	- -	7.13	- -
				R-65	8.05	6.94	6.94	7.76	- -	6.85	7.09	7.20	6.79	- -	7.10	- -	6.71	- -	6.77	- -	7.39	- -
				R-66	7.98	6.90	6.90	7.65	- -	6.65	7.00	7.16	6.76	- -	7.08	- -	6.69	- -	6.76	- -	7.34	- -
Conductivity	µmhos/cm			R-62	283	321	528	177	- -	347	328	604	622	- -	927	- -	491	- -	635	- -	311	- -
				R-63	283	315	506	213	- -	363	346	589	618	- -	857	- -	478	- -	624	- -	313	- -
				R-64	278	310	492	205	- -	391	345	571	618	- -	772	- -	470	- -	612	- -	317	- -
				R-65	279.0	649.3	488.8	271.6	- -	406.3	745.6	1206	623.6	- -	1548	- -	468.8	- -	608.6	- -	323.8	- -
				R-66	289.5	296.0	478.6	281.0	- -	390.2	342.4	566.8	640.4	- -	696.5	- -	476.9	- -	622.7	- -	328.8	- -
Temperature	C			R-62	11.8	11.4	13.0	11.4	- -	12.2	12.1	11.3	14.0	- -	12.0	- -	11.7	- -	10.5	- -	10.6	- -
				R-63	11.8	12.0	12.9	11.7	- -	12.1	12.4	11.7	14.6	- -	11.6	- -	11.9	- -	11.3	- -	11.1	- -
				R-64	12.0	11.9	13.5	11.9	- -	12.3	11.9	11.5	14.1	- -	12.6	- -	11.8	- -	10.2	- -	9.5	- -
				R-65	11.8	11.9	13.4	11.8	- -	12.3	12.2	11.8	14.5	- -	11.9	- -	11.7	- -	10.4	- -	9.9	- -
				R-66	11.8	11.6	13.4	12.1	- -	12.9	12.0	11.3	14.6	- -	11.7	- -	11.8	- -	10.6	- -	10.3	- -
Conventional Parameters																						
Chloride	mg/L	250**		R-62	7.9	6.0	12.7	6.3	- -	5.8	10.8	12.3	13.5	- -	22.4	- -	9.4	9.5	21.2	21.6	12.2	- -
				R-63	7.9	6.0	11.6	8.0	7.9	5.3	11.3	11.3	12.7	- -	19.2	- -	9.2	- -	20.3	- -	10.6	11.2
				R-64	8.09	6.15	11.6	8.81	- -	5.78	12.1	11.6	14.9	- -	18.2	- -	10.7	10.5	19.5	19.5	11.9	- -
				R-65	7.82	5.78	14.9	8.81	- -	5.99	10.7	9.84	17.4	- -	17.2	15.8	9.54	- -	16.9	- -	10.7	10.3
				R-66	7.89	5.77	13.1	9.22	- -	5.96	11.3	10.2	20.3	19.7	14.9	- -	9.58	- -	17.1	17.2	10.8	- -
Sulfate	mg/L	250**		R-62	24.4	32.6	33.4	23.0	- -	29.4	21.9	92.3	29.7	- -	12.5	- -	29.1	29.1	22.7	22.4	14.3	- -
				R-63	21.7	30.7	28.7	27.3	27.3	26.7	22.2	82.6	24.9	- -	13.7	- -	28.0	- -	19.4	- -	12.7	12.5
				R-64	21.1	29.2	27.3	25.3	- -	24.9	23.0	82.4	23.9	- -	13.8	- -	25.3	25.4	19.6	19.8	13.3	- -
				R-65	22.6	29.7	28.8	30.6	- -	24.2	23.2	92.9	25.6	- -	15.4	15.5	23.7	- -	18.8	- -	13.3	13.1
				R-66	20.2	28.1	27.0	29.8	- -	26.9	20.8	93.3	21.8	21.8	14.7	- -	26.1	- -	19.4	19.3	15.5	- -
Chemical Oxygen Demand	mg/L			R-62	10.0 U	10.0 U	10.0 U	20.9	- -	10.0 U	10.0 U	10.0 U	10.0 U	- -	12.2	- -	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	- -
				R-63	10.0 U	10.0 U	10.0 U	19.6	22.1	10.0 U	10.0 U	10.0 U	18.4	- -	28.3	- -	10.0 U	- -	18.4	- -	10.0 U	11.6
				R-64	10.0 U	10.0 U	10.0 U	10.0 U	- -	10.0 U	10.0 U	10.0 U	10.0 U	- -	10.0 U	- -	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	- -
				R-65	10.0 U	10.0 U	10.0 U	10.0 U	- -	10.0 U	10.0 U	10.0 U	10.0 U	- -	10.0 U	10.0 U	10.0 U	- -	10.0 U	- -	10.0 U	10.0 U
				R-66	10.0 U	10.0 U	10.0 U	10.0 U	- -	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	- -	10.0 U	- -	10.0 U	10.0 U	10.0 U	- -
Total Organic Carbon	mg/L			R-62	1.50 U	1.50 U	1.50 U	4.10	- -	1.50 U	1.50 U	1.50 U	1.50 U	- -	3.76	- -	1.50 U	1.50 U	1.69	1.65	1.50 U	- -
				R-63	0.50 U	0.60	0.96	1.66	2.64	0.79	1.01	1.10	1.30	- -	3.39	- -	1.16	- -	1.73	- -	0.74	0.90
				R-64	0.50 U	0.51	1.02	1.26	- -	0.75	1.01	1.01	1.15	- -	3.16	- -	1.10	1.07	1.40	1.73	0.63	- -
				R-65	0.50 U	0.52	0.93	0.50 U	- -	0.88	0.97	1.09	1.21	- -	2.90	2.83	1.08	- -	1.38	- -	0.73	0.65
				R-66	0.50 U	0.50 U	0.80	0.50 U	- -	0.60	1.03	1.02	1.38	1.35	2.48	- -	0.95	- -	1.32	1.30	0.59	- -
Dissolved Metals																						
Iron	mg/L	0.3**		R-62	0.13	0.05 U	**2.74**	**1.29**	- -	0.05 U	0.05 U	0.05 U	**9.62**	- -	**6.31**	- -	**7.26**	**7.26**	**12.8**	**12.8**	**2.39**	- -
				R-63	0.14	0.08	**2.66**	0.11	0.11	0.05 U	0.05 U	0.05 U	**9.30**	- -	**5.80**	- -	**7.58**	- -	**12.7**	- -	**2.30**	**2.32**
				R-64	0.116	0.0500 U	**2.27**	0.0500 U	- -	0.0500 U	0.0500 U	0.0500 U	**9.23**	- -	**4.29**	- -	**7.21**	**7.11**	**11.9**	**12.7**	**2.25**	- -
				R-65	0.0926	0.0500 U	**1.96**	0.0740	- -	0.02 U	0.0500 U	0.0500 U	**8.64**	- -	**4.52**	**4.53**	**6.22**	- -	**10.4**	- -	**2.11**	**2.31**
				R-66	0.0816	0.0500 U	**1.76**	0.0677	- -	0.0500 U	0.0500 U	0.0500 U	**8.76**	**8.73**	**4.27**		**7.01**	- -	**12.1**	**11.7**	**2.15**	- -
Semi-Volatile Organics																						
1,4-Dioxane	µg/L		0.44	R-62	0.4 U	0.4 U	**1.0**	0.4 U	- -	0.4 U	**1.5**	**2.8**	**4.1**	- -	**27**	- -	**1.3**	**1.2**	**7.9** J	**12** J	**4.2**	- -
				R-63	0.4 U	0.4 U	**0.6**	0.4 U	0.4 U	0.4 U	**1.0**	**1.9**	**5.4**	- -	**18**	- -	**1.5**	- -	**11**	- -	**4.4**	**4.7**
				R-64	0.4 U	0.4 U	**1.0**	0.4 U	- -	0.4 U	**1.5**	**1.7**	**6.8**	- -	**19.9**	- -	**2.0**	**2.3**	**13.8**	**11.7**	**6.4**	- -
				R-65	0.4 U	0.4 U	**2.0**	0.4 U	- -	0.4 U	**0.9**	**1.9**	**10.3**	- -	**17.6**	**19.0**	**2.1**	- -	**12.5**	- -	**5.6**	**5.5**
				R-66	0.4 U	0.4 U	**1.3**	0.4 U	- -	0.4 U	**0.7**	**1.5**	**10.3**	**9.6**	**12.9**	- -	**1.8**	- -	**8.8**	**9.0**	**4.8**	- -

Table 7. Summary of Detected Groundwater Quality Parameters Not Included in the ROD and Comparision to Regulatory Standards, 2015-2019 Data Summary, Midway Landfill

					Upper Gravel Aquifer		Sand Aquifer						Southern Gravel Aquifer									
					MW-16 (UP)	MW-21A (UP)	MW-7B (DOWN)	MW-8B (UP)		MW-15A (DOWN)	MW-17B (UP)	MW-21B (UP)	MW-14B (DOWN)		MW-20B (DOWN)		MW-23B (DOWN)		MW-29B (DOWN)		MW-30C (DOWN)	
Compound	**Units**	**MCL[a]**	**MTCA B[b]**	**Round**					**Dup**					**Dup**		**Dup**		**Dup**		**Dup**		**Dup**
Volatile Organics																						
Trichlorofluoromethane	µg/L		2400	R-62	1.0 U	1.0 U	1.0 U	1.0 U	- -	1.0 U	1.0 U	1.9	1.0 U	- -	1.0 U	- -	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	- -
				R-63	1.0 U	1.8 Q	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.8 Q	1.0 U	- -	1.0 U	- -	1.0 U	- -	1.0 U	- -	1.0 U	1.0 U
				R-64	1.00 U	1.87	1.00 U	1.00 U	- -	1.00 U	1.00 U	1.98	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	- -
				R-65	1.00 U	1.58	1.00 U	1.00 U	- -	1.00 U	1.00 U	1.52	1.00 U	- -	1.00 U	1.00 U	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U
				R-66	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	1.00 U	1.00	1.00 U	1.00 U	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U	1.00 U	- -
1,1-Dichloroethene	µg/L	7*	400	R-62	1.0 U	1.0 U	1.0 U	1.0 U	- -	1.0 U	**1.4**	**2.5**	1.0 U	- -	1.0 U	- -	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	- -
				R-63	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.4**	**2.9**	1.0 U	- -	1.0 U	- -	1.0 U	- -	1.0 U	- -	1.0 U	1.0 U
				R-64	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	**1.10**	**2.62**	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	- -
				R-65	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	**1.03**	**3.04**	1.00 U	- -	1.00 U	1.00 U	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U
				R-66	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	**1.19**	**2.85**	1.00 U	1.00 U	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U	1.00 U	- -
1,1-Dichloroethane	µg/L		7.7	R-62	1.0 U	1.0 U	1.6	1.0 U	- -	1.0 U	**20**	2.6	1.0 U	- -	1.0 U	- -	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	- -
				R-63	1.0 U	1.0 U	1.5	1.0 U	1.0 U	1.0 U	**19**	2.4	1.0	- -	1.0 U	- -	1.0 U	- -	1.0 U	- -	1.0 U	1.0 U
				R-64	1.00 U	1.00 U	1.36	1.00 U	- -	1.00 U	**13.1**	2.30	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	- -
				R-65	1.00 U	1.00 U	1.25	1.00 U	- -	1.00 U	**12.9**	2.56	1.00 U	- -	1.00 U	1.00 U	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U
				R-66	1.00 U	1.00 U	1.35	1.00 U	- -	1.00 U	**14.6**	2.39	1.00 U	1.00 U	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U	1.00 U	- -
cis-1,2-Dichloroethene	µg/L	70*	16	R-62	1.0 U	1.0 U	1.0 U	1.0 U	- -	1.0 U	2.8	1.0 U	3.0	- -	1.0 U	- -	2.7	2.7	1.0 U	1.0 U	1.0 U	- -
				R-63	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5	1.0 U	3.0	- -	1.0 U	- -	2.7	- -	1.0 U	- -	1.0 U	1.0 U
				R-64	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	2.50	1.00 U	3.50	- -	1.00 U	- -	2.71	2.59	1.00 U	1.00 U	1.00 U	- -
				R-65	1.00 U	1.12	1.00 U	1.00 U	- -	1.00 U	2.36	1.00 U	3.53	- -	1.00 U	1.00 U	2.42	- -	1.00 U	- -	1.00 U	1.00 U
				R-66	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	2.56	1.00 U	3.52	3.21	1.00 U	- -	2.61	- -	1.03	1.08	1.00 U	- -
1,1,1-Trichloroethane	µg/L	200*	16000	R-62	1.0 U	1.0 U	1.0 U	1.0 U	- -	1.0 U	1.0 U	1.7	1.0 U	- -	1.0 U	- -	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	- -
				R-63	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4	1.0 U	- -	1.0 U	- -	1.0 U	- -	1.0 U	- -	1.0 U	1.0 U
				R-64	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	1.00 U	1.25	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	- -
				R-65	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	1.00 U	1.66	1.00 U	- -	1.00 U	1.00 U	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U
				R-66	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	1.00 U	1.08	1.00 U	1.00 U	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U	1.00 U	- -
Trichloroethene	µg/L	5*	4	R-62	1.0 U	1.0 U	1.0 U	1.0 U	- -	1.0 U	1.0 U	**4.6**	1.0 U	- -	1.0 U	- -	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	- -
				R-63	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**4.6**	1.0 U	- -	1.0 U	- -	1.0 U	- -	1.0 U	- -	1.0 U	1.0 U
				R-64	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	1.00 U	**5.92**	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	- -
				R-65	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	1.00 U	**6.68**	1.00 U	- -	1.00 U	1.00 U	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U
				R-66	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	1.00 U	**6.26**	1.00 U	1.00 U	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U	1.00 U	- -
Tetrachloroethene	µg/L	5*	5	R-62	1.0 U	1.0 U	1.0 U	1.0 U	- -	1.0 U	1.0 U	**110**	1.0 U	- -	1.0 U	- -	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	- -
				R-63	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**110**	1.0 U	- -	1.0 U	- -	1.0 U	- -	1.0 U	- -	1.0 U	1.0 U
				R-64	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	1.00 U	**130**	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	- -
				R-65	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	1.00 U	**128**	1.00 U	- -	1.00 U	1.00 U	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U
				R-66	1.00 U	1.00 U	1.00 U	1.00 U	- -	1.00 U	1.00 U	**118**	1.00 U	1.00 U	1.00 U	- -	1.00 U	- -	1.00 U	1.00 U	1.00 U	- -

Notes: [shaded] = Exceeds Federal MCL or MTCA Method B Groundwater Cleanup Level.
* = Primary MCL Standards; EPA National Primary Drinking Water Regulations (40 CFR 141 59 FR 34322).
** = Secondary MCL Standards; EPA National Primary Drinking Water Regulations (40 CFR 141 59 FR 34322).
*** = Testing for 1,4-Dioxane in selected groundwater samples was recommended by Ecology and EPA.
[a] = MCL/Federal maximum contaminant level.
[b] = MTCA B/Model Toxics Control Act (WAC 173-340) Method B Cleanup Level. CLARC II Database, Ecology (updated May 2019).

R-62 = Round 62, May 2015
R-63 = Round 63, May 2016
R-64 = Round 64, May 2017
R-65 = Round 65, May 2018
R-66 = Round 66, May 2019

U = Indicated the compound was undetected at the reported concentration
J = Indicated the compound was detected at an estimated concentration
M = Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
Q = Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF)
- - = Not ananlyzed

Table 8. Evaluation of Detention Pond Compliance with Washington State Freshwater Criteria, Midway Landfill

Parameter	Location	Units	Aquatic Life Criteria [a]	Number of Samples[b]	Number of Criteria Exceedances	Water Quality Concentrations[d]		
						Maximum	Average	Minimum
Temperature	I-5 Inflow	C	18	248	0	16.7	11.1	0.4
	Hwy-99 Inflow			191	0	17.5	11.1	4.3
	Landfill Inflow			345	1	18.4	10.8	3.4
	Discharge			358	0	16.1	9.7	1.1
Conductivity	I-5 Inflow	µS/cm	400	248	2	423.3	70.0	7.0
	Hwy-99 Inflow			190	0	235.0	80.3	11.0
	Landfill Inflow			345	0	153.9	49.4	10.0
	Discharge			353	0	183.0	58.9	6.5
pH	I-5 Inflow	s.u.	6.5 - 8.5	247	11	8.9	7.2	6.1
	Hwy-99 Inflow			191	4	9.0	7.5	6.3
	Landfill Inflow			345	33	8.9	7.0	5.2
	Discharge			368	23	9.2	7.1	6.1
Dissolved Oxygen	I-5 Inflow	mg/L	8.0	248	3	15.0	10.1	7.2
	Hwy-99 Inflow			190	0	15.9	10.2	8.4
	Landfill Inflow			345	9	14.0	9.7	7.6
	Discharge			353	38	13.8	9.2	5.6
Turbidity	I-5 Inflow	NTU	29 c	248	5	39.8	8.7	2.7
	Hwy-99 Inflow			191	24	78.6	14.2	1.0
	Landfill Inflow			345	0	28.9	4.8	1.7
	Discharge			355	4	38.2	6.6	1.8

Notes:

a. Criteria are from Operations and Maintenace Manual (Parametrix 1992) and are based on WAC 173-201A-200 for Salmonid Spawning, Rearing and Migration Category

b. The detention pond levels are measured 5 days per week. If the water level in the pond exceeds 1.0 ft, samples are collected at the three inlet locations (inflows from the landfill, Highway 99, and I-5) and discharge at the detention pond outlet and tested in the field if flows are present. Sample locations are shown on Figure 13.

c. Criteria in the Monitoring Plan (Parametrix 2000) are not to exceed 100 NTU

d. Measurements provided by SPU

Appendix A

Groundwater

A1 Tables and Figures from the 1,4-Dioxane Report

Table 1. Midway Landfill Monitoring Well Details

Well ID	Meas Pt Elev (ft)	North	East	Screen (ft bgs)	Screen Elevation (ft)	Depth to GW (ft)	SWL Elevation (ft)	Aquifer	Water Level Monitoring	Water Quality Monitoring	Notes on Well
MW-1	365.99	143013.536	1278389.298	86 - 122	280.4 - 244.4	59.6	306.4	UGA			Abandoned
MW-2	384.39	140563.222	1277975.286	126 - 156	256.0 - 226.0	149.6	234.8	UGA	x		Well is usually dry
MW-3	416.11	140544.170	1278604.942	152.8 - 184.7	260.0 - 228.1	-	-	UGA			Well is dry
MW-4	362.82	139657.189	1278087.942	110.5 - 144.25	252.8 - 219.1	107.1	255.7	UGA	x		
MW-5	321.94	140608.626	1276491.779	47.6 - 77.5	274.8 - 244.9	61.3	260.6	UGA			Could not locate in September 2017
MW-6	271.76	137174.122	1281951.569	96.0 - 113.7	176.1 - 158.4	85.85	185.91	SA			Could not locate in September 2017
MW-7A	412.73	140527.411	1278674.548	188.3 - 197.8	225.0 - 215.5	182.82	229.91	UGA	x		Well is usually dry
MW-7B	412.73	140527.411	1278674.548	222.7 - 225.7	190.6 - 187.6	195.15	217.58	SA	x	x	
MW-8A	351.35	140101.288	1277096.707	168.5 - 179.0	183.3 - 172.8	106.8	244.6	UGA	x		
MW-8B	351.35	140101.288	1277096.707	200.9 - 206.3	150.9 - 145.5	132.4	219.0	SA	x	x	
MW-9A	353.79	141300.120	1276999.163	127.6 - 138.0	226.9 - 216.5	94.4	259.4	SA	x		New fencing, no access to well
MW-9B	353.79	141300.120	1276999.163	164.7 - 170.1	189.8 - 184.4	118.4	235.4	SA			New fencing, no access to well
MW-10A	338.77	141909.154	1277116.788	192.5 - 202.2	146.7 - 137.0	81.73	257.04	SA			
MW-10B	338.77	141909.154	1277116.788	222.9 - 231.9	116.3 - 107.3	81.83	256.94	SA			
MW-11A	370.41	142588.826	1279129.305	200.3 - 210.3	169.4 - 159.4	110.13	260.28	SA	x		
MW-11B	370.41	142588.826	1279129.305	265.8 - 271.2	103.9 - 98.5	110.13	260.28	NGA			
MW-12A	374.8	143744.753	1277650.303	233.8 - 239.2	141.4 - 136.0	112.6	262.2	SA			Abandoned, new building and pavement 2015
MW-12B	374.8	143744.753	1277650.303	255.4 - 258.4	119.8 - 116.8	112.7	262.1	SA			Abandoned, new building and pavement 2015
MW-13A	382.68	141832.070	1279884.978	109.0 - 111.9	274.2 - 271.3	106.51	276.17	UGA	x		
MW-13B	382.68	141832.070	1279884.978	196.3 - 206.8	186.9 - 176.4	128.5	254.2	SA*	x		
MW-14A	381.85	141513.128	1278951.790	277.6 - 283.0	103.4 - 98.0	208.15	173.70	SGA			
MW-14B	381.85	141513.128	1278951.790	302.0 - 307.5	79.0- 73.5	213.12	168.73	SGA	x	x	
MW-15A	438.54	140128.828	1279403.432	224.1 - 234.3	214.8 - 204.6	228.16	210.38	SA	x	x	
MW-15B	438.54	140128.828	1279403.432	260.2 - 265.7	178.7 - 173.2	229.43	209.11	SA			
MW-16	362.8	139736.588	1278164.235	161.5 - 166.9	201.7 - 196.3	121.2	241.6	UGA	x	x	
MW-17A	337.08	141918.618	1277102.356	87.8 - 98.2	249.6 - 239.2	66.83	270.3	SA	x		
MW-17B	337.08	141918.618	1277102.356	126.0 - 133.0	211.4 - 204.4	69.9	267.2	SA	x	x	
MW-18A	343.91	142044.335	1277773.804	119.0 - 129.5	223.6 - 213.1	71.98	271.9	SA	x		
MW-18B	343.91	142044.335	1277773.804	281.3 - 297.7	61.3 - 50.9	117.85	226.1	NGA			
MW-19A	370.2	141633.365	1278007.927	72.5 - 82.5	295.9 - 285.9	75.8	294.4	LA			
MW-19B	370.2	141633.365	1278007.927	168.2 - 173.2	200.2 - 195.2	151.5	218.7	UGA			Well is partially obstructed at 53 feet below ground
MW-19C	370.2	141633.365	1278007.927	292.4 - 297.6	76.0 - 70.8	232.0	138.2	SGA			Well is partially obstructed at 53 feet below ground
MW-20A	375.65	141160.550	1277678.225	190.0 - 195.0	183.7 - 178.7	159.0	216.7	SA	x		Well is usually dry
MW-20B	375.65	141160.550	1277678.225	295.0 - 300.0	78.7 - 73.7	238.0	137.7	SGA	x	x	
MW-21A	359.95	142650.909	1278075.791	85.4 - 95.4	273.1 - 263.1	83.58	276.4	UGA	x	x	
MW-21B	359.95	142650.909	1278075.791	170.4 - 180.4	188.1 - 178.1	86.79	273.2	SA	x	x	
MW-21C	359.95	142650.909	1278075.791	290.5 - 295.5	68.0 - 63.0	100.46	259.5	NGA			
MW-22A	378.28	142022.661	1278936.216	268.8 - 273.0	108.0 - 103.8	121.0	257.3	NGA			
MW-22B	378.28	142022.661	1278936.216	300.2 - 310.2	76.6 - 66.6	141.2	237.1	NGA			
MW-23A	424.42	141127.672	1279707.900	230.0 - 240.0	195.0 - 185.0	222.4	202.0	SA	x		Well is usually dry
MW-23B	424.42	141127.672	1279707.900	320.3 - 330.3	104.7 - 94.7	256.5	167.9	SGA	x	x	
MW-24A	418.58	139324.276	1279160.852	205.5 - 215.5	213.6 - 203.6	192.4	226.2	SA	x		
MW-24B	418.58	139324.276	1279160.852	350.5 - 355.5	68.6 - 63.6	247.6	171.0	SGA	x		Well is partially obstructed
MW-25A	260.84	141910.832	1276507.653	14.5 - 19.5	246.7 - 241.7	3.0	257.8	PA			Abandoned, road widening in 2009
MW-25B	260.84	141910.832	1276507.653	40.1 - 45.1	221.1 - 216.1	8.0	252.8	PA			Abandoned, road widening in 2009
MW-25C	260.84	141910.832	1276507.653	69.2 - 74.2	192.0 - 187.0	4.3	256.5	SA			Abandoned, road widening in 2009
MW-26	370.58	142610.219	1279133.869	112.0 - 117.0	257.4 - 252.4	90.3	280.3	UGA	x		
MW-27A	330.05	142983.208	1277178.173	76.9 - 87.3	253.5 - 243.1	60.57	269.5	UGA	x		
MW-27B	330.05	142983.208	1277178.173	147.6 - 153.0	182.8 - 177.4	61.02	269.0	UGA	x		
MW-27C	330.05	142983.208	1277178.173	260.0 - 265.0	70.4 - 65.4	79.85	250.2	NGA			
MW-28	374.15	143745.216	1277643.333	108.0 - 113.0	267.2 - 262.2	88.6	285.6	SA	x		
MW-29A	428.5	141098.127	1280622.620	208.1 - 218.1	220.8 - 210.8	189.8	238.7	UGA	x		
MW-29B	428.5	141098.127	1280622.620	370.0 - 377.0	58.9 - 51.9	293.9	134.6	SGA	x	x	
MW-30A	407.91	139798.650	1281175.819	182.9 - 192.9	224.6 - 214.6	168.0	239.9	SA	x		
MW-30B	407.91	139798.650	1281175.819	274.1 - 284.1	133.4 - 123.4	246.2	161.7	SA			
MW-30C	407.91	139798.650	1281175.819	345.7 - 350.7	61.8 - 56.8	266.2	141.7	SGA	x	x	

Notes:

= Active wells used for water level or water quality monitoring

= Inactive Wells not used for water level or water quality monitoring

Pumps set 2 feet above screen except for MW-13A, MW-23A, and MW-24A

Water levels from 1987 - 1989

PA = Perched Aquifer

UGA = Upper Gravel Aquifer

SA = Sand Aquifer

NGA = Northern Gravel Aquifer

SGA = Southern Gravel Aquifer

LA = Landfill Aquifer

* = Well originally reported completed in the NGA by AGI (1990)

ft = feet

bgs = below ground surface

Sources:

Hydrogeology Technical Memorandum, Appendix A for the Midway Landfill Remedial Investigation (AGI 1988)

Supplemental Hydrogeologic and Hydrochemical Investigation, Midway Landfill Feasibility Study (AGI 1990)

Table 2. 1,4-Dioxane (µg/L) in Groundwater, Midway Landfill

Well	R-48 Nov 2005	R-49 May 2006	R-50 Nov 2006	R-51 May 2007	R-52 Nov 2007	R-53 May 2008	R-54 Nov 2008	R-55 May 2009	R-56 Nov 2009	R-57 May 2010	R-58 May 2011	R-59 May 2012	R-60 May 2013	R-61 May 2014	R-62 May 2015	R-63 May 2016	R-64 May 2017	R-65 May 2018	R-66 May 2019
Upper Gravel Aquifer																			
MW-8A (Up)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.4 U	- -	- -	- -	- -	- -	- -	- -
MW-16 (Up)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	2.0 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
MW-21A (Up)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	2.0 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
MW-27B (Up)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.4 U	- -	- -	- -	- -	- -	- -	- -
Southern Gravel Aquifer																			
MW-14B (Down)	22	13	15	14	15	14	22	21	14	17	13	12	9.3	9.1	4.1	5.4	6.8	10.3	10.3
MW-20B (Down)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	53	48	39	35	27	18	19.9	17.6	12.9
MW-23B (Down)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	4.4	3.5	2.3	2.4	1.3	1.5	2.0	2.1	1.8
MW-29B (Down)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	21	21	17	15	7.9	11	13.8	12.5	8.8
MW-30C (Down)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	7.4	7.1	6.2	6.3	4.2	4.4	6.4	5.6	4.8
Sand Aquifer																			
MW-7B (Up)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	4.3	6.0	3.4	2.0	1.0	0.6	1.0	2.0	1.3
MW-8B (Up)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	2.0 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
MW-11A (Up)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.4 U	- -	- -	- -	- -	- -	- -	- -
MW-15A (Up)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
MW-17B (Up)	7.3	5.7	4.9	4.9	3.1	2.8	3.5	3.6	2.3	2.4	2.4	2.2	1.9	1.9	1.5	1.0	1.5	0.9	0.7
MW-18A (Up)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.4 U	- -	- -	- -	- -	- -	- -	- -
MW-21B (Up)	10	6.6	6.9	7.2	5.1	5.5	7	7.1	5.1	5.3	4.2	4.2	3.7	3.4	2.8	1.9	1.7	1.9	1.5
MW-28 (Up)	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.4 U	- -	- -	- -	- -	- -	- -	- -

Notes: - - = Not Analyzed

Light gray font was used for non-detected values

Up or Down denotes whether the well is located upgradient or downgradient of the landfill's influence.

Table 3. Washington Sites with Historical Testing of 1,4-Dioxane Data Submitted to Ecology's EIM Database

EIM ID	Study Name	Date Range		Results Range (µg/L)		# Samples	# Sample detections	Detection Levels
				Minimum	Maxiumum			
AODE5095	Jeld Wen Inc., Former Nord Door Site (Agreed Order DE5095) Groundwater, Soil and 2009 Sediments, Everett, WA	2009	2012	<100	<500	16	0	100 to 500 µg/L
AODE5348	Capital Industries Remedial Investigation (related to the PSC Georgetown Site)	2010	2012	<1	120	54	34	2 µg/L
AODE6829	Park Laundry, Ridgefield, WA	2008	2008	<100		24	0	100 µg/L
AODE8072	Duwamish Marine Center	2016	2016	<0.4	1.79	17	3	0.4 µg/L
AODE8258	Douglas Management Dock (Alaska Marine Lines), Seattle, WA	2013	2014	<0.4	0.4	53	1	0.4 µg/L
AODE8462	Olympic View Sanitary Landfill, Port Orchard, WA	2011	2018	<9.3	<40	486	0	9.3 to 40 µg/L
DE10402	Blaser Die Casting (related to the PSC Georgetown Site)	2009	2011	<2	150	8	6	2.0 µg/L
FS1080	International Paper, Longview Historical Monitoring Data, Longview, WA	1996	1996	<2500		1	0	2500 µg/L
FS15269	Cascade Pallet, Ellensburg, WA	2013	2013	<21.4		7	0	21.4 µg/L
FS2139	Landsburg Mine Rogers Seam, Site Groundwater Monitoring, Ravensdale, WA (PSC Site)	2017	2018	<0.4	2.3	47	15	0.4 µg/L
FS2191	Universal Manufacturing/Universal Sheet Metal, Woodinville, Remedial Investigation	1996	1998	<50	<500	8	0	50 to 500 µg/L
FS2605	Remedial Action at the Hansville Landfill, Hansville, WA	2012	2018	<9.3	<40	48	0	9.3 to 40 µg/L
FS4438651	Port of Everett- Former Bay Wood Products Site, Everett, WA. Formerly AQBAYWOOD & AQBaywood2011	2009	2009	<0.1		10	0	0.1 µg/L
FS68593938	SSA Containers, Inc (formerly Reichhold Chemical), Tacoma, Soil and Groundwater RCRA Corrective Action	1989	1990	<100	<500	10	0	100 to 500 µg/L
FS787	Palouse Producers, Palouse, WA	2007	2007	<100		6	0	100 µg/L
FS88531932	Art Brass Plating, Soil and Groundwater Cleanup - Georgetown, Seattle, WA (related to the PSC Georgetown Site)	2008	2011	<2	70	24	10	2 µg/L
FS9	Kimberly-Clark Worldwide Site, Everett, WA	2012	2012	<10		8	0	10 µg/L
G0800537	Colbert Landfill 1,4-Dioxane Project, Spokane, WA	2005	2008	<2	96	132	26	2 to 5 µg/L
GTSP	Lower Duwamish Waterway Site, Multimedia sampling at the Georgetown Steam Plant (GTSP) property	2006	2006	<1		12	0	1 µg/L
PLF575	Pasco Landfill NPL Site, Pasco, WA	1998	2013	<0.2	0.4	35	2	0.2 to 5 µg/L
PSCGT106	PSC (Philip Services Corp) Georgetown Groundwater Monitoring	2005	2018	<0.16	1,100	902	591	0.16 to 1 µg/L
PSCTA103	PSC (Philip Services Corp) Tacoma Groundwater Monitoring	2005	2017	<0.16	87	178	150	0.16 to 0.4 µg/L
PSCWA104	PSC (Philip Services Corp) Washougal, Groundwater Monitoring	2006	2018	<0.16	420	1902	615	0.16 to 0.4 µg/L
RRL12862377-MSW	Roosevelt Regional Landfill- Municipal Solid Waste WAC 173-351	2014	2014	<200		7	0	200 µg/L
TBA17010004	Seaport Landing Targeted Brownfield Assessment, Former Weyerhaeuser Sawmill Aberdeen	2017	2017	<1.9	<2.0	23	0	1.9 to 2.0 µg/L
VCCE0415	Midstate Cooperative, Ellensburg, WA	2013	2013	<21.4		5	0	21.4 µg/L
FS2699	Sisco Landfill Site	2010	2010	37	75	13	13	1.4 µg/L
VCSW1012	Woodworth & Co Inc Lakeview Plant Cleanup	2017	2017	<0.096	<1	3	0	0.096 to 0.1 µg/L
VCSW1039	Morrells Dry Cleaners, Tacoma, WA	2014	2014	<10		1	0	10 µg/L
VCSW1040	Walker Chevrolet (Bruce Titus Chevrolet), Tacoma, WA	2014	2015	<0.4	<10	2	0	0.4 to 10 µg/L
VCSW1095	Estes Express Lines Terminal Facility (Formerly USF Reddaway Terminal Facility) Subsurface Investigation, Tacoma, WA	2009	2009	<10		5	0	10 µg/L
VCSW1658	Port Angeles Red Lion	2016	2016	<0.4		20	0	0.4 µg/L
WSLCB	Washington State Liquor Control Board Reconnaissance Investigation	2011	2011	<1		8	0	1 µg/L
					TOTAL SAMPLES	4075	1466	

Note: Light gray font was used for non-detected values

Source: Washington State Department of Ecology (Ecology) – EIM Database, available online at https://fortress.wa.gov/ecy/eimreporting/

EIM Database reviewed on 7/15/2019

EIM Data taken from groundwater samples only

Table 4. UCMR 3 1,4-Dioxane Testing Data for Washington Group A Water Supply Wells

PWS ID	PWS Name	Facility ID	Facility Name	Collection Date	1,4-Dioxane (µg/L)
WA5301300	Alderwood Water District	1	Everett Intertie	2/11/2013	<0.07
WA5301300	Alderwood Water District	1	Everett Intertie	5/8/2013	<0.07
WA5301300	Alderwood Water District	1	Everett Intertie	8/15/2013	<0.07
WA5301300	Alderwood Water District	1	Everett Intertie	11/6/2013	<0.07
WA5302950	Arlington Water Department	3296	Airport Well Field	6/3/2013	<0.07
WA5302950	Arlington Water Department	3296	Airport Well Field	12/12/2013	<0.07
WA5302950	Arlington Water Department	3297	Haller Well Field	6/3/2013	<0.07
WA5302950	Arlington Water Department	3297	Haller Well Field	9/25/2013	<0.07
WA5302950	Arlington Water Department	3297	Haller Well Field	12/12/2013	<0.07
WA5302950	Arlington Water Department	3297	Haller Well Field	3/4/2014	<0.07
WA5302950	Arlington Water Department	3298	PUD Intertie	6/3/2013	<0.07
WA5302950	Arlington Water Department	3298	PUD Intertie	9/25/2013	<0.07
WA5302950	Arlington Water Department	3298	PUD Intertie	12/12/2013	<0.07
WA5302950	Arlington Water Department	3298	PUD Intertie	3/4/2014	<0.07
WA5395904	Birch Bay Water & Sewer District	90001	Blaine Rd. Pump Station	2/19/2013	<0.07
WA5395904	Birch Bay Water & Sewer District	90001	Blaine Rd. Pump Station	8/13/2013	<0.07
WA5395904	Birch Bay Water & Sewer District	90002	Semiahmoo Intertie	2/19/2013	<0.07
WA5395904	Birch Bay Water & Sewer District	90002	Semiahmoo Intertie	8/13/2013	<0.07
WA5395904	Birch Bay Water & Sewer District	90003	Horizons Intertie	2/19/2013	<0.07
WA5395904	Birch Bay Water & Sewer District	90003	Horizons Intertie	8/13/2013	<0.07
WA5309100	Bucoda Water Dept.	90001	Well #1	6/3/2014	<0.07
WA5309100	Bucoda Water Dept.	90001	Well #1	12/4/2014	<0.07
WA5309100	Bucoda Water Dept.	90002	Well #2	6/3/2014	<0.07
WA5309100	Bucoda Water Dept.	90002	Well #2	12/4/2014	<0.07
WA5310800	Camas Municipal Water Sewer System	6	Deep Well #13	6/17/2013	<0.07
WA5310800	Camas Municipal Water Sewer System	6	Deep Well #13	11/20/2013	<0.07
WA5310800	Camas Municipal Water Sewer System	7	Deep Well #14	6/17/2013	<0.07
WA5310800	Camas Municipal Water Sewer System	7	Deep Well #14	11/20/2013	<0.07
WA5310800	Camas Municipal Water Sewer System	11	Well #9	8/14/2013	<0.07
WA5310800	Camas Municipal Water Sewer System	11	Well #9	7/22/2014	<0.07
WA5310800	Camas Municipal Water Sewer System	96	Oak Park Wellfield	6/17/2013	<0.07
WA5310800	Camas Municipal Water Sewer System	96	Oak Park Wellfield	11/20/2013	<0.07
WA5311100	Carbonado Water Dept.	90001	Water Treatment Plant #1	3/10/2015	<0.07
WA5311100	Carbonado Water Dept.	90001	Water Treatment Plant #1	6/8/2015	<0.07
WA5311100	Carbonado Water Dept.	90001	Water Treatment Plant #1	9/14/2015	<0.07
WA5311100	Carbonado Water Dept.	90001	Water Treatment Plant #1	12/7/2015	<0.07
WA5311700	Cashmere Water Department	90001	Water Treatment Plant	1/22/2013	<0.07
WA5311700	Cashmere Water Department	90001	Water Treatment Plant	4/16/2013	<0.07
WA5311700	Cashmere Water Department	90001	Water Treatment Plant	7/23/2013	<0.07
WA5311700	Cashmere Water Department	90001	Water Treatment Plant	10/29/2013	<0.07
WA5311700	Cashmere Water Department	90002	Well #10	1/22/2013	<0.07
WA5311700	Cashmere Water Department	90002	Well #10	7/23/2013	<0.07
WA5311700	Cashmere Water Department	90003	Well #4	1/22/2013	<0.07
WA5311700	Cashmere Water Department	90003	Well #4	7/23/2013	<0.07
WA5311800	Castle Rock Municipal Water	90001	Castle Rock WTP	1/22/2014	<0.07
WA5311800	Castle Rock Municipal Water	90001	Castle Rock WTP	4/21/2014	<0.07
WA5311800	Castle Rock Municipal Water	90001	Castle Rock WTP	8/4/2014	<0.07
WA5311800	Castle Rock Municipal Water	90001	Castle Rock WTP	10/20/2014	<0.07
WA5341800	Cedar River Water & Sewer District	17363	Seattle Intertie	4/20/2015	<0.07
WA5341800	Cedar River Water & Sewer District	17363	Seattle Intertie	6/3/2015	<0.07
WA5341800	Cedar River Water & Sewer District	17363	Seattle Intertie	9/8/2015	<0.07
WA5341800	Cedar River Water & Sewer District	17363	Seattle Intertie	12/2/2015	<0.07
WA5341800	Cedar River Water & Sewer District	17364	East Well	5/18/2015	<0.07
WA5341800	Cedar River Water & Sewer District	17364	East Well	10/5/2015	<0.07
WA5312200	Centralia Utilities	3	K Street Well	4/23/2013	<0.07
WA5312200	Centralia Utilities	3	K Street Well	12/2/2013	<0.07
WA5312200	Centralia Utilities	9	Tennis Court WF (Wells 1 & 2)	4/23/2013	<0.07
WA5312200	Centralia Utilities	9	Tennis Court WF (Wells 1 & 2)	12/2/2013	<0.07
WA5312200	Centralia Utilities	16	Port District Wellfield	4/23/2013	<0.07
WA5312200	Centralia Utilities	16	Port District Wellfield	12/2/2013	<0.07
WA5312250	Chehalis Water Department	1	Main Reservoir	12/9/2013	<0.07
WA5312250	Chehalis Water Department	1	Main Reservoir	3/5/2014	<0.07
WA5312250	Chehalis Water Department	1	Main Reservoir	6/4/2014	<0.07
WA5312250	Chehalis Water Department	1	Main Reservoir	9/3/2014	<0.07
WA5312284	Chelan County PUD #1	10597	Wen Regional Intertie	4/25/2015	<0.07
WA5312284	Chelan County PUD #1	10597	Wen Regional Intertie	10/8/2015	<0.07
WA5312350	Chelan Falls Water District	90001	Chelan Falls Well	4/21/2015	<0.07
WA5312350	Chelan Falls Water District	90001	Chelan Falls Well	10/20/2015	<0.07
WA5300050	City of Aberdeen	950	Aberdeen Water Department	2/10/2015	<0.07
WA5300050	City of Aberdeen	950	Aberdeen Water Department	5/14/2015	<0.07
WA5300050	City of Aberdeen	950	Aberdeen Water Department	8/11/2015	<0.07
WA5300050	City of Aberdeen	950	Aberdeen Water Department	11/16/2015	<0.07
WA5302200	City of Anacortes	1	Skagit River	4/30/2013	<0.07
WA5303350	City of Auburn Water Division	1	Spring #1 (Coal Creek)	3/18/2014	<0.07
WA5303350	City of Auburn Water Division	1	Spring #1 (Coal Creek)	9/23/2014	<0.07
WA5303350	City of Auburn Water Division	2	Spring #2 (West Hill)	4/1/2014	<0.07
WA5303350	City of Auburn Water Division	2	Spring #2 (West Hill)	9/30/2014	<0.07
WA5303350	City of Auburn Water Division	6	Well #5	3/11/2014	<0.07
WA5303350	City of Auburn Water Division	6	Well #5	9/16/2014	<0.07
WA5303350	City of Auburn Water Division	7	Well #4	3/18/2014	<0.07
WA5303350	City of Auburn Water Division	7	Well #4	9/23/2014	<0.07
WA5303350	City of Auburn Water Division	10	Well #5A	3/11/2014	<0.07
WA5303350	City of Auburn Water Division	10	Well #5A	9/16/2014	<0.07
WA5303350	City of Auburn Water Division	18	Tacoma Water Intertie	3/13/2014	<0.07
WA5303350	City of Auburn Water Division	18	Tacoma Water Intertie	6/11/2014	<0.07
WA5303350	City of Auburn Water Division	18	Tacoma Water Intertie	9/9/2014	<0.07
WA5303350	City of Auburn Water Division	18	Tacoma Water Intertie	12/9/2014	<0.07
WA5397650	City of Bainbridge Island	2110	Fletcher Bay Well	1/15/2014	<0.07
WA5397650	City of Bainbridge Island	2110	Fletcher Bay Well	7/7/2014	<0.07
WA5397650	City of Bainbridge Island	2111	Sands Avenue Wells	1/15/2014	<0.07
WA5397650	City of Bainbridge Island	2111	Sands Avenue Wells	7/7/2014	<0.07

Table 4. UCMR 3 1,4-Dioxane Testing Data for Washington Group A Water Supply Wells

PWS ID	PWS Name	Facility ID	Facility Name	Collection Date	1,4-Dioxane (µg/L)
WA5397650	City of Bainbridge Island	2112	Head of Bay	1/21/2014	<0.07
WA5397650	City of Bainbridge Island	2112	Head of Bay	7/8/2014	<0.07
WA5397650	City of Bainbridge Island	2113	Commodore Well	1/21/2014	<0.07
WA5397650	City of Bainbridge Island	2113	Commodore Well	7/9/2014	<0.07
WA5304700	City of Battle Ground Water Department	2122	Wells 1 & 2	4/28/2015	<0.07
WA5304700	City of Battle Ground Water Department	2122	Wells 1 & 2	10/14/2015	<0.07
WA5304700	City of Battle Ground Water Department	2123	Wells 4 & 5	4/28/2015	<0.07
WA5304700	City of Battle Ground Water Department	2123	Wells 4 & 5	10/14/2015	<0.07
WA5304700	City of Battle Ground Water Department	2126	Wells 7, 8 & 9	4/28/2015	<0.07
WA5304700	City of Battle Ground Water Department	2126	Wells 7, 8 & 9	10/14/2015	<0.07
WA5305575	City of Bellevue	6163	Seattle Tolt/Kirkland/Redmond Intertie	5/21/2013	<0.07
WA5305575	City of Bellevue	6163	Seattle Tolt/Kirkland/Redmond Intertie	8/22/2013	<0.07
WA5305575	City of Bellevue	6163	Seattle Tolt/Kirkland/Redmond Intertie	11/20/2013	<0.07
WA5305575	City of Bellevue	6163	Seattle Tolt/Kirkland/Redmond Intertie	2/24/2014	<0.07
WA5305575	City of Bellevue	6165	Seattle Intertie - Cedar Supply	5/21/2013	<0.07
WA5305575	City of Bellevue	6165	Seattle Intertie - Cedar Supply	8/22/2013	<0.07
WA5305575	City of Bellevue	6165	Seattle Intertie - Cedar Supply	11/20/2013	<0.07
WA5305575	City of Bellevue	6165	Seattle Intertie - Cedar Supply	2/24/2014	<0.07
WA5305600	City of Bellingham Water Division	90001	Treatment Plant	10/1/2013	<0.07
WA5305600	City of Bellingham Water Division	90001	Treatment Plant	1/7/2014	<0.07
WA5305600	City of Bellingham Water Division	90001	Treatment Plant	4/8/2014	<0.07
WA5305600	City of Bellingham Water Division	90001	Treatment Plant	7/8/2014	<0.07
WA5307650	City of Bonney Lake Water Department	1	Victor Falls Spring Treatment	8/20/2013	<0.07
WA5307650	City of Bonney Lake Water Department	1	Victor Falls Spring Treatment	2/19/2014	<0.07
WA5307650	City of Bonney Lake Water Department	2	Grainger Springs Treatment	8/20/2013	<0.07
WA5307650	City of Bonney Lake Water Department	2	Grainger Springs Treatment	2/19/2014	<0.07
WA5307650	City of Bonney Lake Water Department	12	Tacoma Pt. Wells #2 & #4 Treatment	8/20/2013	<0.07
WA5307650	City of Bonney Lake Water Department	12	Tacoma Pt. Wells #2 & #4 Treatment	2/19/2014	<0.07
WA5307650	City of Bonney Lake Water Department	15	Ball Park Wells Treatment	9/25/2013	<0.07
WA5307650	City of Bonney Lake Water Department	15	Ball Park Wells Treatment	8/19/2014	<0.07
WA5307650	City of Bonney Lake Water Department	8447	Tacoma Water Intertie	8/20/2013	<0.07
WA5307650	City of Bonney Lake Water Department	8447	Tacoma Water Intertie	12/17/2013	<0.07
WA5307650	City of Bonney Lake Water Department	8447	Tacoma Water Intertie	2/19/2014	<0.07
WA5307650	City of Bonney Lake Water Department	8447	Tacoma Water Intertie	5/7/2014	<0.07
WA5307900	City of Bothell Water	8723	Seattle Intertie	3/16/2015	<0.07
WA5307900	City of Bothell Water	8723	Seattle Intertie	6/17/2015	<0.07
WA5307900	City of Bothell Water	8723	Seattle Intertie	9/15/2015	<0.07
WA5307900	City of Bothell Water	8723	Seattle Intertie	12/7/2015	<0.07
WA5308200	City of Bremerton	950	T1 Surface/Groundwater	9/4/2013	<0.07
WA5308200	City of Bremerton	950	T1 Surface/Groundwater	12/4/2013	<0.07
WA5308200	City of Bremerton	950	T1 Surface/Groundwater	3/4/2014	<0.07
WA5308200	City of Bremerton	950	T1 Surface/Groundwater	6/3/2014	<0.07
WA5308200	City of Bremerton	951	T2 Anderson Creek	9/4/2013	<0.07
WA5308200	City of Bremerton	951	T2 Anderson Creek	3/4/2014	<0.07
WA5308200	City of Bremerton	952	T3 Manette Aquifer	9/4/2013	<0.07
WA5308200	City of Bremerton	952	T3 Manette Aquifer	3/4/2014	<0.07
WA5320500	City of Dupont Water System	2393	Bell Hill 1, 2,3	4/8/2014	<0.07
WA5320500	City of Dupont Water System	2393	Bell Hill 1, 2,3	10/13/2014	<0.07
WA5320500	City of Dupont Water System	2394	Hoffman Hill Well #1	4/8/2014	<0.07
WA5320500	City of Dupont Water System	2394	Hoffman Hill Well #1	10/13/2014	<0.07
WA5320500	City of Dupont Water System	3921	Hoffman Hill Well #2	4/8/2014	<0.07
WA5320500	City of Dupont Water System	3921	Hoffman Hill Well #2	10/13/2014	<0.07
WA5322500	City of Edmonds	1	Everett Intertie	1/15/2013	<0.07
WA5322500	City of Edmonds	1	Everett Intertie	4/15/2013	<0.07
WA5322500	City of Edmonds	1	Everett Intertie	7/31/2013	<0.07
WA5322500	City of Edmonds	1	Everett Intertie	10/21/2013	<0.07
WA5324050	City of Everett Public Works Department	20000	Everett Water Treatment Plant	1/23/2014	<0.07
WA5324050	City of Everett Public Works Department	20000	Everett Water Treatment Plant	4/16/2014	<0.07
WA5324050	City of Everett Public Works Department	20000	Everett Water Treatment Plant	7/22/2014	<0.07
WA5324050	City of Everett Public Works Department	20000	Everett Water Treatment Plant	10/15/2014	<0.07
WA5338000	City of Kelso	2	Ranney	4/23/2014	<0.07
WA5338000	City of Kelso	2	Ranney	7/29/2014	<0.07
WA5338000	City of Kelso	2	Ranney	10/23/2014	<0.07
WA5338000	City of Kelso	2	Ranney	1/27/2015	<0.07
WA5338100	City of Kennewick	6	Columbia River	4/22/2014	<0.07
WA5338100	City of Kennewick	6	Columbia River	7/15/2014	<0.07
WA5338100	City of Kennewick	6	Columbia River	10/17/2014	<0.07
WA5338100	City of Kennewick	7	Ranney Collector #4 & #5 Wellfield	4/22/2014	<0.07
WA5338100	City of Kennewick	7	Ranney Collector #4 & #5 Wellfield	7/15/2014	<0.07
WA5338100	City of Kennewick	7	Ranney Collector #4 & #5 Wellfield	10/17/2014	<0.07
WA5342250	City of Kirkland	17495	Seattle Intertie	8/6/2014	<0.07
WA5342250	City of Kirkland	17495	Seattle Intertie	2/25/2015	<0.07
WA5342250	City of Kirkland	17495	Seattle Intertie	5/6/2015	<0.07
WA5349270	City of Lynnwood	19020	Alderwood Intertie	3/9/2015	<0.07
WA5349270	City of Lynnwood	19020	Alderwood Intertie	9/10/2015	<0.07
WA5353640	City of Mercer Island	19890	Seattle Intertie	3/19/2013	<0.07
WA5353640	City of Mercer Island	19890	Seattle Intertie	6/11/2013	<0.07
WA5353640	City of Mercer Island	19890	Seattle Intertie	9/17/2013	<0.07
WA5353640	City of Mercer Island	19890	Seattle Intertie	12/10/2013	<0.07
WA5356300	City of Moses Lake	2903	Well #11	5/18/2015	<0.07
WA5356300	City of Moses Lake	2903	Well #11	11/10/2015	<0.07
WA5356300	City of Moses Lake	2905	Well #12	5/6/2014	<0.07
WA5356300	City of Moses Lake	2905	Well #12	11/18/2014	<0.07
WA5356300	City of Moses Lake	2906	Well #8	5/5/2014	<0.07
WA5356300	City of Moses Lake	2906	Well #8	11/18/2014	<0.07
WA5356300	City of Moses Lake	2907	Well #4	5/5/2014	<0.07
WA5356300	City of Moses Lake	2907	Well #4	11/13/2014	<0.07
WA5356300	City of Moses Lake	2909	Well #7	5/5/2014	<0.07
WA5356300	City of Moses Lake	2909	Well #7	11/13/2014	<0.07
WA5356300	City of Moses Lake	2910	Well #10	5/5/2014	<0.07
WA5356300	City of Moses Lake	2910	Well #10	11/13/2014	<0.07

Table 4. UCMR 3 1,4-Dioxane Testing Data for Washington Group A Water Supply Wells

PWS ID	PWS Name	Facility ID	Facility Name	Collection Date	1,4-Dioxane (µg/L)
WA5356300	City of Moses Lake	2912	Well #14	5/6/2014	<0.07
WA5356300	City of Moses Lake	2912	Well #14	11/13/2014	<0.07
WA5356300	City of Moses Lake	2916	Well #23	5/18/2015	<0.07
WA5356300	City of Moses Lake	2916	Well #23	11/10/2015	<0.07
WA5356300	City of Moses Lake	2918	Well #24	5/6/2014	<0.07
WA5356300	City of Moses Lake	2922	Well #29	11/10/2014	<0.07
WA5356300	City of Moses Lake	2924	Well #17	5/7/2014	<0.07
WA5356300	City of Moses Lake	2924	Well #17	11/17/2014	<0.07
WA5356300	City of Moses Lake	2926	Well #18	5/8/2014	<0.07
WA5356300	City of Moses Lake	2926	Well #18	11/18/2014	<0.07
WA5356300	City of Moses Lake	90001	Well #19	5/5/2014	<0.07
WA5356300	City of Moses Lake	90001	Well #19	11/17/2014	<0.07
WA5356300	City of Moses Lake	90002	Well #31	5/12/2014	<0.07
WA5356300	City of Moses Lake	90002	Well #31	11/17/2014	<0.07
WA5357250	City of Mountlake Terrace	20693	Alderwood Intertie	7/11/2013	<0.07
WA5357250	City of Mountlake Terrace	20693	Alderwood Intertie	12/10/2013	<0.07
WA5357250	City of Mountlake Terrace	20693	Alderwood Intertie	1/14/2014	<0.07
WA5357250	City of Mountlake Terrace	20693	Alderwood Intertie	4/8/2014	<0.07
WA5362650	City of Oak Harbor	21568	Anacortes Intertie	7/9/2013	<0.07
WA5362650	City of Oak Harbor	21568	Anacortes Intertie	10/8/2013	<0.07
WA5362650	City of Oak Harbor	21568	Anacortes Intertie	1/7/2014	<0.07
WA5362650	City of Oak Harbor	21568	Anacortes Intertie	4/10/2014	<0.07
WA5363450	City of Olympia	1	McAllister Springs	2/14/2013	<0.07
WA5363450	City of Olympia	1	McAllister Springs	5/20/2013	<0.07
WA5363450	City of Olympia	1	McAllister Springs	8/5/2013	<0.07
WA5363450	City of Olympia	1	McAllister Springs	11/13/2013	<0.07
WA5363450	City of Olympia	3	Well #1 (Kaiser)	5/20/2013	<0.07
WA5363450	City of Olympia	3	Well #1 (Kaiser)	11/13/2013	<0.07
WA5363450	City of Olympia	8	Well #3 (Hoffman)	5/20/2013	<0.07
WA5363450	City of Olympia	8	Well #3 (Hoffman)	11/13/2013	<0.07
WA5363450	City of Olympia	9	Well #13 (Allison)	5/20/2013	<0.07
WA5363450	City of Olympia	9	Well #13 (Allison)	11/13/2013	<0.07
WA5363450	City of Olympia	10	Well #11 (Shana Park)	5/20/2013	<0.07
WA5363450	City of Olympia	10	Well #11 (Shana Park)	11/13/2013	<0.07
WA5363450	City of Olympia	11	Well #19 (Allison)	5/20/2013	<0.07
WA5363450	City of Olympia	11	Well #19 (Allison)	11/13/2013	<0.07
WA5363450	City of Olympia	12	Well #20 (Indian Summer)	5/20/2013	<0.07
WA5363450	City of Olympia	12	Well #20 (Indian Summer)	11/13/2013	<0.07
WA5368550	City of Port Angeles	1	Elwha Pump Station	10/6/2014	<0.07
WA5368550	City of Port Angeles	1	Elwha Pump Station	3/4/2015	<0.07
WA5368550	City of Port Angeles	1	Elwha Pump Station	6/23/2015	<0.07
WA5368550	City of Port Angeles	1	Elwha Pump Station	9/30/2015	<0.07
WA5369150	City of Poulsbo Water System	90001	Lincoln Well	9/30/2014	<0.07
WA5369150	City of Poulsbo Water System	90002	Big Valley Well #1 (USGS)	9/30/2014	<0.07
WA5369150	City of Poulsbo Water System	90003	Pugh Well	9/30/2014	<0.07
WA5369150	City of Poulsbo Water System	90004	Big Valley Well #2	9/30/2014	<0.07
WA5369150	City of Poulsbo Water System	90005	Finn Hill / Nike Well	9/30/2014	<0.07
WA5369150	City of Poulsbo Water System	90006	Westside Well	9/30/2014	<0.07
WA5369750	City of Prosser	90001	Filter Plant	1/5/2015	<0.07
WA5369750	City of Prosser	90001	Filter Plant	7/27/2015	<0.07
WA5369880	City of Pullman Water Department	3	Well 8	4/16/2014	<0.07
WA5369880	City of Pullman Water Department	3	Well 8	10/13/2014	<0.07
WA5369880	City of Pullman Water Department	4	Well 4	4/17/2014	<0.07
WA5369880	City of Pullman Water Department	4	Well 4	10/14/2014	<0.07
WA5369880	City of Pullman Water Department	5	Well 5	4/16/2014	<0.07
WA5369880	City of Pullman Water Department	5	Well 5	10/13/2014	<0.07
WA5369880	City of Pullman Water Department	6	Well 6	4/17/2014	<0.07
WA5369880	City of Pullman Water Department	6	Well 6	10/14/2014	<0.07
WA5369880	City of Pullman Water Department	8	Well 7	4/16/2014	<0.07
WA5369880	City of Pullman Water Department	8	Well 7	10/13/2014	<0.07
WA5370050	City of Puyallup	1	Salmon SP	2/3/2015	<0.07
WA5370050	City of Puyallup	1	Salmon SP	8/6/2015	<0.07
WA5370050	City of Puyallup	2	Maplewood SP	2/3/2015	<0.07
WA5370050	City of Puyallup	2	Maplewood SP	8/6/2015	<0.07
WA5370050	City of Puyallup	3	Well #13 (15th & 9th St.)	2/3/2015	<0.07
WA5370050	City of Puyallup	3	Well #13 (15th & 9th St.)	8/6/2015	<0.07
WA5370050	City of Puyallup	5	Well #33 (23rd Ave. SE)	2/3/2015	<0.07
WA5370050	City of Puyallup	5	Well #33 (23rd Ave. SE)	8/6/2015	<0.07
WA5370050	City of Puyallup	7	Cherokee Park Well	2/3/2015	<0.07
WA5370050	City of Puyallup	7	Cherokee Park Well	8/6/2015	<0.07
WA5370050	City of Puyallup	8	Rec-Center Well	2/3/2015	<0.07
WA5370050	City of Puyallup	8	Rec-Center Well	8/6/2015	<0.07
WA5370050	City of Puyallup	9	96th Street Well	2/3/2015	<0.07
WA5370050	City of Puyallup	9	96th Street Well	8/6/2015	<0.07
WA5370050	City of Puyallup	22834	Tacoma Intertie	2/3/2015	<0.07
WA5370050	City of Puyallup	22834	Tacoma Intertie	5/5/2015	<0.07
WA5370050	City of Puyallup	22834	Tacoma Intertie	8/6/2015	<0.07
WA5370050	City of Puyallup	22834	Tacoma Intertie	11/17/2015	<0.07
WA5371650	City of Redmond Water System	3	Well #3	6/25/2014	<0.07
WA5371650	City of Redmond Water System	3	Well #3	12/17/2014	<0.07
WA5371650	City of Redmond Water System	4	Well #4	8/18/2015	<0.07
WA5371650	City of Redmond Water System	4	Well #4	12/15/2015	<0.07
WA5371650	City of Redmond Water System	7	Well #5	6/25/2014	<0.07
WA5371650	City of Redmond Water System	7	Well #5	12/17/2014	<0.07
WA5371650	City of Redmond Water System	8	Well #1 & Well #2 Combined	6/25/2014	<0.07
WA5371650	City of Redmond Water System	8	Well #1 & Well #2 Combined	12/17/2014	<0.07
WA5371650	City of Redmond Water System	22973	Seattle Intertie	6/25/2014	<0.07
WA5371650	City of Redmond Water System	22973	Seattle Intertie	9/24/2014	<0.07
WA5371650	City of Redmond Water System	22973	Seattle Intertie	12/17/2014	<0.07
WA5371650	City of Redmond Water System	22973	Seattle Intertie	3/4/2015	<0.07
WA5371850	City of Renton	5	Springbrook Springs	8/6/2014	<0.07

Table 4. UCMR 3 1,4-Dioxane Testing Data for Washington Group A Water Supply Wells

PWS ID	PWS Name	Facility ID	Facility Name	Collection Date	1,4-Dioxane (µg/L)
WA5371850	City of Renton	5	Springbrook Springs	2/4/2015	<0.07
WA5371850	City of Renton	7	Well 8 (PW-8)	8/6/2014	<0.07
WA5371850	City of Renton	7	Well 8 (PW-8)	2/4/2015	<0.07
WA5371850	City of Renton	10	Wells 1, 2 & 3	8/6/2014	<0.07
WA5371850	City of Renton	10	Wells 1, 2 & 3	2/4/2015	<0.07
WA5371850	City of Renton	13	Wells 11, 12 & 17	8/6/2014	<0.07
WA5371850	City of Renton	13	Wells 11, 12 & 17	2/4/2015	<0.07
WA5372250	City of Richland	1	Columbia River	6/3/2014	<0.07
WA5372250	City of Richland	1	Columbia River	9/9/2014	<0.07
WA5372250	City of Richland	1	Columbia River	12/2/2014	<0.07
WA5372250	City of Richland	1	Columbia River	3/10/2015	<0.07
WA5372250	City of Richland	2	WLSN WY/S12-15	6/3/2014	<0.07
WA5372250	City of Richland	2	WLSN WY/S12-15	12/2/2014	<0.07
WA5372250	City of Richland	4	N. Richland Slow Sand Filter Facility	6/3/2014	<0.07
WA5372250	City of Richland	4	N. Richland Slow Sand Filter Facility	9/9/2014	<0.07
WA5372250	City of Richland	4	N. Richland Slow Sand Filter Facility	1/13/2015	<0.07
WA5372250	City of Richland	4	N. Richland Slow Sand Filter Facility	2/24/2015	<0.07
WA5372250	City of Richland	5	Columbia Well	6/3/2014	<0.07
WA5372250	City of Richland	5	Columbia Well	12/2/2014	<0.07
WA5377400	City of Selah	90001	Well #5	6/17/2014	<0.07
WA5377400	City of Selah	90001	Well #5	12/8/2014	<0.07
WA5377400	City of Selah	90002	Well #6	6/17/2014	<0.07
WA5377400	City of Selah	90002	Well #6	12/8/2014	<0.07
WA5377400	City of Selah	90003	Well #7	6/17/2014	<0.07
WA5377400	City of Selah	90003	Well #7	12/8/2014	<0.07
WA5377400	City of Selah	90004	Well #8	6/17/2014	<0.07
WA5377400	City of Selah	90004	Well #8	12/8/2014	<0.07
WA5377620	City of Sequim	2267	Dungeness River Ranney Well	12/15/2014	<0.07
WA5377620	City of Sequim	2267	Dungeness River Ranney Well	6/2/2015	<0.07
WA5377620	City of Sequim	2268	Silberhorn Wellfield	12/15/2014	<0.07
WA5377620	City of Sequim	2268	Silberhorn Wellfield	6/2/2015	<0.07
WA5377620	City of Sequim	2269	Port Williams Wellfield	12/15/2014	<0.07
WA5377620	City of Sequim	2269	Port Williams Wellfield	6/2/2015	<0.07
WA5378170	City of Shelton	2220	Well #1 & #3	3/10/2014	<0.07
WA5378170	City of Shelton	2220	Well #1 & #3	9/9/2014	<0.07
WA5378170	City of Shelton	4107	Well #4	3/10/2014	<0.07
WA5378170	City of Shelton	4107	Well #4	9/9/2014	<0.07
WA5383100	City of Spokane	1	Nevada Street	3/23/2015	<0.07
WA5383100	City of Spokane	1	Nevada Street	9/28/2015	<0.07
WA5383100	City of Spokane	3	Park Water	3/23/2015	<0.07
WA5383100	City of Spokane	3	Park Water	9/28/2015	<0.07
WA5383100	City of Spokane	4	Ray Street	3/23/2015	<0.07
WA5383100	City of Spokane	4	Ray Street	9/28/2015	<0.07
WA5383100	City of Spokane	5	Hoffman Avenue	3/23/2015	<0.07
WA5383100	City of Spokane	5	Hoffman Avenue	9/28/2015	<0.07
WA5383100	City of Spokane	8	Central Avenue	3/23/2015	<0.07
WA5383100	City of Spokane	8	Central Avenue	9/28/2015	<0.07
WA5383650	City of Stanwood Water Department	3793	Cedarhome Well	1/12/2015	<0.07
WA5383650	City of Stanwood Water Department	3793	Cedarhome Well	7/6/2015	<0.07
WA5383650	City of Stanwood Water Department	3802	Bryant Wells	1/12/2015	<0.07
WA5383650	City of Stanwood Water Department	3802	Bryant Wells	7/6/2015	<0.07
WA5385400	City of Sunnyside	6	Well 6	3/31/2014	<0.07
WA5385400	City of Sunnyside	6	Well 6	9/3/2014	<0.07
WA5385400	City of Sunnyside	7	Well 7	3/31/2014	<0.07
WA5385400	City of Sunnyside	7	Well 7	9/3/2014	<0.07
WA5385400	City of Sunnyside	8	Well 8	3/31/2014	<0.07
WA5385400	City of Sunnyside	8	Well 8	9/3/2014	<0.07
WA5385400	City of Sunnyside	9	Well 9	3/31/2014	<0.07
WA5385400	City of Sunnyside	9	Well 9	9/3/2014	<0.07
WA5385400	City of Sunnyside	11	Well 11	3/31/2014	<0.07
WA5385400	City of Sunnyside	11	Well 11	9/3/2014	<0.07
WA5386800	City of Tacoma Water Division	1	Green River	3/10/2015	<0.07
WA5386800	City of Tacoma Water Division	1	Green River	6/9/2015	<0.07
WA5386800	City of Tacoma Water Division	1	Green River	9/9/2015	<0.07
WA5386800	City of Tacoma Water Division	1	Green River	12/2/2015	<0.07
WA5386800	City of Tacoma Water Division	4	UP-1	7/8/2015	<0.07
WA5386800	City of Tacoma Water Division	4	UP-1	12/7/2015	<0.07
WA5386800	City of Tacoma Water Division	5	SE-2&6	7/9/2015	<0.07
WA5386800	City of Tacoma Water Division	5	SE-2&6	12/9/2015	<0.07
WA5386800	City of Tacoma Water Division	6	SE11&11A	7/6/2015	<0.07
WA5386800	City of Tacoma Water Division	6	SE11&11A	12/10/2015	<0.07
WA5386800	City of Tacoma Water Division	8	South Tacoma Pump Station	8/6/2014	<0.07
WA5386800	City of Tacoma Water Division	8	South Tacoma Pump Station	3/10/2015	<0.07
WA5386800	City of Tacoma Water Division	950	Tacoma Treatment Plant	3/10/2015	<0.07
WA5386800	City of Tacoma Water Division	950	Tacoma Treatment Plant	6/17/2015	<0.07
WA5386800	City of Tacoma Water Division	950	Tacoma Treatment Plant	9/9/2015	<0.07
WA5386800	City of Tacoma Water Division	950	Tacoma Treatment Plant	12/1/2015	<0.07
WA5386800	City of Tacoma Water Division	90001	Portland Ave. Well	7/9/2015	<0.07
WA5386800	City of Tacoma Water Division	90001	Portland Ave. Well	12/7/2015	<0.07
WA5386800	City of Tacoma Water Division	90002	Gravity Pipeline Well #2	6/29/2015	<0.07
WA5386800	City of Tacoma Water Division	90002	Gravity Pipeline Well #2	12/8/2015	<0.07
WA5386800	City of Tacoma Water Division	90003	Prairie Springs	10/13/2015	<0.07
WA5386800	City of Tacoma Water Division	90003	Prairie Springs	12/8/2015	<0.07
WA5389700	City of Tumwater	2	Source 2	8/13/2014	<0.07
WA5389700	City of Tumwater	2	Source 2	2/11/2015	<0.07
WA5389700	City of Tumwater	14	Source 14	8/20/2014	<0.07
WA5389700	City of Tumwater	14	Source 14	2/11/2015	<0.07
WA5389700	City of Tumwater	15	Source 15	8/13/2014	<0.07
WA5389700	City of Tumwater	15	Source 15	2/11/2015	<0.07
WA5389700	City of Tumwater	21	Source 21	8/13/2014	<0.07
WA5389700	City of Tumwater	21	Source 21	2/11/2015	<0.07

Table 4. UCMR 3 1,4-Dioxane Testing Data for Washington Group A Water Supply Wells

PWS ID	PWS Name	Facility ID	Facility Name	Collection Date	1,4-Dioxane (µg/L)
WA5389700	City of Tumwater	22	Source 22	8/13/2014	<0.07
WA5389700	City of Tumwater	22	Source 22	2/11/2015	<0.07
WA5389700	City of Tumwater	23	Source 23	8/13/2014	<0.07
WA5389700	City of Tumwater	23	Source 23	2/11/2015	<0.07
WA5391200	City of Vancouver	1	W. S. #1	5/28/2013	0.11
WA5391200	City of Vancouver	1	W. S. #1	11/19/2013	0.072
WA5391200	City of Vancouver	2	W. S. #3	5/28/2013	0.13
WA5391200	City of Vancouver	2	W. S. #3	11/19/2013	0.17
WA5391200	City of Vancouver	3	W. S. #4	5/28/2013	<0.07
WA5391200	City of Vancouver	3	W. S. #4	11/19/2013	<0.07
WA5391200	City of Vancouver	5	W. S. #7/Well #1	6/17/2013	<0.07
WA5391200	City of Vancouver	5	W. S. #7/Well #1	11/19/2013	<0.07
WA5391200	City of Vancouver	6	W. S. #8	5/28/2013	0.093
WA5391200	City of Vancouver	6	W. S. #8	11/19/2013	<0.07
WA5391200	City of Vancouver	7	W. S. #9	5/28/2013	0.076
WA5391200	City of Vancouver	7	W. S. #9	11/19/2013	<0.07
WA5391200	City of Vancouver	8	W. S. #14	5/28/2013	0.25
WA5391200	City of Vancouver	8	W. S. #14	11/19/2013	0.21
WA5391200	City of Vancouver	9	W. S. #15	5/28/2013	<0.07
WA5391200	City of Vancouver	9	W. S. #15	11/19/2013	<0.07
WA5391200	City of Vancouver	11	Ellsworth WTP	5/28/2013	<0.07
WA5391200	City of Vancouver	11	Ellsworth WTP	11/19/2013	<0.07
WA5393400	City of Washougal	2309	Hathaway Park	8/20/2013	<0.07
WA5393400	City of Washougal	2310	Westside	8/20/2013	<0.07
WA5393400	City of Washougal	2310	Westside	10/7/2014	<0.07
WA5393400	City of Washougal	90001	Well #11 TP	8/20/2013	<0.07
WA5394350	City of Wenatchee	2825	Wellfield	12/3/2014	<0.07
WA5394350	City of Wenatchee	2825	Wellfield	6/2/2015	<0.07
WA5394900	City of West Richland	2767	Central Well 1	10/17/2013	<0.07
WA5394900	City of West Richland	2767	Central Well 1	4/10/2014	<0.07
WA5394900	City of West Richland	2769	Flattop Well 2	10/7/2013	<0.07
WA5394900	City of West Richland	2769	Flattop Well 2	4/10/2014	<0.07
WA5394900	City of West Richland	2779	Well 7	10/7/2013	<0.07
WA5394900	City of West Richland	2779	Well 7	4/10/2014	<0.07
WA5394900	City of West Richland	2780	Well 9	10/7/2013	<0.07
WA5394900	City of West Richland	2780	Well 9	4/10/2014	<0.07
WA5394900	City of West Richland	2782	Richland Intertie	1/15/2014	<0.07
WA5394900	City of West Richland	2782	Richland Intertie	4/10/2014	<0.07
WA5394900	City of West Richland	2782	Richland Intertie	7/7/2014	<0.07
WA5399150	City of Yakima Water Division	1	Naches River WTP	3/2/2015	<0.07
WA5399150	City of Yakima Water Division	1	Naches River WTP	6/22/2015	<0.07
WA5399150	City of Yakima Water Division	1	Naches River WTP	9/9/2015	<0.07
WA5399150	City of Yakima Water Division	1	Naches River WTP	12/21/2015	<0.07
WA5399150	City of Yakima Water Division	2	Airport Well	3/3/2015	<0.07
WA5399150	City of Yakima Water Division	2	Airport Well	9/16/2015	<0.07
WA5399150	City of Yakima Water Division	3	Kiwanis Well	3/3/2015	<0.07
WA5399150	City of Yakima Water Division	3	Kiwanis Well	9/16/2015	<0.07
WA5399150	City of Yakima Water Division	10	Gardner Well	3/3/2015	<0.07
WA5399150	City of Yakima Water Division	10	Gardner Well	9/9/2015	<0.07
WA5313333	Clark Public Utilities	5	Well 5 HAZ S05	6/11/2015	<0.07
WA5313333	Clark Public Utilities	5	Well 5 HAZ S05	12/21/2015	<0.07
WA5313333	Clark Public Utilities	20	Well 19 HAZ S20	5/19/2015	<0.07
WA5313333	Clark Public Utilities	20	Well 19 HAZ S20	11/19/2015	<0.07
WA5313333	Clark Public Utilities	22	Well 20 HAZ S22	11/19/2014	<0.07
WA5313333	Clark Public Utilities	22	Well 20 HAZ S22	4/28/2015	<0.07
WA5313333	Clark Public Utilities	24	Well 22 HAZ S24	11/19/2014	0.36
WA5313333	Clark Public Utilities	24	Well 22 HAZ S24	4/28/2015	0.36
WA5313333	Clark Public Utilities	28	Well 27 HAZ S28	11/20/2014	<0.07
WA5313333	Clark Public Utilities	28	Well 27 HAZ S28	5/19/2015	<0.07
WA5313333	Clark Public Utilities	30	Well 30 HAZ S30	9/17/2013	<0.07
WA5313333	Clark Public Utilities	30	Well 30 HAZ S30	3/26/2014	<0.07
WA5313333	Clark Public Utilities	31	Well 31 HAZ S31	9/17/2013	<0.07
WA5313333	Clark Public Utilities	31	Well 31 HAZ S31	3/26/2014	<0.07
WA5313333	Clark Public Utilities	33	Well104 HOC S04	6/11/2014	<0.07
WA5313333	Clark Public Utilities	33	Well104 HOC S04	12/10/2014	<0.07
WA5313333	Clark Public Utilities	38	Well110 HOC S09	6/11/2015	<0.07
WA5313333	Clark Public Utilities	38	Well110 HOC S09	12/21/2015	<0.07
WA5313333	Clark Public Utilities	43	Well 26 MG S06	6/11/2015	<0.07
WA5313333	Clark Public Utilities	43	Well 26 MG S06	12/21/2015	<0.07
WA5310221	Consolidated Irrig. Dist. #19, System #2	90001	Wells 1A, 1B, 1C	4/23/2015	<0.07
WA5310221	Consolidated Irrig. Dist. #19, System #2	90001	Wells 1A, 1B, 1C	10/13/2015	<0.07
WA5310221	Consolidated Irrig. Dist. #19, System #2	90002	Wells 2A, 2B, 2C	4/23/2015	<0.07
WA5310221	Consolidated Irrig. Dist. #19, System #2	90002	Wells 2A, 2B, 2C	10/13/2015	<0.07
WA5310221	Consolidated Irrig. Dist. #19, System #2	90003	Wells 3A, 3B, 3C	4/23/2015	<0.07
WA5310221	Consolidated Irrig. Dist. #19, System #2	90003	Wells 3A, 3B, 3C	10/13/2015	<0.07
WA5310221	Consolidated Irrig. Dist. #19, System #2	90004	Wells 4A, 4B, 4C, 4D	4/23/2015	<0.07
WA5310221	Consolidated Irrig. Dist. #19, System #2	90004	Wells 4A, 4B, 4C, 4D	10/13/2015	<0.07
WA5341650	Covington Water District	4	Witte #1, 2, 3 & 4	7/29/2015	<0.07
WA5341650	Covington Water District	13	222nd Pl. A,C,D,E,F	5/27/2015	<0.07
WA5341650	Covington Water District	13	222nd Pl. A,C,D,E,F	11/18/2015	<0.07
WA5341650	Covington Water District	18	264th Well	7/29/2015	<0.07
WA5341650	Covington Water District	27828	Tacoma Intertie	2/25/2015	<0.07
WA5341650	Covington Water District	27828	Tacoma Intertie	5/27/2015	<0.07
WA5341650	Covington Water District	27828	Tacoma Intertie	7/29/2015	<0.07
WA5341650	Covington Water District	27828	Tacoma Intertie	11/18/2015	<0.07
WA5316270	Cross Valley Water District	12	Woodlane	4/3/2013	<0.07
WA5316270	Cross Valley Water District	12	Woodlane	10/9/2013	<0.07
WA5316270	Cross Valley Water District	15	Wells 5, 6 & 10	4/3/2013	<0.07
WA5316270	Cross Valley Water District	15	Wells 5, 6 & 10	10/9/2013	<0.07
WA5316270	Cross Valley Water District	17	Wells 1 & 9	4/3/2013	<0.07
WA5316270	Cross Valley Water District	17	Wells 1 & 9	10/9/2013	<0.07

Table 4. UCMR 3 1,4-Dioxane Testing Data for Washington Group A Water Supply Wells

PWS ID	PWS Name	Facility ID	Facility Name	Collection Date	1,4-Dioxane (µg/L)
WA5316270	Cross Valley Water District	18	Wells 3 & 8	4/3/2013	<0.07
WA5316270	Cross Valley Water District	18	Wells 3 & 8	10/9/2013	<0.07
WA5316270	Cross Valley Water District	19	Wells 7 & 7A	4/3/2013	<0.07
WA5316270	Cross Valley Water District	19	Wells 7 & 7A	10/9/2013	<0.07
WA5306536	Diamond Point Water System	90001	Diamond Point Booster	5/14/2013	<0.07
WA5306536	Diamond Point Water System	90001	Diamond Point Booster	11/13/2013	<0.07
WA5302348	Eagle Estates	90001	Pumphouse	4/9/2013	<0.07
WA5302348	Eagle Estates	90001	Pumphouse	10/28/2013	<0.07
WA5321800	East Wenaatchee Water District	12845	Wen Regional Intertie	12/2/2014	<0.07
WA5321800	East Wenaatchee Water District	12845	Wen Regional Intertie	7/27/2015	<0.07
WA5321900	Eastern Washington University	4163	Well #1	3/2/2015	<0.07
WA5321900	Eastern Washington University	4163	Well #1	8/19/2015	<0.07
WA5322950	Ellensburg Water Department	1	City Wells	4/22/2013	<0.07
WA5322950	Ellensburg Water Department	1	City Wells	10/14/2013	<0.07
WA5322950	Ellensburg Water Department	5	Kiwanis Park Well	4/22/2013	<0.07
WA5322950	Ellensburg Water Department	5	Kiwanis Park Well	10/14/2013	<0.07
WA5323600	Enumclaw Water Department	1	Boise Spring	1/6/2014	<0.07
WA5323600	Enumclaw Water Department	1	Boise Spring	7/2/2014	<0.07
WA5323600	Enumclaw Water Department	2	Watercress Springs Combined	1/6/2014	<0.07
WA5323600	Enumclaw Water Department	2	Watercress Springs Combined	7/2/2014	<0.07
WA5323600	Enumclaw Water Department	7	PC Johnson Wellfield	9/15/2015	<0.07
WA5324850	Ferndale	13642	Water Treatment Plant	3/25/2014	<0.07
WA5324850	Ferndale	13642	Water Treatment Plant	9/9/2014	<0.07
WA5325200	Firgrove Mutual, Inc.	3	Well #3 (E. 154th St.)	12/12/2014	<0.07
WA5325200	Firgrove Mutual, Inc.	3	Well #3 (E. 154th St.)	5/18/2015	<0.07
WA5325200	Firgrove Mutual, Inc.	6	Well #6 (Regis Park)	11/17/2014	<0.07
WA5325200	Firgrove Mutual, Inc.	6	Well #6 (Regis Park)	5/18/2015	<0.07
WA5325200	Firgrove Mutual, Inc.	10	E. 164th St.	11/17/2014	<0.07
WA5325200	Firgrove Mutual, Inc.	10	E. 164th St.	5/18/2015	<0.07
WA5325200	Firgrove Mutual, Inc.	14	Well #14 (E. 97th Ave.)	2/13/2015	<0.07
WA5325200	Firgrove Mutual, Inc.	14	Well #14 (E. 97th Ave.)	5/18/2015	<0.07
WA5325200	Firgrove Mutual, Inc.	16	Well #16 (E. 70th Ave.)	11/17/2014	<0.07
WA5325200	Firgrove Mutual, Inc.	16	Well #16 (E. 70th Ave.)	5/18/2015	<0.07
WA5325200	Firgrove Mutual, Inc.	20	Well #20	11/17/2014	<0.07
WA5325200	Firgrove Mutual, Inc.	20	Well #20	5/18/2015	<0.07
WA5325200	Firgrove Mutual, Inc.	21	Wells #13 & #18	11/17/2014	<0.07
WA5325200	Firgrove Mutual, Inc.	21	Wells #13 & #18	5/18/2015	<0.07
WA5325200	Firgrove Mutual, Inc.	26	Wells #12 & #22	11/17/2014	<0.07
WA5325200	Firgrove Mutual, Inc.	26	Wells #12 & #22	5/18/2015	<0.07
WA5325200	Firgrove Mutual, Inc.	13764	Tacoma Intertie	11/17/2014	<0.07
WA5325200	Firgrove Mutual, Inc.	13764	Tacoma Intertie	2/13/2015	<0.07
WA5325200	Firgrove Mutual, Inc.	13764	Tacoma Intertie	5/18/2015	<0.07
WA5325200	Firgrove Mutual, Inc.	13764	Tacoma Intertie	8/21/2015	<0.07
WA5326050	Fort Lewis Water - Cantonment	1	Sequalitchew Spring	6/11/2014	<0.07
WA5326050	Fort Lewis Water - Cantonment	1	Sequalitchew Spring	12/29/2014	<0.07
WA5326050	Fort Lewis Water - Cantonment	3	Well #12A	3/17/2015	<0.07
WA5326050	Fort Lewis Water - Cantonment	3	Well #12A	9/2/2015	<0.07
WA5326050	Fort Lewis Water - Cantonment	4	Well #14	6/9/2014	<0.07
WA5326050	Fort Lewis Water - Cantonment	4	Well #14	12/29/2014	<0.07
WA5326050	Fort Lewis Water - Cantonment	5	Well #17	6/10/2014	<0.07
WA5326050	Fort Lewis Water - Cantonment	5	Well #17	12/29/2014	<0.07
WA5326050	Fort Lewis Water - Cantonment	6	Well #13	3/17/2015	<0.07
WA5326050	Fort Lewis Water - Cantonment	6	Well #13	9/2/2015	<0.07
WA5326050	Fort Lewis Water - Cantonment	7	Well #12B	3/17/2015	<0.07
WA5326050	Fort Lewis Water - Cantonment	7	Well #12B	9/2/2015	<0.07
WA5326050	Fort Lewis Water - Cantonment	8	Well #20	6/10/2014	<0.07
WA5326050	Fort Lewis Water - Cantonment	8	Well #20	12/29/2014	<0.07
WA5326050	Fort Lewis Water - Cantonment	9	MAMC Well #4	3/18/2015	<0.07
WA5326050	Fort Lewis Water - Cantonment	9	MAMC Well #4	9/14/2015	<0.07
WA5326800	Fruitland Mutual Water Company	2581	Well 3	3/6/2013	<0.07
WA5326800	Fruitland Mutual Water Company	2581	Well 3	9/16/2013	<0.07
WA5326800	Fruitland Mutual Water Company	2582	Well 4	12/16/2013	<0.07
WA5326800	Fruitland Mutual Water Company	2582	Well 4	6/2/2014	<0.07
WA5326800	Fruitland Mutual Water Company	2583	Well 5A	3/6/2013	<0.07
WA5326800	Fruitland Mutual Water Company	2583	Well 5A	9/17/2013	<0.07
WA5326800	Fruitland Mutual Water Company	2585	Well 2A	3/6/2013	<0.07
WA5326800	Fruitland Mutual Water Company	2585	Well 2A	9/17/2013	<0.07
WA5340650	Highline Water District	5	Wellfield (DesMoines/Angle Lake)	4/23/2014	<0.07
WA5340650	Highline Water District	5	Wellfield (DesMoines/Angle Lake)	10/28/2014	<0.07
WA5340650	Highline Water District	7	Tyee Well	4/23/2014	<0.07
WA5340650	Highline Water District	7	Tyee Well	10/28/2014	<0.07
WA5340650	Highline Water District	17205	SPU and McMicken TP water comingled	4/23/2014	<0.07
WA5340650	Highline Water District	17205	SPU and McMicken TP water comingled	7/23/2014	<0.07
WA5340650	Highline Water District	17205	SPU and McMicken TP water comingled	10/28/2014	<0.07
WA5340650	Highline Water District	17205	SPU and McMicken TP water comingled	1/20/2015	<0.07
WA5336350	Issaquah Water System	1	Well #1	7/22/2013	<0.07
WA5336350	Issaquah Water System	1	Well #1	1/8/2014	<0.07
WA5336350	Issaquah Water System	2	Well #2	7/22/2013	<0.07
WA5336350	Issaquah Water System	2	Well #2	1/8/2014	<0.07
WA5336350	Issaquah Water System	4	Well #4	7/22/2013	<0.07
WA5336350	Issaquah Water System	4	Well #4	1/8/2014	<0.07
WA5336350	Issaquah Water System	5	Well #5	7/22/2013	<0.07
WA5336350	Issaquah Water System	5	Well #5	1/8/2014	<0.07
WA5338150	Kent Water Department	1	Kent Springs & Soos Creek Blending Point	3/4/2013	<0.07
WA5338150	Kent Water Department	1	Kent Springs & Soos Creek Blending Point	12/26/2013	<0.07
WA5338150	Kent Water Department	2	Clark Springs & Armstrong Springs Blending Point	3/4/2013	<0.07
WA5338150	Kent Water Department	2	Clark Springs & Armstrong Springs Blending Point	12/26/2013	<0.07
WA5338150	Kent Water Department	5	East Hill Well	3/4/2013	<0.07
WA5338150	Kent Water Department	5	East Hill Well	12/26/2013	<0.07

Table 4. UCMR 3 1,4-Dioxane Testing Data for Washington Group A Water Supply Wells

PWS ID	PWS Name	Facility ID	Facility Name	Collection Date	1,4-Dioxane (µg/L)
WA5338150	Kent Water Department	6	Garrison Creek Well	3/4/2013	<0.07
WA5338150	Kent Water Department	6	Garrison Creek Well	12/26/2013	<0.07
WA5338150	Kent Water Department	10	Wells @ 208th & 212th Streets Blending Point	3/4/2013	<0.07
WA5338150	Kent Water Department	10	Wells @ 208th & 212th Streets Blending Point	12/26/2013	<0.07
WA5338150	Kent Water Department	12	O'Brien Well	3/4/2013	<0.07
WA5338150	Kent Water Department	12	O'Brien Well	12/26/2013	<0.07
WA5341900	King County Water District #111	4	Well #3	8/20/2013	<0.07
WA5341900	King County Water District #111	4	Well #3	2/25/2014	<0.07
WA5341900	King County Water District #111	6	Well #5	8/20/2013	<0.07
WA5341900	King County Water District #111	6	Well #5	2/25/2014	<0.07
WA5341900	King County Water District #111	7	Well #6	8/20/2013	<0.07
WA5341900	King County Water District #111	7	Well #6	2/25/2014	<0.07
WA5341900	King County Water District #111	8	Well #9	8/20/2013	<0.07
WA5341900	King County Water District #111	8	Well #9	2/25/2014	<0.07
WA5341998	King County Water District #125	17445	Seattle Intertie	11/17/2014	<0.07
WA5341998	King County Water District #125	17445	Seattle Intertie	2/3/2015	<0.07
WA5341998	King County Water District #125	17445	Seattle Intertie	5/11/2015	<0.07
WA5341998	King County Water District #125	17445	Seattle Intertie	8/3/2015	<0.07
WA5338950	King County Water District #20	17011	Seattle Intertie	10/15/2013	<0.07
WA5338950	King County Water District #20	17011	Seattle Intertie	1/8/2014	<0.07
WA5338950	King County Water District #20	17011	Seattle Intertie	4/1/2014	<0.07
WA5338950	King County Water District #20	17011	Seattle Intertie	7/9/2014	<0.07
WA5339800	King County Water District #49	17096	Seattle Intertie	2/18/2014	<0.07
WA5339800	King County Water District #49	17096	Seattle Intertie	5/19/2014	<0.07
WA5339800	King County Water District #49	17096	Seattle Intertie	8/5/2014	<0.07
WA5339800	King County Water District #49	17096	Seattle Intertie	11/13/2014	<0.07
WA5341150	King County Water District #90	2441	Wojewodski Well	7/29/2014	<0.07
WA5341150	King County Water District #90	2441	Wojewodski Well	2/26/2015	<0.07
WA5341150	King County Water District #90	17277	Seattle Intertie	7/29/2014	<0.07
WA5341150	King County Water District #90	17277	Seattle Intertie	10/28/2014	<0.07
WA5341150	King County Water District #90	17277	Seattle Intertie	2/26/2015	0.077
WA5341150	King County Water District #90	17277	Seattle Intertie	4/16/2015	<0.07
WA5343500	Lacey Water Department	1	Well 1	12/2/2014	<0.07
WA5343500	Lacey Water Department	1	Well 1	6/29/2015	<0.07
WA5343500	Lacey Water Department	2	S02	12/2/2014	<0.07
WA5343500	Lacey Water Department	2	S02	6/29/2015	<0.07
WA5343500	Lacey Water Department	4	Well 4	12/2/2014	<0.07
WA5343500	Lacey Water Department	4	Well 4	8/24/2015	<0.07
WA5343500	Lacey Water Department	6	Well 6	12/3/2014	<0.07
WA5343500	Lacey Water Department	6	Well 6	6/29/2015	<0.07
WA5343500	Lacey Water Department	7	Well 7	12/3/2014	<0.07
WA5343500	Lacey Water Department	7	Well 7	6/29/2015	<0.07
WA5343500	Lacey Water Department	9	Well 9	12/2/2014	<0.07
WA5343500	Lacey Water Department	9	Well 9	6/29/2015	<0.07
WA5343500	Lacey Water Department	10	Well 10	12/4/2014	<0.07
WA5343500	Lacey Water Department	10	Well 10	6/29/2015	<0.07
WA5343500	Lacey Water Department	15	S15	12/3/2014	<0.07
WA5343500	Lacey Water Department	15	S15	6/30/2015	<0.07
WA5343500	Lacey Water Department	19	Hawks Prairie Well 1	12/3/2014	<0.07
WA5343500	Lacey Water Department	19	Hawks Prairie Well 1	6/30/2015	<0.07
WA5343500	Lacey Water Department	22	S22	12/3/2014	<0.07
WA5343500	Lacey Water Department	22	S22	6/30/2015	<0.07
WA5343500	Lacey Water Department	25	Nisqually Well 19C	12/4/2014	<0.07
WA5343500	Lacey Water Department	25	Nisqually Well 19C	6/30/2015	<0.07
WA5343500	Lacey Water Department	29	Betti Well	12/3/2014	<0.07
WA5343500	Lacey Water Department	29	Betti Well	6/30/2015	0.076
WA5343500	Lacey Water Department	29337	Olympia Intertie - SW	12/4/2014	<0.07
WA5343500	Lacey Water Department	90001	Olympia Intertie - GW	6/30/2015	<0.07
WA5341997	Lakehaven Utility District	2531	Well 10	8/6/2013	<0.07
WA5341997	Lakehaven Utility District	2531	Well 10	1/13/2014	<0.07
WA5341997	Lakehaven Utility District	2532	Well 7	8/6/2013	<0.07
WA5341997	Lakehaven Utility District	2532	Well 7	1/22/2014	<0.07
WA5341997	Lakehaven Utility District	2533	Well 9	8/6/2013	<0.07
WA5341997	Lakehaven Utility District	2533	Well 9	1/22/2014	<0.07
WA5341997	Lakehaven Utility District	2535	Well 10A	8/6/2013	<0.07
WA5341997	Lakehaven Utility District	2535	Well 10A	7/22/2014	<0.07
WA5341997	Lakehaven Utility District	2536	Wells 15 & 15A	8/6/2013	<0.07
WA5341997	Lakehaven Utility District	2536	Wells 15 & 15A	1/13/2014	<0.07
WA5341997	Lakehaven Utility District	2537	Well 16	8/12/2013	<0.07
WA5341997	Lakehaven Utility District	2537	Well 16	1/22/2014	<0.07
WA5341997	Lakehaven Utility District	2538	Wells 17, 17A, & 17B	8/27/2013	<0.07
WA5341997	Lakehaven Utility District	2538	Wells 17, 17A, & 17B	4/16/2014	<0.07
WA5341997	Lakehaven Utility District	2540	Well 18	8/12/2013	<0.07
WA5341997	Lakehaven Utility District	2540	Well 18	1/13/2014	<0.07
WA5341997	Lakehaven Utility District	2541	Wells 19 & 19A	8/26/2013	<0.07
WA5341997	Lakehaven Utility District	2541	Wells 19 & 19A	7/22/2014	<0.07
WA5341997	Lakehaven Utility District	2542	Wells 20, 20A & 33	8/12/2013	<0.07
WA5341997	Lakehaven Utility District	2542	Wells 20, 20A & 33	5/13/2014	<0.07
WA5341997	Lakehaven Utility District	2543	Wells 22, 22A & 22B	8/20/2013	<0.07
WA5341997	Lakehaven Utility District	2543	Wells 22, 22A & 22B	7/1/2014	<0.07
WA5341997	Lakehaven Utility District	2544	Wells 23 & 23A	8/6/2013	<0.07
WA5341997	Lakehaven Utility District	2544	Wells 23 & 23A	6/3/2014	<0.07
WA5341997	Lakehaven Utility District	17431	Well 21	8/12/2013	<0.07
WA5341997	Lakehaven Utility District	17431	Well 21	7/22/2014	<0.07
WA5341997	Lakehaven Utility District	17440	Well 25	8/20/2013	<0.07
WA5341997	Lakehaven Utility District	17440	Well 25	1/22/2014	<0.07
WA5341997	Lakehaven Utility District	90001	Well 29	8/20/2013	<0.07
WA5341997	Lakehaven Utility District	90001	Well 29	7/8/2014	<0.07
WA5341997	Lakehaven Utility District	99003	Second Supply Pipeline SSP2	1/21/2014	<0.07
WA5341997	Lakehaven Utility District	99003	Second Supply Pipeline SSP2	4/22/2014	<0.07
WA5341997	Lakehaven Utility District	99003	Second Supply Pipeline SSP2	7/9/2014	<0.07

Table 4. UCMR 3 1,4-Dioxane Testing Data for Washington Group A Water Supply Wells

PWS ID	PWS Name	Facility ID	Facility Name	Collection Date	1,4-Dioxane (µg/L)
WA5341997	Lakehaven Utility District	99003	Second Supply Pipeline SSP2	9/30/2014	<0.07
WA5345550	Lakewood Water District	3	Interlaaken D-3	5/7/2013	<0.07
WA5345550	Lakewood Water District	3	Interlaaken D-3	10/23/2013	<0.07
WA5345550	Lakewood Water District	7	G-1 & G-2 Scott	5/8/2013	<0.07
WA5345550	Lakewood Water District	7	G-1 & G-2 Scott	10/22/2013	<0.07
WA5345550	Lakewood Water District	16	View Rd. N-2	5/7/2013	<0.07
WA5345550	Lakewood Water District	16	View Rd. N-2	10/22/2013	<0.07
WA5345550	Lakewood Water District	19	112th & Deepwood Q-1	5/7/2013	<0.07
WA5345550	Lakewood Water District	19	112th & Deepwood Q-1	10/22/2013	<0.07
WA5345550	Lakewood Water District	21	R-1 112th St. Site	5/8/2013	<0.07
WA5345550	Lakewood Water District	21	R-1 112th St. Site	10/23/2013	<0.07
WA5306461	Larch Corrections Center	90001	Well #3	6/10/2015	<0.07
WA5306461	Larch Corrections Center	90001	Well #3	12/16/2015	<0.07
WA5306461	Larch Corrections Center	90002	Well #4	6/10/2015	<0.07
WA5306461	Larch Corrections Center	90002	Well #4	12/16/2015	<0.07
WA5348100	Longview Water Department	1	Water Treatment Plant	10/31/2013	<0.07
WA5348100	Longview Water Department	1	Water Treatment Plant	4/22/2014	<0.07
WA5349150	Lynden Water Department	1420	Nooksack	1/14/2014	<0.07
WA5349150	Lynden Water Department	1420	Nooksack	4/8/2014	<0.07
WA5349150	Lynden Water Department	1420	Nooksack	7/8/2014	<0.07
WA5349150	Lynden Water Department	1420	Nooksack	10/14/2014	<0.07
WA5350700	Manchester Water District	2693	Wells #5 & #8	5/12/2015	<0.07
WA5350700	Manchester Water District	2693	Wells #5 & #8	3/23/2016	<0.07
WA5350700	Manchester Water District	2694	Wells #6 & #7	3/18/2015	<0.07
WA5350700	Manchester Water District	2694	Wells #6 & #7	9/24/2015	<0.07
WA5350700	Manchester Water District	2695	Well #9	6/29/2015	<0.07
WA5350700	Manchester Water District	4224	Wells #1 & #2	3/18/2015	<0.07
WA5350700	Manchester Water District	4224	Wells #1 & #2	9/24/2015	<0.07
WA5350700	Manchester Water District	4225	Well #11	3/18/2015	<0.07
WA5350700	Manchester Water District	4225	Well #11	9/24/2015	<0.07
WA5350700	Manchester Water District	90001	Well #10	3/18/2015	<0.07
WA5350700	Manchester Water District	90001	Well #10	9/24/2015	<0.07
WA5351900	Marysville Utilities	1	GWI Edwards Spring	8/11/2014	<0.07
WA5351900	Marysville Utilities	1	GWI Edwards Spring	11/4/2014	<0.07
WA5351900	Marysville Utilities	1	GWI Edwards Spring	2/3/2015	<0.07
WA5351900	Marysville Utilities	1	GWI Edwards Spring	5/5/2015	<0.07
WA5351900	Marysville Utilities	4	GWI Stilli Well	8/11/2014	<0.07
WA5351900	Marysville Utilities	4	GWI Stilli Well	11/4/2014	<0.07
WA5351900	Marysville Utilities	4	GWI Stilli Well	2/3/2015	<0.07
WA5351900	Marysville Utilities	4	GWI Stilli Well	5/5/2015	<0.07
WA5351900	Marysville Utilities	5	GW Lake Goodwin Well	8/11/2014	<0.07
WA5351900	Marysville Utilities	5	GW Lake Goodwin Well	2/4/2015	<0.07
WA5351900	Marysville Utilities	19513	Everett Intertie	8/11/2014	<0.07
WA5351900	Marysville Utilities	19513	Everett Intertie	11/4/2014	<0.07
WA5351900	Marysville Utilities	19513	Everett Intertie	2/3/2015	<0.07
WA5351900	Marysville Utilities	19513	Everett Intertie	5/5/2015	<0.07
WA5355550	Model Irrigation Dist. #18	90001	Well #1	1/7/2014	<0.07
WA5355550	Model Irrigation Dist. #18	90002	Well #3	6/11/2013	<0.07
WA5355550	Model Irrigation Dist. #18	90002	Well #3	12/12/2013	<0.07
WA5355550	Model Irrigation Dist. #18	90003	Well #4	6/11/2013	<0.07
WA5355550	Model Irrigation Dist. #18	90003	Well #4	12/12/2013	<0.07
WA5355550	Model Irrigation Dist. #18	90004	Well #5	6/11/2013	<0.07
WA5355550	Model Irrigation Dist. #18	90004	Well #5	12/12/2013	<0.07
WA5355550	Model Irrigation Dist. #18	90005	Well #6	6/11/2013	<0.07
WA5355550	Model Irrigation Dist. #18	90005	Well #6	12/12/2013	<0.07
WA5355550	Model Irrigation Dist. #18	90006	Well #7	6/11/2013	<0.07
WA5355550	Model Irrigation Dist. #18	90006	Well #7	12/12/2013	<0.07
WA5355600	Modern Electric Water Co.	2	Well 2	5/30/2014	<0.07
WA5355600	Modern Electric Water Co.	2	Well 2	1/12/2015	<0.07
WA5355600	Modern Electric Water Co.	3	Well 3	10/13/2014	<0.07
WA5355600	Modern Electric Water Co.	3	Well 3	9/14/2015	<0.07
WA5355600	Modern Electric Water Co.	4	Well 4	10/13/2014	<0.07
WA5355600	Modern Electric Water Co.	4	Well 4	9/14/2015	<0.07
WA5355600	Modern Electric Water Co.	6	Well 6	10/13/2014	<0.07
WA5355600	Modern Electric Water Co.	6	Well 6	9/14/2015	<0.07
WA5355600	Modern Electric Water Co.	8	Well 8	10/13/2014	<0.07
WA5355600	Modern Electric Water Co.	8	Well 8	9/14/2015	<0.07
WA5355600	Modern Electric Water Co.	9	Well 9	5/30/2014	<0.07
WA5355600	Modern Electric Water Co.	9	Well 9	1/12/2015	<0.07
WA5355600	Modern Electric Water Co.	11	Well 11	10/13/2014	<0.07
WA5355600	Modern Electric Water Co.	11	Well 11	9/14/2015	<0.07
WA5355820	Monroe Water System	20354	Everett Intertie	4/2/2013	<0.07
WA5355820	Monroe Water System	20354	Everett Intertie	7/11/2013	<0.07
WA5355820	Monroe Water System	20354	Everett Intertie	10/9/2013	<0.07
WA5355820	Monroe Water System	20354	Everett Intertie	1/7/2014	<0.07
WA5357550	Mukilteo Water & Wastewater District	20737	Everett Intertie	8/7/2013	<0.07
WA5357550	Mukilteo Water & Wastewater District	20737	Everett Intertie	11/14/2013	<0.07
WA5357550	Mukilteo Water & Wastewater District	20737	Everett Intertie	2/14/2014	<0.07
WA5357550	Mukilteo Water & Wastewater District	20737	Everett Intertie	5/20/2014	<0.07
WA5303420	Naval Air Station - Whidbey Island	1	Oak Harbor Intertie	2/11/2014	<0.07
WA5303420	Naval Air Station - Whidbey Island	1	Oak Harbor Intertie	5/6/2014	<0.07
WA5303420	Naval Air Station - Whidbey Island	1	Oak Harbor Intertie	8/19/2014	<0.07
WA5303420	Naval Air Station - Whidbey Island	1	Oak Harbor Intertie	11/4/2014	<0.07
WA5302714	Naval Base Kitsap @ Bangor	70090	70009 Chlorination Station	3/12/2014	<0.07
WA5302714	Naval Base Kitsap @ Bangor	70090	70009 Chlorination Station	9/17/2014	<0.07
WA5302714	Naval Base Kitsap @ Bangor	70510	7051 Chlorination Station	3/12/2014	<0.07
WA5302714	Naval Base Kitsap @ Bangor	70510	7051 Chlorination Station	9/17/2014	<0.07
WA5303468	Naval Base Kitsap @ Bremerton	1	Bremerton Intertie	1/14/2014	<0.07
WA5303468	Naval Base Kitsap @ Bremerton	1	Bremerton Intertie	4/9/2014	<0.07
WA5303468	Naval Base Kitsap @ Bremerton	1	Bremerton Intertie	7/9/2014	<0.07
WA5303468	Naval Base Kitsap @ Bremerton	1	Bremerton Intertie	10/29/2014	<0.07

Table 4. UCMR 3 1,4-Dioxane Testing Data for Washington Group A Water Supply Wells

PWS ID	PWS Name	Facility ID	Facility Name	Collection Date	1,4-Dioxane (µg/L)
WA5359700	Nob Hill Water Association	1	Tieton Well	9/9/2014	<0.07
WA5359700	Nob Hill Water Association	1	Tieton Well	5/14/2015	<0.07
WA5359700	Nob Hill Water Association	2	Gilbert Well	4/21/2014	<0.07
WA5359700	Nob Hill Water Association	3	Hayes Well	4/21/2014	<0.07
WA5359700	Nob Hill Water Association	4	King St. Well	4/21/2014	<0.07
WA5359700	Nob Hill Water Association	7	Apple Blossom Well	9/9/2014	<0.07
WA5359700	Nob Hill Water Association	7	Apple Blossom Well	5/14/2015	<0.07
WA5305122	North Peninsula	3255	J Pt. 1	9/9/2013	<0.07
WA5305122	North Peninsula	3255	J Pt. 1	3/25/2014	<0.07
WA5305122	North Peninsula	3256	Wellfield (SO5 & SO6)	9/9/2013	<0.07
WA5305122	North Peninsula	3256	Wellfield (SO5 & SO6)	3/25/2014	<0.07
WA5305122	North Peninsula	3257	Gam 3 Ritter	9/9/2013	<0.07
WA5305122	North Peninsula	3257	Gam 3 Ritter	3/25/2014	<0.07
WA5305122	North Peninsula	3258	Kingston 7	3/25/2014	<0.07
WA5305122	North Peninsula	3258	Kingston 7	9/29/2015	<0.07
WA5360950	North Perry Avenue Water District	2	Pickering	5/22/2013	<0.07
WA5360950	North Perry Avenue Water District	2	Pickering	11/4/2013	<0.07
WA5360950	North Perry Avenue Water District	3	Perry Ave.	11/4/2013	<0.07
WA5360950	North Perry Avenue Water District	4	Gilberton #1	5/22/2013	<0.07
WA5360950	North Perry Avenue Water District	4	Gilberton #1	11/6/2013	<0.07
WA5360950	North Perry Avenue Water District	5	Gilberton #2	5/22/2013	<0.07
WA5360950	North Perry Avenue Water District	5	Gilberton #2	11/6/2013	<0.07
WA5360950	North Perry Avenue Water District	7	Sunset	5/20/2013	<0.07
WA5360950	North Perry Avenue Water District	7	Sunset	11/4/2013	<0.07
WA5360950	North Perry Avenue Water District	8	Bucklin Hill	5/21/2013	<0.07
WA5360950	North Perry Avenue Water District	8	Bucklin Hill	11/6/2013	<0.07
WA5360950	North Perry Avenue Water District	9	Center St. #2	5/20/2013	<0.07
WA5360950	North Perry Avenue Water District	9	Center St. #2	11/5/2013	<0.07
WA5360950	North Perry Avenue Water District	10	Riddell Rd.	5/20/2013	<0.07
WA5360950	North Perry Avenue Water District	10	Riddell Rd.	11/5/2013	<0.07
WA5360950	North Perry Avenue Water District	11	Meadowdale #2	5/21/2013	<0.07
WA5360950	North Perry Avenue Water District	11	Meadowdale #2	11/5/2013	<0.07
WA5360950	North Perry Avenue Water District	12	Well #14	5/21/2013	<0.07
WA5360950	North Perry Avenue Water District	12	Well #14	11/6/2013	<0.07
WA5340800	Northshore Utility District	17222	Seattle Intertie	5/19/2014	<0.07
WA5340800	Northshore Utility District	17222	Seattle Intertie	8/12/2014	<0.07
WA5340800	Northshore Utility District	17222	Seattle Intertie	2/11/2015	<0.07
WA5363008	Ocean Shores Water Department	2243	Water Treatment Facility	8/27/2014	<0.07
WA5363008	Ocean Shores Water Department	2243	Water Treatment Facility	2/4/2015	<0.07
WA5363600	Olympic View Water & Sewer District	1	Intertie from Seattle Water	7/14/2014	<0.07
WA5363600	Olympic View Water & Sewer District	1	Intertie from Seattle Water	10/27/2014	<0.07
WA5363600	Olympic View Water & Sewer District	1	Intertie from Seattle Water	1/13/2015	<0.07
WA5363600	Olympic View Water & Sewer District	4	Deer Creek	7/14/2014	<0.07
WA5363600	Olympic View Water & Sewer District	4	Deer Creek	10/27/2014	<0.07
WA5363600	Olympic View Water & Sewer District	4	Deer Creek	1/13/2015	<0.07
WA5363600	Olympic View Water & Sewer District	4	Deer Creek	4/15/2015	<0.07
WA5364850	Othello Water Department	90001	Well #2	1/21/2014	<0.07
WA5364850	Othello Water Department	90001	Well #2	7/14/2014	<0.07
WA5364850	Othello Water Department	90002	Well #3	1/21/2014	<0.07
WA5364850	Othello Water Department	90002	Well #3	7/14/2014	<0.07
WA5364850	Othello Water Department	90003	Well #4	2/18/2014	<0.07
WA5364850	Othello Water Department	90003	Well #4	7/14/2014	<0.07
WA5364850	Othello Water Department	90004	Well #5	1/21/2014	<0.07
WA5364850	Othello Water Department	90004	Well #5	7/14/2014	<0.07
WA5364850	Othello Water Department	90005	Well #6	2/18/2014	<0.07
WA5364850	Othello Water Department	90005	Well #6	7/14/2014	<0.07
WA5364850	Othello Water Department	90006	Well #7	1/21/2014	<0.07
WA5364850	Othello Water Department	90006	Well #7	7/14/2014	<0.07
WA5364850	Othello Water Department	90007	Well #8	1/21/2014	<0.07
WA5364850	Othello Water Department	90007	Well #8	7/14/2014	<0.07
WA5366200	Parkland Light & Water Company	1	Well #1	10/15/2013	<0.07
WA5366200	Parkland Light & Water Company	1	Well #1	4/3/2014	<0.07
WA5366200	Parkland Light & Water Company	5	Well #6	10/15/2013	<0.07
WA5366200	Parkland Light & Water Company	5	Well #6	4/7/2014	<0.07
WA5366200	Parkland Light & Water Company	7	Well #8	10/15/2013	<0.07
WA5366200	Parkland Light & Water Company	7	Well #8	4/3/2014	<0.07
WA5366200	Parkland Light & Water Company	11	Well #12	10/15/2013	<0.07
WA5366200	Parkland Light & Water Company	11	Well #12	4/7/2014	<0.07
WA5366200	Parkland Light & Water Company	14	Tank 2	10/14/2013	<0.07
WA5366200	Parkland Light & Water Company	14	Tank 2	4/1/2014	<0.07
WA5366200	Parkland Light & Water Company	15	Tank - 6	10/14/2013	<0.07
WA5366200	Parkland Light & Water Company	15	Tank - 6	4/3/2014	<0.07
WA5366200	Parkland Light & Water Company	16	CT - Main	4/3/2014	<0.07
WA5366200	Parkland Light & Water Company	16	CT - Main	10/2/2014	<0.07
WA5366400	Pasco Water Department	1	Columbia River	2/13/2013	<0.07
WA5366400	Pasco Water Department	1	Columbia River	5/15/2013	<0.07
WA5366400	Pasco Water Department	1	Columbia River	8/13/2013	<0.07
WA5366400	Pasco Water Department	1	Columbia River	11/12/2013	<0.07
WA5366400	Pasco Water Department	2	Columbia River S-09	2/13/2013	<0.07
WA5366400	Pasco Water Department	2	Columbia River S-09	5/15/2013	<0.07
WA5366400	Pasco Water Department	2	Columbia River S-09	8/13/2013	<0.07
WA5366400	Pasco Water Department	2	Columbia River S-09	11/12/2013	<0.07
WA5303182	Port of Seattle - Seatac Airport	3558	Seattle Intertie	2/4/2015	<0.07
WA5303182	Port of Seattle - Seatac Airport	3558	Seattle Intertie	5/7/2015	<0.07
WA5303182	Port of Seattle - Seatac Airport	3558	Seattle Intertie	8/6/2015	<0.07
WA5303182	Port of Seattle - Seatac Airport	3558	Seattle Intertie	11/10/2015	<0.07
WA5368900	Port Orchard Water Department	2271	Well #6	1/26/2015	<0.07
WA5368900	Port Orchard Water Department	2272	Wells #4 & #7	1/26/2015	<0.07
WA5368900	Port Orchard Water Department	2272	Wells #4 & #7	7/6/2015	<0.07
WA5368900	Port Orchard Water Department	2273	Well #8	1/26/2015	<0.07
WA5368900	Port Orchard Water Department	2273	Well #8	7/6/2015	<0.07

Table 4. UCMR 3 1,4-Dioxane Testing Data for Washington Group A Water Supply Wells

PWS ID	PWS Name	Facility ID	Facility Name	Collection Date	1,4-Dioxane (µg/L)
WA5368900	Port Orchard Water Department	2274	Well #9	1/26/2015	<0.07
WA5368900	Port Orchard Water Department	2274	Well #9	7/6/2015	<0.07
WA5368900	Port Orchard Water Department	22688	Bremerton Intertie	1/28/2015	<0.07
WA5368900	Port Orchard Water Department	22688	Bremerton Intertie	4/6/2015	<0.07
WA5368900	Port Orchard Water Department	22688	Bremerton Intertie	7/6/2015	<0.07
WA5368900	Port Orchard Water Department	22688	Bremerton Intertie	11/24/2015	<0.07
WA5393343	PUD #1 of Asotin County	3	Well #3	1/14/2014	<0.07
WA5393343	PUD #1 of Asotin County	3	Well #3	7/24/2014	<0.07
WA5393343	PUD #1 of Asotin County	6	Well #6	1/14/2014	<0.07
WA5393343	PUD #1 of Asotin County	6	Well #6	7/24/2014	<0.07
WA5393343	PUD #1 of Asotin County	7	Well #7	1/14/2014	<0.07
WA5393343	PUD #1 of Asotin County	7	Well #7	7/24/2014	<0.07
WA5303456	Ridge Water Association	90001	Ridge Well #1	5/27/2014	<0.07
WA5303456	Ridge Water Association	90001	Ridge Well #1	12/3/2014	<0.07
WA5303456	Ridge Water Association	90002	Ridge Well #2	5/27/2014	<0.07
WA5303456	Ridge Water Association	90002	Ridge Well #2	12/3/2014	<0.07
WA5374700	Royal City Water	90001	Well #1	4/9/2013	<0.07
WA5374700	Royal City Water	90001	Well #1	8/20/2013	<0.07
WA5374700	Royal City Water	90002	Well #3	4/10/2013	<0.07
WA5374700	Royal City Water	90002	Well #3	8/20/2013	<0.07
WA5374700	Royal City Water	90003	Well #4	4/10/2013	<0.07
WA5374700	Royal City Water	90003	Well #4	8/20/2013	<0.07
WA5340900	Sammamish Plateau Water & Sewer	1	Well #1	3/30/2015	<0.07
WA5340900	Sammamish Plateau Water & Sewer	1	Well #1	9/3/2015	<0.07
WA5340900	Sammamish Plateau Water & Sewer	7	Corrosion Control Facility	3/30/2015	<0.07
WA5340900	Sammamish Plateau Water & Sewer	7	Corrosion Control Facility	9/3/2015	<0.07
WA5340900	Sammamish Plateau Water & Sewer	8	Well #12	3/31/2015	<0.07
WA5340900	Sammamish Plateau Water & Sewer	8	Well #12	9/30/2015	<0.07
WA5340900	Sammamish Plateau Water & Sewer	9	Well #13	3/31/2015	<0.07
WA5340900	Sammamish Plateau Water & Sewer	9	Well #13	5/16/2016	<0.07
WA5340900	Sammamish Plateau Water & Sewer	11	Well #10	3/30/2015	<0.07
WA5340900	Sammamish Plateau Water & Sewer	11	Well #10	9/3/2015	<0.07
WA5340900	Sammamish Plateau Water & Sewer	12	Main Street Treatment Facility	3/31/2015	<0.07
WA5340900	Sammamish Plateau Water & Sewer	12	Main Street Treatment Facility	9/3/2015	<0.07
WA5340900	Sammamish Plateau Water & Sewer	18	Wells #2.1 & #2.2	3/30/2015	<0.07
WA5340900	Sammamish Plateau Water & Sewer	18	Wells #2.1 & #2.2	9/3/2015	<0.07
WA5376530	Scenic Shores Water Company	90001	S01	2/18/2014	<0.07
WA5376530	Scenic Shores Water Company	90001	S01	8/18/2014	<0.07
WA5376530	Scenic Shores Water Company	90002	S02	2/18/2014	<0.07
WA5376530	Scenic Shores Water Company	90002	S02	8/18/2014	<0.07
WA5376530	Scenic Shores Water Company	90003	S03	2/18/2014	<0.07
WA5376530	Scenic Shores Water Company	90003	S03	8/18/2014	<0.07
WA5377050	Seattle Public Utilities	1	Cedar Water Treatment Facility	1/13/2015	<0.07
WA5377050	Seattle Public Utilities	1	Cedar Water Treatment Facility	4/6/2015	<0.07
WA5377050	Seattle Public Utilities	1	Cedar Water Treatment Facility	7/22/2015	<0.07
WA5377050	Seattle Public Utilities	1	Cedar Water Treatment Facility	10/13/2015	<0.07
WA5377050	Seattle Public Utilities	2	Tolt Treatment Facility	1/13/2015	<0.07
WA5377050	Seattle Public Utilities	2	Tolt Treatment Facility	4/6/2015	<0.07
WA5377050	Seattle Public Utilities	2	Tolt Treatment Facility	7/22/2015	<0.07
WA5377050	Seattle Public Utilities	2	Tolt Treatment Facility	10/13/2015	<0.07
WA5339600	Shoreline Water District	17067	Seattle Intertie - Supply Station 4	4/15/2013	<0.07
WA5339600	Shoreline Water District	17067	Seattle Intertie - Supply Station 4	7/16/2013	<0.07
WA5339600	Shoreline Water District	17067	Seattle Intertie - Supply Station 4	1/16/2014	<0.07
WA5339600	Shoreline Water District	17067	Seattle Intertie - Supply Station 4	6/3/2015	<0.07
WA5379250	Silver Lake Water & Sewer District	23859	Everett Intertie	3/17/2015	<0.07
WA5379250	Silver Lake Water & Sewer District	23859	Everett Intertie	5/13/2015	<0.07
WA5379250	Silver Lake Water & Sewer District	23859	Everett Intertie	8/11/2015	<0.07
WA5379250	Silver Lake Water & Sewer District	23859	Everett Intertie	11/19/2015	<0.07
WA5379250	Silver Lake Water & Sewer District	23860	Clearview Intertie	3/17/2015	<0.07
WA5379250	Silver Lake Water & Sewer District	23860	Clearview Intertie	5/13/2015	<0.07
WA5379250	Silver Lake Water & Sewer District	23860	Clearview Intertie	8/11/2015	<0.07
WA5379250	Silver Lake Water & Sewer District	23860	Clearview Intertie	11/19/2015	<0.07
WA5379300	Silverdale Water District #16	1	Provost Rd. Well	12/9/2014	<0.07
WA5379300	Silverdale Water District #16	1	Provost Rd. Well	6/17/2015	<0.07
WA5379300	Silverdale Water District #16	4	Bucklin Ridge	12/10/2014	<0.07
WA5379300	Silverdale Water District #16	4	Bucklin Ridge	6/17/2015	<0.07
WA5379300	Silverdale Water District #16	7	Spirit Ridge #3	12/8/2014	<0.07
WA5379300	Silverdale Water District #16	7	Spirit Ridge #3	6/17/2015	<0.07
WA5379300	Silverdale Water District #16	8	Island Lake Well	12/9/2014	<0.07
WA5379300	Silverdale Water District #16	8	Island Lake Well	6/17/2015	<0.07
WA5379300	Silverdale Water District #16	10	Spirit Ridge Well #4	12/9/2014	<0.07
WA5379300	Silverdale Water District #16	10	Spirit Ridge Well #4	6/16/2015	<0.07
WA5379300	Silverdale Water District #16	11	Hess Well	12/8/2014	<0.07
WA5379300	Silverdale Water District #16	11	Hess Well	6/16/2015	<0.07
WA5379300	Silverdale Water District #16	12	Wixson Well	12/8/2014	<0.07
WA5379300	Silverdale Water District #16	12	Wixson Well	6/16/2015	<0.07
WA5379300	Silverdale Water District #16	13	Westwind Well	12/8/2014	<0.07
WA5379300	Silverdale Water District #16	13	Westwind Well	6/16/2015	<0.07
WA5379300	Silverdale Water District #16	15	Dawn Park Well	12/8/2014	<0.07
WA5379300	Silverdale Water District #16	15	Dawn Park Well	6/17/2015	<0.07
WA5379300	Silverdale Water District #16	16	El Dorado Well	12/8/2014	<0.07
WA5379300	Silverdale Water District #16	16	El Dorado Well	6/16/2015	<0.07
WA5379300	Silverdale Water District #16	19	Ridgetop #2	12/10/2014	<0.07
WA5379300	Silverdale Water District #16	19	Ridgetop #2	6/17/2015	<0.07
WA5379500	Skagit County PUD #1 - Judy Res.	1	Judy Reservoir	8/25/2014	<0.07
WA5379500	Skagit County PUD #1 - Judy Res.	1	Judy Reservoir	11/19/2014	<0.07
WA5379500	Skagit County PUD #1 - Judy Res.	1	Judy Reservoir	2/2/2015	<0.07
WA5379500	Skagit County PUD #1 - Judy Res.	1	Judy Reservoir	5/4/2015	<0.07
WA5380907	Snohomish Co. PUD #1 - Lake Stevens	24039	Everett Intertie	1/22/2014	<0.07
WA5380907	Snohomish Co. PUD #1 - Lake Stevens	24039	Everett Intertie	4/15/2014	<0.07
WA5380907	Snohomish Co. PUD #1 - Lake Stevens	24039	Everett Intertie	7/22/2014	<0.07

Table 4. UCMR 3 1,4-Dioxane Testing Data for Washington Group A Water Supply Wells

PWS ID	PWS Name	Facility ID	Facility Name	Collection Date	1,4-Dioxane (µg/L)
WA5380907	Snohomish Co. PUD #1 - Lake Stevens	24039	Everett Intertie	10/27/2014	<0.07
WA5380907	Snohomish Co. PUD #1 - Lake Stevens	24043	Lake Stevens Well #1	4/16/2014	<0.07
WA5380907	Snohomish Co. PUD #1 - Lake Stevens	24043	Lake Stevens Well #1	10/28/2014	<0.07
WA5381080	Snoqualmie Water	2458	Canyon Springs	3/26/2013	<0.07
WA5381080	Snoqualmie Water	2458	Canyon Springs	9/17/2013	<0.07
WA5381080	Snoqualmie Water	3788	North Wellfield Treatment Plant	3/26/2013	<0.07
WA5381080	Snoqualmie Water	3788	North Wellfield Treatment Plant	9/17/2013	<0.07
WA5381080	Snoqualmie Water	4134	South Wellfield Treatment Plant	3/26/2013	<0.07
WA5381080	Snoqualmie Water	4134	South Wellfield Treatment Plant	9/17/2013	<0.07
WA5340100	Soos Creek Water & Sewer District	17151	Seattle Intertie	3/12/2013	<0.07
WA5340100	Soos Creek Water & Sewer District	17151	Seattle Intertie	6/12/2013	<0.07
WA5340100	Soos Creek Water & Sewer District	17151	Seattle Intertie	9/5/2013	<0.07
WA5340100	Soos Creek Water & Sewer District	17151	Seattle Intertie	12/23/2013	<0.07
WA5381500	South Bend Water Department	90001	Treatment Plant	1/21/2015	<0.07
WA5381500	South Bend Water Department	90001	Treatment Plant	4/20/2015	<0.07
WA5381500	South Bend Water Department	90001	Treatment Plant	7/21/2015	<0.07
WA5381500	South Bend Water Department	90001	Treatment Plant	10/20/2015	<0.07
WA5382844	Southwood Water System	1	Well #1	8/11/2014	<0.07
WA5382844	Southwood Water System	1	Well #1	2/23/2015	<0.07
WA5382844	Southwood Water System	2	Bethel Ridge	8/11/2014	<0.07
WA5382844	Southwood Water System	2	Bethel Ridge	2/12/2015	<0.07
WA5382844	Southwood Water System	9	Lauradel A,B	3/16/2015	<0.07
WA5382844	Southwood Water System	11	Quiet Village 2	8/13/2014	<0.07
WA5382844	Southwood Water System	11	Quiet Village 2	3/16/2015	<0.07
WA5382844	Southwood Water System	12	Fir Meadows A,B	8/13/2014	<0.07
WA5382844	Southwood Water System	12	Fir Meadows A,B	2/16/2015	<0.07
WA5382844	Southwood Water System	14	Moreyglen A,B	8/12/2014	<0.07
WA5382844	Southwood Water System	14	Moreyglen A,B	2/16/2015	<0.07
WA5382844	Southwood Water System	15	Oak Hill Estates	8/11/2014	<0.07
WA5382844	Southwood Water System	15	Oak Hill Estates	2/16/2015	<0.07
WA5382844	Southwood Water System	16	Beverly Park A,B	10/21/2014	<0.07
WA5382844	Southwood Water System	16	Beverly Park A,B	2/25/2015	0.073
WA5382844	Southwood Water System	18	Country Park 2	8/12/2014	<0.07
WA5382844	Southwood Water System	18	Country Park 2	2/23/2015	<0.07
WA5382844	Southwood Water System	29687	Tacoma Intertie	8/12/2014	<0.07
WA5382844	Southwood Water System	29687	Tacoma Intertie	11/1/2014	<0.07
WA5382844	Southwood Water System	29687	Tacoma Intertie	2/23/2015	<0.07
WA5382850	Spanaway Water Company	1	Well #1	4/15/2014	<0.07
WA5382850	Spanaway Water Company	1	Well #1	10/6/2014	<0.07
WA5382850	Spanaway Water Company	3	Well #3	4/21/2014	<0.07
WA5382850	Spanaway Water Company	3	Well #3	10/7/2014	<0.07
WA5382850	Spanaway Water Company	4	Well #5	4/15/2014	<0.07
WA5382850	Spanaway Water Company	4	Well #5	10/7/2014	<0.07
WA5382850	Spanaway Water Company	5	Well #7	4/21/2014	<0.07
WA5382850	Spanaway Water Company	5	Well #7	10/6/2014	<0.07
WA5382850	Spanaway Water Company	7	Well #8	4/21/2014	<0.07
WA5382850	Spanaway Water Company	7	Well #8	10/6/2014	<0.07
WA5382850	Spanaway Water Company	8	Well #9	4/29/2014	<0.07
WA5382850	Spanaway Water Company	8	Well #9	10/7/2014	<0.07
WA5382850	Spanaway Water Company	12	Well #2 (Shaffer)	4/21/2014	<0.07
WA5382850	Spanaway Water Company	12	Well #2 (Shaffer)	10/6/2014	<0.07
WA5382850	Spanaway Water Company	13	Wellfield 2, 2A	4/15/2014	<0.07
WA5382850	Spanaway Water Company	13	Wellfield 2, 2A	10/6/2014	<0.07
WA5382850	Spanaway Water Company	14	Well #4	4/21/2014	<0.07
WA5382850	Spanaway Water Company	14	Well #4	10/6/2014	<0.07
WA5393351	Spokane County Water District #3, System #2	3963	26/Verc. 2-5	4/6/2015	<0.07
WA5393351	Spokane County Water District #3, System #2	3963	26/Verc. 2-5	10/20/2015	<0.07
WA5393351	Spokane County Water District #3, System #2	3964	Brns. Pk. 2-6	5/13/2015	<0.07
WA5393351	Spokane County Water District #3, System #2	3965	WF/ S14, S15	5/13/2015	<0.07
WA5393351	Spokane County Water District #3, System #2	3965	WF/ S14, S15	10/20/2015	<0.07
WA5385050	Summit Water & Supply Company	2	Wells #4 & #8	4/22/2013	<0.07
WA5385050	Summit Water & Supply Company	2	Wells #4 & #8	10/29/2013	<0.07
WA5385050	Summit Water & Supply Company	3	Wells #5 & #7	4/22/2013	<0.07
WA5385050	Summit Water & Supply Company	3	Wells #5 & #7	10/29/2013	<0.07
WA5385050	Summit Water & Supply Company	5	Well #10	4/22/2013	<0.07
WA5385050	Summit Water & Supply Company	5	Well #10	10/29/2013	<0.07
WA5387116	Tahuyeh Lake Community Club	90001	Pumphouse	1/16/2013	<0.07
WA5387116	Tahuyeh Lake Community Club	90001	Pumphouse	7/23/2013	<0.07
WA5390260	Union Hill Water Association, Inc.	90001	Well #1	3/3/2014	<0.07
WA5390260	Union Hill Water Association, Inc.	90001	Well #1	9/9/2014	<0.07
WA5390260	Union Hill Water Association, Inc.	90002	Well #1S	3/3/2014	<0.07
WA5390260	Union Hill Water Association, Inc.	90002	Well #1S	9/9/2014	<0.07
WA5391450	Vera Water & Power	1	Well 1	7/13/2015	<0.07
WA5391450	Vera Water & Power	3	Well 3	7/13/2015	<0.07
WA5391450	Vera Water & Power	4	Well 4	7/13/2015	<0.07
WA5391450	Vera Water & Power	6	Well 6	7/13/2015	<0.07
WA5391450	Vera Water & Power	12	WF/Well 2A(S10,11)	7/13/2015	<0.07
WA5391450	Vera Water & Power	13	Well 33	7/13/2015	<0.07
WA5392500	Walla Walla Water Division	1	Mill Creek Water Shed	6/17/2014	<0.07
WA5392500	Walla Walla Water Division	1	Mill Creek Water Shed	9/29/2014	<0.07
WA5392500	Walla Walla Water Division	1	Mill Creek Water Shed	12/9/2014	<0.07
WA5392500	Walla Walla Water Division	1	Mill Creek Water Shed	4/7/2015	<0.07
WA5393063	Washington Corrections Center	90001	500K Gallon Tank	6/2/2015	<0.07
WA5393063	Washington Corrections Center	90001	500K Gallon Tank	12/9/2015	<0.07
WA5393200	Washington State University	3038	Well #7	3/11/2015	<0.07
WA5393200	Washington State University	3038	Well #7	9/15/2015	<0.07
WA5393200	Washington State University	3041	Well #6	3/11/2015	<0.07
WA5393200	Washington State University	3041	Well #6	9/15/2015	<0.07
WA5393200	Washington State University	3042	Well #8	3/11/2015	<0.07
WA5393200	Washington State University	3042	Well #8	9/15/2015	<0.07
WA5393200	Washington State University	25700	Well #4	3/11/2015	<0.07

Table 4. UCMR 3 1,4-Dioxane Testing Data for Washington Group A Water Supply Wells

PWS ID	PWS Name	Facility ID	Facility Name	Collection Date	1,4-Dioxane (µg/L)
WA5393200	Washington State University	25700	Well #4	9/15/2015	<0.07
WA5302600	West Sound Utility District #1	6	Village Greens #8	9/23/2014	<0.07
WA5302600	West Sound Utility District #1	6	Village Greens #8	3/17/2015	<0.07
WA5302600	West Sound Utility District #1	14	Village Greens #2	9/23/2014	<0.07
WA5302600	West Sound Utility District #1	14	Village Greens #2	3/17/2015	<0.07
WA5302600	West Sound Utility District #1	16	Well #18	9/22/2014	<0.07
WA5302600	West Sound Utility District #1	16	Well #18	3/17/2015	<0.07
WA5302600	West Sound Utility District #1	17	Well #19	9/24/2014	<0.07
WA5302600	West Sound Utility District #1	17	Well #19	3/18/2015	<0.07
WA5302600	West Sound Utility District #1	18	Well #20	9/23/2014	<0.07
WA5302600	West Sound Utility District #1	18	Well #20	3/16/2015	<0.07
WA5302600	West Sound Utility District #1	20	Krista Firs	9/22/2014	<0.07
WA5302600	West Sound Utility District #1	20	Krista Firs	3/16/2015	<0.07
WA5302600	West Sound Utility District #1	102	Well #1 & Well #5 Blended	9/22/2014	<0.07
WA5302600	West Sound Utility District #1	102	Well #1 & Well #5 Blended	3/16/2015	<0.07
WA5302600	West Sound Utility District #1	515	Well #16 & Well #17 Blended	9/23/2014	<0.07
WA5302600	West Sound Utility District #1	515	Well #16 & Well #17 Blended	3/18/2015	<0.07
WA5302600	West Sound Utility District #1	919	Wells #11, #14 & #21	9/22/2014	<0.07
WA5302600	West Sound Utility District #1	919	Wells #11, #14 & #21	3/16/2015	<0.07
WA5396601	Whitworth Water District #2	1	Well 1	7/16/2014	<0.07
WA5396601	Whitworth Water District #2	1	Well 1	1/12/2015	<0.07
WA5396601	Whitworth Water District #2	2	Well 1A	7/15/2014	<0.07
WA5396601	Whitworth Water District #2	2	Well 1A	1/13/2015	<0.07
WA5396601	Whitworth Water District #2	5	Well 2A	7/15/2014	<0.07
WA5396601	Whitworth Water District #2	5	Well 2A	1/12/2015	<0.07
WA5396601	Whitworth Water District #2	7	Well 3	7/15/2014	<0.07
WA5396601	Whitworth Water District #2	7	Well 3	1/12/2015	<0.07
WA5396601	Whitworth Water District #2	15	Well 8	7/16/2014	<0.07
WA5396601	Whitworth Water District #2	15	Well 8	1/12/2015	<0.07
WA5396601	Whitworth Water District #2	17	Well 8A2	7/15/2014	<0.07
WA5396601	Whitworth Water District #2	17	Well 8A2	1/12/2015	<0.07
WA5396601	Whitworth Water District #2	29	Well 3C	7/16/2014	<0.07
WA5396601	Whitworth Water District #2	29	Well 3C	1/13/2015	<0.07
WA5341600	Woodinville Water District	17319	Seattle Intertie	12/3/2014	<0.07
WA5341600	Woodinville Water District	17319	Seattle Intertie	3/3/2015	<0.07
WA5341600	Woodinville Water District	17319	Seattle Intertie	6/1/2015	<0.07
WA5341600	Woodinville Water District	17319	Seattle Intertie	9/9/2015	<0.07

Note: Light gray font was used for all rows with a non-detect value

Source: U.S. Environmental Protection Agency (EPA). 2017b.– UCMR 3 (2013 – 2015) Occurrence Data, available online at https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule#3

UCMR3 source data presented in the table accessed on 10/18/2018

Table 5. Confirmed or Suspected Solvent Use/Release Sites Surrounding the Midway Landfill

Site Name	Address	Contamination Notes	CSCSL?	ECY SITE ID	FS ID
Northwest Powder Coatings	24453 Pacific Hwy S	Halogenated organics in soil, suspected in groundwater	Yes	1887	2332
Hauser Property	S 244th & 26th Pl S	Halogenated organics suspected in soil and groundwater	Yes	2778	2413
Japanese Auto Sales and Service	24141 Pacific Hwy S	Halogenated organics suspected in soil and groundwater	Yes	3577	8233705
Midway Cleaners	23647 Pacific Hwy S	Halogenated organics in soil, suspected in groundwater (appears present in gw)	Yes	517	91733269
Cleaners 1	26612 Pacific Hwy S	Halogenated organics in soil and groundwater	Yes	2326	29843481
Floyd R Hunt	3219 S 259th Place	Halogenated organics in soil	NFA	1945	2241
Davis Construction	24515 26th Place S	Halogenated organics suspected in soil and groundwater	NFA	1161	2237
Redondo 1 Hour	27203 Pacific Hwy S	Historical dry cleaner (? - 1994)	No	N/A	N/A
Midway Classic Cleaners	24860 Pacific Hwy S	Historical dry cleaner	No	N/A	N/A
Cho Kee	24453 Pacific Hwy S	Historical dry cleaner (2002 - 2008)	No	N/A	N/A
SeaTac Transmission Repair	24805 Pacific Hwy S	Historical auto repair (1977 - 2014)	No	N/A	N/A
Skips Auto Rebuild	24441 Pacific Hwy S	Historical auto repair (1974 - 1996)	No	N/A	N/A
Cape Cruiser Boat Works	25028 Pacific Hwy S	Historical boat repair (1987 - 2000)	No	N/A	N/A
RS Color & Design / Abra Auto Body	25015 Pacific Hwy S	Historical Auto repair (1988 - 2013)	No	N/A	N/A
Scooters Performance / Bow Wow	24811 Pacific Hwy S	Historical Auto repair (1992 - 2008)	No	N/A	N/A
American Tire & Equipment	24401 Pacific Hwy S	Historical auto repair (1971 - 1978)	No	N/A	N/A
WA National Guard	24410 Military Rd	National Guard Maintenance Shop	Yes	8721, 8722, 4652	32645977
Midway Muffler & Radiator	23898 Pacific Hwy S	Historical Auto repair (? - 1996)	No	N/A	N/A
Production Plastics Inc.	24602 Pacific Hwy S	Historical plastic manufacturer (1968 - ?)	No	N/A	N/A
Busy Bee Dry Cleaners	25246 Pacific Hwy S	Current Dry Cleaner	No	N/A	N/A

Notes: CSCSL = Confirmed and Suspected Contaminated Sites List

NFA = Ecology No Further Action Determination

N/A = Not Available, site not listed by Ecology

Sources: EDR (2017)

Washington State Department of Ecology (Ecology) – Cleanup Site Search, available online at https://fortress.wa.gov/ecy/gsp/SiteSearchPage.aspx

Kroll Map Company, Inc, 1966-1974, Atlas of Seattle, Scale 1:200

Table 6. Updated Water Well Inventory within Approximate 1-Mile Radius of Midway Landfill

Well ID (T/R/S QQ)	Map ID	North	East	Owner	Address	Well Depth	Surf. Elev.	Screen Int.	Log?	Likely Aquifer[1]	Aquifer Basis	Source(s)[2]	WL Ft BGS	Use[3]	Source of Info	Notes	Operable?	Accessible	Well Type	Loc Quality[4]	Old Inventory #	Completion Elevation	Water Level Elevation
22N-04E-16L1	16L1	146556.297	1275906.250	Erickson	2060 20th Ave S	93	175	N/A	Y	NGA	Completion elev.	Imap, WSB 28, ECY, KCA	N/A	NIU	KCA	Redeveloped, on public water supply	Unlikely	No	Group D	I		82	N/A
22N-04E-16N1	16N1	144755.188	1274702.375	Highline WD Well 5	1826 S 240th St	146	150	124 - 145	Y	NGA	Completion elev.	Imap, WSB 28, ECY, KCA	-5 Flowing	NIU	DOH	Inactive	Unlikely	No	Group A	P	59	4	155
22N-04E-16R1	16R1	145086.500	1278561.375	Roland	23656 30th Ave S	275	400	N/A	N	SA	Completion elev.	Imap, WSB 28, KCA	131.45	NIU	KCA	On public water supply	Unlikely	No	Group D	I		125	268.55
22N-04E-21B1	21B1	144108.305	1276309.977	Shuck	24029 24th Ave S	65	312	N/A	N	UGA	Completion elev.	Imap, WSB 28, KCA	24.75	NIU	KCA	On public water supply	Unlikely	No	Group D	I		247	287.25
22N-04E-21B2	21B2	144341.462	1276521.116	Johnson	24004 24th Ave S	210	318	N/A	N	NGA	Completion elev.	Imap, WSB 28, KCA	N/A	NIU	KCA	On public water supply	Unlikely	No	Group D	I		108	N/A
22N-04E-21C1	21C1	143722.859	1275646.375	Stoner	24135 21st Ave S	36	225	N/A	N	SA	Completion elev.	Imap, WSB 28, MWI, GSV, KCA	8.72	NIU	MWI, GSV	On public water supply, well visible from street	Covered, but operable	Yes	Group D	I	11A	189	216.28
22N-04E-21C2	21C2	143827.829	1275266.964	Sahee	24131 21st Ave S	N/A	230	N/A	N	SA	Neighboring well	ECY WR, MWI, KCA	N/A	NIU	MWI	Decommissioned	No	No	Group D	P	11B	N/A	N/A
22N-04E-21C3	21C3	143709.686	12755366.100	Bjelland	24132 21st Ave S	N/A	240	N/A	N	SA	Neighboring well	ECY WR, KCA	N/A	NIU	KCA	On public water supply	Unlikely	No	Group D	P		N/A	N/A
22N-04E-21F1	21F1	142085.194	1275637.269	Marcus Whitman Church	2130 S 248th St	N/A	265	N/A	N	SA	Neighboring well	MWI, KCA	N/A	NIU	MWI, KCA	On public water supply	Covered, but operable	Yes	Group D	P	38	N/A	N/A
22N-04E-21G1	21G1	143407.371	1276326.907	Maynard	24319 24th Ave S	65	296	N/A	N	SA	Completion elev.	Imap, WSB 28, KCA	9.51	NIU	KCA	On public water supply	Unlikely	No	Group D	I		231	286.49
22N-04E-21K1	21K1	141240.328	1277408.455	Grohs	24860 Pacific Hwy S	200	370	N/A	N	SA	Completion elev.	MWI, KCA	N/A	NIU	MWI, KCA	On public water supply	Unlikely	No	Group D	P	37	170	N/A
22N-04E-21M1	21M1	141596.628	1273912.305	Wilson	24836 16th Ave S	257	210	N/A	N	DA	Completion elev.	Imap, ECY WR, KCA	N/A	NIU	KCA	On public water supply	Unlikely	No	Group D	I		-47	N/A
22N-04E-21N1	21N1	139943.540	1273836.397	Muller (Sasta)	25401 16th Pl. S.	125	195	N/A	N	SGA	Completion elev.	MWI, Imap, WSB 28, KCA	3	NIU	MWI	On public water supply	Decom.	No	Group D	P	12	70	192
22N-04E-21N2	21N2	140213.645	1273815.561	Smith	25276 16th Ave S	N/A	170	N/A	N	SGA	Neighboring well	MWI, KCA	N/A	NIU	MWI, Imap	Site is a stormwater pond	Decom.	No	Group D	P	55	N/A	N/A
22N-04E-21P1	**21P1**	**140325.224**	**1275733.010**	**Strange**	**25235 22nd Ave S**	**N/A**	**300**	**N/A**	**N**	**UGA**	**Wellhead elev.**	**MWI, KCA**	**N/A**	**PIU**	**MWI**	**On public water supply, well for irrigation**	**Likely**	**Yes**	**Group D - Irrigation**	**P**	**54**	**N/A**	**N/A**
22N-04E-22A1	22A1	143998.344	1282671.250	Unknown	4331 S 239th Pl	220	220	N/A	N	SGA	Completion elev.	Imap, KCA	N/A	NIU	KCA	On public water supply	Unlikely	No	Group D	I		0	N/A
22N-04E-22A2	**22A2**	**143740.919**	**1283743.306**	**Stearns**	**24519 Frager Rd S**	**65**	**40**	**55 - 60**	**Y**	**AA**	**Completion elev.**	**ECY, Imap, KCA**	**13**	**PIU**	**GSV, KCA**	**New well, on private water supply, site vacant**	**New well**	**Yes**	**Group D**	**A**		-25	27
22N-04E-22B1	22B1	140520.969	1284258.875	Pierce	4821 S Kent Des Moines Rd	110	190	N/A	N	SGA	Completion elev.	Imap, WSB 28, KCA	95	NIU	KCA	On public water supply	Unlikely	No	Group D	I		80	95
22N-04E-22E1	22E1	141957.779	1279680.632	Kent Test well	3400 S 248th Street	402	385	N/A	N	DA	Completion elev.	Imap, MWI, KCA	N/A	NIU	MWI	Well is capped	Unlikely	No	Group A Test Well	P		-17	N/A
22N-04E-22H1	**22H1**	**142791.264**	**1283049.768**	**Eckland**	**24421 Frager Rd S**	**N/A**	**75**	**N/A**	**N**	**SGA**	**Wellhead elev.**	**ECY WR, KCA**	**N/A**	**IU**	**KCA**	**On private water supply**	**Yes**	**Yes**	**Group D**	**P**		**N/A**	**N/A**
22N-04E-22J1	22J1	141229.780	1284300.635	Kent Riverbend 1	2091 W Meeker St	451	45	425 - 455	Y	AA	Completion elev.	ECY, ECY WR, KCA	-6.6 Flowing	NIU	ECY WR	Inactive	Unlikely	No	Group A - Irrigation	G		-406	51.6
22N-04E-22J2	**22J2**	**141275.282**	**1284247.462**	**Kent Riverbend 1R**	**2091 W Meeker St**	**465**	**45**	**412 - 440**	**Y**	**AA**	**Completion elev.**	**ECY, ECY WR, KCA**	**Flowing**	**IU**	**ECY**	**New irrigation well for Golf Course**	**Yes**	**Yes**	**Group A - Irrigation**	**G**		-420	50
22N-04E-22Q1	**22Q1**	**139764.228**	**1282913.789**	**Riefschnider**	**4516 S 254th St**	**246**	**255**	**236 - 246**	**Y**	**SGA**	**Completion elev.**	**Imap, ECY, WSB 28, KCA**	**166**	**PIU**	**MWI, KCA**	**On public water supply, well for irrigation**	**Unknown**	**Yes**	**Group D - Irrigation**	**P**		9	89
22N-04E-22Q2	**22Q2**	**139546.245**	**1281948.238**	**Kraft**	**25410 42nd Place S (4436 Reith Rd)**	**180**	**285**	**N/A**	**N**	**SA**	**Completion elev.**	**Imap, WSB 28, MWI, KCA**	**50**	**PIU**	**MWI**	**On public water supply, well for irrigation**	**Unknown**	**Yes**	**Group D - Irrigation**	**G**	**13**	105	235
22N-04E-22Q3	**22Q3**	**139673.755**	**1282486.954**	**Book**	**4343 S 254th St**	**N/A**	**260**	**N/A**	**N**	**SA**	**Neighboring well**	**GSV, KCA**	**N/A**	**PIU**	**GSV, KCA**	**On public water supply, well visible from street**	**Likely**	**Yes**	**Group D - Irrigation**	**P**		**N/A**	**N/A**

Table 6. Updated Water Well Inventory within Approximate 1-Mile Radius of Midway Landfill

Well ID (T/R/S QQ)	Map ID	North	East	Owner	Address	Well Depth	Surf. Elev.	Screen Int.	Log?	Likely Aquifer [1]	Aquifer Basis	Source(s)[2]	WL Ft BGS	Use[3]	Source of Info	Notes	Operable?	Accessible	Well Type	Loc Quality[4]	Old Inventory #	Completion Elevation	Water Level Elevation
22N-04E-27A3	27A3	138736.955	1283525.703	Huddleston	25643 Lk Fenwick Rd	120	200	N/A	N	SGA	Completion elev.	ECY WR, MWI, KCA	N/A	NIU	MWI, KCA	On public water supply, operable	Yes	Yes	Group D - Irrigation	P	15	80	N/A
22N-04E-27D1	27D1	138534.963	1279957.603	Moore	3420 S 259th Pl	40	400	N/A	N	UGA	Completion elev.	Imap, WSB 28, KCA	10.86	NIU	KCA	On public water supply	Unlikely	No	Group D - Irrigation	I		360	389.14
22N-04E-27E1	27E1	137060.188	1279717.750	Brannan	3422 S 262nd St	32	400	N/A	N	UGA	Completion elev.	Imap, WSB 28, KCA	N/A	NIU	KCA	On public water supply	Unlikely	No	Group D	I		368	N/A
22N-04E-27G1	27G1	137779.365	1281711.437	Dehnert	26010 42nd Ave S	129	300	N/A	N	SA	Completion elev.	Imap, WSB 28, KCA	119	NIU	KCA	On public water supply	Unlikely	No	Group D	I		171	181
22N-04E-27M1	27M1	136046.313	1279698.625	Kent Cambridge	3301 S 264th St	435	441.36	N/A	Y	SGA	Completion elev.	Imap, MWI, KCA, DNR	305	NIU	DNR	Well is capped	Unlikely	Yes	Group A - Test Well	P	58	6.36	136.36
22N-04E-28A1	28A1	138110.613	1278863.171	Guitar	3133 S 260th St	N/A	340	N/A	N	UGA	Wellhead elev.	MWI, KCA	N/A	NIU	MWI, KCA	On public water supply, well is capped	Unlikely	No	Group D	P	56	N/A	N/A
22N-04E-28B1	28B1	137687.245	1275770.807	Sides	26205 Pacific Hwy S	N/A	255	N/A	N	SA	Wellhead elev.	ECY WR, KCA	N/A	NIU	KCA	On public water supply	Unlikely	No	Group D	P		N/A	N/A
22N-04E-28D1	28D1	138739.029	1273914.134	Molitar	1605 S 257th Pl	27	250	N/A	N	SA	Completion elev.	Imap, WSB 28, KCA	3.17	NIU	KCA	On public water supply	Unlikely	No	Group D	I		223	246.83
22N-04E-28E1	28E1	137836.801	1274853.941	Jacobs	1847 S 260th	265	300	N/A	N	SGA	Completion elev.	Imap, WSB 28, MWI, KCA	56.89	NIU	MWI, KCA	On public water supply, pump removed	Unlikely	Yes	Group D	P	20	35	243.11
22N-04E-28G2	28G1	137412.516	1277109.500	Beattie	2600 S 260th St	50	250	N/A	N	SA	Completion elev.	Imap, WSB 28, ECY WR, KCA	3.4	NIU	KCA	On public water supply	Unlikely	No	Group D	I		200	246.6
22N-04E-28G3	28G3	137615.453	1277180.250	Highline WD Well 8	2600 S 260th St	242	280	204 - 221	Y	SGA	Completion elev.	Imap, ECY, ECY WR, DOH, WSB 28 MWI, KCA	38.5	NIU	MWI	Abandoned	Unlikely	No	Group A	P	60	38	241.5
22N-04E-28G4	28G4	137619.375	1276974.625	Highline WD	2600 S 260th St	24	260	N/A	N	SA	Completion elev.	Imap, ECY, ECY WR, DOH, WSB 28, KCA	N/A	NIU	DOH	Abandoned	Unlikely	No	Group A	I		236	N/A
22N-04E-28G5	28G5	137782.486	1276935.101	Highline WD Well 8M	2600 S 260th St	400	280	175 - 223	Y	DA	Completion elev.	ECY, ECY WR, DOH, KCA, HWD	48.2	NIU	HWD	Decommissioned	No	No	Group A	G		-120	231.8
22N-04E-28G6	28G6	137783.238	1277241.259	Rost	2635 S 260th	27	290	N/A	N	UGA	Completion elev.	WSB 28, MWI, KCA	9	NIU	MWI	On public water supply, well is operable	Yes	Yes	Group D	P	22	263	281
22N-04E-28L1	28L1	136358.895	1275183.738	Brown 1	26421 Pacific Hwy S	96	250	N/A	N	SA	Completion elev.	Imap, WSB 28, KCA	35	NIU	KCA	On public water supply	Unlikely	No	Group D	I		154	215
22N-04E-28L2	28L2	136358.895	1275183.738	Brown 2	26421 Pacific Hwy S	250	250	N/A	N	DA	Completion elev.	Imap, WSB 28, KCA	49.16	NIU	KCA	On public water supply	Unlikely	No	Group D	I		0	200.84
22N-04E-28L3	28L3	136384.532	1275644.977	Howard	26430 Pacific Hwy S	11	250	N/A	N	SA	Completion elev.	Imap, WSB 28, KCA	3.79	NIU	KCA	On public water supply	Unlikely	No	Group D	I		239	246.21
22N-04E-29A1	29A1	138867.849	1273625.438	Larson	25737 16th Ave S	96	200	N/A	N	SGA	Completion elev.	Imap, WSB 28, KCA	Dry	NIU	KCA	On public water supply	Unlikely	No	Group D	I		104	N/A
22N-04E-29A2	**29A2**	**138803.763**	**1273990.019**	**Meeker**	**1620 S 257th Place**	**27**	**280**	**N/A**	**N**	**UGA**	**Completion elev.**	**MWI, KCA**	**3**	**IU**	**MWI, KCA**	**On public water supply, used for lawn care**	**Yes**	**Yes**	**Group D - Irrigation**	**P**	**19**	**253**	**277**

Table 6. Updated Water Well Inventory within Approximate 1-Mile Radius of Midway Landfill

Well ID (T/R/S QQ)	Map ID	North	East	Owner	Address	Well Depth	Surf. Elev.	Screen Int.	Log?	Likely Aquifer [1]	Aquifer Basis	Source(s)[2]	WL Ft BGS	Use[3]	Source of Info	Notes	Operable?	Accessible	Well Type	Loc Quality[4]	Old Inventory #	Completion Elevation	Water Level Elevation

Notes:

[1]Likely Aquifer:

AA = Alluvial Aquifer
UGA = Upper Gravel Aquifer
SA = Sand Aquifer
NGA = Northern Gravel Aquifer
SGA = Southern Gravel Aquifer
DA = Deep Aquifer

[2]Sources:

ECY = Ecology Well Logs (Ecology 2019b)
ECY WR = Ecology Water Resources Explorer (Ecology 2019a)
WSB 28 = Water Supply Bulletin 28 (Luzier 1969)
Imap = King County iMAP groundwater well database
DOH = WA Department of Health (DOH 2019)
MWI = Midway Landfill Remedial Investigation Groundwater Technical Report, Appendix C, Water Well Inventory (Parametrix 1988b)
DNR = WA Dept. of Natural Resources Subsurface Database
GSV = Google(R) Street View (2019)
KCA = King County Assessor (2019)
HWD = Highline Water District

[3]Use:

NIU = Not in use
IU = In use
PIU = Potentially in use

[4]Location Quality:

P = Parcel
G = Google (R) Maps
I = Imap
A = Address matching

= In use or potentially in use wells
= Operable wells
N/A = Information Not Available

Table 7. In Use, Potentially in Use, and Operable Wells within Approximate 1-Mile Radius of Midway Landfill

Map ID	Owner	Address	Well Type	Likely Aquifer[1]	Use	Operable?	Source of Info[2]	Notes	Additional Notes
21C1	Stoner	24135 21st Ave S	Group D	SA	Not in use	Covered, but operable	MWI, GSV	On public water supply, well visible from street	House built in 1943, well SE of house
21F1	Marcus Whitman Church	2130 S 248th St	Group D	SA	Not in use	Covered, but operable	MWI, KCA	On public water supply	Church built in 1962, owned by Presbyterian of Seattle
21P1	Strange	25235 22nd Ave S	Group D - Irrigation	UGA	Potentially in use	Likely	MWI	On public water supply, well for irrigation	Two houses on large lot, built in 1943, well reported for irrigation in MWI
22A2	Stearns	24519 Frager Rd S	Group D	AA	Potentially in use	New well	GSV, KCA	New well, on private water supply, site vacant	Well drilled in 2016, site is currently vacant
22H1	Eckland	24421 Frager Rd S	Group D	SGA	In use	Yes	KCA	On private water supply	House built in 1931, well south of the residence
22J2	Kent Riverbend 1R	2091 W Meeker St	Group A - Irrigation	AA	In use	Yes	ECY	New irrigation well for Golf Course	New well drilled in 2016, Robinson Noble for City of Kent
22Q1	Riefschnider	4516 S 254th St	Group D - Irrigation	SGA	Potentially in use	Unknown	MWI, KCA	On public water supply, well for irrigation	House built in 1947, well potentially in use for irrigation
22Q2	Kraft	25410 42nd Place S (4436 Reith Rd)	Group D - Irrigation	SA	Potentially in use	Unknown	MWI	On public water supply, well for irrigation	New house built in 1995, well would be east of residence
22Q3	Book	4343 S 254th St	Group D - Irrigation	SA	Potentially in use	Likely	GSV, KCA	On public water supply, well visible from street	House built in 1959, well at north of residence next to driveway
27A3	Huddleston	25643 Lk Fenwick Rd	Group D - Irrigation	SGA	Not in use	Yes	MWI, KCA	On public water supply, operable	House built in 1959, well reported for irrigation in MWI
28G6	Rost	2635 S 260th	Group D	UGA	Not in use	Yes	MWI	On public water supply, well is operable	House appears demolished
29A2	Meeker	1620 S 257th Place	Group D - Irrigation	UGA	In use	Yes	MWI, KCA	On public water supply, used for lawn care	House built in 1948, well likely east of residence

Notes:

[1]Likely Aquifer:
- AA = Alluvial Aquifer
- UGA = Upper Gravel Aquifer
- SA = Sand Aquifer
- SGA = Southern Gravel Aquifer

[2]Source of Info
- MWI = Midway Landfill Remedial Investigation Groundwater Technical Report, Appendix C, Water Well Inventory (Parametrix 1988b)
- KCA = King County Assessor (2019)
- GSV = Google(R) Street View (2019)
- ECY = Ecology Well Logs (Ecology 2019b) or Ecology Water Resources Explorer (Ecology 2019a)

Table 8. Resource Protection Well Inventory within Approximate 1-Mile Radius of Midway Landfill

Ecy Well ID	Well ID (T/R/S QQ)	Map ID	North	East	Well Owner	Depth	# Wells	Well Comp Date	TaxParcel NR	Accuracy[1]
109805	R22N-04E-14N2	R14N2	147733.4089	1286508.137	PACIFIC PROPELLER		5	12/14/1994		P
	22N-04E-15X	R15X	146582.691	1280745.732	Kent Highlands NPL Site	100+	100+	77 - 17		QS
1020951	R22N-04E-15N1	R15N1	145653.504	1280794.549	Kent West LLC	15	9	4/2/2015	1522049053	P
1019248	R22N-04E-15N2	R15N2	145653.504	1280794.549	Mathews	21.5	6	3/30/2015		P
1064683	R22N-04E-15N3	R15N3	145238.816	1279513.977	WSDOT	80	1	8/31/2015		QS
1563158	R22N-04E-16R1	R16R1	144874.246	1278461.253	City Of Kent	101	2	1/12/2015		QS
589761	R22N-04E-16R2	R16R2	145314.2123	1278050.591	MIDWAY CLEANERS	24	18	4/23/2009		P
1637150	R22N-04E-16R3	R16R3	145263.696	1278260.033	Louis Gadini	14	2	5/24/2017	2500600520	P
1532499	R22N-04E-16R4	R16R4	145306.286	1277938.754	Michael Park	11	1	12/4/2015	2500600670	P
546961	R22N-04E-16R5	R16R5	144431.5158	1277662.628	SHANNON AND WILSON	22	3	6/23/2008		P
300372	R22N-04E-16R6	R16R6	144507.4694	1277888.447	UNOCAL (#6211) - DES MOINES		13			P
1570423	R22N-04E-16Q1	R16Q1	145102.555	1277142.034	Highline College	15	16	6/17/2016		P
339612	R22N-04E-16Q2	R16Q2	145968.8235	1278111.19	ENSR	40	3	8/19/2002		P
673650	R22N-04E-21A1	R21A1	144.252.63653	1277846.716	ARCO | ARCADIS	95	14	8/16/2010		P
200934	R22N-04E-21A2	R21A2	143046.6758	1277580.932	B & B AIRCRAFT		5			P
725444	R22N-04E-21A3	R21A3	143886.782	1277763.09	Centrum Financial Services | Allwest Testing & Eng.	8	12	4/11/2011	212204-9084	P
548848	R22N-04E-21A4	R21A4	143723.408	1278008.754	CITY OF KENT | EARTH CONSULTANTS INC	26.5	6	8/29/2008	N/A ROADWAY ROW	QS
390879	R22N-04E-21A5	R21A5	144050.8833	1278422.401	KENT DRIVE IN	70	1	8/18/2004		P
841433	R22N-04E-21A6	R21A6	143598.793	1277559.384	Sea Mar Community Health Center | Now Environmental Services	12	7	1/11/2013	3603000024	P
1514725	R22N-04E-21A7	R21A7	143251.7732	1277899.191	WIDING CONSTRUCTION	12	7	2/12/2016		P
1607250	R22N-04E-21B1	R21B1	144209.2816	1278960.186	Argus	65	2	6/28/2016		P
420716	R22N-04E-21B2	R21B2	144299.78	1277852.265	BP ARCO 4484	20	2	8/25/2005		P
1561222	R22N-04E-21B3	R21B3	143673.757	1277397.027	City Pacific Land Company	70	1	2/10/2016		QS
505551	R22N-04E-21B4	R21B4	142537.3377	1277501.972	GINSBERG | ENVIRONMENTAL RESOLUTIONS INC	20	3	9/14/2007		P
531419	R22N-04E-21G1	R21G1	142795.981	1277568.881	CHOC SOO CHUL	11	5	3/17/2008	3602400166	P
420712	R22N-04E-21G2	R21G2	143062.0145	1277249.499	VACANT LOT	40	1	8/12/2005		P
477654	R22N-04E-21D1	R21D1	144631.7844	1273878.661	PSE	210	1	11/15/2006		P
534640	R22N-04E-21F2	R21F2	142499.5051	1275553.571	HIGHLAND SCHOOL DISTRICT | ASSOCIATED EARTH SCIENCES	25	9	4/25/2008		P
411208	R22N-04E-21E1	R21E1	142407.8324	1275634.031	PARKSIDE ELEMENTARY		1	5/27/2005		P
1042660	R22N-04E-21J1	R21J1	140393.754	1277156.374	Cadence Capital	30	12	8/28/2015		P
349569	R22N-04E-21K1	R21K1	140447.446	1277214.181	EARTH CONSULTANTS	20	2	11/4/2002		P
855310	R22N-04E-21M2	R21M2	141091.328	1277040.801	Scott Hensrude	19	4	4/10/2013	2122049153	P
202473	R22N-04E-21Q1	R21Q1	139952.0952	1277221.951	FRED MEYER		7	3/8/1989		P
483700	R22N-04E-21Q2	R21Q2	140214.253	1276730.227	U-HAUL	50	12	5/17/2007		P
787513	R22N-04E-21Q3	R21Q3	139526.896	1276812.713	Wendys Restaurant | Leighton Consulting	10	19	3/28/2012	2122049201	P
603817	R22N-04E-21M1	R21M1	141335.429	1273787.588	City of Des Moines | Terracon	110	6	6/16/2009		P
1604322	R22N-04E-22A1	R22A1	143875.4957	1284105.504	Green River Soil Borings - FORMER NURSERY	20	15	12/20/2016		P
111114	R22N-04E-22F1	R21F1	141940.9515	1280544.221	AUTO BODY SHOP		1	6/5/1997		P
589603	R22N-04E-22F2	R22F2	142101.885	1281535.906	Federal Way School Dist | Associated Earth Sciences	50	8	5/5/2009		P
573403	R22N-04E-22F3	R22F3	141973.293	1280551.648	Jaswal Harpreet DR | Aerotech Consulting	19	6	2/17/2009	2222049010	P
331915	R22N-04E-22E1	R22E1	141914.9112	1280547.052	ENVIRONMENTAL RESOLUTIONS INC	25	4	4/3/2002		P
409100	R22N-04E-22E2	R22E2	142513.6671	1280547.057	FM GAS STATION	60	3	5/12/2005		P
1117527	R22N-04E-22R1	R22R1	140057.3393	1283631.537	Benjamin Ryan	35	1	11/5/2015		P
203008	R22N-04E-27C1	R27C1	138566.03	1281369.911	KENT FEILD		2			P
1561080	R22N-04E-28A1	R28A1	138240.313	1278164.009	City Of Kent	100	4	8/13/2015		QS
1561145	R22N-04E-28A2	R28A2	137941.3359	1277558.408	Gabrielle Dayrit - Pembrooke	100	2	12/3/2015		P
631697	R22N-04E-28A3	R28A3	138292.637	1278405.667	ORILLIA ROAD CROSSING	51.5	1			QS
106191	R22N-04E-28A4	R28A4	137953.249	1275705.683	PIERCE CO. LINE TO TUKWILA		1	12/20/1994		A
631694	R22N-04E-28A5	R28A5	137472.344	1278290.74	S 260TH CROSSING	50.5	2			P
1066466	R22N-04E-28A6	R28A6	149210.248	1284017.709	WSDOT	41	3	8/19/2015		QS
1538036	R22N-04E-28C1	R28C1	137825.575	1276111.048	Kim	12.5	5	2/5/2016	2822049156	P
310596	R22N-04E-28C2	R28C2	137520.0659	1276248.939	CLEANERS 1 CO	16	17	7/18/2000		P
571397	R22N-04E-28C3	R28C3	138303	1275946.672	Midway Chevron | Envitech	12	4	1/19/2009	2822049246	P
107237	R22N-04E-28C4	R28C4	138236.34	1275998.439	SHELL		7			P
620364	R22N-04E-28C5	R28C5	137903.251	1275864.673	Southland Corp | Stantec	12	8	11/10/2009	2822049219	P
525170	R22N-04E-28C6	R28C6	137343.4707	1276326.804	TIM JORVE	16	52	12/18/1998		P
1007492	R22N-04E-28D1	R28D1	137857.8054	1275881.956	Stantec Facility 18758 - 7-11 STORE	18	8	11/19/2014		P
321687	R22N-04E-28F1	R28F1	137822.3819	1276076.091	OHS MARKET	15	1	7/28/1997		P
1066464	R22N-04E-28J1	R28J1	147464.739	1283889.935	WSDOT	27	16	8/20/2015		QS
753224	R22N-04E-28K1	R28K1	136658.2657	1275390.191	Health Point | The Riley Group	10	7	9/19/2011		P
					TOTAL WELLS		396			

Notes: [1]Well Location Accuracy:

P = Parcel

A = Approximately

QS = Quarter/Quarter/Section

Table 9. Additional Water Wells Used for Flow Analysis within Approximate 2-Mile Radius of Midway Landfill

Well ID (T/R/S QQ)	Map ID	North	East	Owner	Address	Well Depth	Surf. Elev.	Screen Int.	Log?	Likely Aquifer [1]	Aquifer Basis	Source(s)[2]	WL Ft BGS	Well Type	Loc Quality[3]	Old Inventory #	Completion Elevation	Water Level Elevation
22-04E-17K1	17K1	147738.568	1272794.525	Fisher	1213 S 230th St	630	100	N/A	N	DA	Completion elev.	Imap, WSB 28, KCA	N/A	Group D	P		-530	N/A
22N-04E-17L1	17L1	147441.096	1270881.742	Kluth	23105 Marine View Drive S.	360	45	45	Y	DA	Completion elev.	WSB 28, KCA	7	Group D	G		-315	38
22N-04E-17Q1	17Q1	144774.657	1271911.065	Zenith Masonic Home	23660 Marine Vw Drive S.	1,001	162	896 - 919	Y	DA	Completion elev.	WSB 28, DOH, ECY WR, KCA	65	Group A	G		-839	97
22N-04E-20Q1	20Q1	140126.806	1271696.299	Saltwater State Park	25205 8th Place S	165	75	105 - 145	Y	DA	Completion elev.	WSB 28, KCA	N/A	Group D	G		-90	N/A
22N-04E-23D1	23D1	144154.031	1284879.200	Unknown (Orphan)	24202 Frager Rd S	NA	33	N/A	N	AA	Wellhead elev.	Imap, ECY, KCA	N/A	Group D	I		N/A	N/A
22N-04E-23N1	23N1	140837.057	1284727.931	Mazel	24931 Frager Rd S	N/A	40	N/A	N	AA	Wellhead elev.	ECY, ECY WR, KCA	N/A	Group D	P		N/A	N/A
22N-04E-23Q1	23Q1	139160.582	1287173.103	Standard	25069 Frager Rd S	100	25	N/A	N	AA	Completion elev.	Imap, WSB 28, KCA	6	Group D - Irrigation	I		-75	19
22N-04E-26H1	26H1	136367.951	1290077.786	LoPriore	26404 68th Ave S	90	35	N/A	N	AA	Completion elev.	ECY WR, WSB 28, KCA	5.73	Group D - irrigation	P		-55	29.27
22N-04E-27A1	27A1	138496.875	1284221.125	Flowers	25650 Lk Fenwick Rd	42	200	N/A	N	SA	Completion elev.	Imap, WSB 28, KCA	16.78	Group D	I		158	183.22
22N-04E-27A2	27A2	138698.750	1284155.500	Sandelius	25616 Lk Fenwick Rd	153	200	N/A	N	SGA	Completion elev.	Imap, WSB 28, MWI, KCA	121.15	Group D	I	16	47	78.85
22N-04E-27H1	27H1	137054.650	1283306.533	Salter	26416 Lk Fenwick Rd S	39	140	39	Y	SGA	Completion elev.	ECY, MWI, KCA	17	Group D	P	2	101	123
22N-04E-27H2	27H2	135798.936	1284107.770	Hayett	26612 Lk Fenwick Rd S	84	165	75 - 83	Y	SGA	Completion elev.	ECY, ECY WR, DOH, MWI, KCA	43	Group B	P	5	81	122
22N-04E-27J1	27J1	136217.780	1283659.340	Lake Fenwick supply	26425 Lk Fenwick Rd S (Sharick property)	165	300	N/A	N	SGA	Completion elev.	DOH, MWI, KCA	N/A	Group B	P	6	135	N/A
22N-04E-27J2	27J2	136252.886	1284015.030	Heuston	26420 Lk Fenwick Rd	N/A	130	N/A	N	SGA	Neighboring well	ECY, ECY WR, DOH, KCA, PHSKC	N/A	Group B	P		N/A	N/A
22N-04E-27J3	27J3	136483.249	1283798.022	Unknown (Shannon)	26430 Lk Fenwick Rd	61	160	61	Y	SGA	Completion elev.	ECY, ECY WR, KCA	48	Group D	P		99	112
22N-04E-27J4	27J4	135510.307	1284214.794	Flewellings (Banke)	26724 51st Pl S	30	130	30	N	SGA	Completion elev.	ECY, MWI, KCA	6	Group D	P	3	100	124
22N-04E-27J5	27J5	135844.058	1283672.534	Sharick	26505 Lk Fenwick Rd S	137	200	137	Y	SGA	Completion elev.	ECY, MWI, KCA	79	Group D	P	1	63	121
22N-04E-27J6	27J6	136077.367	1284038.060	Sherman	26510 Lk Fenwick Rd S	N/A	160	N/A	N	SGA	Neighboring well	ECY WR, KCA	N/A	Group D	P		N/A	N/A
22N-04E-27N1	27N1	134022.897	1280048.794	Star Lake Water Coop Well 2	3720 S 272nd St	345	375	335 - 345	Y	SGA	Completion elev.	ECY, ECY WR, WSB 28, KCA, HWD	235	Group A	G		30	140
22N-04E-27N2	27N2	134022.897	1280048.794	Star Lake Water Coop Well 3	3720 S 272nd St	366	375	343 - 366	Y	SGA	Completion elev.	ECY, ECY WR, WSB 28, KCA, HWD	229	Group A	G		9	146
22N-04E-27N3	27N3	134022.897	1280048.794	Star Lake Water Coop Well 1	3720 S 272nd St	142	375	122 - 135	Y	UGA	Completion elev.	ECY, ECY WR, WSB 28, KCA, HWD	60	Group A	G		240	315
22N-04E-27R1	27R1	135183.780	1284267.923	Fisher	26805 52nd Ave S	45	145	45	Y	SGA	Completion elev.	ECY, WSB 28, KCA	18	Group D	A		100	127
22N-04E-28L5	28L5	135862.959	1275063.775	Graham	26631 Pacific Hwy S	30	290	N/A	N	UGA	Completion elev.	ECY WR, MWI, KCA	N/A	Group D	P	26	260	N/A
22N-04E-28L6	28L6	135700.338	1275352.544	Hedin	26632 Pacific Hwy S	11	280	N/A	N	UGA	Completion elev.	MWI, KCA	4	Group D	P	28	269	276

Table 9. Additional Water Wells Used for Flow Analysis within Approximate 2-Mile Radius of Midway Landfill

Well ID (T/R/S QQ)	Map ID	North	East	Owner	Address	Well Depth	Surf. Elev.	Screen Int.	Log?	Likely Aquifer [1]	Aquifer Basis	Source(s) [2]	WL Ft BGS	Well Type	Loc Quality [3]	Old Inventory #	Completion Elevation	Water Level Elevation
22N-04E-28L7	28L7	136022.581	1275208.451	Wilcox	26601 Pacific Hwy S	96	290	N/A	N	SA	Completion elev.	MWI, KCA	35	Group D	P	25	194	255
22N-04E-28N1	28N1	135187.984	1274358.759	Bolinger	1805 S 268th St	N/A	310	N/A	N	SA	Neighboring well	ECY WR, KCA	N/A	Group D			N/A	N/A
22N-04E-28P1	28P1	134902.135	1275311.500	Highline WD Well 14	2600 S 260th St	342	272	145 - 165	Y	SGA	Completion elev.	Imap, ECY, ECY WR, DOH, WSB 28, MWI, KCA	15	Group A	G	61	107	257
22N-04E-29J1	29J1	135618.628	1273434.398	McGee	26645 16th Ave S	45	280	N/A	N	SA	Completion elev.	MWI, KCA	32	Group D	P	31A	235	248
22N-04E-29J2	29J2	136193.063	1272741.661	Waldron	1300 S 268th St	N/A	240	N/A	N	SA	Neighboring well	MWI, KCA	N/A	Group D	P	31B	N/A	N/A
22N-04E-29J3	29J3	135529.442	1273183.870	Sadler	1404 S 268th St	N/A	265	N/A	N	SA	Neighboring well	MWI, KCA, GSV	N/A	Group D	P	31C	N/A	N/A
22N-04E-29J4	**29J4**	**135827.978**	**1272822.935**	**Chester**	**1308 S 268th St**	**42**	**260**	**N/A**	**N**	**SA**	**Completion elev.**	**MWI, KCA**	**N/A**	**Group D - Irrigation**	**P**	**31D**	**218**	**N/A**
22N-04E-33C1	33C1	133891.071	1275110.354	LaVanaway	2211 S Star Lake Rd	182	273	182	Y	SGA	Completion elev.	WSB 28, KCA	14.52	Group D	Q		91	258.48
22N-04E-35A1	35A1	132418.036	1288956.543	Smith Brothers Well 1	27501 68th Ave S	210	35	N/A	N	AA	Completion elev.	Imap, WSB 28, ECY, ECY WR, DOH, KCA	N/A	Group A	P		-175	N/A
22N-04E-35A2	35A2	132632.703	1288963.158	Smith Brothers Well 2	27501 68th Ave S	217	35	N/A	N	AA	Completion elev.	Imap, WSB 28, ECY, ECY WR, DOH, KCA	N/A	Group A	P		-182	N/A
22N-04E-35D1	**35D1**	**132811.443**	**1285865.600**	**Smith (Stewart)**	**5516 S 277th St**	**N/A**	**40**	**N/A**	**N**	**AA**	**Wellhead elev.**	**Imap, ECY, ECY WR, KCA**	**N/A**	**Group D**	**P**		**N/A**	**N/A**
22N-04E-35E1	**35E 1**	**131959.694**	**1285566.165**	**Swanson**	**5460 Star Lake Rd**	**86**	**230**	**N/A**	**N**	**SA**	**Completion elev.**	**ECY, KCA**	**N/A**	**Group D**	**P**		**144**	**N/A**
22N-04E-35F1	35F1	131043.908	1286284.902	KCWD 64 Well 9	28030 55th Ave S	458	60	N/A	N	AA	Completion elev.	Imap, WSB 28, KCA, HWD	-10 Flowing	Group A	P		-398	N/A

Notes:

[1]Likely Aquifer:
- AA = Alluvial Aquifer
- UGA = Upper Gravel Aquifer
- SA = Sand Aquifer
- SGA = Southern Gravel Aquifer
- DA = Deep Aquifer

[2]Sources:
- ECY = Ecology Well Logs (Ecology 2019b)
- ECY WR = Ecology Water Resources Explorer (Ecology 2019a)
- WSB 28 = Water Supply Bulletin 28 (Luzier 1969)
- Imap = King County iMAP groundwater well database
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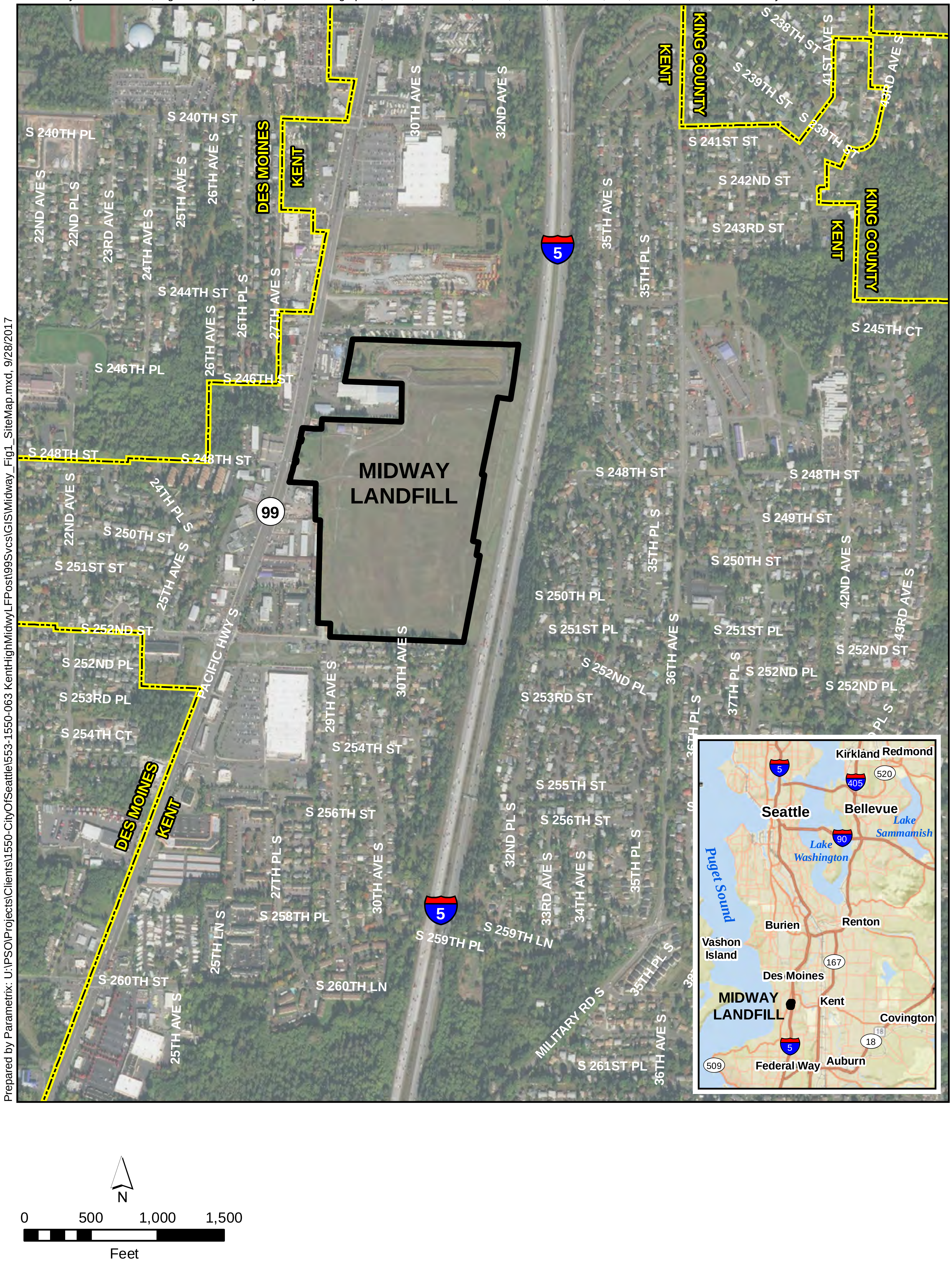
- KCA = King County Assessor (2019)
- HWD = Highline Water District
- PHSKC = Public Health – Seattle & King County

[3]Location Quality:
- P = Parcel
- G = Google(R) maps
- Q = Quarter/Quarter
- I = Imap
- A = Address matching

- (blue-grey shading) = In use or potentially in use wells
- (yellow shading) = Operable wells
- N/A = Information Not Available

Service Layer Credits: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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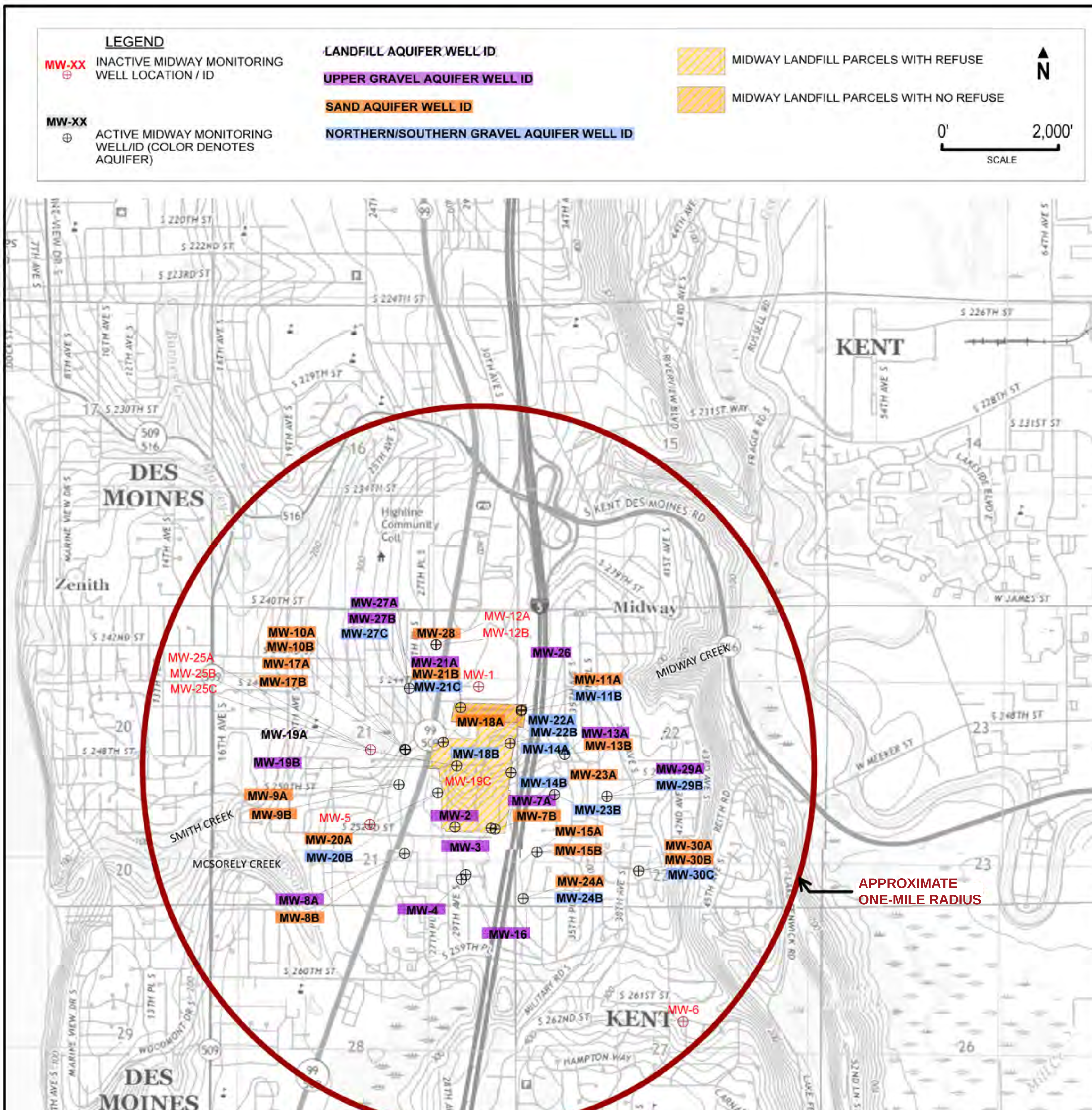
City of Seattle, Seattle Public Utilities Owned Parcel Boundary That Includes Kent Highlands Landfill

Figure 1
Site Location Map
Midway Landfill
Kent, Washington



Landfill Aquifer Monitoring Wells

Well ID	Meas Pt El. (ft)	Screen El. (ft)
MW-19A	370.2	295.9 - 285.9

Upper Gravel Aquifer Monitoring Wells

Well ID	Meas Pt El. (ft)	Screen El. (ft)
MW-2	384.39	256.0 - 226.0
MW-3	416.11	260.0 - 228.1
MW-4	362.82	252.8 - 219.1
MW-7A	412.73	225.0 - 215.5
MW-8A	351.35	183.3 - 172.8
MW-13A	382.68	274.2 - 271.3
MW-16	362.8	201.7 - 196.3
MW-19B	370.2	200.2 - 195.2
MW-21A	359.95	273.1 - 263.1
MW-26	370.58	257.4 - 252.4
MW-27A	330.05	253.5 - 243.1
MW-27B	330.05	182.8 - 177.4
MW-29A	428.5	220.8 - 210.8

Sand Aquifer Monitoring Wells

Well ID	Meas Pt El. (ft)	Screen El. (ft)
MW-7B	412.73	190.6 - 187.6
MW-8B	351.35	150.9 - 145.5
MW-9A	353.79	226.9 - 216.5
MW-9B	353.79	189.8 - 184.4
MW-10A	338.77	146.7 - 137.0
MW-10B	338.77	116.3 - 107.3
MW-11A	370.41	169.4 - 159.4
MW-13B	382.68	186.9 - 176.4
MW-15B	438.54	178.7 - 173.2
MW-17A	337.08	249.6 - 239.2
MW-17B	337.08	211.4 - 204.4
MW-18A	343.91	223.6 - 213.1
MW-20A	375.65	183.7 - 178.7
MW-21B	359.95	188.1 - 178.1
MW-23A	424.42	195.0 - 185.0
MW-24A	418.58	213.6 - 203.6
MW-28	374.15	267.2 - 262.2
MW-30A	407.91	224.6 - 214.6
MW-30B	407.91	133.4 - 123.4

Northern and Southern Gravel Aquifer Wells

Well ID	Meas Pt El. (ft)	Screen El. (ft)
MW-11B	370.41	103.9 - 98.5
MW-14A	381.85	103.4 - 98.0
MW-14B	381.85	79.0- 73.5
MW-18B	343.91	61.3 - 50.9
MW-20B	375.65	78.7 - 73.7
MW-21C	359.95	68.0 - 63.0
MW-22A	378.28	108.0 - 103.8
MW-22B	378.28	76.6 - 66.6
MW-23B	424.42	104.7 - 94.7
MW-24B	418.58	68.6 - 63.6
MW-27C	330.05	70.4 - 65.4
MW-29B	428.5	58.9 - 51.9
MW-30C	407.91	61.8 - 56.8

MAP SOURCE: USGS DES MOINES AND POVERTY BAY 7.5-MIN QUADRANGLES

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1,4-DIOXANE EVALUATION

PM: K EASTHOUSE
PROJ.#: 10887
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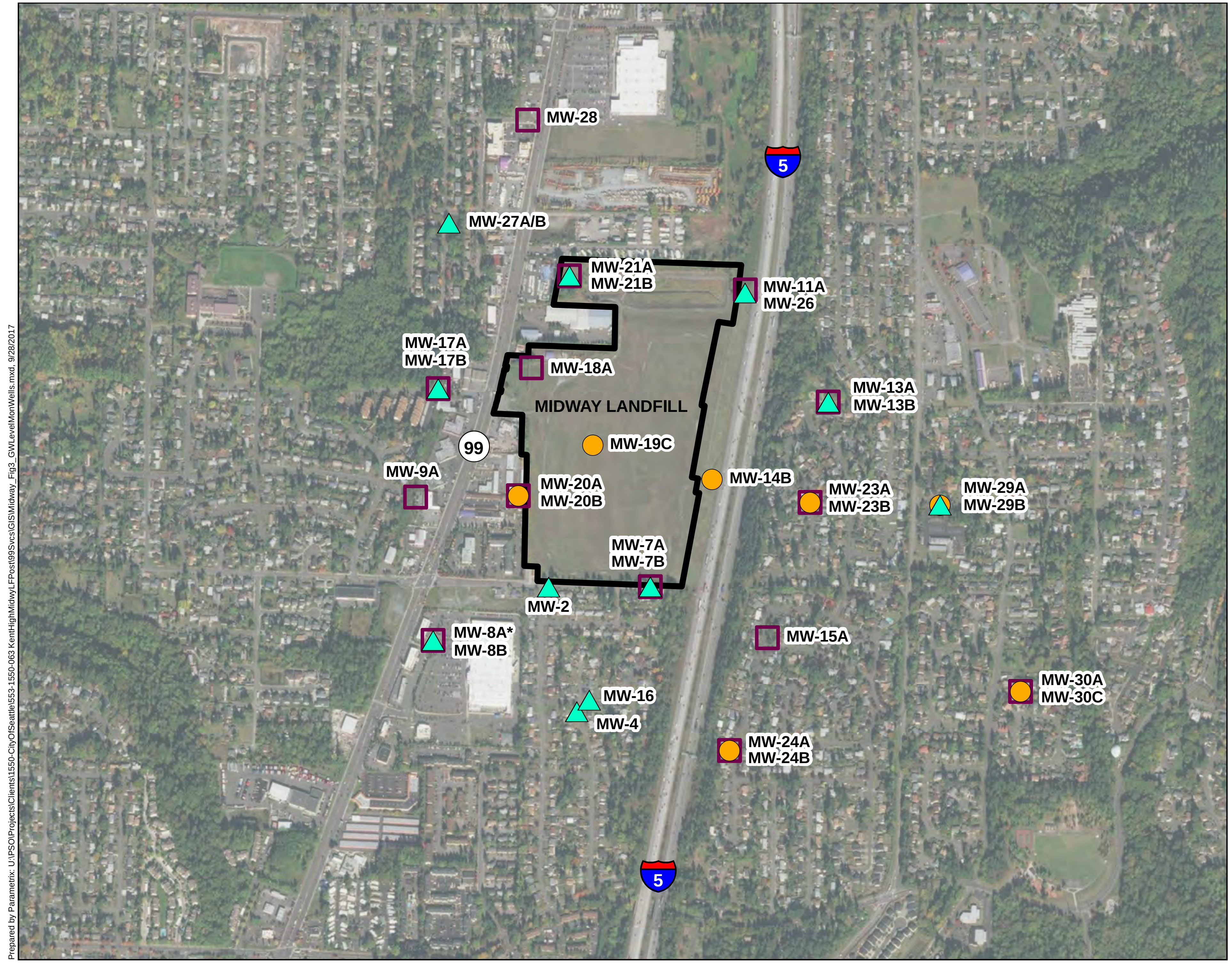
Figure 2
Monitoring Well Location Map
Midway Landfill
Kent, Washington



Upper Gravel Aquifer Monitoring Well

Sand Aquifer Monitoring Well

Southern Gravel Aquifer Monitoring Well

* MW-8A is screened at the contact between the UGA and SA. Fluid levels in this well are considered representative of the UGA and the SA.

N

0 350 700 1,050

Feet

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City of Seattle, Seattle Public Utilities Owned Parcel Boundary That Includes Kent Highlands Landfill

Figure 3
Upper Gravel Aquifer, Sand Aquifer and Southern Gravel Aquifer Groundwater Level Monitoring Network
Midway Landfill
Kent, Washington

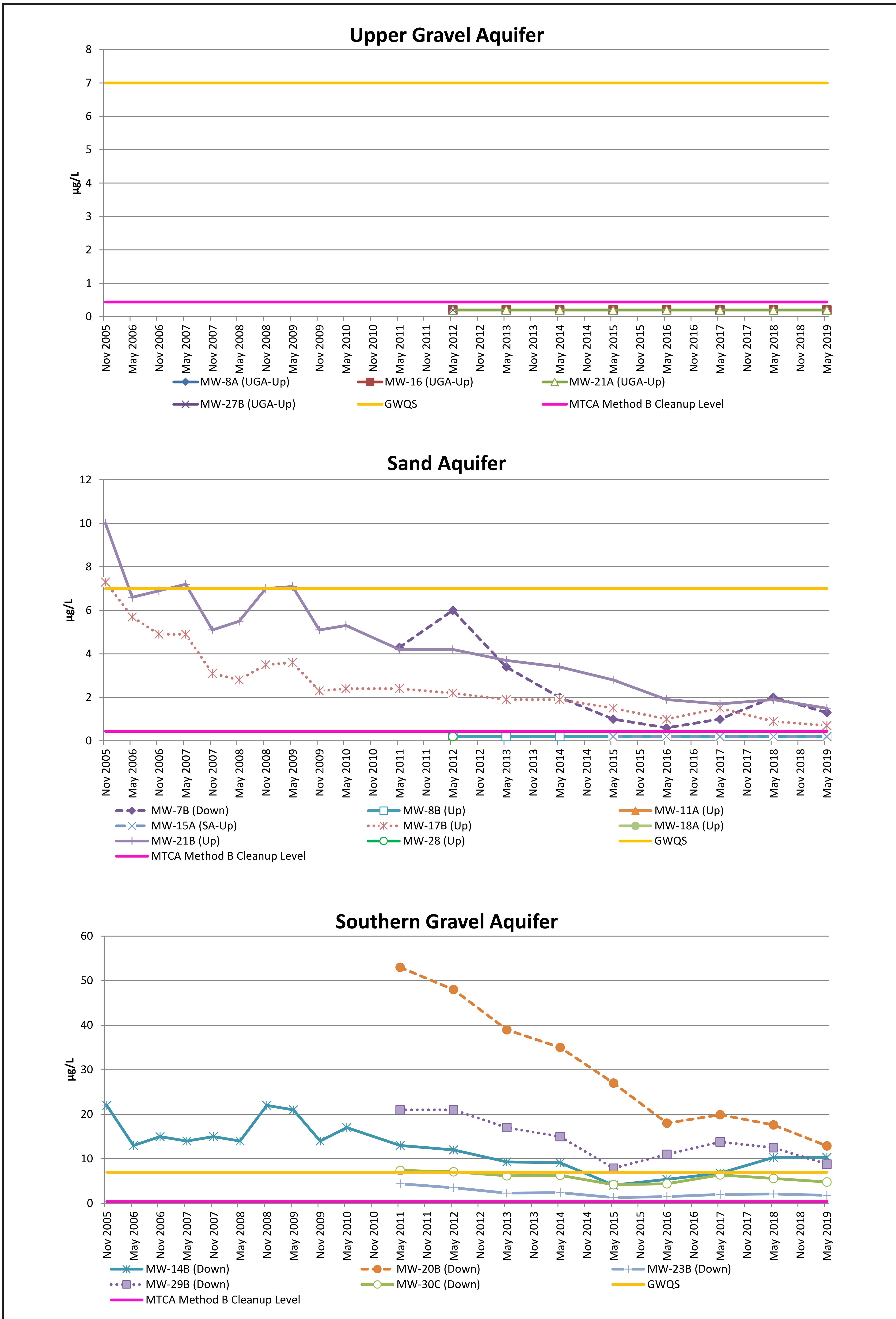

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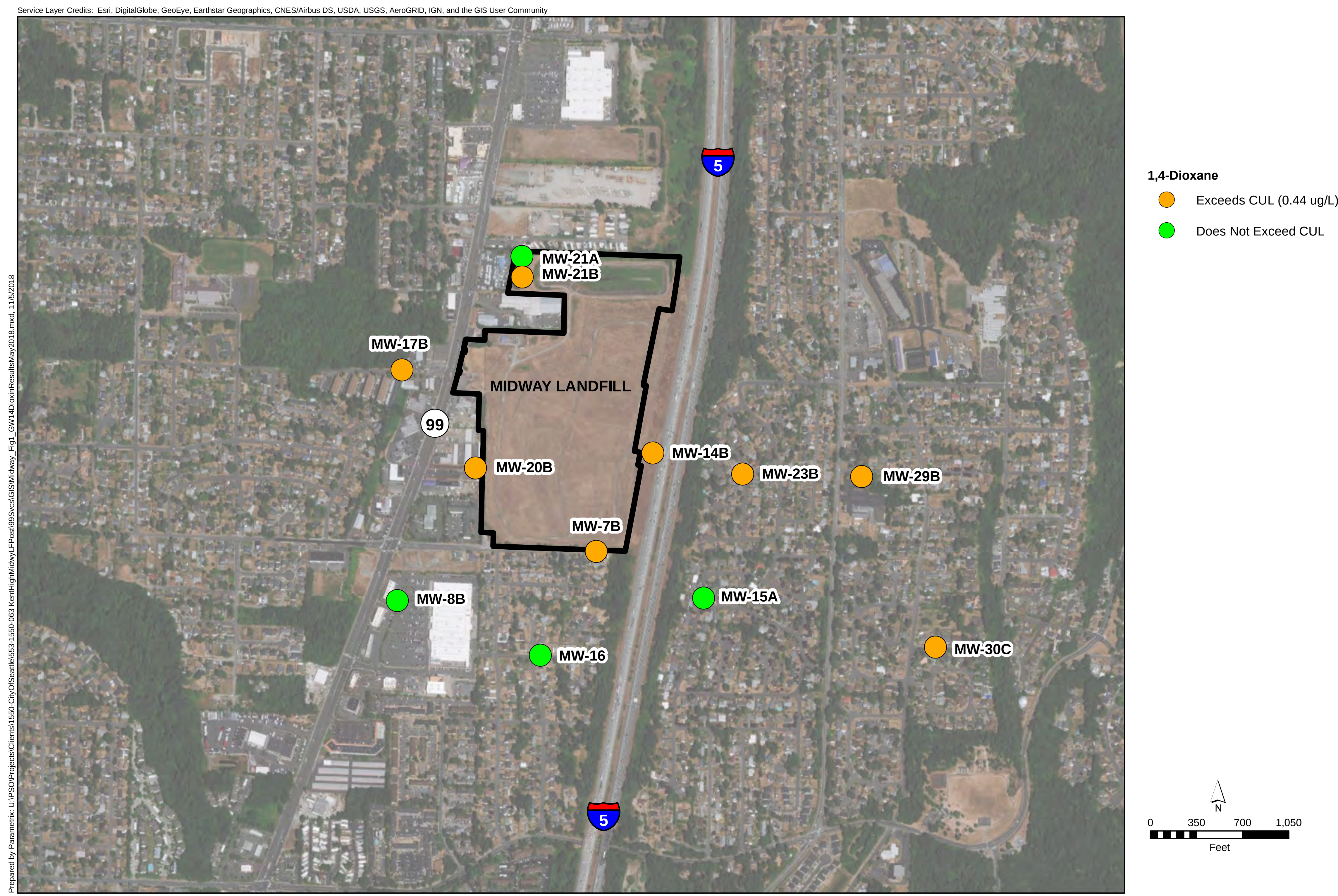
Figure 4
1,4-Dioxane Results by Aquifer
Midway Landfill
Kent, Washington



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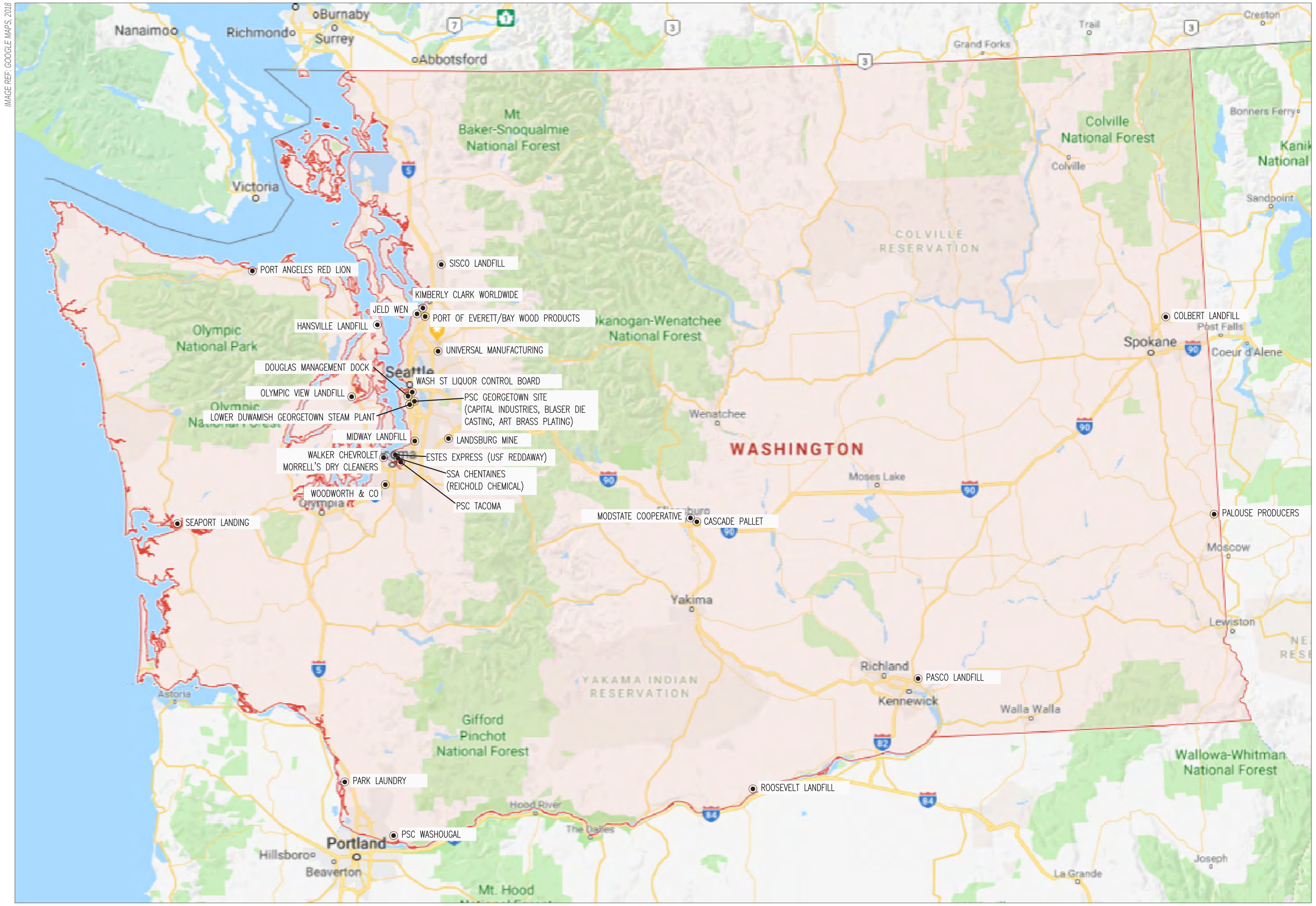
City of Seattle, Seattle Public Utilities Owned Parcel Boundary That Includes Kent Highlands Landfill

Figure 5
Comparison of 1,4-Dioxane to MTCA B Cleanup Level, Round 65 (May 2018)
Midway Landfill
Kent, Washington

IMAGE REF: GOOGLE MAPS, 2018



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0 10 20 40
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MIDWAY LANDFILL
1,4 DIOXANE EVALUATION

SEATTLE PUBLIC UTILITIES
(IN ASSOCIATION WITH PARAMETRIX)
SEATTLE, WA

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INSPECTORS:
SURVEY DATE:
EHSI PROJECT #: 10887-4.4
DRAWN BY: F DIMALANTA
SCALE: SHOWN
ISSUE DATE: 06/28/19

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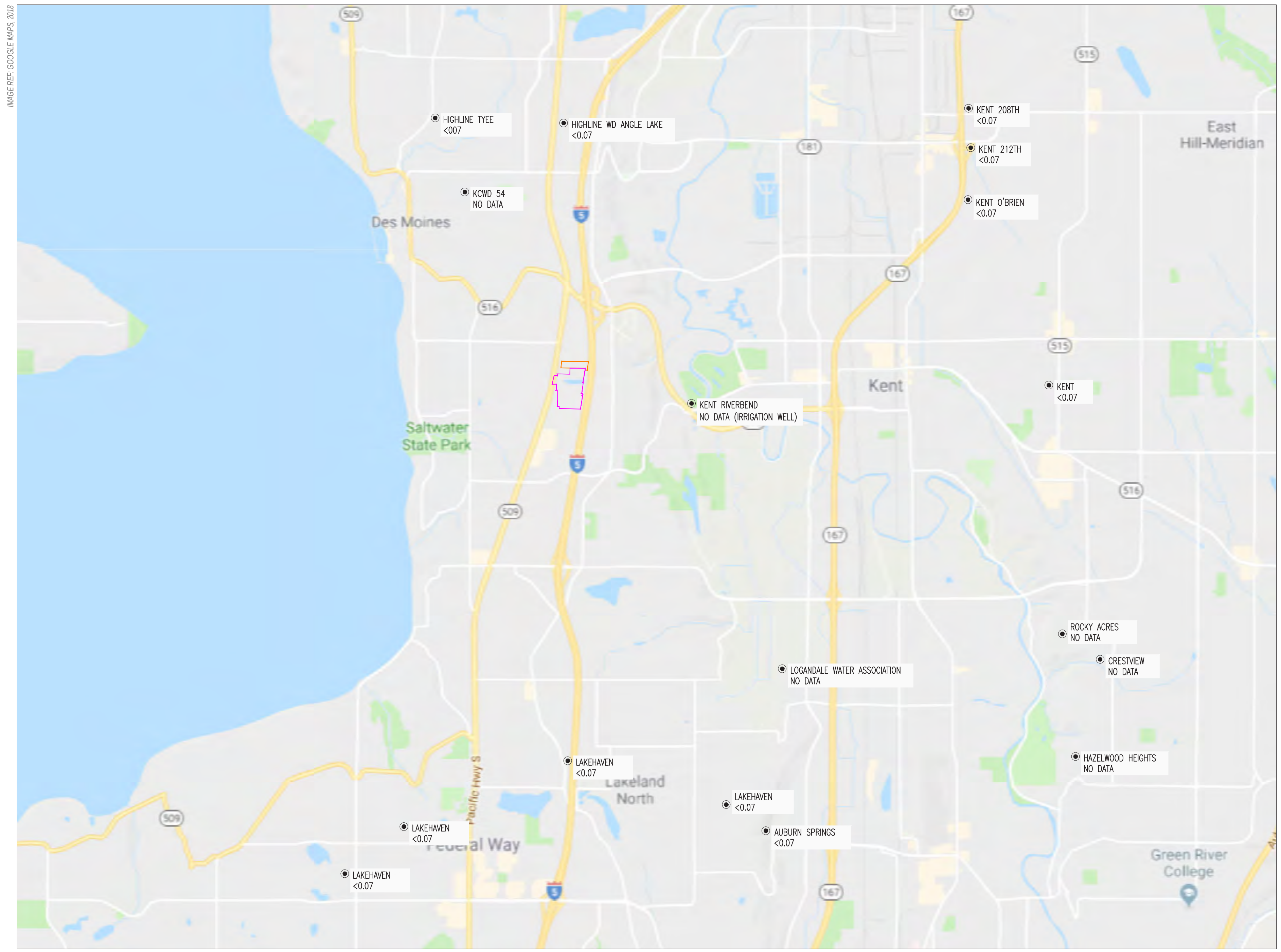
Figure 6
Washington Sites with Historical Testing of 1,4-Dioxane Submitted to Ecology's EIM Database
Midway Landfill
Kent, Washington



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0 0.25 0.5 1.0
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Figure 7
Group A Water Supply Wells Surrounding the Midway Landfill and 1,4-Dioxane Testing
Midway Landfill
Kent, Washington

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Figure 8
Confirmed or Suspected Solvent Use/Release Sites Surrounding the Midway Landfill
Midway Landfill
Kent, Washington

LEGEND

MW-XX MIDWAY MONITORING WELL LOCATION / ID

NOT IN USE WATER WELL LOCATION

NOT IN USE, OPERABLE WATER WELL LOCATION

IN USE/ POTENTIALLY IN USE WATER WELL LOCATION

ALLUVIAL AQUIFER WELL ID

UPPER GRAVEL AQUIFER WELL ID

SAND AQUIFER WELL ID

NORTHERN/SOUTHERN GRAVEL AQUIFER WELL ID

DEEP AQUIFER WELL ID

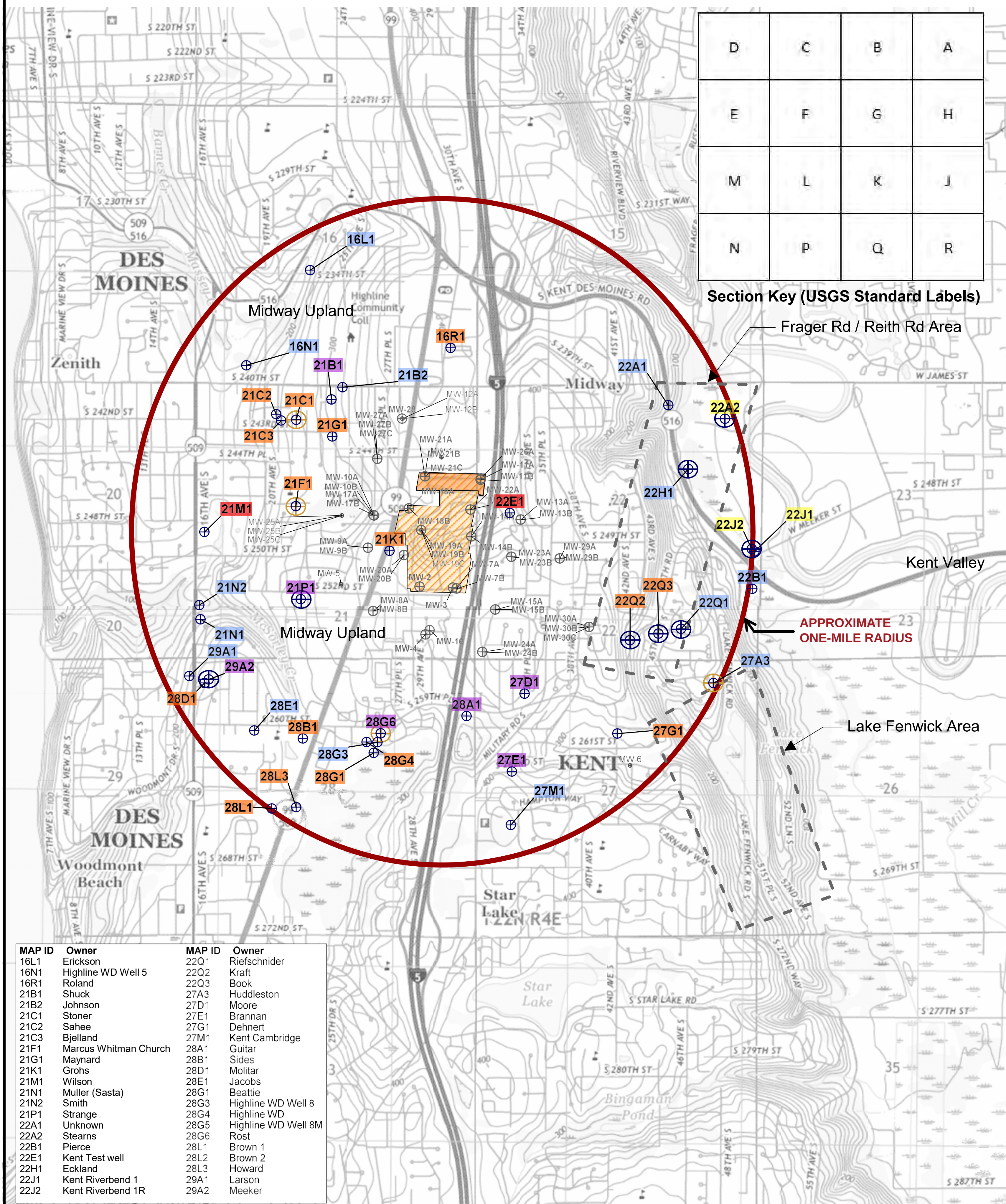
MIDWAY LANDFILL PARCELS WITH REFUSE

MIDWAY LANDFILL PARCELS WITH NO REFUSE

N

0' 2,000'

SCALE



MAP ID	Owner	MAP ID	Owner
16L1	Erickson	22Q1	Riefschnider
16N1	Highline WD Well 5	22Q2	Kraft
16R1	Roland	22Q3	Book
21B1	Shuck	27A3	Huddleston
21B2	Johnson	27D1	Moore
21C1	Stoner	27E1	Brannan
21C2	Sahee	27G1	Dehnert
21C3	Bjelland	27M1	Kent Cambridge
21F1	Marcus Whitman Church	28A1	Guitar
21G1	Maynard	28B1	Sides
21K1	Grohs	28D1	Molitar
21M1	Wilson	28E1	Jacobs
21N1	Muller (Sasta)	28G1	Beattie
21N2	Smith	28G3	Highline WD Well 8
21P1	Strange	28G4	Highline WD
22A1	Unknown	28G5	Highline WD Well 8M
22A2	Stearns	28G6	Rost
22B1	Pierce	28L1	Brown 1
22E1	Kent Test well	28L2	Brown 2
22H1	Eckland	28L3	Howard
22J1	Kent Riverbend 1	29A1	Larson
22J2	Kent Riverbend 1R	29A2	Meeker

MAP SOURCE: USGS DES MOINES AND POVERTY BAY 7.5-MIN QUADRANGLES

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Figure 9
1-Mile Radius Water Well Location Map
Midway Landfill
Kent, Washington

LEGEND

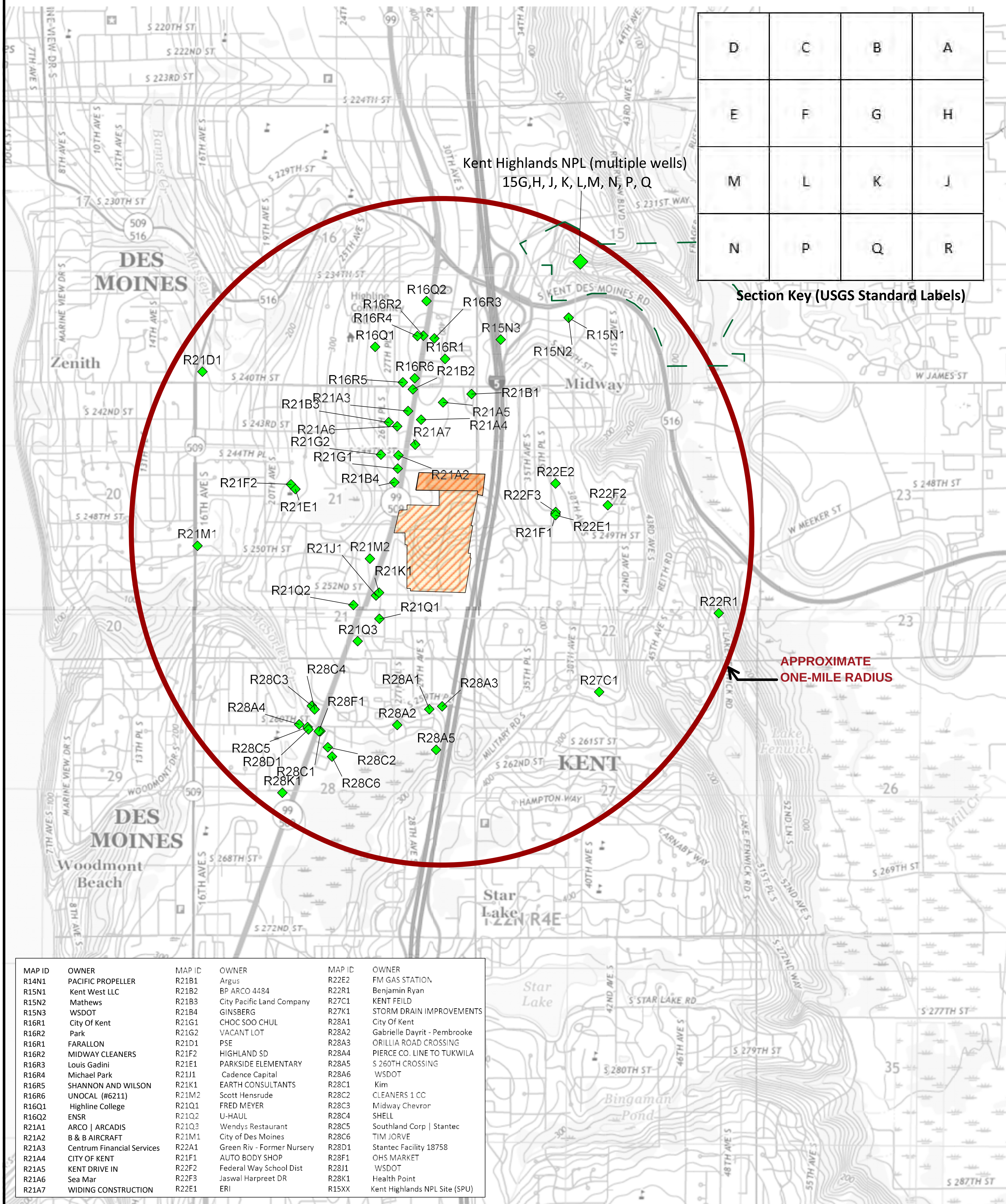
XXXX RESOURCE PROTECTION WELL LOCATION / ID

MIDWAY LANDFILL PARCELS WITH REFUSE

MIDWAY LANDFILL PARCELS WITH NO REFUSE

N

0' 2,000'
SCALE



MAP ID	OWNER	MAP ID	OWNER	MAP ID	OWNER
R14N1	PACIFIC PROPELLER	R21B1	Argus	R22E2	FM GAS STATION
R15N1	Kent West LLC	R21B2	BP ARCO 4484	R22R1	Benjamin Ryan
R15N2	Mathews	R21B3	City Pacific Land Company	R27C1	KENT FEILD
R15N3	WSDOT	R21B4	GINSBERG	R27K1	STORM DRAIN IMPROVEMENTS
R16R1	City Of Kent	R21G1	CHOC SOO CHUL	R28A1	City Of Kent
R16R2	Park	R21G2	VACANT LOT	R28A2	Gabrielle Dayrit - Pembrooke
R16R1	FARALLON	R21D1	PSE	R28A3	ORILLIA ROAD CROSSING
R16R2	MIDWAY CLEANERS	R21F2	HIGHLAND SD	R28A4	PIERCE CO. LINE TO TUKWILA
R16R3	Louis Gadini	R21E1	PARKSIDE ELEMENTARY	R28A5	S 260TH CROSSING
R16R4	Michael Park	R21J1	Cadence Capital	R28A6	WSDOT
R16R5	SHANNON AND WILSON	R21K1	EARTH CONSULTANTS	R28C1	Kim
R16R6	UNOCAL (#6211)	R21M2	Scott Hensrude	R28C2	CLEANERS 1 CC
R16Q1	Highline College	R21Q1	FRED MEYER	R28C3	Midway Chevror
R16Q2	ENSR	R21Q2	U-HAUL	R28C4	SHELL
R21A1	ARCO | ARCADIS	R21Q3	Wendys Restaurant	R28C5	Southland Corp | Stantec
R21A2	B & B AIRCRAFT	R21M1	City of Des Moines	R28C6	TIM JORVE
R21A3	Centrum Financial Services	R22A1	Green Riv - Former Nursery	R28D1	Stantec Facility 18758
R21A4	CITY OF KENT	R21F1	AUTO BODY SHOP	R28F1	OHS MARKET
R21A5	KENT DRIVE IN	R22F2	Federal Way School Dist	R28J1	WSDOT
R21A6	Sea Mar	R22F3	Jaswal Harpreet DR	R28K1	Health Point
R21A7	WIDING CONSTRUCTION	R22E1	ERI	R15XX	Kent Highlands NPL Site (SPU)

MAP SOURCE: USGS DES MOINES AND POVERTY BAY 7.5-MIN QUADRANGLES

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Figure 10
1-Mile Radius Resource Protection Well Location Map
Midway Landfill
Kent, Washington

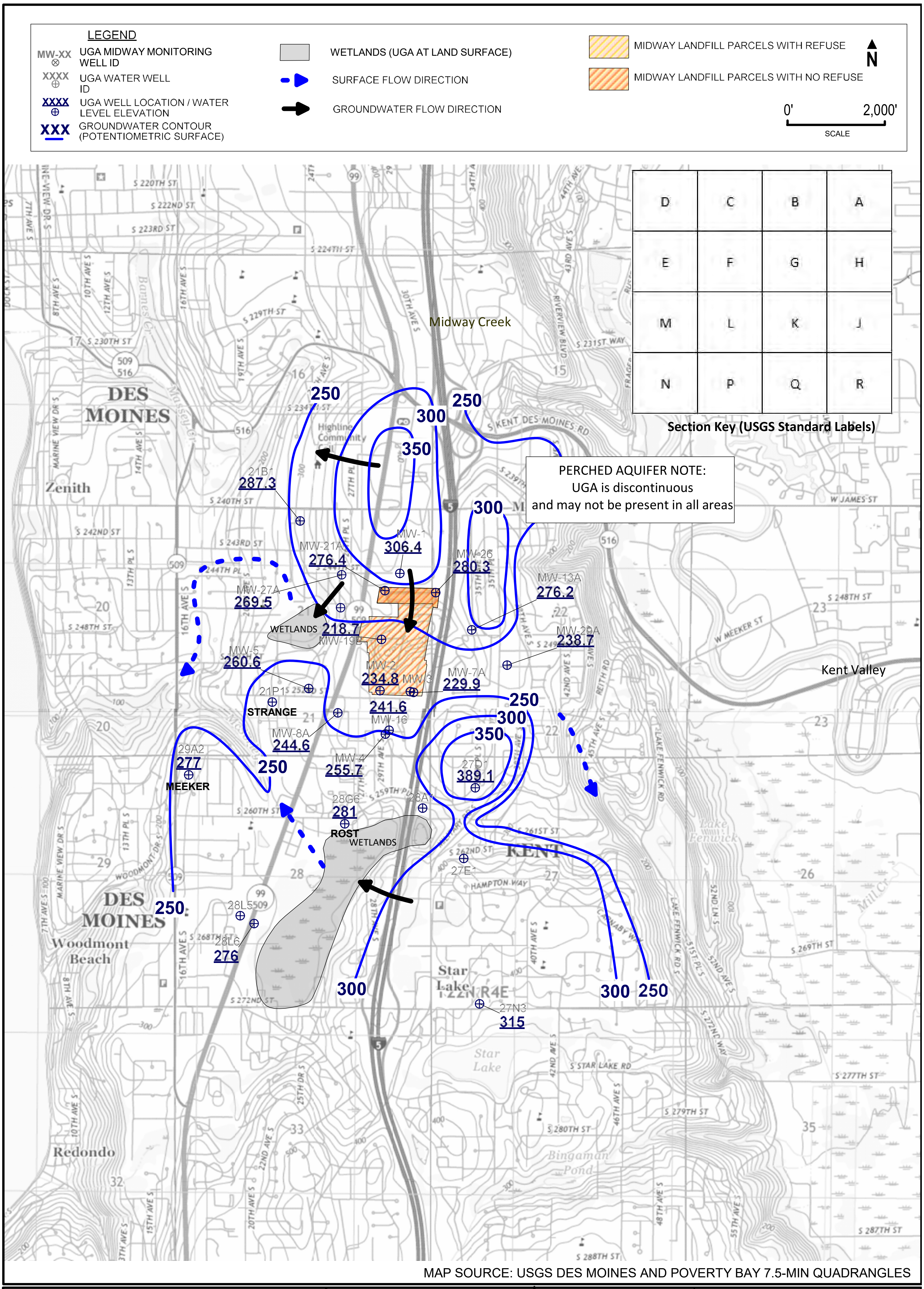

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Figure 11
Upper Gravel Aquifer Potentiometric Surface Map
Midway Landfill
Kent, Washington

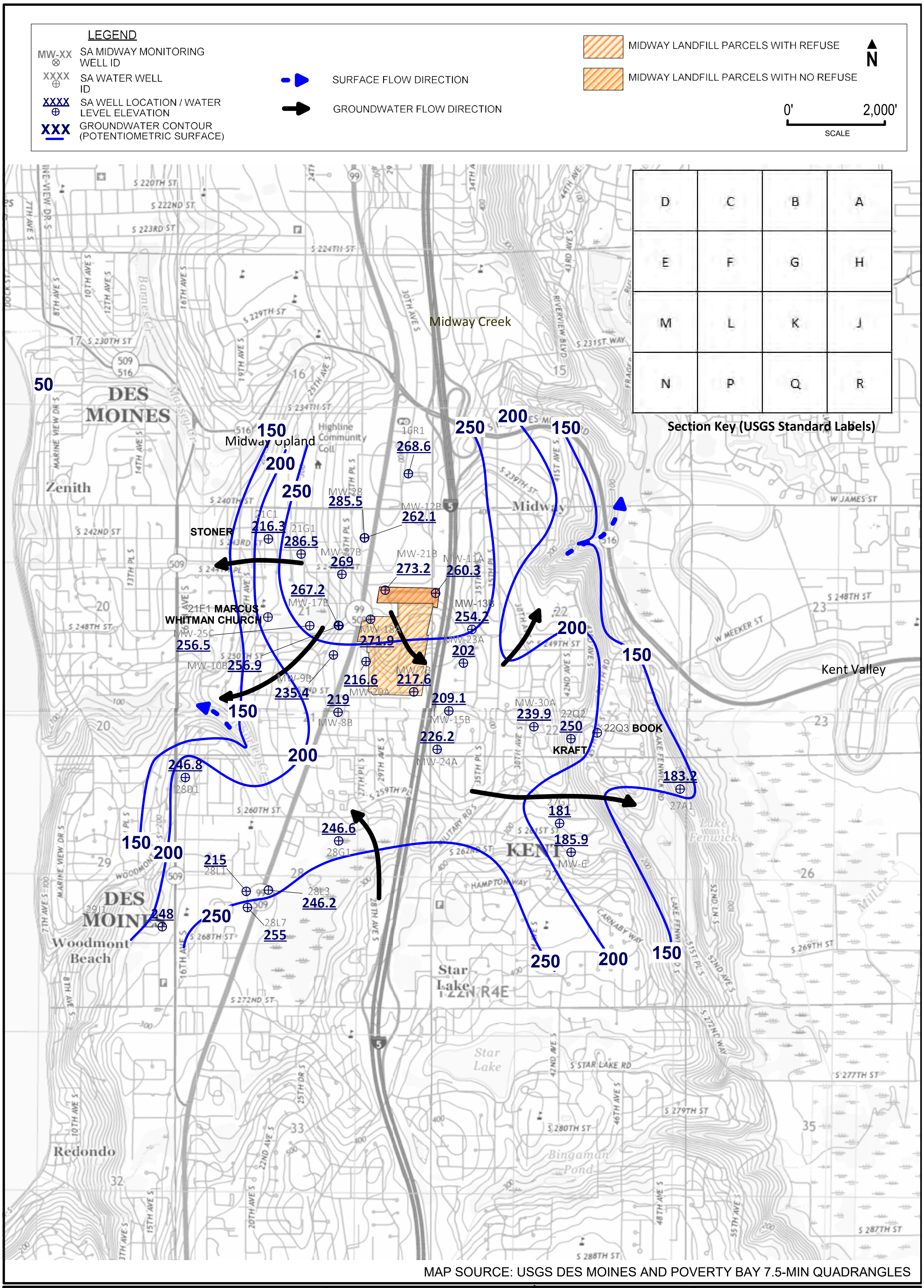

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Figure 12
Sand Aquifer
Potentiometric Surface Map
Midway Landfill
Kent, Washington

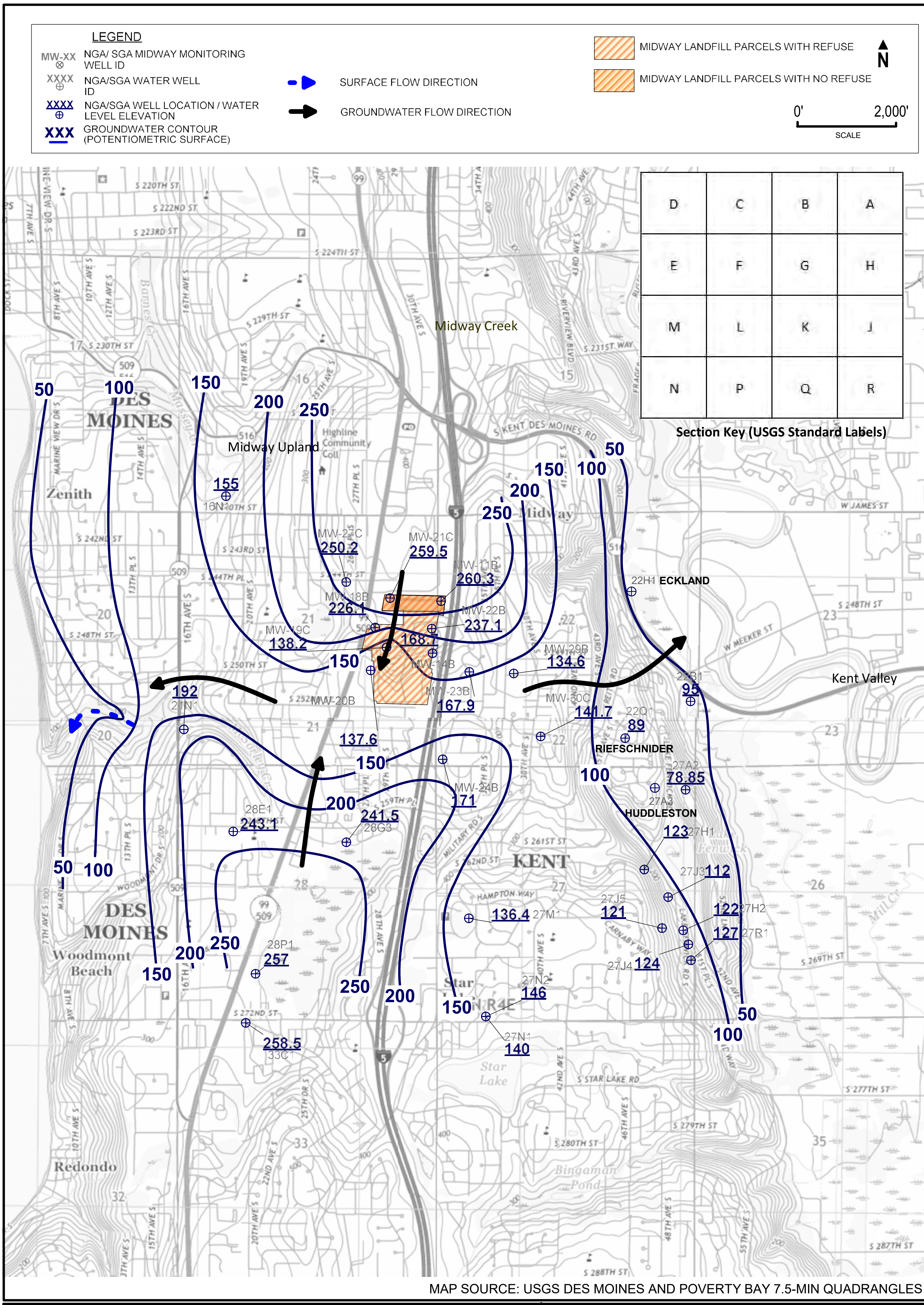

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Figure 13
Northern and Southern Gravel Aquifer Potentiometric Surface Map
Midway Landfill
Kent, Washington

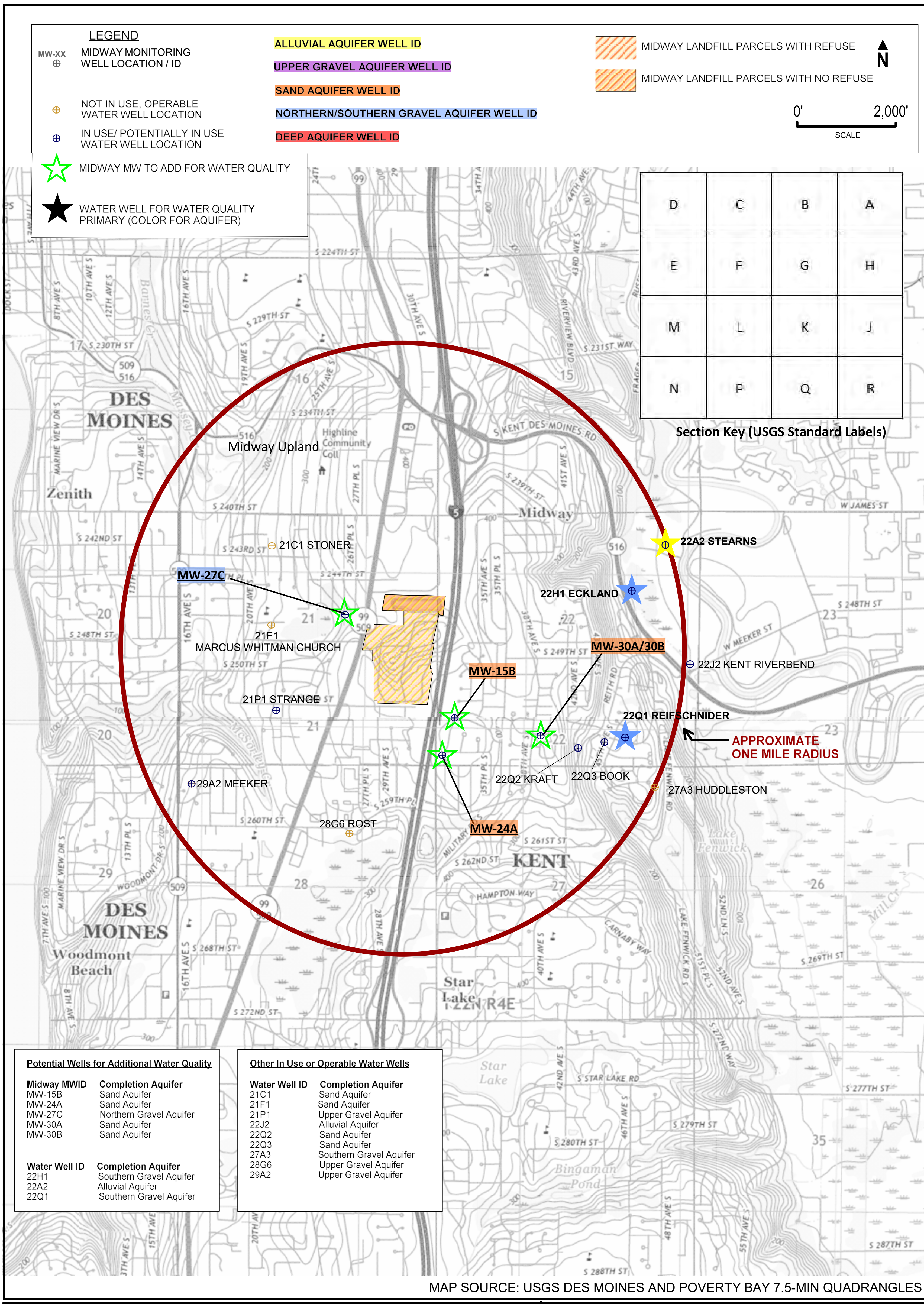

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Figure 14
Potential Additional Water Quality Monitoring Locations
Midway Landfill
Kent, Washington

A2 Hydraulic Monitoring Data

Fluid and Groundwater Level Measurements

Table A2-1. Fluid Level Data for Shallow Groundwater/Saturated Refuse Monitoring Wells, 2015 -2019, Midway Landfill

Area	Well #	Measuring Point Elevation* (ft.)	2015 Fluid Depth (ft.)	2015 Fluid Elev. (ft.)	2016 Fluid Depth (ft.)	2016 Fluid Elev. (ft.)	2017 Fluid Depth (ft.)	2017 Fluid Elev. (ft.)	2018 Fluid Depth (ft.)	2018 Fluid Elev. (ft.)	2019 Fluid Depth (ft.)	2019 Fluid Elev. (ft.)
West Side	2	366.13	Dry @ 62.60	<303.53	Dry @ 62.68	<303.45	Dry @ 62.68	<303.45	Dry @ 62.68	<303.45	Dry @ 62.47	<303.66
	5	365.67	68.80	296.87	68.16	297.51	68.28	297.39	68.91	296.76	68.21	297.46
North End	14	370.63	60.68	309.95	60.50	310.13	60.58	310.05	60.59	310.04	60.67	309.96
	PC4S	349.16	34.80	314.36	34.92	314.24	34.93	314.23	34.80	314.36	35.15	314.01
	PC6S	348.68	28.58	320.10	26.93	321.75	25.62	323.06	26.04	322.64	29.29	319.39
Linda Heights Area	26	380.89	70.85	310.04	67.34	313.55	69.03	311.86	71.95	308.94	72.99	307.90
	27	379	72.60	306.40	69.69	309.31	67.53	311.47	70.23	308.77	72.72	306.28
	45D	379.82	74.27	305.55	70.95	308.87	69.97	309.85	71.89	307.93	74.41	305.41
Hydraulic Sink	40D	400.27	129.80	270.47	130.25	270.02	130.19	270.08	130.65	269.62	130.68	269.59
	49D	395.45	111.05	284.40	111.57	283.88	111.57	283.88	111.85	283.60	111.83	283.62
	54D	385.98	Dry @ 95.45	<290.53	Dry @ 95.45	<290.53	Dry @ 95.47	<290.51	Dry @ 95.15	<290.83	Dry @ 95.30	<290.68
	54S	385.97	45.74	340.23	45.56	340.41	45.52	340.45	45.51	340.46	45.50	340.47
(area refuse)	38D	396.93	102.42	294.51	102.86	294.07	101.89	295.04	102.13	294.80	102.00	294.93
South End	56D	383.11	84.00	299.11	83.98	299.13	83.96	299.15	84.37	298.74	83.57	299.54
	56S	382.84	Dry @ 55.40	<327.44	Dry @ 54.45	<328.39	Dry @ 55.45	<327.39	Dry @ 53.33	<329.51	Dry @ 55.35	<327.49
Central Mound	42D	380.32	73.70	306.62	73.66	306.66	73.63	306.69	73.60	306.72	73.63	306.69
	43D	374.7	76.78	297.92	70.02	304.68	74.80	299.90	76.08	298.62	77.38	297.32
	47D	381.58	Dry @ 90.07	<291.51	Dry @ 90.01	<291.57	Dry @ 90.00	<291.58	Dry @ 89.90	<291.68	Dry @ 89.23	<292.35
	43D Oil Thickness		0.84		0.14		0.45		0.45		0.18	
(area refuse)	AM-M	368	55.26	312.74	54.43	313.57	53.91	314.09	54.69	313.31	57.10	310.90
North End Shallow	AN-M	364.5	24.18	340.32	24.08	340.42	24.01	340.49	24.04	340.46	26.67	337.83
	AO-M	356.2	22.02	334.18	23.81	332.39	21.22	334.98	22.87	333.33	26.81	329.39
	AR-M	354.4	19.00	335.40	19.01	335.39	15.28	339.12	16.63	337.77	21.68	332.72

NOTES:

All fluid depth measurements are to first encountered fluid.

* Measuring point elevations updated April 1998.

Dry - Well was dry

(area refuse) = Well not in a specific hydraulic area located between the two areas on the table.

Table A2-2. Water Level Data for 2015-2019, Groundwater Monitoring, Midway Landfill

			2015			2016			2017			2018			2019		
Well ID	Aquifer	Reference Elevation (ft-MSL)	Date Measured	Depth to Water (ft)	Water Level Elevation (ft-MSL)	Date Measured	Depth to Water (ft)	Water Level Elevation (ft-MSL)	Date Measured	Depth to Water (ft)	Water Level Elevation (ft-MSL)	Date Measured	Depth to Water (ft)	Water Level Elevation (ft-MSL)	Date Measured	Depth to Water (ft)	Water Level Elevation (ft-MSL)
MW-2	UGA	384.39	4/28/2015	Dry @ 157.00	<227.39 (a)	4/25/2016	Dry @ 157.00	<227.39 (a)	4/24/2017	155.68	228.71	4/30/2018	Dry @ 151.00	<233.39 (a)	4/30/2019	Dry @ 149.01	<235.38 (a)
MW-4	UGA	362.82	4/28/2015	Dry @ 91.42	<271.40 (a)	4/25/2016	90.61	272.21	4/24/2017	90.83	271.99	4/30/2018	90.86	271.96	4/30/2019	90.79	272.03
MW-7A	UGA	412.73	4/28/2015	Dry @ 197.20	<215.53 (a)	4/25/2016	Dry @ 196.83	<215.90 (a)	4/24/2017	Dry @ 198.30	<214.43 (a)	4/30/2018	Dry @ 192.65	<220.08 (a)	4/30/2019	Dry @ 195.01	<217.72 (a)
MW-7B	SA	412.73	4/28/2015	204.33	208.40	4/25/2016	203.96	208.77	4/24/2017	203.20	209.53	4/30/2018	201.53	211.20	4/30/2019	202.78	209.95
MW-8A	UGA/SA	353.02 *	4/28/2015	111.03	241.99	4/25/2016	110.68	242.34	4/24/2017	109.88	243.14	4/30/2018	111.12	241.90	5/1/2019	112.32	240.70
MW-8B	SA	351.35	4/28/2015	136.90	214.45	4/25/2016	135.76	215.59	4/24/2017	135.71	215.64	4/30/2018	134.75	216.60	5/1/2019	136.48	214.87
MW-9A	SA	353.79	4/28/2015	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
MW-11A	SA	370.41	4/28/2015	112.32	258.09	4/25/2016	111.61	258.80	4/24/2017	110.26	260.15	4/30/2018	109.66	260.75	4/30/2019	112.18	258.23
MW-13A	UGA	382.68	4/28/2015	105.77	276.91	4/26/2016	105.74	276.94	4/24/2017	104.80	277.88	4/30/2018	104.73	277.95	4/30/2019	105.67	277.01
MW-13B	SA	382.68	4/28/2015	128.82	253.86	4/26/2016	128.29	254.39	4/24/2017	127.61	255.07	4/30/2018	127.34	255.34	4/30/2019	128.55	254.13
MW-14B	SGA	381.85	4/28/2015	226.54	155.31	4/25/2016	226.03	155.82	4/24/2017	225.66	156.19	4/30/2018	222.73	159.12	4/30/2019	222.89	158.96
MW-15A	SA	438.54	4/28/2015	225.55	212.99	4/25/2016	225.29	213.25	4/24/2017	223.62	214.92	4/30/2018	222.38	216.16	4/30/2019	223.99	214.55
MW-16	UGA	362.80	4/28/2015	123.05	239.75	4/25/2016	123.11	239.69	4/24/2017	122.47	240.33	4/30/2018	122.66	240.14	4/30/2019	123.77	239.03
MW-17A	UGA	337.08	4/28/2015	67.34	269.74	4/25/2016	66.21	270.87	4/24/2017	64.78	272.30	4/30/2018	66.99	270.09	4/30/2019	69.41	267.67
MW-17B	SA	337.08	4/28/2015	68.61	268.47	4/25/2016	67.45	269.63	4/24/2017	65.92	271.16	4/30/2018	67.01	270.07	4/30/2019	69.79	267.29
MW-18A	SA	343.91	4/28/2015	75.09	268.82	4/27/2016	73.29	270.62	4/24/2017	71.58	272.33	4/30/2018	74.03	269.88	4/30/2019	77.33	266.58
MW-20A	SA	375.65	4/28/2015	Dry @ 184.00	<191.65 (a)	4/25/2016	Dry @ 183.90	<191.75 (a)	4/24/2017	Dry @ 184.10	<191.55 (a)	4/30/2018	Dry @ 184.20	<191.45 (a)	5/1/2019	Dry @ 183.89	<191.76 (a)
MW-20B	SGA	375.65	4/28/2015	251.54	124.11	4/25/2016	251.34	124.31	4/24/2017	250.47	125.18	4/30/2018	250.01	125.64	4/29/2019	251.80	123.85
MW-21A	UGA	359.95	4/28/2015	80.50	279.45	4/25/2016	78.28	281.67	4/24/2017	76.58	283.37	4/30/2018	79.40	280.55	4/30/2019	82.68	277.27
MW-21B	SA	359.95	4/28/2015	83.75	276.20	4/25/2016	81.81	278.14	4/24/2017	80.12	279.83	4/30/2018	82.59	277.36	4/30/2019	85.42	274.53
MW-23A	SA	424.42	4/28/2015	Dry @ 240.20	<184.22 (a)	4/25/2016	Dry @ 239.44	<184.98 (a)	4/24/2017	Dry @ 239.99	<184.43 (a)	4/30/2018	Dry @ 240.44	<183.98 (a)	4/30/2019	Dry @ 239.32	<185.10 (a)
MW-23B	SGA	424.42	4/28/2015	264.57	159.85	4/25/2016	264.11	160.31	4/24/2017	264.34	160.08	4/30/2018	261.64	162.78	4/30/2019	261.78	162.64
MW-24A	SA	418.58	4/28/2015	194.44	224.14	4/25/2016	194.01	224.57	4/24/2017	192.81	225.77	5/3/2018	191.74	226.84	4/30/2019	193.90	224.68
MW-24B	SGA	418.58	4/28/2015	253.84	164.74	4/25/2016	253.39	165.19	4/24/2017	252.29	166.29	5/3/2018	251.57	167.01	4/30/2019	252.49	166.09
MW-25C	SA	260.84	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
MW-26	UGA	370.58	4/28/2015	90.05	280.53	4/25/2016	89.61	280.97	4/24/2017	88.41	282.17	4/30/2018	88.28	282.30	4/30/2019	90.91	279.67
MW-27A	UGA	330.05	4/28/2015	46.50	283.55	4/25/2016	44.26	285.79	4/24/2017	42.51	287.54	4/30/2018	45.61	284.44	4/30/2019	49.94	280.11
MW-27B	UGA	330.05	4/28/2015	49.90	280.15	4/25/2016	48.21	281.84	4/24/2017	46.89	283.16	4/30/2018	49.25	280.80	4/30/2019	53.31	276.74
MW-28	SA	374.15	4/28/2015	86.20	287.95	4/25/2016	84.23	289.92	4/24/2017	82.60	291.55	4/30/2018	86.43	287.72	4/30/2019	91.81	282.34
MW-29A	UGA	428.50	4/28/2015	190.71	237.79	4/26/2016	190.15	238.35	4/24/2017	189.19	239.31	4/30/2018	188.87	239.63	4/30/2019	190.13	238.37
MW-29B	SGA	428.50	4/28/2015	299.43	129.07	4/26/2016	299.04	129.46	4/24/2017	300.40	128.10	4/30/2018	297.65	130.85	4/30/2019	298.18	130.32
MW-30A	SA	407.91	4/28/2015	166.52	241.39	4/26/2016	166.54	241.37	4/24/2017	166.01	241.90	4/30/2018	165.91	242.00	4/30/2019	166.97	240.94
MW-30B	SA	407.91	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	4/30/2019	246.54	161.37
MW-30C	SGA	407.91	4/28/2015	264.39	143.52	4/26/2016	263.67	144.24	4/24/2017	263.14	144.77	4/30/2018	262.94	144.97	4/30/2019	263.70	144.21

Notes:

(a) Well was dry during groundwater chemistry monitoring. Elevation shown is bottom of well.
Elevation datum NAVD 83
* = Measuring point elevation raised 1.67 ft
ft = Feet
MSL = Mean sea level

UGA = Upper Gravel Aquifer
SA = Sand Aquifer
SGA = Southern Gravel Aquifer
OBST =well is obstructed at noted depth
nm = Not measured, no access (9A locked gate, 25C destroyed)

Hydrographs

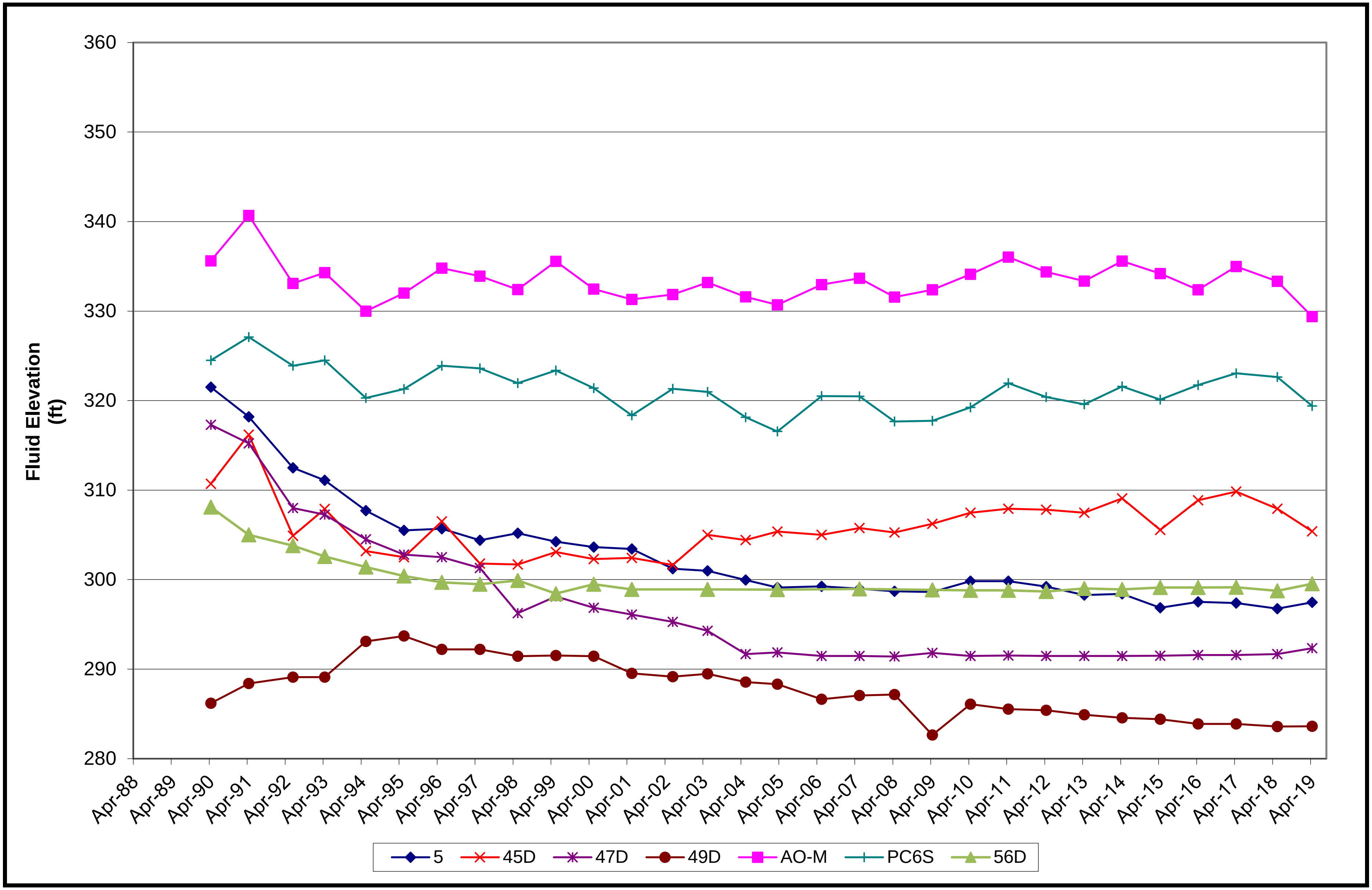

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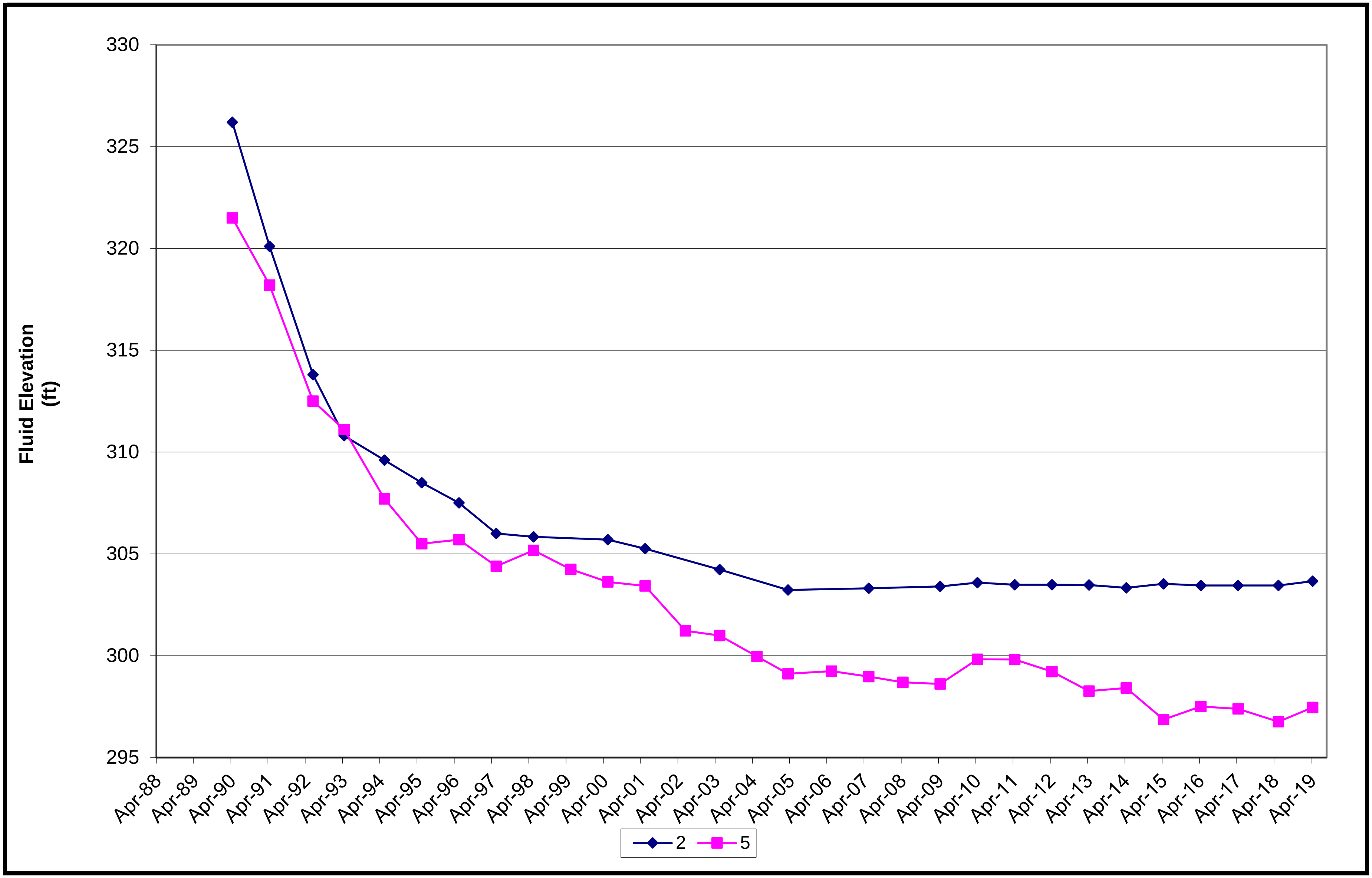
Figure A2-1. Summary of Shallow Groundwater/ Saturated Refuse Hydrographs
Midway Landfill

Note: Bottom of well elevations shown for dry measurements are from Table A-1.
Annual second quarter data presented to remove seasonality.



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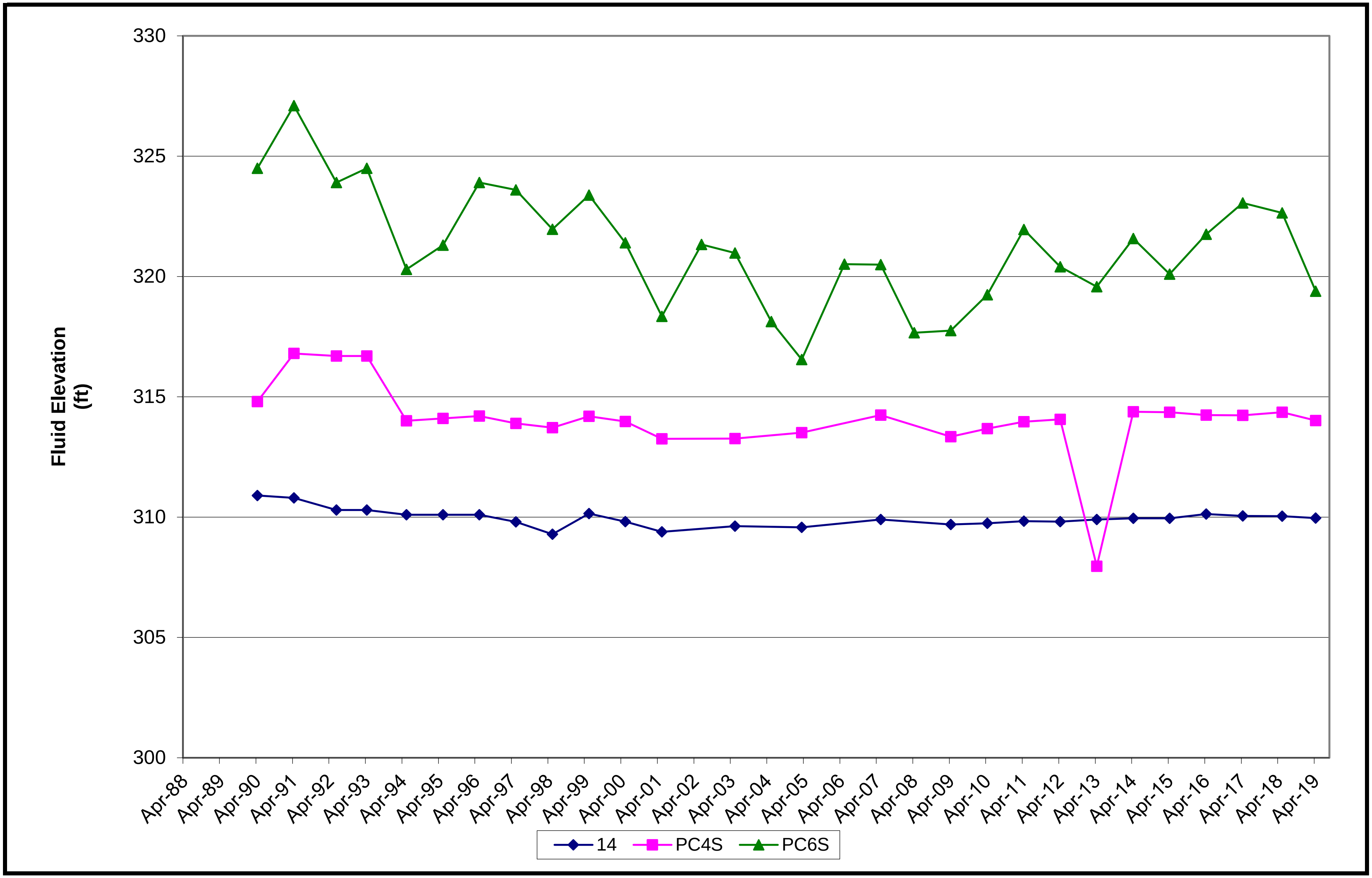
Note: Bottom of well elevations shown for dry measurements are from Table A-1.
Annual second quarter data presented to remove seasonality.

Figure A2-2. Shallow Groundwater/ Saturated Refuse Hydrographs - West Side Wells
Midway Landfill



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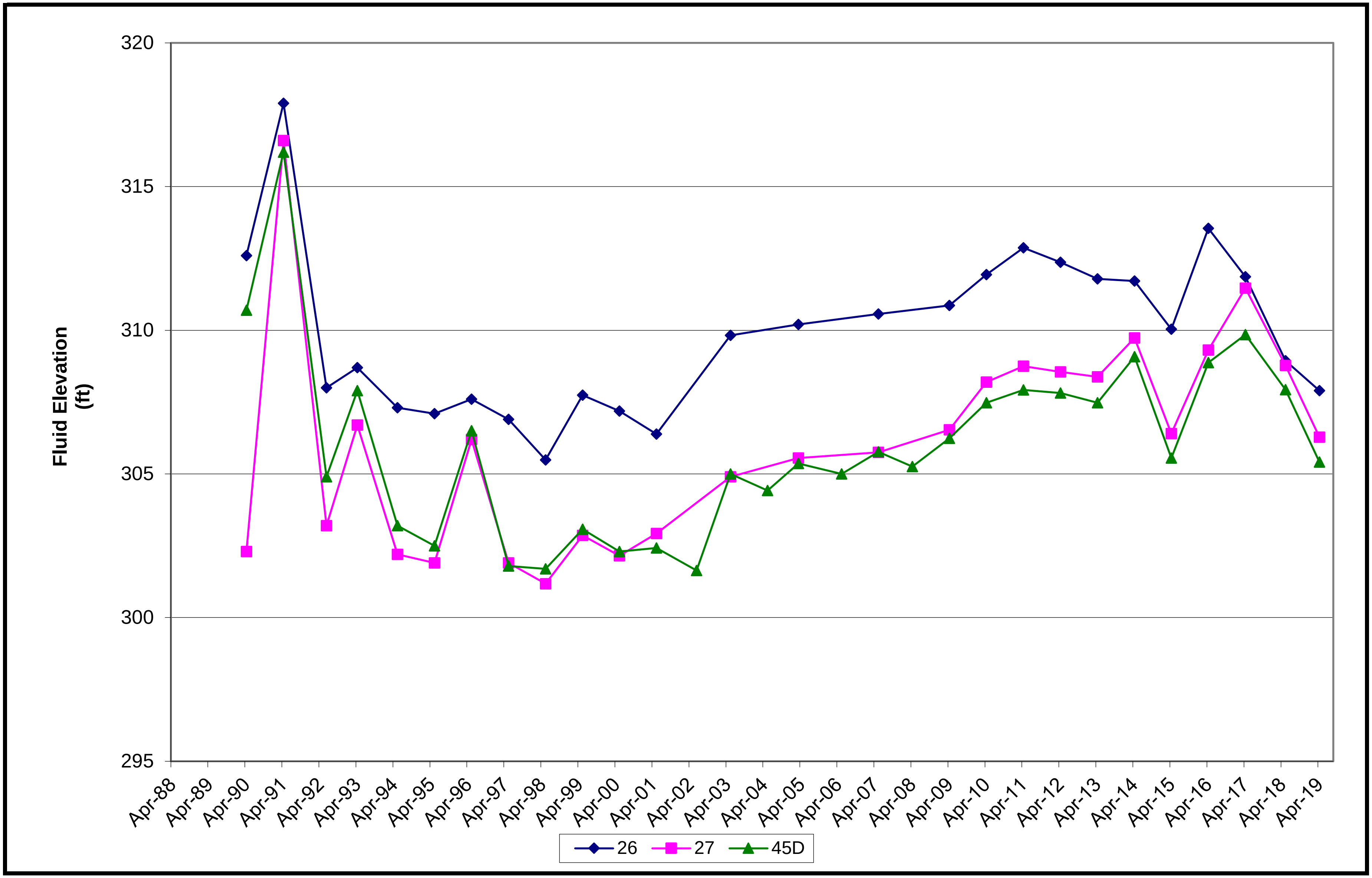
Note: Bottom of well elevations shown for dry measurements are from Table A-1.
Annual second quarter data presented to remove seasonality.

Figure A2-3. Shallow Groundwater/ Saturated Refuse Hydrographs - North End Wells
Midway Landfill



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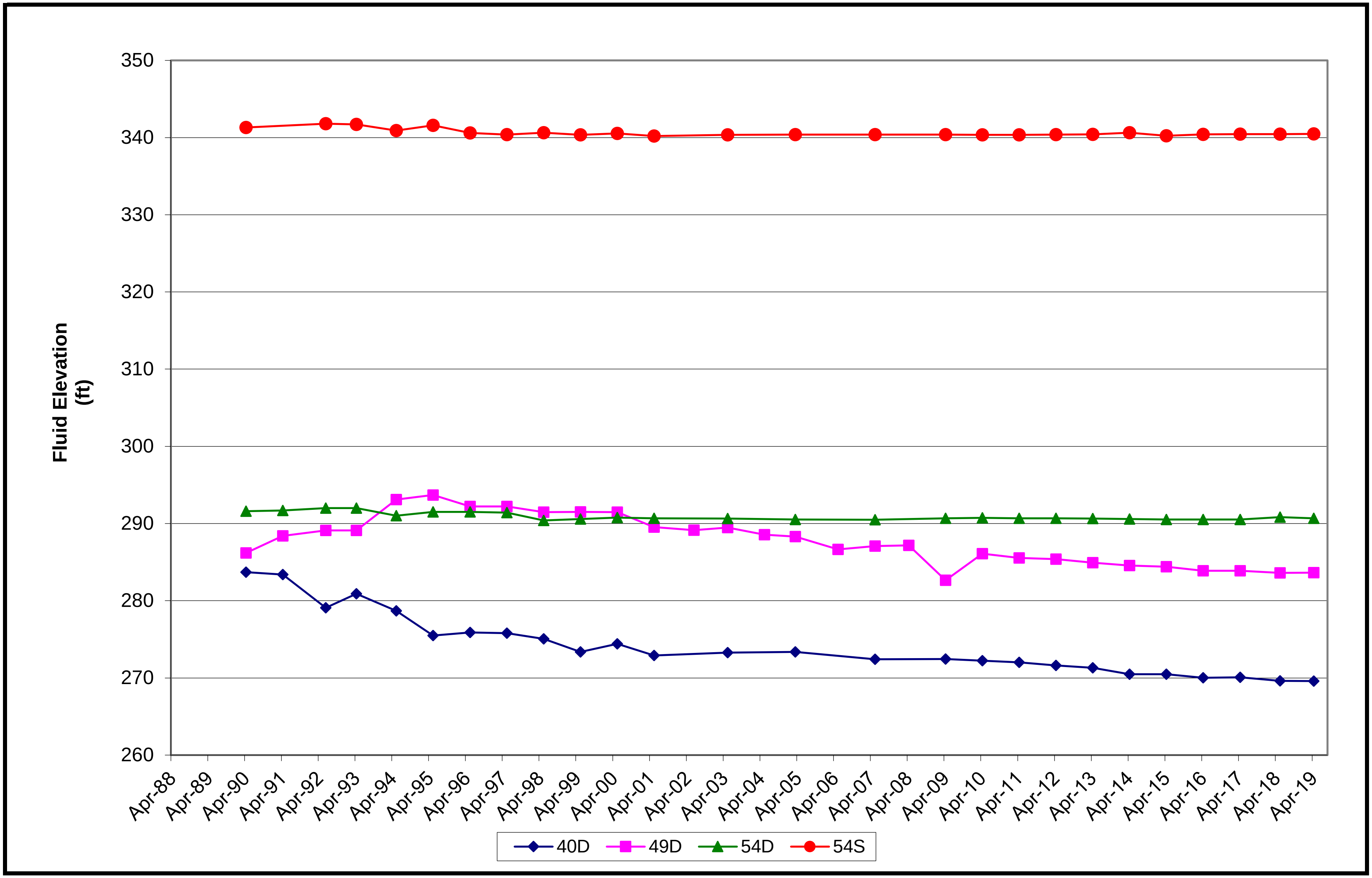
Note: Bottom of well elevations shown for dry measurements are from Table A-1.
Annual second quarter data presented to remove seasonality.

Figure A2-4. Shallow Groundwater/ Saturated Refuse Hydrographs - Linda Heights Wells
Midway Landfill



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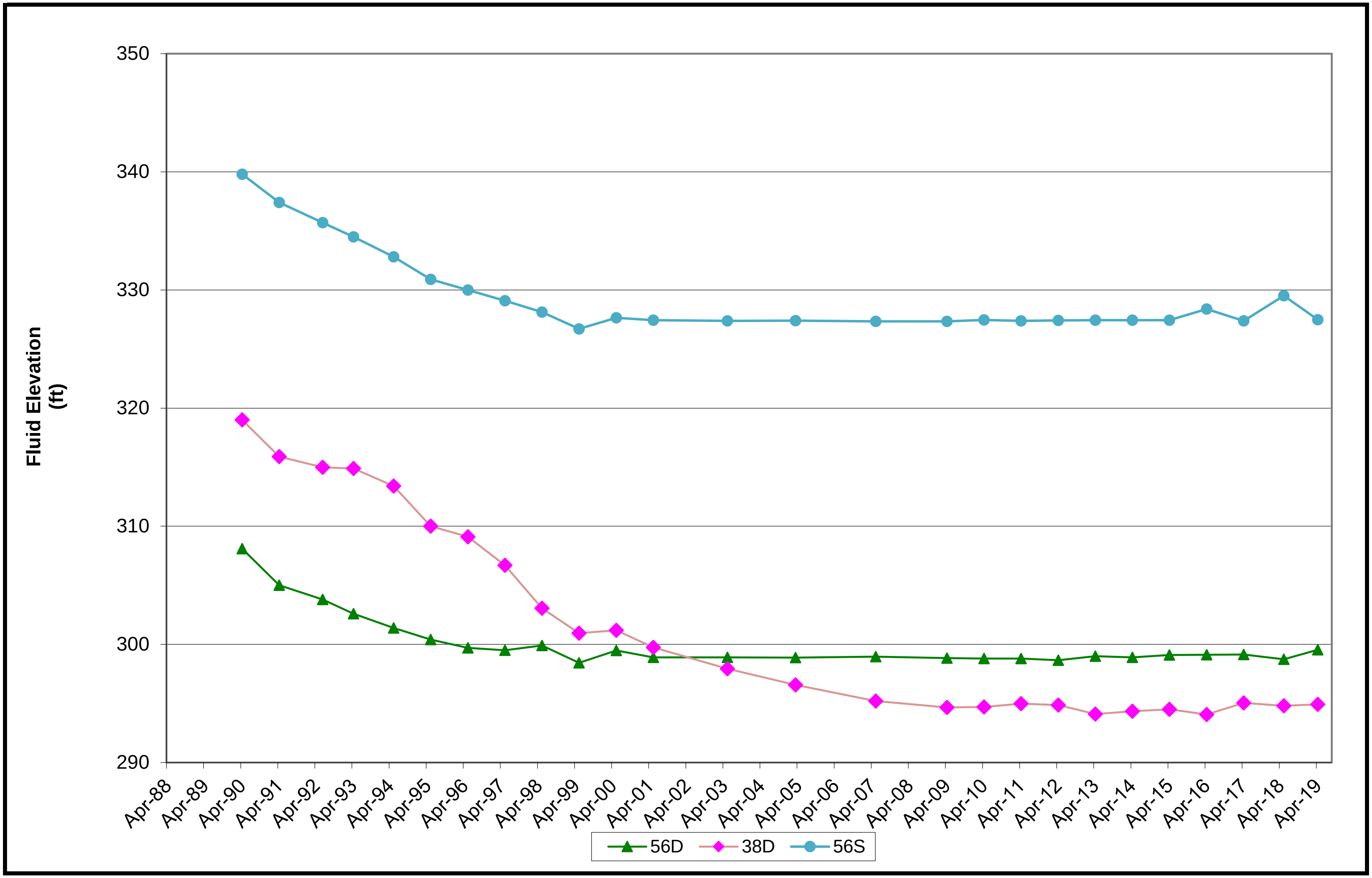
Note: Bottom of well elevations shown for dry measurements are from Table A-1.

Annual second quarter data presented to remove seasonality.

Figure A2-5. Shallow Groundwater/ Saturated Refuse Hydrographs - Hydraulic Sink Wells

Midway Landfill



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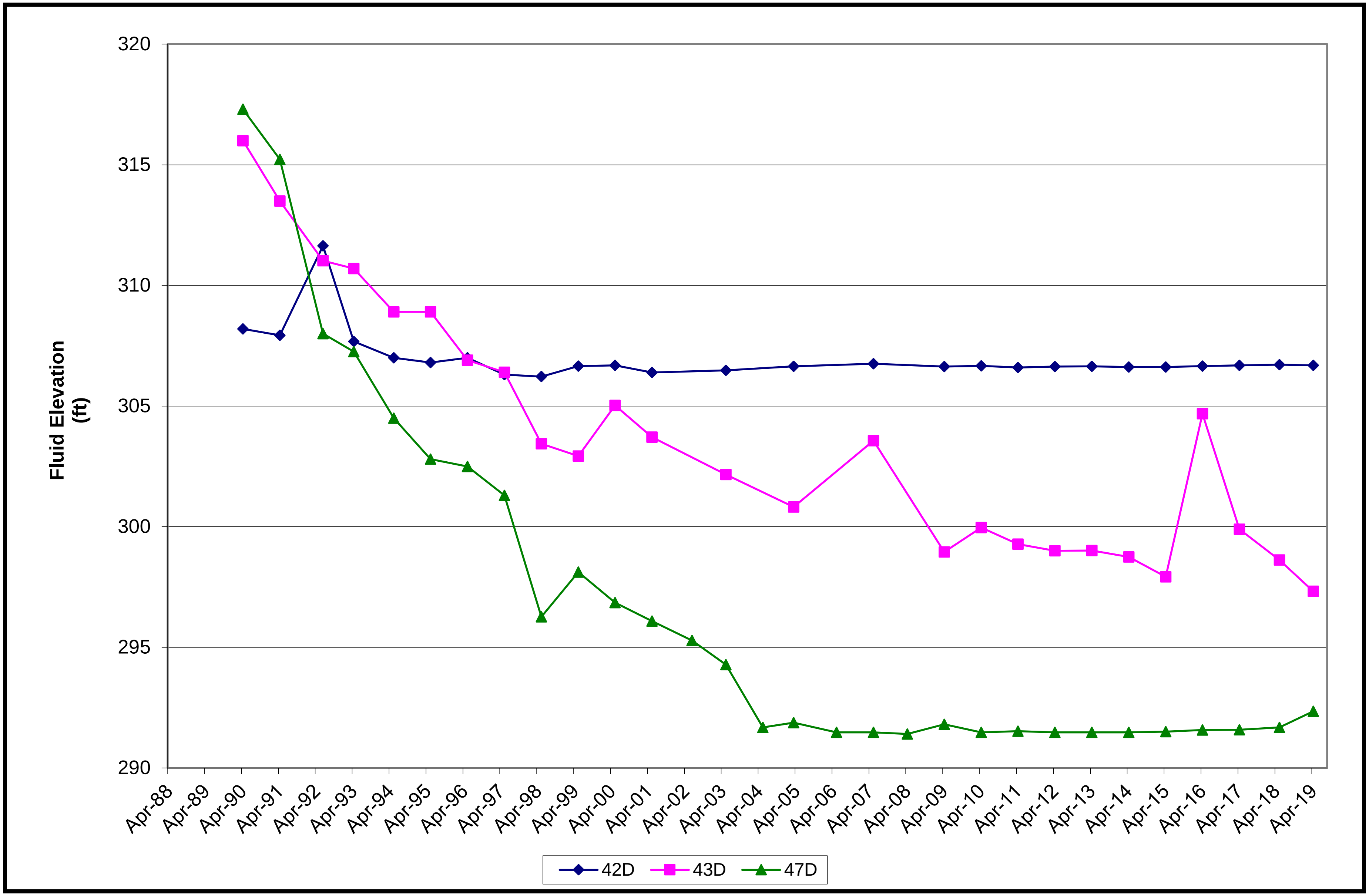
Note: Bottom of well elevations shown for dry measurements are from Table A-1.
Annual second quarter data presented to remove seasonality.

Figure A2-6. Shallow Groundwater/ Saturated Refuse Hydrographs - South End Wells
Midway Landfill



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Note: Bottom of well elevations shown for dry measurements are from Table A-1.
Annual second quarter data presented to remove seasonality.

Figure A2-7. Shallow Groundwater/ Saturated Refuse Hydrographs - Central Mound Wells
Midway Landfill

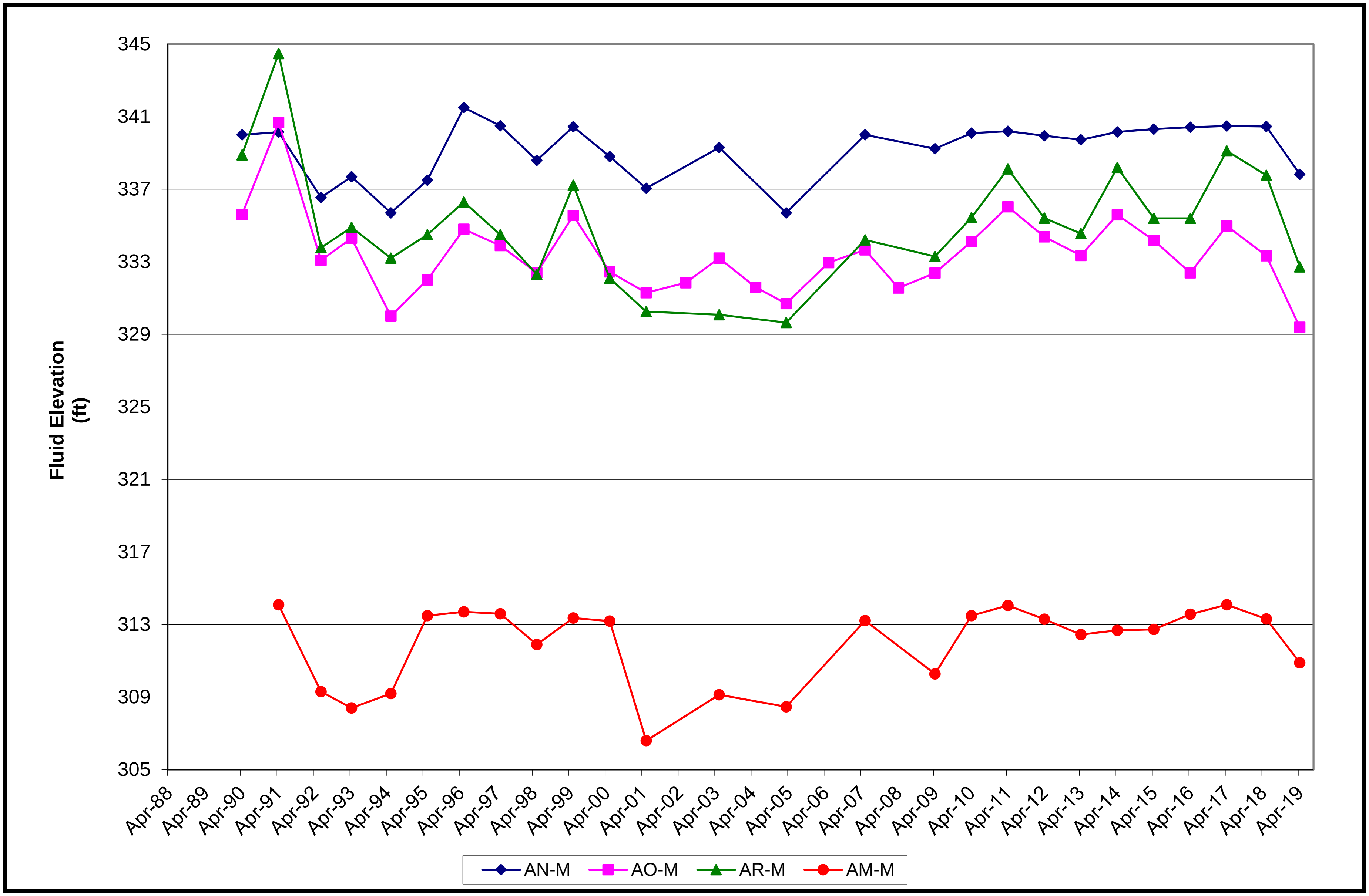

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Figure A2-8. Shallow Groundwater Hydrographs - North End Shallow Wells
Midway Landfill

Note: Bottom of well elevations shown for dry measurements are from Table A-1.
Annual second quarter data presented to remove seasonality.

A3 Groundwater Quality Data

Groundwater Quality Summary Tables

Table A3-1. Minimum Functional Standard and Organic Parameters in Groundwater, Midway Landfill, Upper Gravel Aquifer, 2015-2019 Data Summary

		MW-16 (UP)					MW-21A (UP)				
		R-62	R-63	R-64	R-65	R-66	R-62	R-63	R-64	R-65	R-66
Compound	**Units**	5/7/2015	5/5/2016	5/3/2017	5/8/2018	5/7/2019	5/5/2015	5/3/2016	5/2/2017	5/9/2018	5/8/2019
Field Parameters											
pH	s.u.	7.73	7.74	7.79	8.05	7.98	6.73	6.71	6.74	6.94	6.90
Conductivity	µmhos/cm	283	283	278	279.0	289.5	321	315	310	649.3	296.0
Temperature	C	11.8	11.8	12.0	11.8	11.8	11.4	12.0	11.9	11.9	11.6
Conventional Parameters											
Chloride	mg/L	7.9	7.9	8.09	7.82	7.89	6.0	6.0	6.15	5.78	5.77
Sulfate	mg/L	24.4	21.7	21.1	22.6	20.2	32.6	30.7	29.2	29.7	28.1
Chemical Oxygen Demand	mg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Total Organic Carbon	mg/L	1.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.50 U	0.60	0.51	0.52	0.50 U
Dissolved Metals											
Iron	mg/L	0.13	0.14	0.116	0.0926	0.0816	0.05 U	0.08	0.0500 U	0.0500 U	0.0500 U
Manganese	mg/L	0.092	0.142	0.101	0.0943	0.0950	0.001	0.026	0.0274	0.0241	0.0010 U
Semi-Volatile Organics											
1,4-Dioxane	µg/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Volatile Organics											
Chloromethane	µg/L	1.0 U	2.5 U	2.50 U	2.50 U	2.50 U	1.0 U	2.5 U	2.50 U	2.50 U	2.50 U
Vinyl Chloride	µg/L	0.020 U	0.20 U	0.20 U	0.020 U	0.200 U	0.020 U	0.20 U	0.20 U	0.020 U	0.200 U
Bromomethane	µg/L	1.0 U	5.0 U	5.00 U	5.00 U	5.00 U	1.0 U	5.0 U	5.00 U	5.00 U	5.00 U
Chloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.8 Q	1.87	1.58	1.00 U
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	2.0 U	1.0 U	1.00 U	1.00 U	1.00 U	2.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Acetone	µg/L	10 U	25 U	25.0 U	25.0 U	25.0 U	10 U	25 U	25.0 U	25.0 U	25.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Methylene Chloride	µg/L	2.0 U	5.0 U	5.00 U	5.00 U	5.00 U	2.0 U	5.0 U	5.00 U	5.00 U	5.00 U
Carbon Disulfide	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Vinyl Acetate	µg/L	5.0 U	1.0 U	1.00 U	1.00 U	1.00 U	5.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
2-Butanone	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.12	1.00 U
Chloroform	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Carbon Tetrachloride	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Benzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
2-Chloroethyl vinyl ether	µg/L	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U
4-Methyl-2-Pentanone (MIBK)	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
2-Hexanone	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	µg/L	2.0 U	2.0 U	1.00 U	2.00 U	2.00 U	2.0 U	2.0 U	1.00 U	2.00 U	2.00 U
o-Xylene	µg/L	1.0 U	1.0 U	2.00 U	1.00 U	1.00 U	1.0 U	1.0 U	2.00 U	1.00 U	1.00 U
Styrene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Bromoform	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U

Table A3-2. Minimum Functional Standard and Organic Parameters in Groundwater, Midway Landfill, Sand Aquifer, 2015-2019 Data Summary

		MW-7B (DOWN)					MW-8B (UP)						MW-15A (DOWN)				
		R-62	R-63	R-64	R-65	R-66	R-62	R-63		R-64	R-65	R-66	R-62	R-63	R-64	R-65	R-66
Compound	Units	5/6/2015	5/4/2016	5/3/2017	5/8/2018	5/7/2019	5/6/2015	5/4/2016	Duplicate (MW-35) 5/4/2016	5/4/2017	5/8/2018	5/7/2019	5/7/2015	5/5/2016	5/4/2017	5/7/2018	5/6/2019
Field Parameters																	
pH	s.u.	6.73	6.68	6.75	6.94	6.90	6.54	6.77	- -	6.83	7.76	7.65	6.64	6.58	6.70	6.85	6.65
Conductivity	µmhos/cm	528	506	492	488.8	478.6	177	213	- -	205	271.6	281.0	347	363	391	406.3	390.2
Temperature	C	13.0	12.9	13.5	13.4	13.4	11.4	11.7	- -	11.9	11.8	12.1	12.2	12.1	12.3	12.3	12.9
Conventional Parameters																	
Chloride	mg/L	12.7	11.6	11.6	14.9	13.1	6.3	8.0	7.9	8.81	8.81	9.22	5.8	5.3	5.78	5.99	5.96
Sulfate	mg/L	33.4	28.7	27.3	28.8	27.0	23.0	27.3	27.3	25.3	30.6	29.8	29.4	26.7	24.9	24.2	26.9
Chemical Oxygen Demand	mg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	20.9	19.6	22.1	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Total Organic Carbon	mg/L	1.50 U	0.96	1.02	0.93	0.80	4.10	1.66	2.64	1.26	0.50 U	0.50 U	1.50 U	0.79	0.75	0.88	0.60
Dissolved Metals																	
Iron	mg/L	2.74	2.66	2.27	1.96	1.76	1.29	0.11	0.11	0.0500 U	0.0740	0.0677	0.05 U	0.05 U	0.0500 U	0.02 U	0.0500 U
Manganese	mg/L	2.48	2.44	2.47	2.29	2.32	0.087	0.047	0.049	0.0614	0.351	0.275	0.002	0.002	0.0010 U	0.00273	0.0010 U
Semi-Volatile Organics																	
1,4-Dioxane	µg/L	1.0	0.6	1.0	2.0	1.3	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Volatile Organics																	
Chloromethane	µg/L	1.0 U	2.5 U	2.50 U	2.50 U	2.50 U	1.0 U	2.5 U	2.5 U	2.50 U	2.50 U	2.50 U	1.0 U	2.5 U	2.50 U	2.50 U	2.50 U
Vinyl Chloride	µg/L	0.17	0.20 U	0.20 M, U	0.0954	0.200 U	0.020 U	0.20 U	0.20 U	0.20 U	0.020 U	0.200 U	0.020 U	0.20 U	0.20 U	0.020 U	0.200 U
Bromomethane	µg/L	1.0 U	5.0 U	5.00 U	5.00 U	5.00 U	1.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	1.0 U	5.0 U	5.00 U	5.00 U	5.00 U
Chloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	2.0 U	1.0 U	1.00 U	1.00 U	1.00 U	2.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	2.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Acetone	µg/L	10 U	25 U	25.0 U	25.0 U	25.0 U	10 U	25 U	25 U	25.0 U	25.0 U	25.0 U	10 U	25 U	25.0 U	25.0 U	25.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Methylene Chloride	µg/L	2.0 U	5.0 U	5.00 U	5.00 U	5.00 U	2.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	2.0 U	5.0 U	5.00 U	5.00 U	5.00 U
Carbon Disulfide	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Vinyl Acetate	µg/L	5.0 U	1.0 U	1.00 U	1.00 U	1.00 U	5.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	5.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	µg/L	1.6	1.5	1.36	1.25	1.35	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
2-Butanone	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Chloroform	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Carbon Tetrachloride	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Benzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
2-Chloroethyl vinyl ether	µg/L	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U
4-Methyl-2-Pentanone (MIBK)	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
2-Hexanone	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	µg/L	2.0 U	2.0 U	1.00 U	2.00 U	2.00 U	2.0 U	2.0 U	2.0 U	1.00 U	2.00 U	2.00 U	2.0 U	2.0 U	1.00 U	2.00 U	2.00 U
o-Xylene	µg/L	1.0 U	1.0 U	2.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	2.00 U	1.00 U	1.00 U	1.0 U	1.0 U	2.00 U	1.00 U	1.00 U
Styrene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Bromoform	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U

Table A3-2. Minimum Functional Standard and Organic Parameters in Groundwater, Midway Landfill, Sand Aquifer, 2015-2019 Data Summary

		MW-17B (UP)					MW-21B (UP)				
		R-62	R-63	R-64	R-65	R-66	R-62	R-63	R-64	R-65	R-66
Compound	**Units**	**5/5/2015**	**5/3/2016**	**5/2/2017**	**5/9/2018**	**5/8/2019**	**5/5/2015**	**5/3/2016**	**5/2/2017**	**5/9/2018**	**5/8/2019**
Field Parameters											
pH	s.u.	6.77	6.85	6.90	7.09	7.00	6.99	6.99	7.02	7.20	7.16
Conductivity	µmhos/cm	328	346	345	745.6	342.4	604	589	571	1206	566.8
Temperature	C	12.1	12.4	11.9	12.2	12.0	11.3	11.7	11.5	11.8	11.3
Conventional Parameters											
Chloride	mg/L	10.8	11.3	12.1	10.7	11.3	12.3	11.3	11.6	9.84	10.2
Sulfate	mg/L	21.9	22.2	23.0	23.2	20.8	92.3	82.6	82.4	92.9	93.3
Chemical Oxygen Demand	mg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Total Organic Carbon	mg/L	1.50 U	1.01	1.01	0.97	1.03	1.50 U	1.10	1.01	1.09	1.02
Dissolved Metals											
Iron	mg/L	0.05 U	0.05 U	0.0500 U	0.0500 U	0.0500 U	0.05 U	0.05 U	0.0500 U	0.0500 U	0.0500 U
Manganese	mg/L	0.046	0.044	0.0425	0.0315	0.0330	0.372	0.342	0.346	0.341	0.345
Semi-Volatile Organics											
1,4-Dioxane	µg/L	1.5	1.0	1.5	0.9	0.7	2.8	1.9	1.7	1.9	1.5
Volatile Organics											
Chloromethane	µg/L	1.0 U	2.5 U	2.50 U	2.50 U	2.50 U	1.0 U	2.5 U	2.50 U	2.50 U	2.50 U
Vinyl Chloride	µg/L	0.11	0.20 U	0.20 U	0.0375	0.200 U	0.031	0.20 U	0.20 M, U	0.0299	0.200 U
Bromomethane	µg/L	1.0 U	5.0 U	5.00 U	5.00 U	5.00 U	1.0 U	5.0 U	5.00 U	5.00 U	5.00 U
Chloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.9	1.8 Q	1.98	1.52	1.00
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	2.0 U	1.0 U	1.00 U	1.00 U	1.00 U	2.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Acetone	µg/L	10 U	25 U	25.0 U	25.0 U	25.0 U	10 U	25 U	25.0 U	25.0 U	25.0 U
1,1-Dichloroethene	µg/L	1.4	1.4	1.10	1.03	1.19	2.5	2.9	2.62	3.04	2.85
Methylene Chloride	µg/L	2.0 U	5.0 U	5.00 U	5.00 U	5.00 U	2.0 U	5.0 U	5.00 U	5.00 U	5.00 U
Carbon Disulfide	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Vinyl Acetate	µg/L	5.0 U	1.0 U	1.00 U	1.00 U	1.00 U	5.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	µg/L	20	19	13.1	12.9	14.6	2.6	2.4	2.30	2.56	2.39
2-Butanone	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U
cis-1,2-Dichloroethene	µg/L	2.8	2.5	2.50	2.36	2.56	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Chloroform	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.7	1.4	1.25	1.66	1.08
Carbon Tetrachloride	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	µg/L	2.8	2.6	2.11	2.10	2.14	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Benzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	4.6	4.6	5.92	6.68	6.26
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
2-Chloroethyl vinyl ether	µg/L	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U
4-Methyl-2-Pentanone (MIBK)	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
2-Hexanone	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	110	110	130	128	118
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	µg/L	2.0 U	2.0 U	1.00 U	2.00 U	2.00 U	2.0 U	2.0 U	1.00 U	2.00 U	2.00 U
o-Xylene	µg/L	1.0 U	1.0 U	2.00 U	1.00 U	1.00 U	1.0 U	1.0 U	2.00 U	1.00 U	1.00 U
Styrene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
Bromoform	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U

Table A3-3. Minimum Functional Standard and Organic Parameters in Groundwater, Midway Landfill, Southern Gravel Aquifer, 2015-2019 Data Summary

		MW-14B (DOWN)						MW-20B (DOWN)					
		R-62	R-63	R-64	R-65	R-66		R-62	R-63	R-64	R-65		R-66
							Duplicate (MW-35)					Duplicate (MW-35)	
Compound	Units	5/5/2015	5/3/2016	5/2/2017	5/8/2018	5/7/2019	5/7/2019	5/6/2015	5/4/2016	5/3/2017	5/9/2018	5/9/2018	5/8/2019
Field Parameters													
pH	s.u.	6.62	6.66	6.63	6.79	6.76	- -	6.89	6.88	6.91	7.10	- -	7.08
Conductivity	µmhos/cm	622	618	618	623.6	640.4	- -	927	857	772	1548	- -	696.5
Temperature	C	14.0	14.6	14.1	14.5	14.6	- -	12.0	11.6	12.6	11.9	- -	11.7
Conventional Parameters													
Chloride	mg/L	13.5	12.7	14.9	17.4	20.3	19.7	22.4	19.2	18.2	17.2	15.8	14.9
Sulfate	mg/L	29.7	24.9	23.9	25.6	21.8	21.8	12.5	13.7	13.8	15.4	15.5	14.7
Chemical Oxygen Demand	mg/L	10.0 U	18.4	10.0 U	10.0 U	10.0 U	10.0 U	12.2	28.3	10.0 U	10.0 U	10.0 U	10.0 U
Total Organic Carbon	mg/L	1.50 U	1.30	1.15	1.21	1.38	1.35	3.76	3.39	3.16	2.90	2.83	2.48
Dissolved Metals													
Iron	mg/L	9.62	9.30	9.23	8.64	8.76	8.73	6.31	5.80	4.29	4.52	4.53	4.27
Manganese	mg/L	0.861	0.837	0.834	0.867	0.884	0.877	2.27	2.11	1.92	1.70	1.71	1.61
Semi-Volatile Organics													
1,4-Dioxane	µg/L	4.1	5.4	6.8	10.3	10.3	9.6	27	18	19.9	17.6	19.0	12.9
Volatile Organics													
Chloromethane	µg/L	1.0 U	2.5 U	2.50 U	2.50 U	2.50 U	2.50 U	1.0 U	2.5 U	2.50 U	2.50 U	2.50 U	2.50 U
Vinyl Chloride	µg/L	0.24	0.20 U	0.20 M,	0.104	0.200 U	0.200 U	0.29	0.33 M	0.346	0.257	0.266	0.200 U
Bromomethane	µg/L	1.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	1.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U
Chloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	2.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	2.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Acetone	µg/L	10 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	10 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene Chloride	µg/L	2.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	2.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U
Carbon Disulfide	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Vinyl Acetate	µg/L	5.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	5.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	µg/L	1.0 U	1.0	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Butanone	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U
cis-1,2-Dichloroethene	µg/L	3.0	3.0	3.50	3.53	3.52	3.21	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Carbon Tetrachloride	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Benzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Chloroethyl vinyl ether	µg/L	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Methyl-2-Pentanone (MIBK)	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Hexanone	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	µg/L	2.0 U	2.0 U	1.00 U	2.00 U	2.00 U	2.00 U	2.0 U	2.0 U	1.00 U	2.00 U	2.00 U	2.00 U
o-Xylene	µg/L	1.0 U	1.0 U	2.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	2.00 U	1.00 U	1.00 U	1.00 U
Styrene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U

Table A3-3. Minimum Functional Standard and Organic Parameters in Groundwater, Midway Landfill, Southern Gravel Aquifer, 2015-2019 Data Summary

		MW-23B (DOWN)							MW-29B (DOWN)							
		R-62		R-63	R-64		R-65	R-66	R-62		R-63	R-64		R-65	R-66	
Compound	Units	5/7/2015	Duplicate (MW-35) 5/7/15	5/5/2016	5/4/2017	Duplicate (MW-35) 5/4/2017	5/7/2018	5/6/2019	5/4/2015	Duplicate (MW-31) 5/4/15	5/2/2016	5/1/2017	Duplicate (MW-31) 5/1/2017	5/7/2018	5/6/2019	Duplicate (MW-31) 5/6/2019
Field Parameters																
pH	s.u.	6.55	- -	6.50	6.53	- -	6.71	6.69	6.60	- -	6.59	6.63	- -	6.77	6.76	- -
Conductivity	µmhos/cm	491	- -	478	470	- -	468.8	476.9	635	- -	624	612	- -	608.6	622.7	- -
Temperature	C	11.7	- -	11.9	11.8	- -	11.7	11.8	10.5	- -	11.3	10.2	- -	10.4	10.6	- -
Conventional Parameters																
Chloride	mg/L	9.4	9.5	9.2	10.7	10.5	9.54	9.58	21.2	21.6	20.3	19.5	19.5	16.9	17.1	17.2
Sulfate	mg/L	29.1	29.1	28.0	25.3	25.4	23.7	26.1	22.7	22.4	19.4	19.6	19.8	18.8	19.4	19.3
Chemical Oxygen Demand	mg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	18.4	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Total Organic Carbon	mg/L	1.50 U	1.50 U	1.16	1.10	1.07	1.08	0.95	1.69	1.65	1.73	1.40	1.73	1.38	1.32	1.30
Dissolved Metals																
Iron	mg/L	7.26	7.26	7.58	7.21	7.11	6.22	7.01	12.8	12.8	12.7	11.9	12.7	10.4	12.1	11.7
Manganese	mg/L	0.121	0.121	0.123	0.118	0.115	0.105	0.109	0.858	0.861	0.830	0.820	0.817	0.805	0.812	0.801
Semi-Volatile Organics																
1,4-Dioxane	µg/L	1.3	1.2	1.5	2.0	2.3	2.1	1.8	7.9 J	12 J	11	13.8	11.7	12.5	8.8	9.0
Volatile Organics																
Chloromethane	µg/L	1.0 U	1.0 U	2.5 U	2.50 U	2.50 U	2.50 U	2.50 U	1.0 U	1.0 U	2.5 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U
Vinyl Chloride	µg/L	0.098	0.099	0.20 U	0.20 M,	0.20 M, U	0.0866	0.200 U	0.48	0.44	0.49 M	0.516	0.450	0.335	0.337	0.330
Bromomethane	µg/L	1.0 U	1.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	1.0 U	1.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	2.0 U	2.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	2.0 U	2.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Acetone	µg/L	10 U	10 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	10 U	10 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene Chloride	µg/L	2.0 U	2.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	2.0 U	2.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Carbon Disulfide	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Vinyl Acetate	µg/L	5.0 U	5.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	5.0 U	5.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Butanone	µg/L	5.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	5.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
cis-1,2-Dichloroethene	µg/L	2.7	2.7	2.7	2.71	2.59	2.42	2.61	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.03	1.08
Chloroform	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Carbon Tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	µg/L	1.7	1.7	2.2	1.56	1.49	1.48	1.81	3.8	3.9	3.9	3.54	3.52	3.37	3.92	3.91
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Chloroethyl vinyl ether	µg/L	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Methyl-2-Pentanone (MIBK)	µg/L	5.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	5.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Hexanone	µg/L	5.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	5.0 U	5.0 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	µg/L	2.0 U	2.0 U	2.0 U	1.00 U	1.00 U	2.00 U	2.00 U	2.0 U	2.0 U	2.0 U	1.00 U	1.00 U	2.00 U	2.00 U	2.00 U
o-Xylene	µg/L	1.0 U	1.0 U	1.0 U	2.00 U	2.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	2.00 U	2.00 U	1.00 U	1.00 U	1.00 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

Table A3-3. Minimum Functional Standard and Organic Parameters in Groundwater, Midway Landfill, Southern Gravel Aquifer, 2015-2019 Data Summary

		MW-30C (DOWN)						
		R-62	R-63		R-64	R-65		R-66
				Duplicate (MW-31)			Duplicate (MW-31)	
Compound	Units	5/4/2015	5/2/2016	5/2/2016	5/1/2017	5/7/2018	5/7/2018	5/6/2019
Field Parameters								
pH	s.u.	7.10	7.06	- -	7.13	7.39	- -	7.34
Conductivity	µmhos/cm	311	313	- -	317	323.8	- -	328.8
Temperature	C	10.6	11.1	- -	9.5	9.9	- -	10.3
Conventional Parameters								
Chloride	mg/L	12.2	10.6	11.2	11.9	10.7	10.3	10.8
Sulfate	mg/L	14.3	12.7	12.5	13.3	13.3	13.1	15.5
Chemical Oxygen Demand	mg/L	10.0 U	10.0 U	11.6	10.0 U	10.0 U	10.0 U	10.0 U
Total Organic Carbon	mg/L	1.50 U	0.74	0.90	0.63	0.73	0.65	0.59
Iron	mg/L	2.39	2.30	2.32	2.25	2.11	2.31	2.15
Manganese	mg/L	0.678	0.638	0.639	0.663	0.644	0.691	0.669
Semi-Volatile Organics								
1,4-Dioxane	µg/L	4.2	4.4	4.7	6.4	5.6	5.5	4.8
Volatile Organics								
Chloromethane	µg/L	1.0 U	2.5 U	2.5 U	2.50 U	2.50 U	2.50 U	2.50 U
Vinyl Chloride	µg/L	0.200	0.210 M	0.200 M	0.241	0.172	0.173	0.200 U
Bromomethane	µg/L	1.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	2.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Acetone	µg/L	10 U	25 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene Chloride	µg/L	2.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U
Carbon Disulfide	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Vinyl Acetate	µg/L	5.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Butanone	µg/L	5.0 U	25 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Carbon Tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.03
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Chloroethyl vinyl ether	µg/L	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Methyl-2-Pentanone (MIBK)	µg/L	5.0 U	25 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Hexanone	µg/L	5.0 U	25 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	µg/L	2.0 U	2.0 U	2.0 U	1.00 U	2.00 U	2.00 U	2.00 U
o-Xylene	µg/L	1.0 U	1.0 U	1.0 U	2.00 U	1.00 U	1.00 U	1.00 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U

Table A3-4. Minimum Functional Standard and Organic Parameters in Groundwater, Midway Landfill, Field and Trip Blanks, 2015-2019 Data Summary

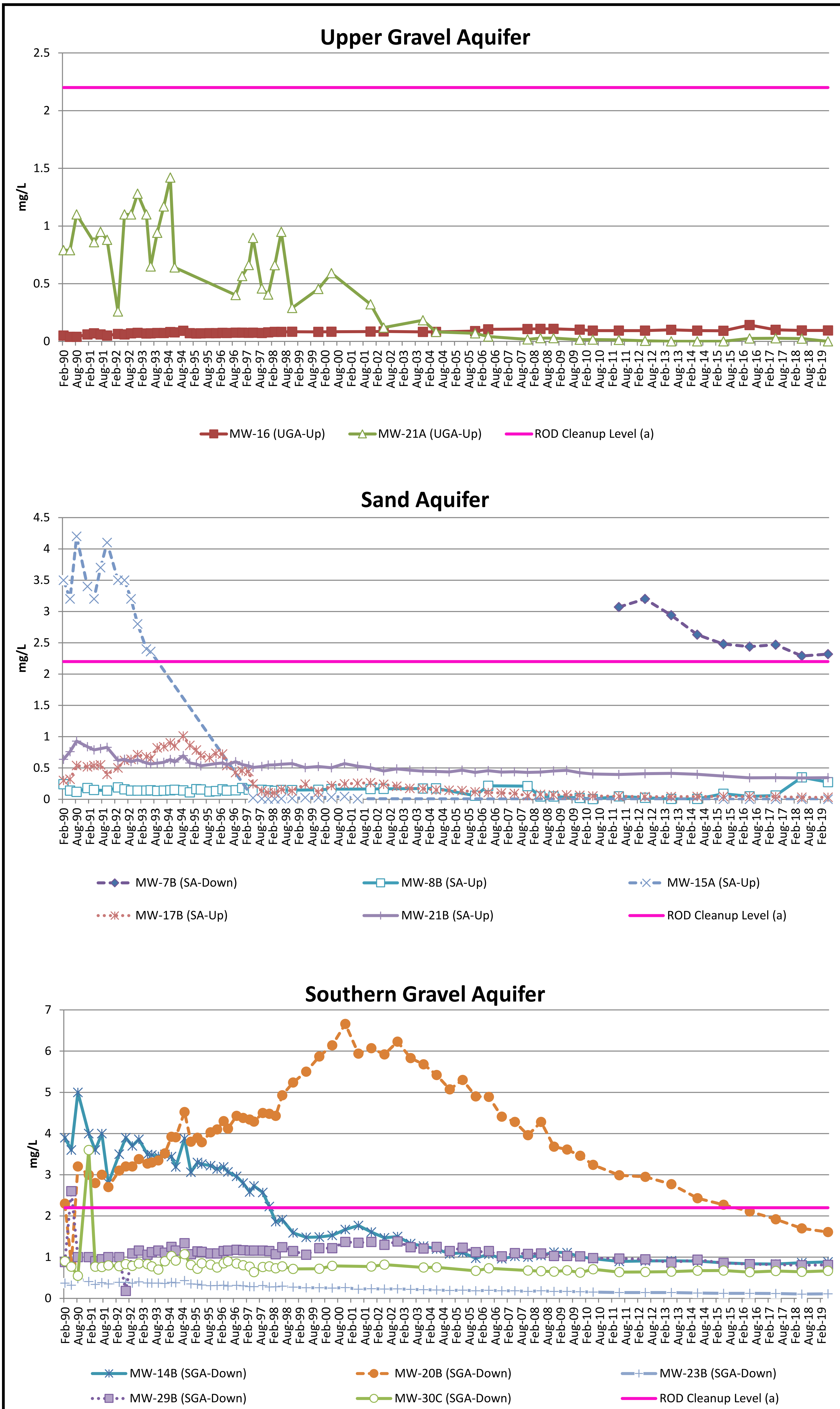
		Field Blanks					Trip Blanks																			
		R-62	R-63	R-64	R-65	R-66	R-62				R-63				R-64				R-65			R-66				
Compound	**Units**	**5/6/2015**	**5/5/2016**	**5/3/2017**	**5/8/2018**	**5/7/2019**	**5/4/2015**	**5/5/2015**	**5/6/2015**	**5/7/2015**	**5/2/2016**	**5/3/2016**	**5/4/2016**	**5/5/2016**	**5/1/2017**	**5/2/2017**	**5/3/2017**	**5/4/2017**	**5/7/2018**	**5/8/2018**	**5/9/2018**	**5/6/2019**	**5/7/2019**	**5/8/2019**
Field Parameters																								
pH	s.u.	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Conductivity	µmhos/cm	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Temperature	C	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Conventional Parameters																								
Chloride	mg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Sulfate	mg/L	2.0 U	2.0 U	2.00 U	2.00 U	2.00 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Chemical Oxygen Demand	mg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total Organic Carbon	mg/L	1.50 U	1.15	0.50 U	0.50 U	0.50 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Dissolved Metals																								
Iron	mg/L	0.05 U	0.05 U	0.0500 U	0.0500 U	0.0500 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Manganese	mg/L	0.001 U	0.002	0.0010 U	0.0010 U	0.0010 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Semi-Volatile Organics																								
1,4-Dioxane	µg/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Volatile Organics																								
Chloromethane	µg/L	1.0 U	2.5 U	2.50 U	2.50 U	2.50 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	2.5 U	2.5 U	2.5 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U	2.50 U
Vinyl Chloride	µg/L	0.020 U	0.20 U	0.20 U	0.020 U	0.200 U	0.020 U	0.020 U	0.020 U	0.020 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.020 U	0.020 U	0.020 U	- -	0.200 U	0.200 U
Bromomethane	µg/L	1.0 U	5.0 U	5.00 U	5.00 U	5.00 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Chloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichlorofluoromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	2.0 U	1.0 U	1.00 U	1.00 U	1.00 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Acetone	µg/L	10 U	25 U	25.0 U	25.0 U	25.0 U	10 U	10 U	10 U	10 U	25 U	25 U	25 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Methylene Chloride	µg/L	7.9	5.0 U	5.00 U	5.00 U	5.00 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Carbon Disulfide	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Vinyl Acetate	µg/L	5.0 U	1.0 U	1.00 U	1.00 U	1.00 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Butanone	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	5.0 U	5.0 U	5.0 U	25 U	25 U	25 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloroform	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Carbon Tetrachloride	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Benzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Chloroethyl vinyl ether	µg/L	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Methyl-2-Pentanone (MIBK)	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	5.0 U	5.0 U	5.0 U	25 U	25 U	25 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Toluene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2-Hexanone	µg/L	5.0 U	25 U	25.0 U	25.0 U	25.0 U	5.0 U	5.0 U	5.0 U	5.0 U	25 U	25 U	25 U	25 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
m,p-Xylene	µg/L	2.0 U	2.0 U	1.00 U	2.00 U	2.00 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.00 U	1.00 U	1.00 U	1.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
o-Xylene	µg/L	1.0 U	1.0 U	2.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.00 U	2.00 U	2.00 U	2.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Styrene	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

Table A-3 Notes:

UP or DOWN in column title denotes whether the well is located upgradient or down gradient of the landfills influence.
U = Indicated the compound was undetected at the reported concentration
J = Indicated the compound was detected at an estimated concentration
M = Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
Q = Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF)
- - = Not analyzed
R-62 = Round 62, May 2015
R-63 = Round 63, May 2016
R-64 = Round 64, May 2017
R-65 = Round 65, May 2018
R-66 = Round 66, May 2019

Groundwater Time-series Plots

ROD COCs



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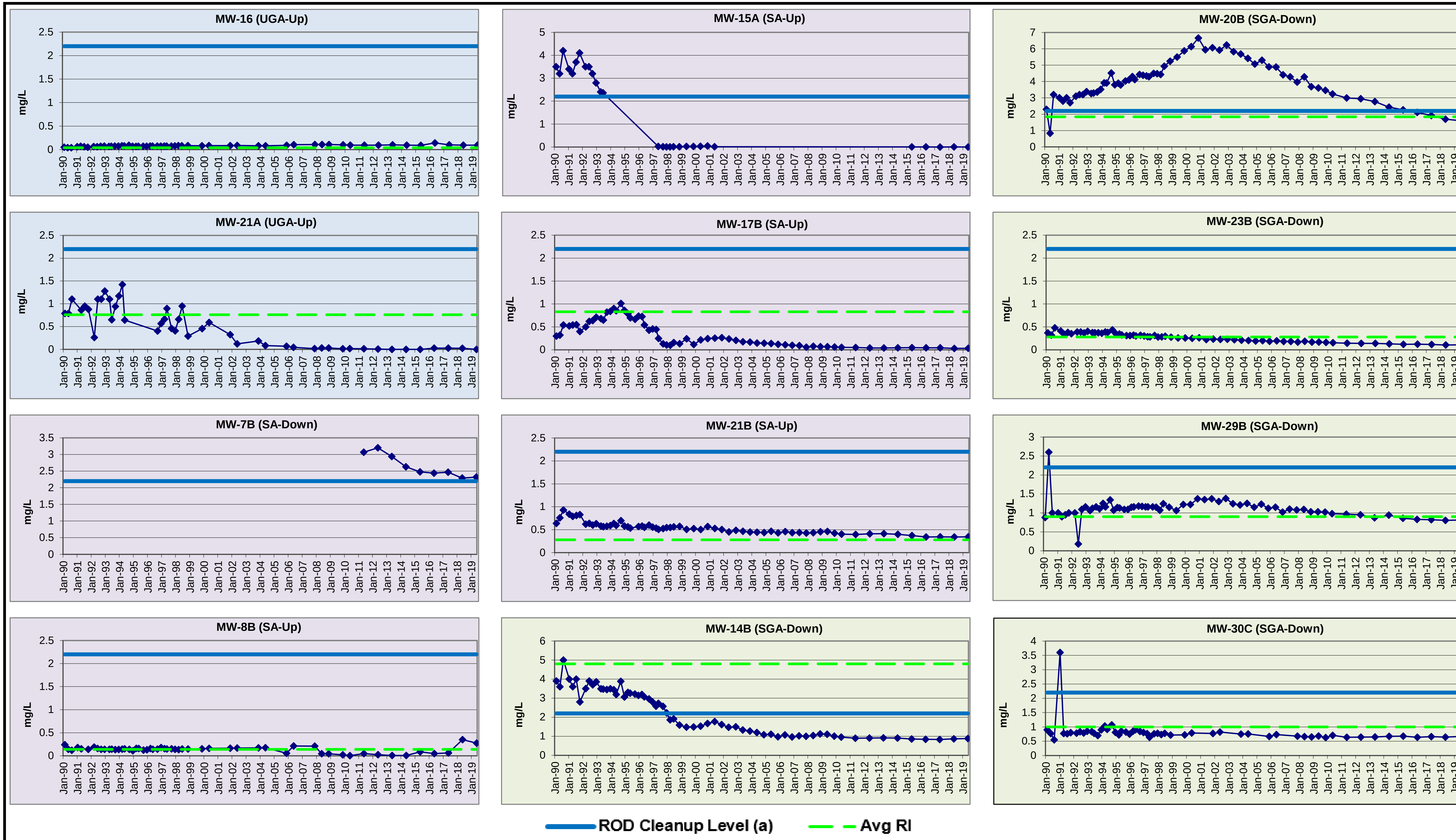
Manganese Concentrations by Aquifer
Midway Landfill

Notes: Non-detected values are shown as 1/2 the detection limit.
(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.



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Notes: Non-detected values are shown as 1/2 the detection limit.

(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.

RI = Remedial Investigation

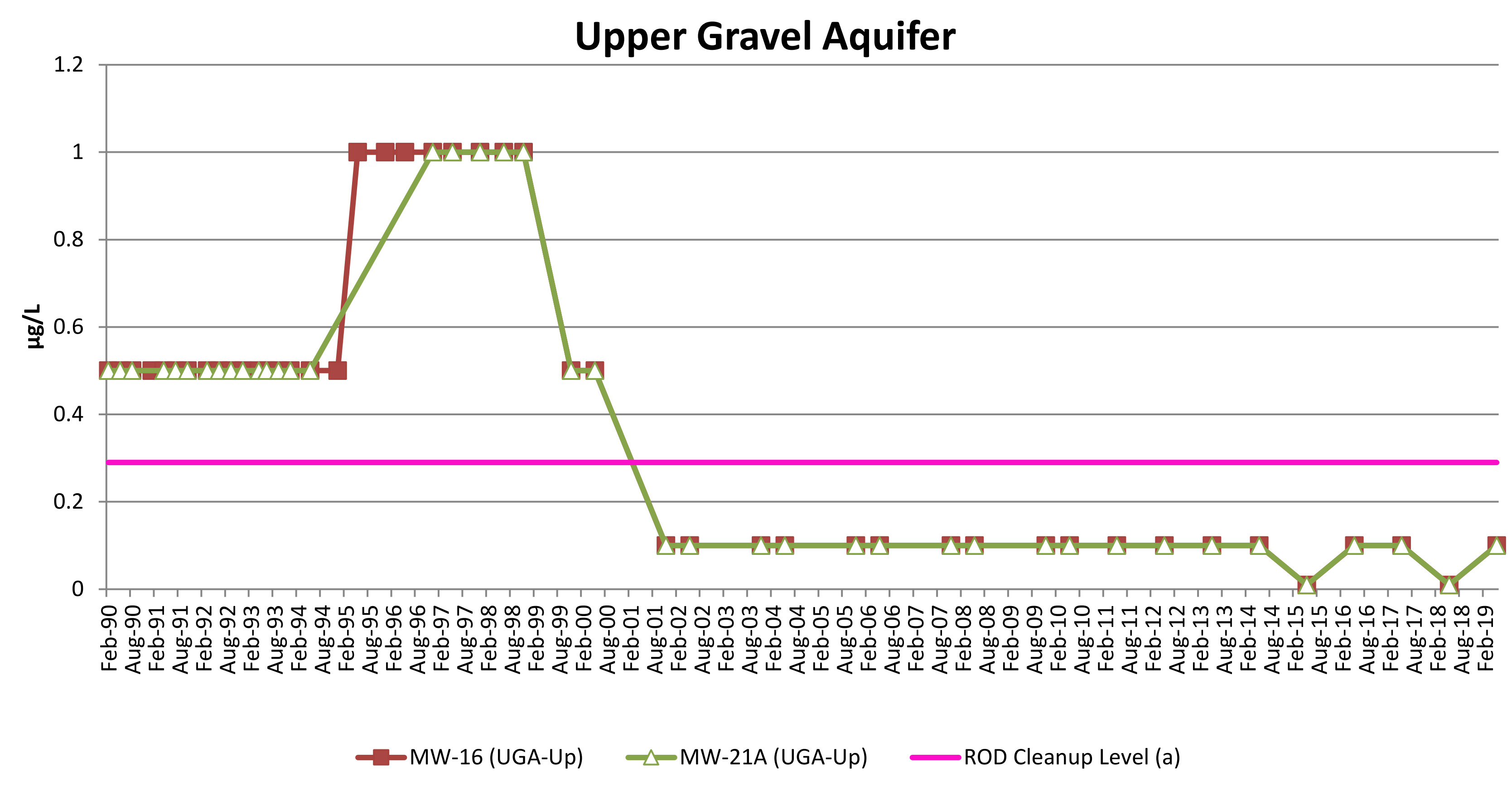
Upper Gravel Aquifer

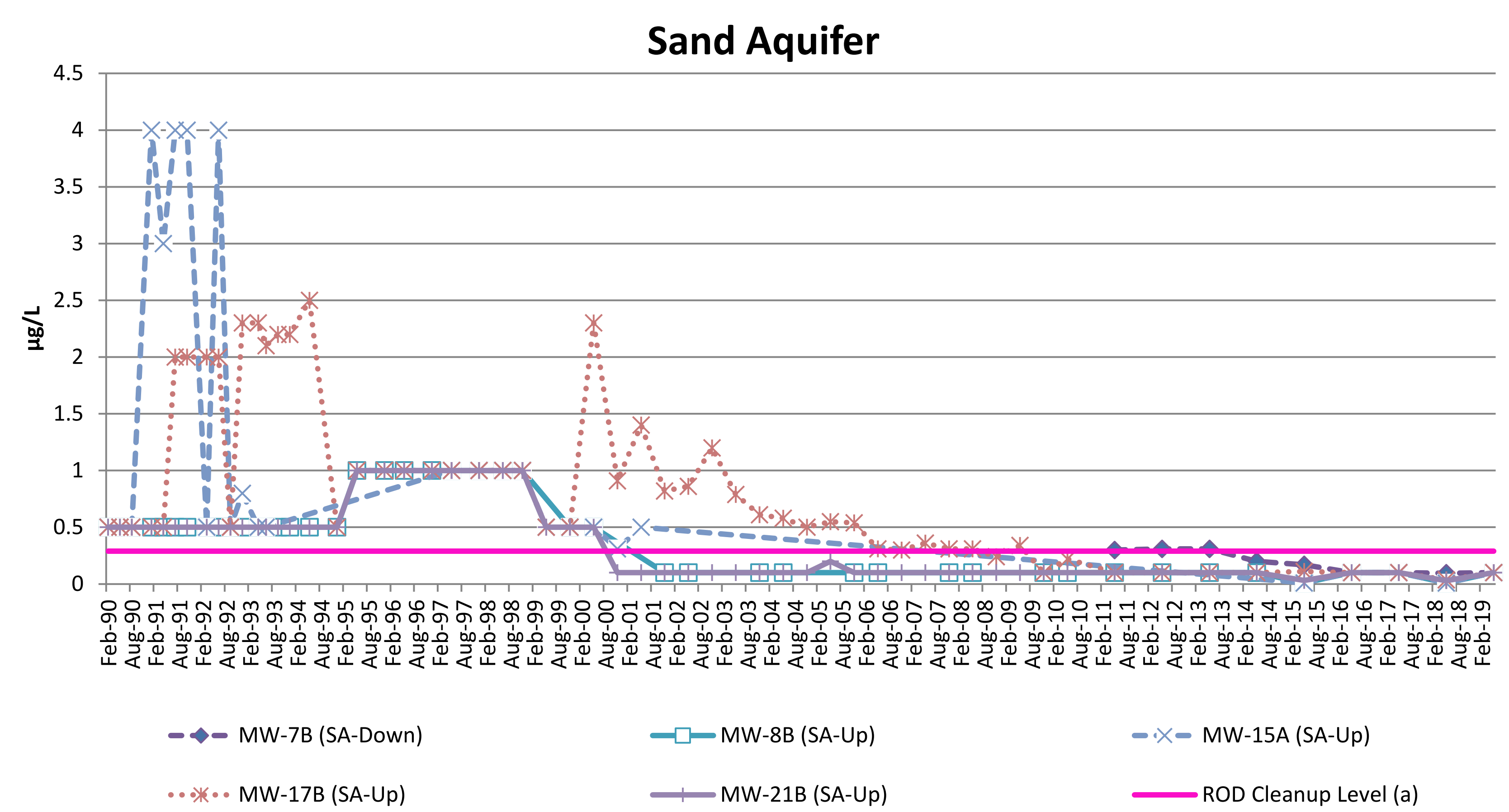
Sand Aquifer

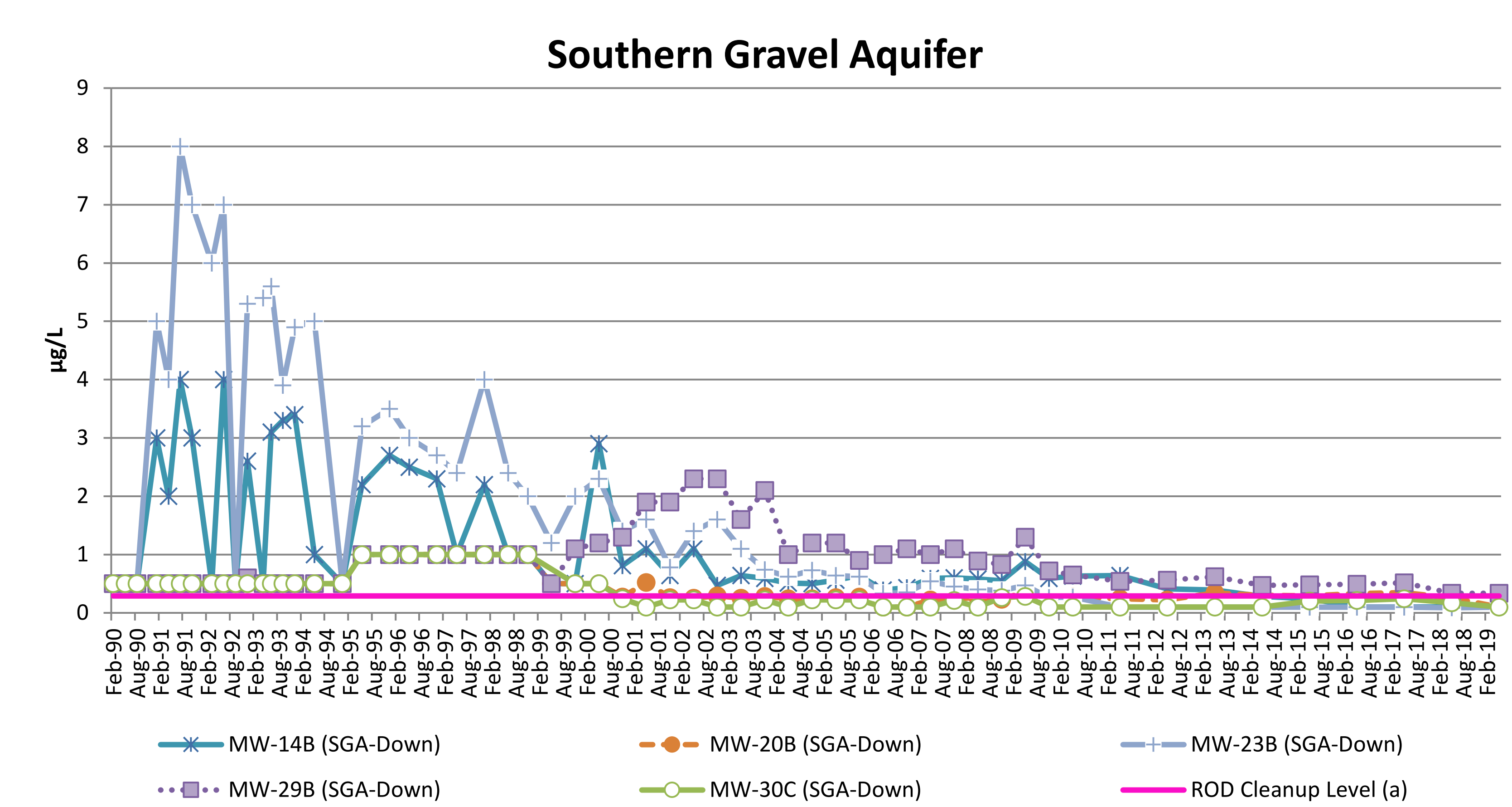
Southern Gravel Aquifer

Manganese Concentrations by Well

Midway Landfill



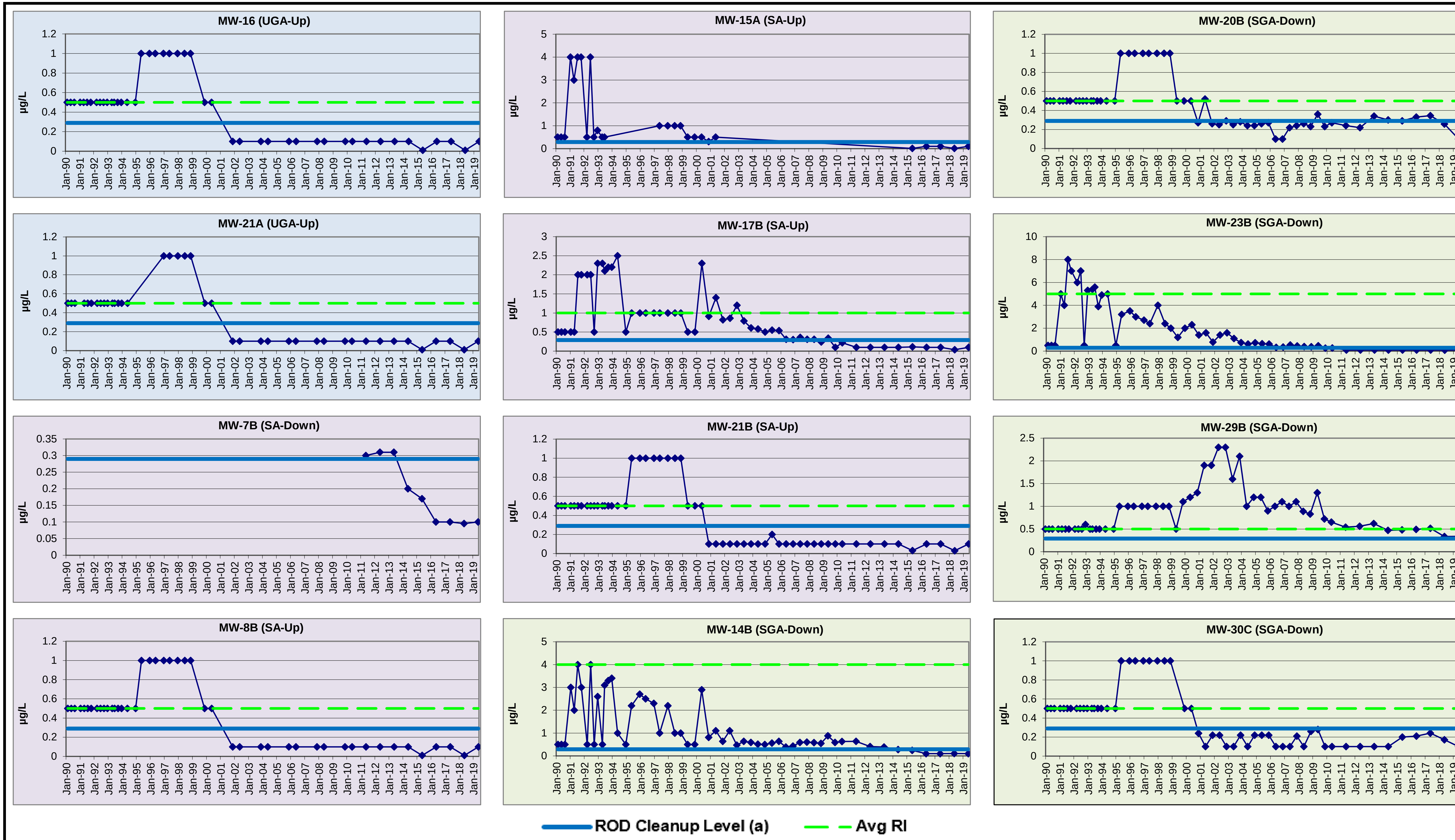




Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.
(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.

Vinyl Chloride Concentrations by Aquifer
Midway Landfill



Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

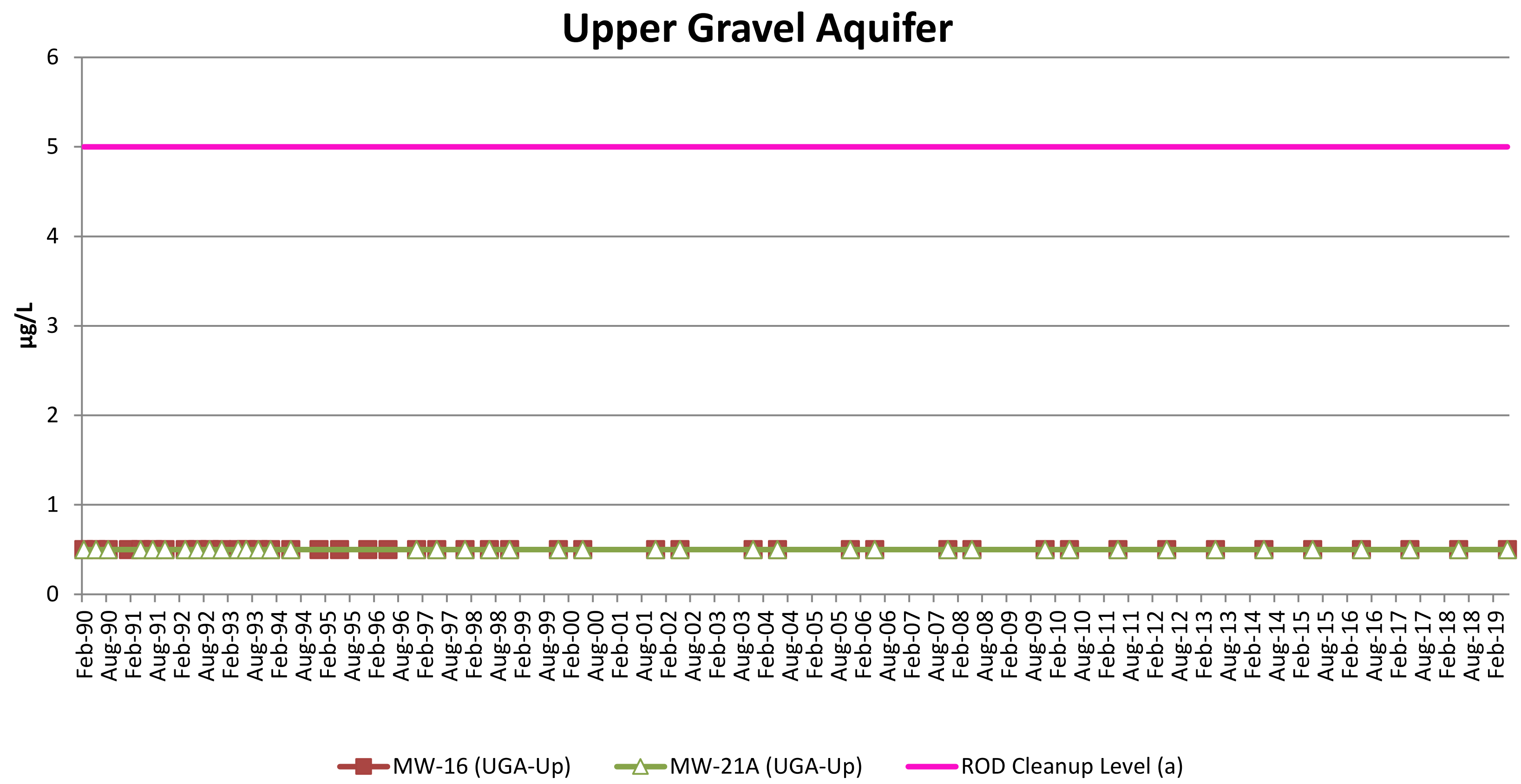
Notes: Non-detected values are shown as 1/2 the detection limit.

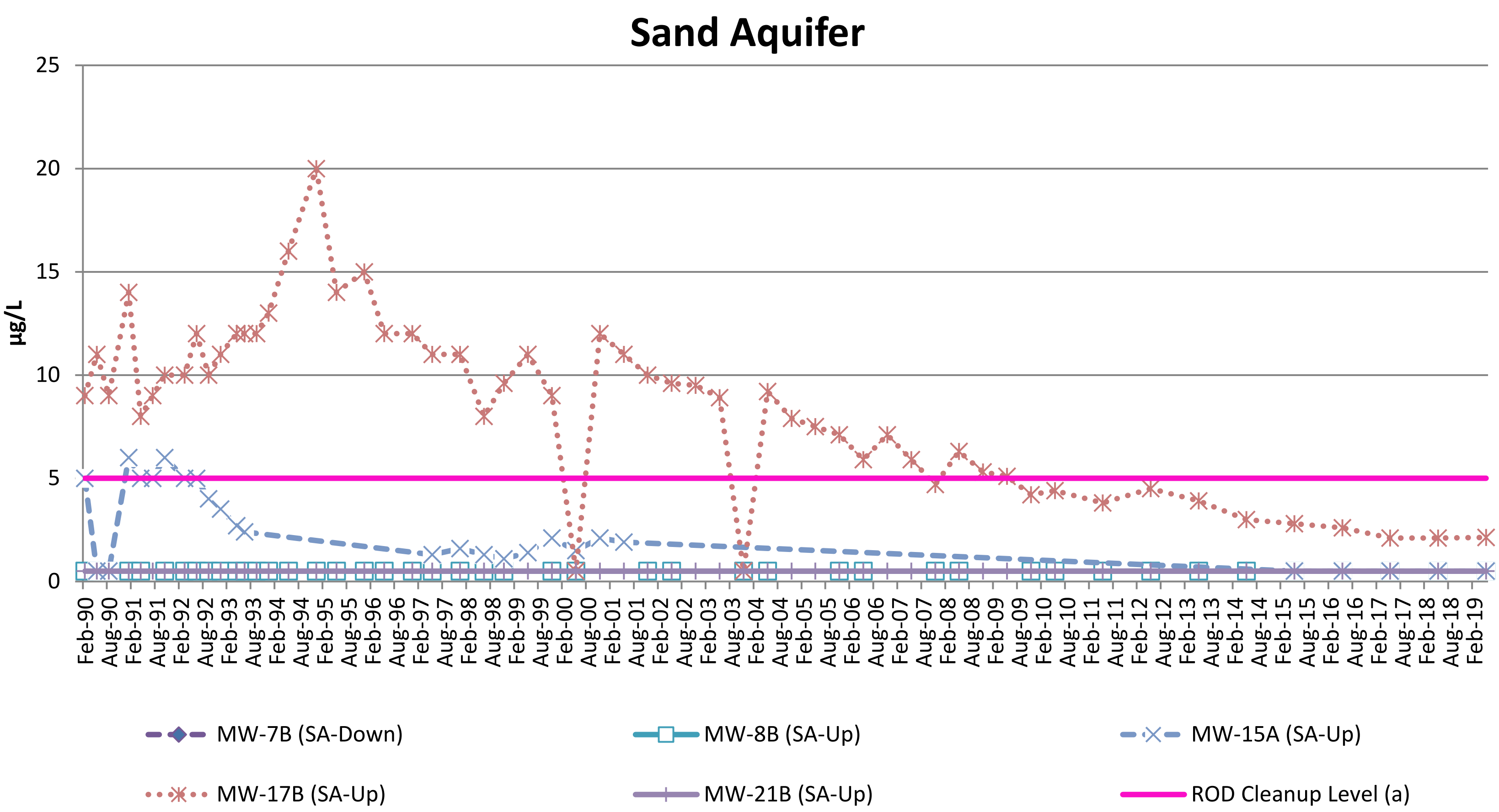
(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.

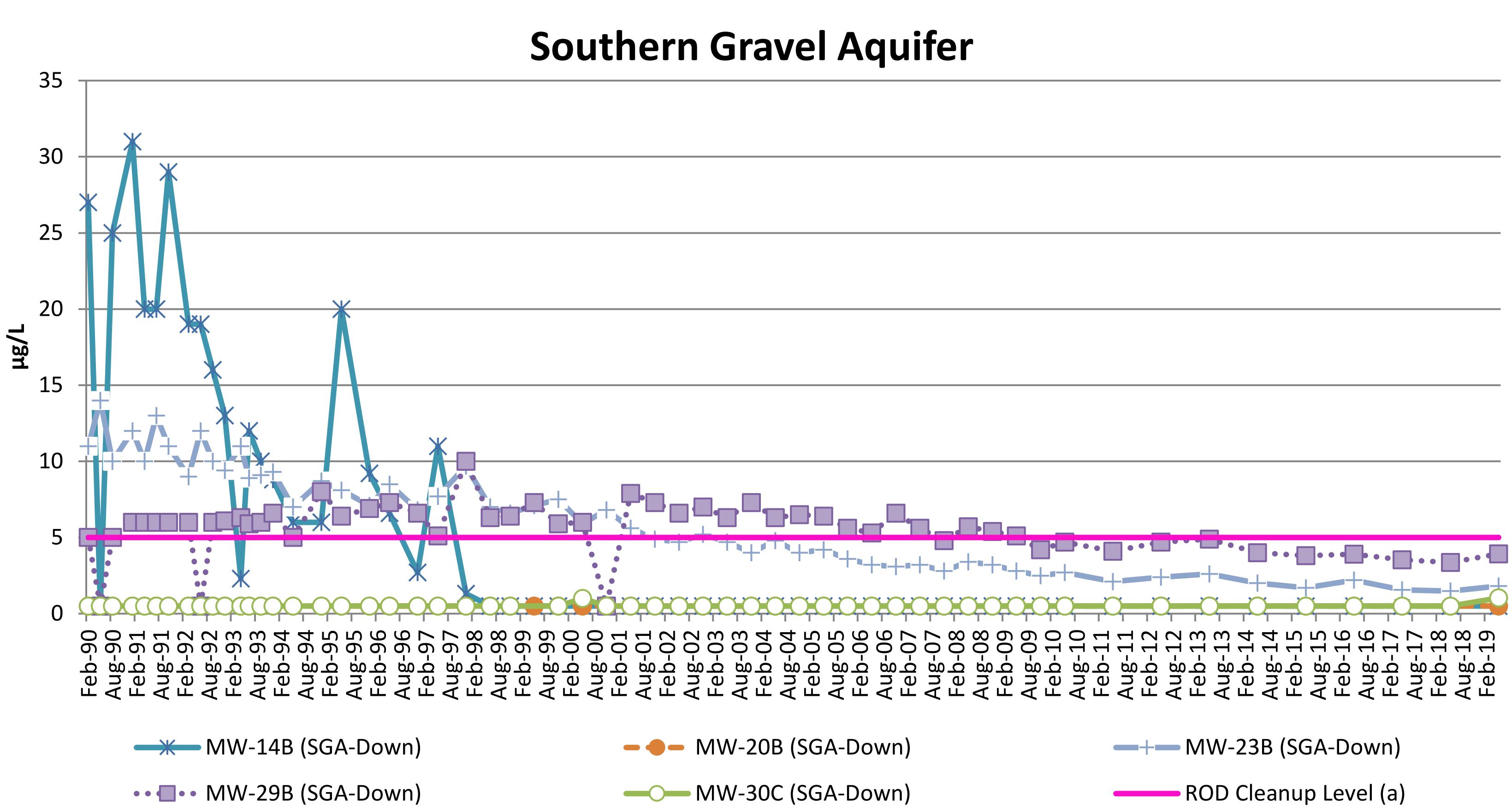
RI = Remedial Investigation

Upper Gravel Aquifer
Sand Aquifer
Southern Gravel Aquifer

Vinyl Chloride Concentrations by Well
Midway Landfill



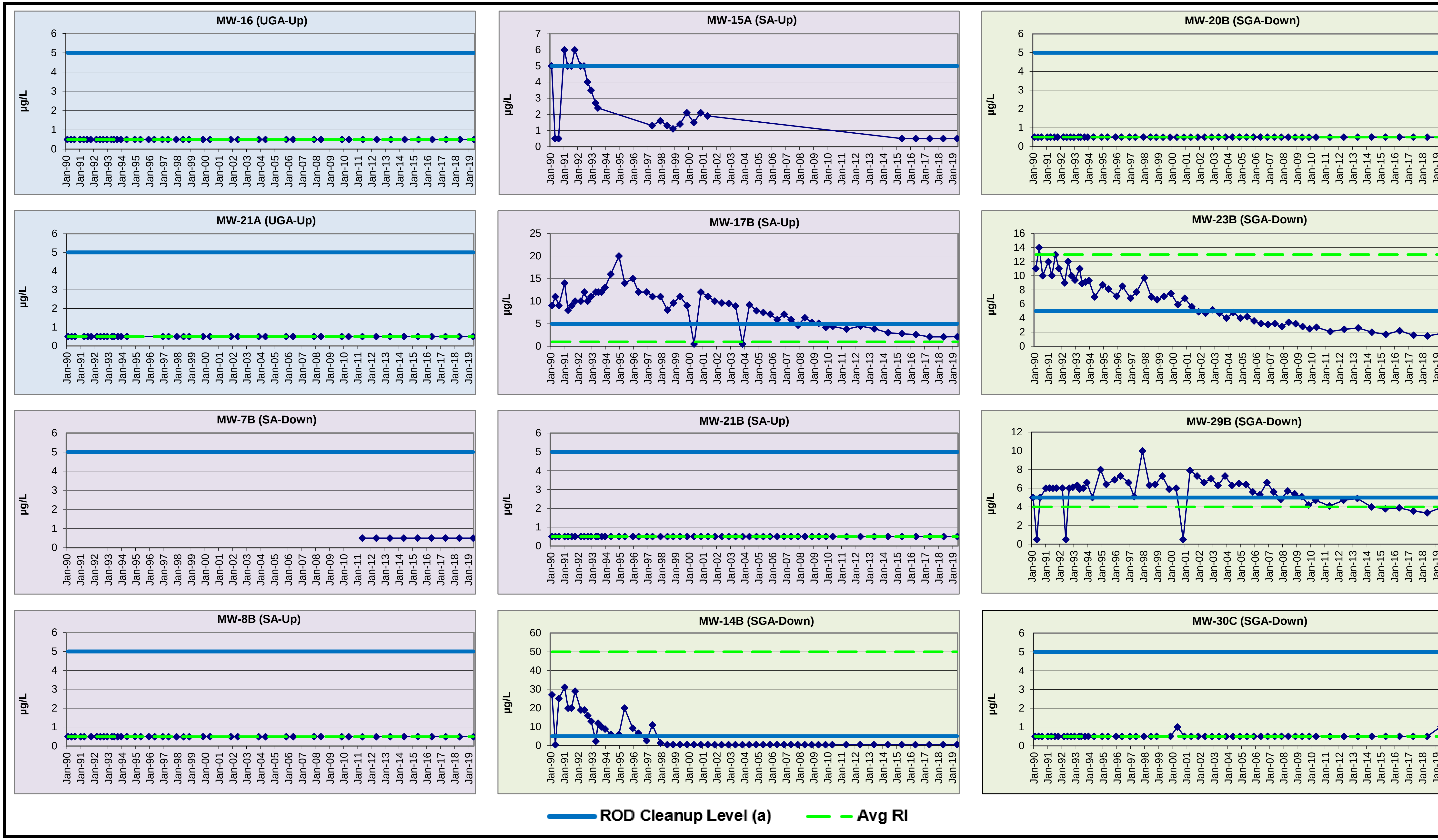




Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.
(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.

1,2-Dichloroethane Concentrations by Aquifer
Midway Landfill



Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.

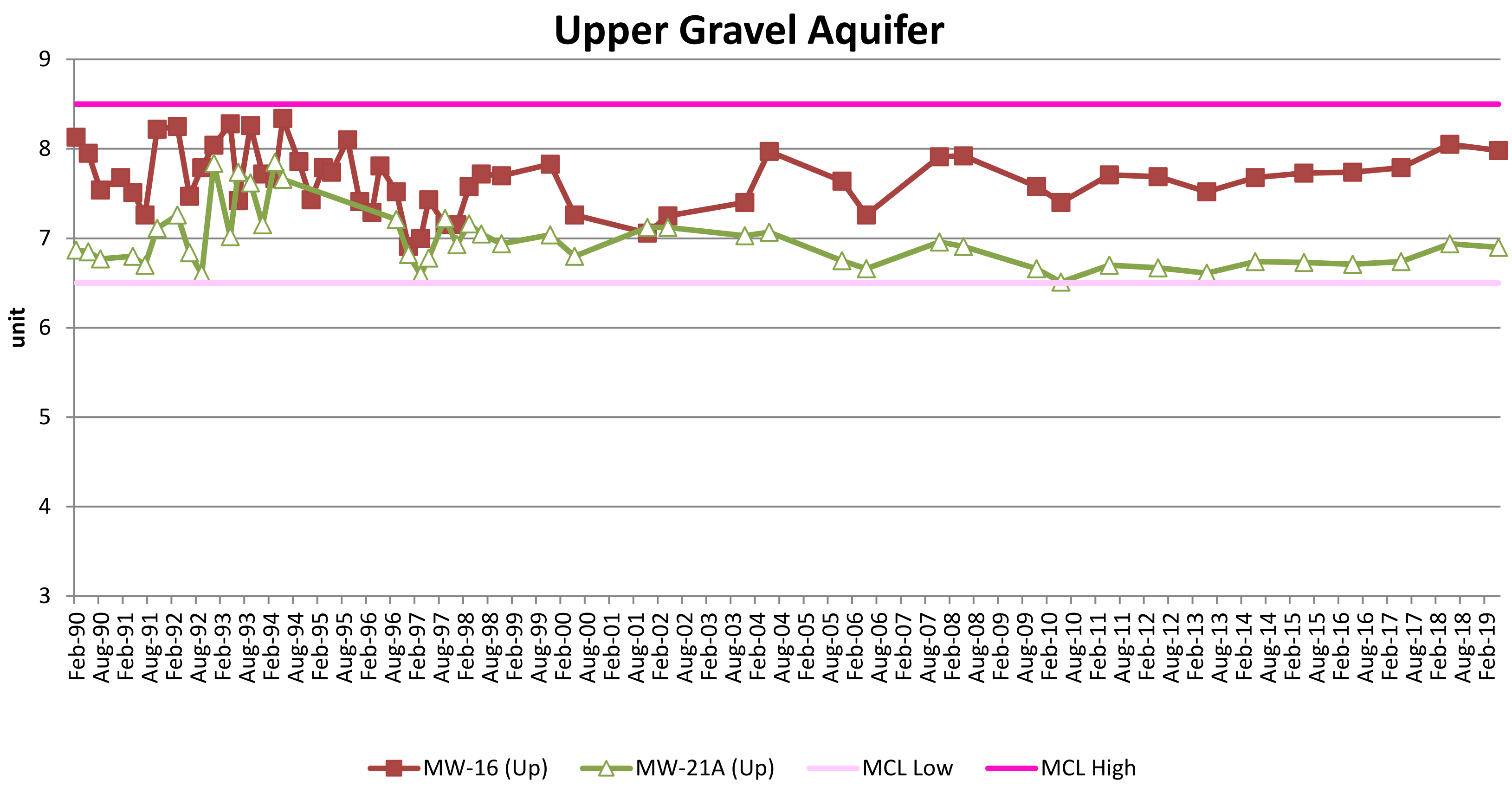
(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.

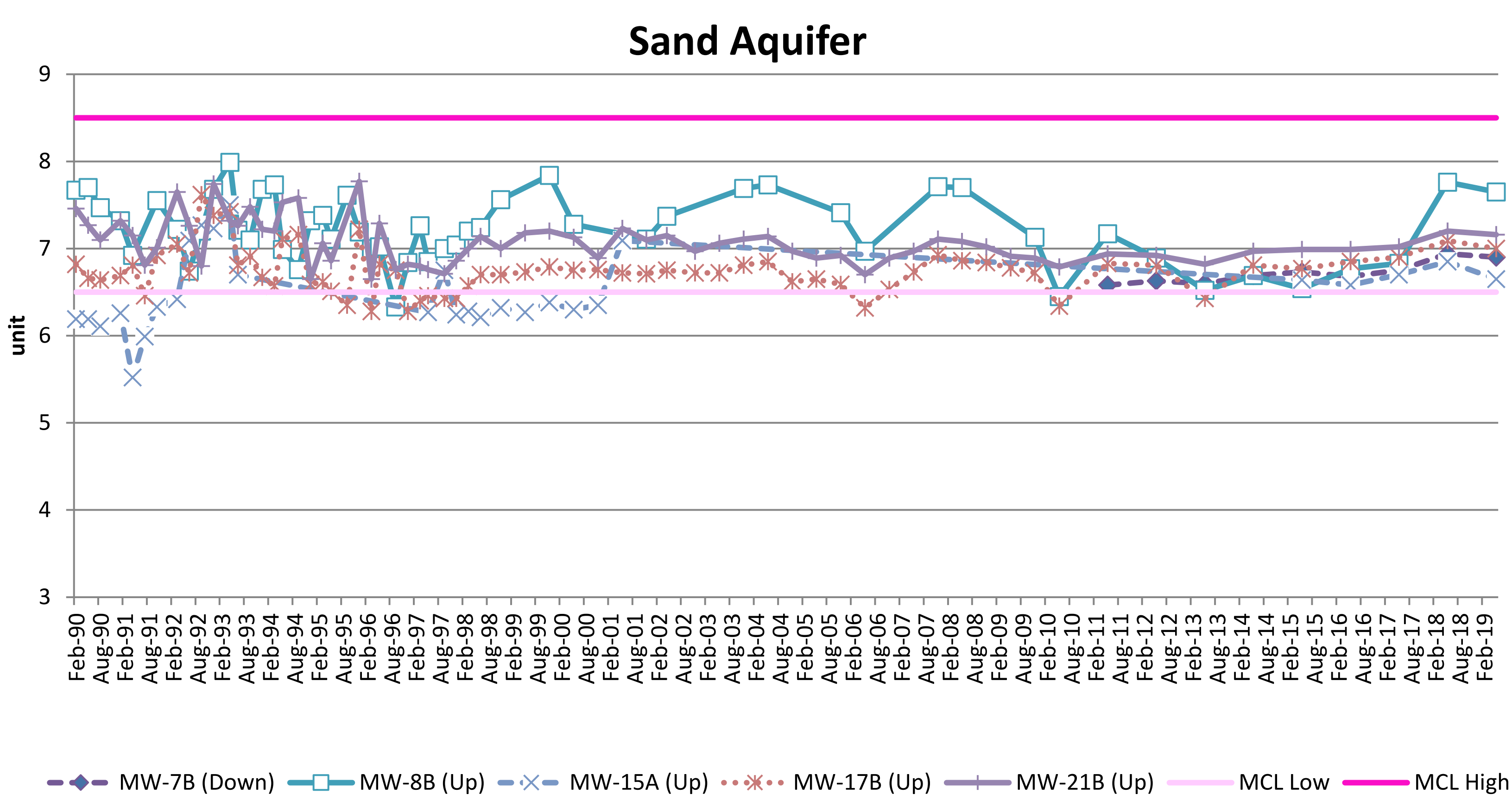
RI = Remedial Investigation

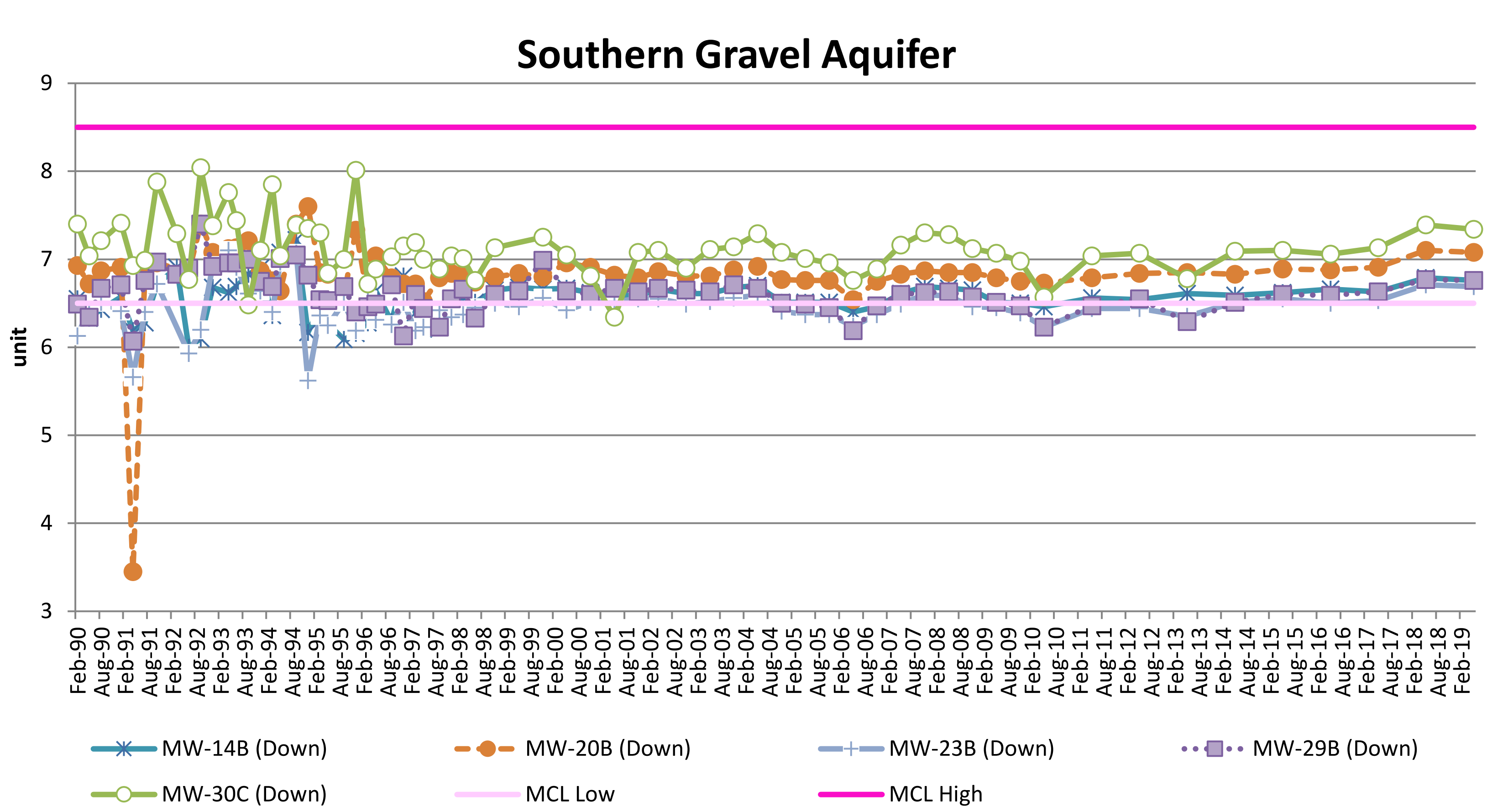
	Upper Gravel Aquifer
	Sand Aquifer
	Southern Gravel Aquifer

1,2-Dichloroethane Concentrations by Well
Midway Landfill

Groundwater Quality Parameters not included in the ROD



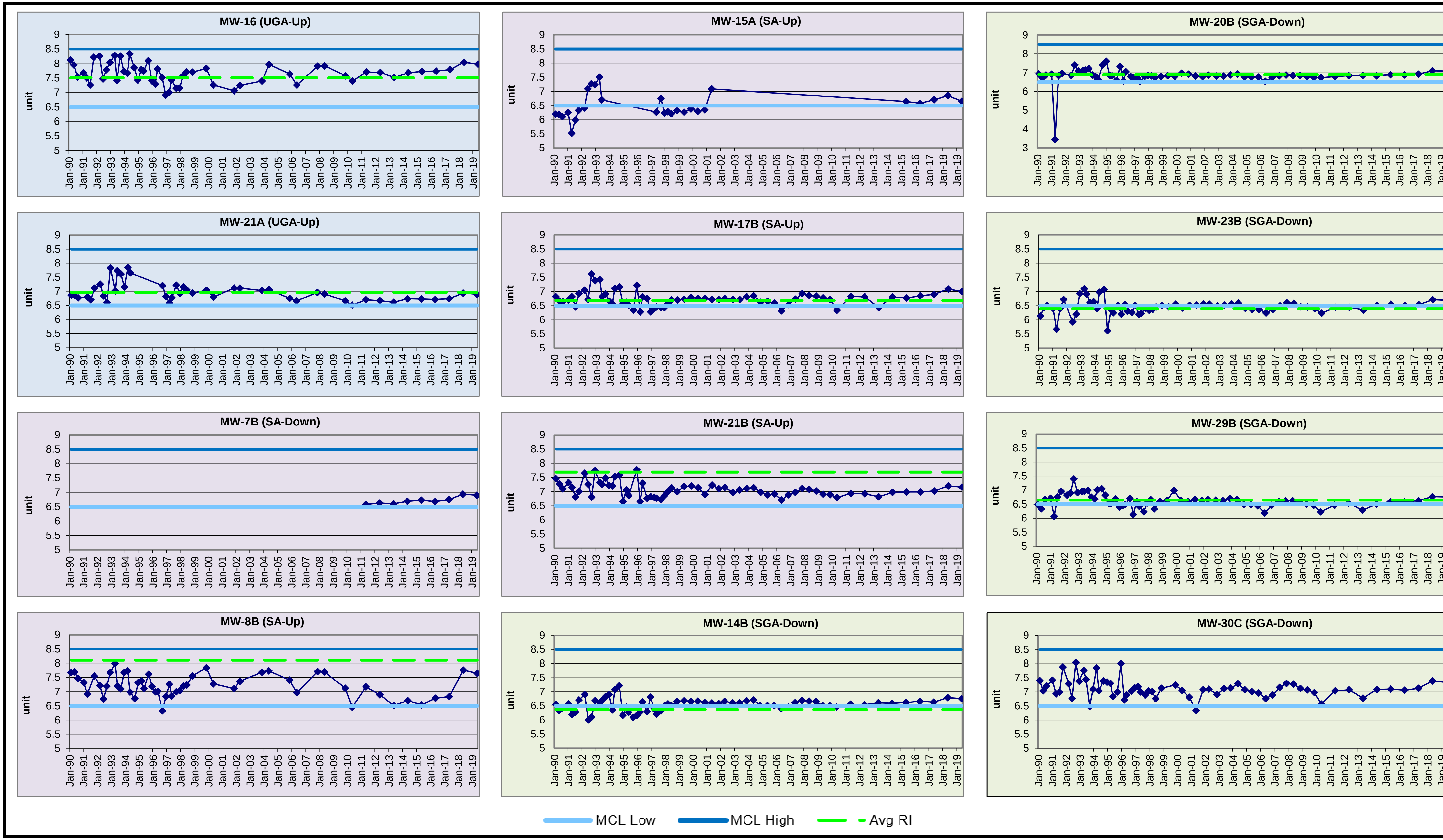




Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: MCL = Primary of secondary maximum contaminat level standard.

pH Concentrations by Aquifer
Midway Landfill

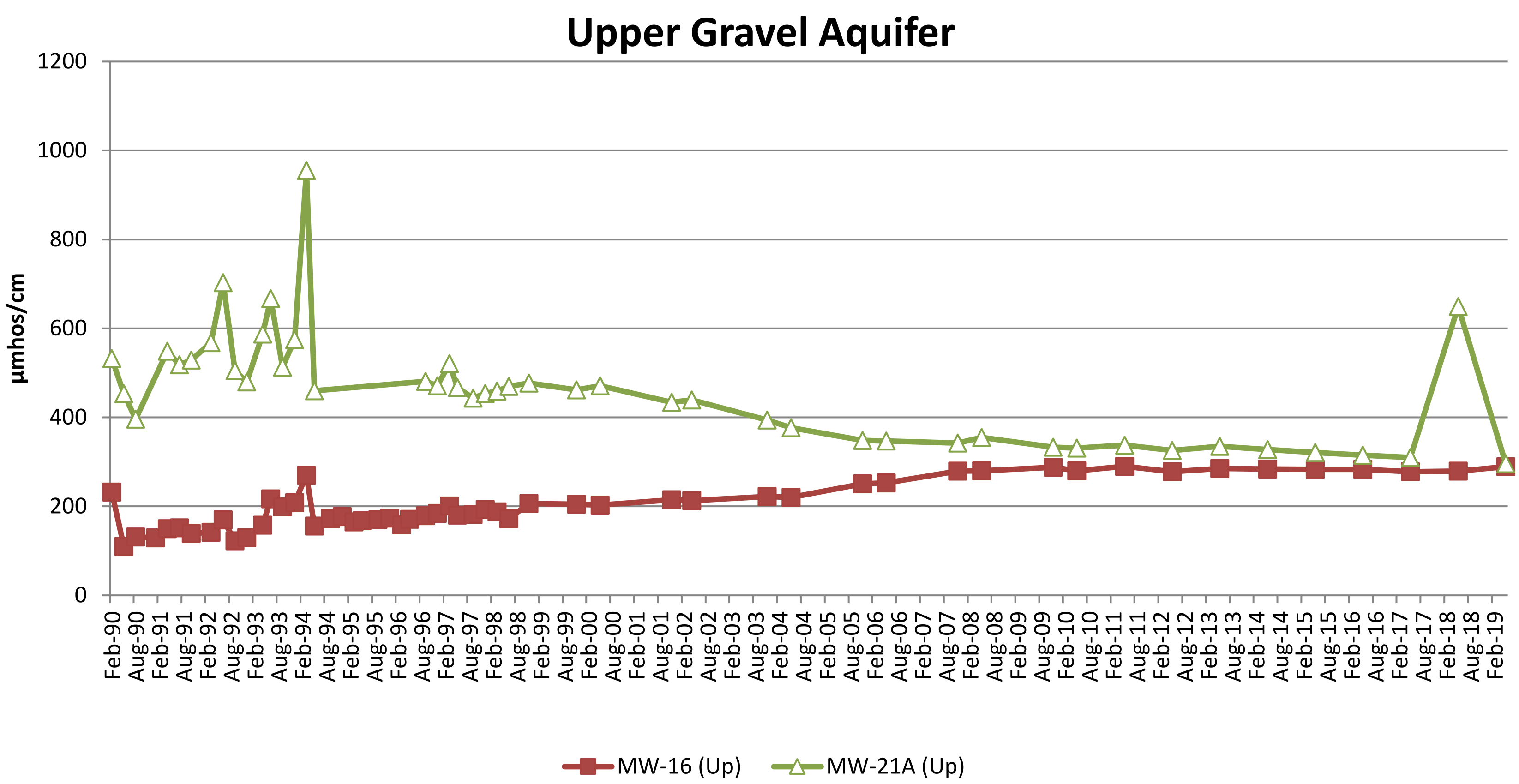


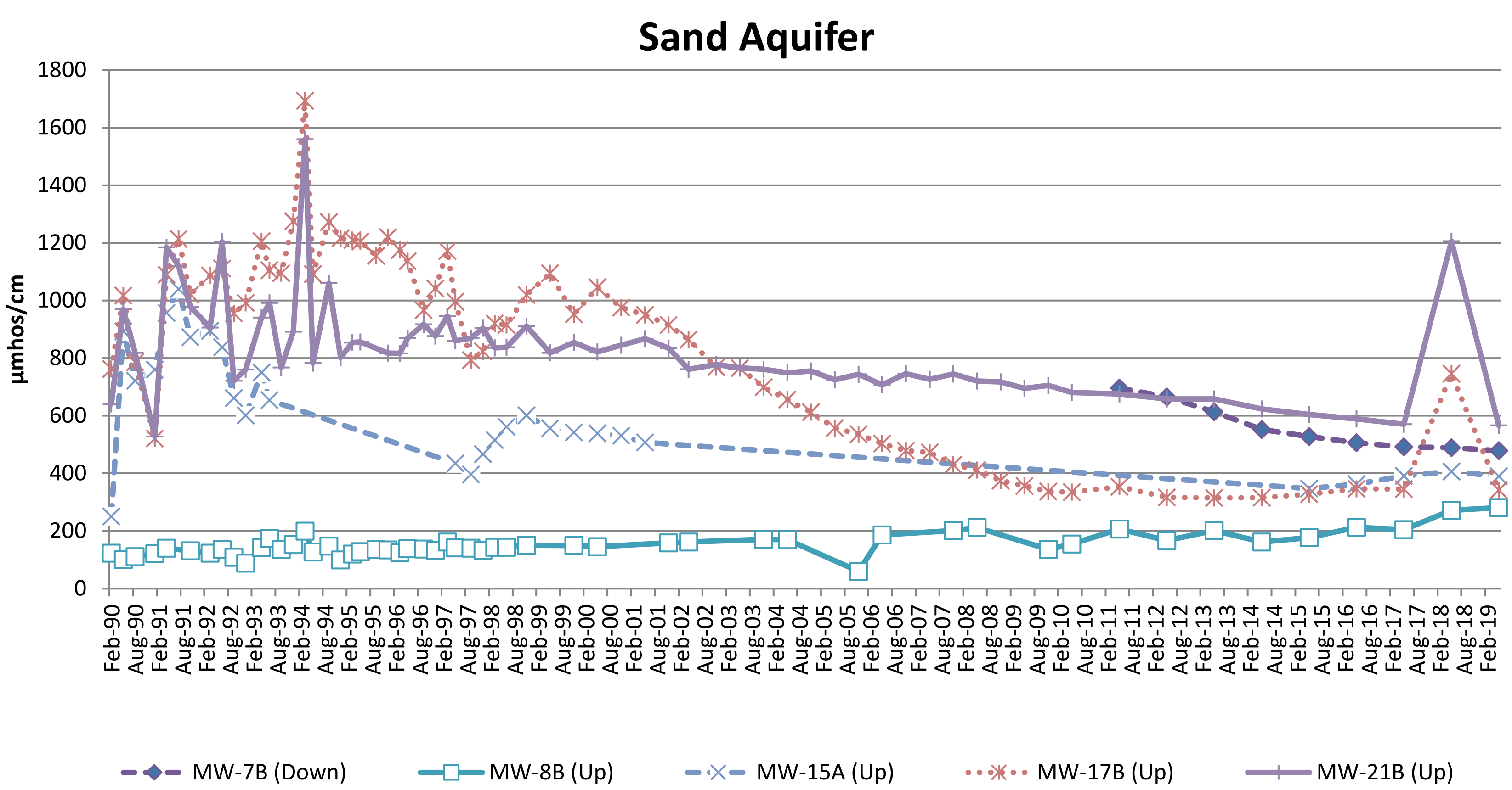
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

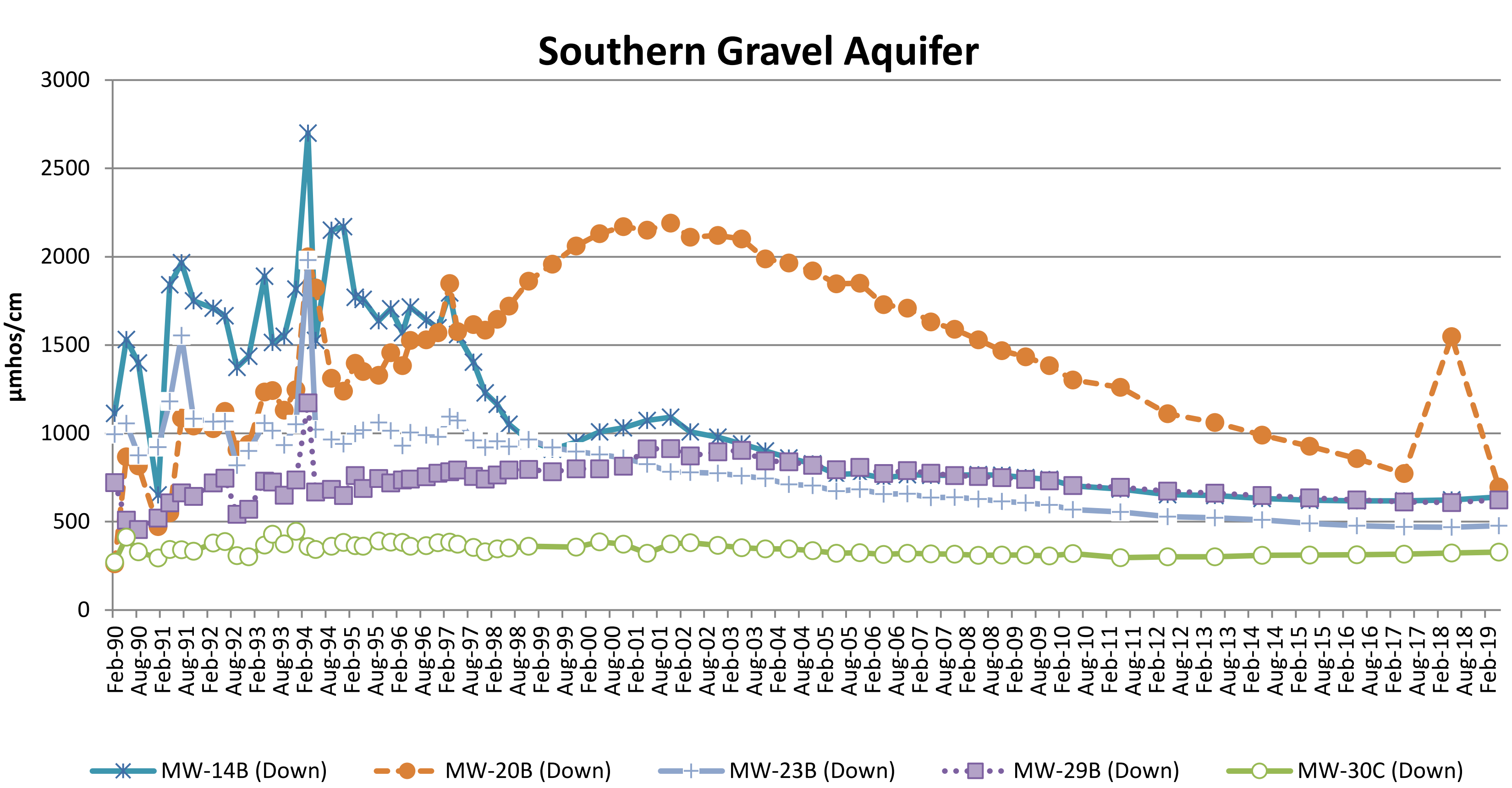
Notes: MCL = Primary of secondary maximum contaminat level standard.
RI = Remedial Investigation

	Upper Gravel Aquifer
	Sand Aquifer
	Southern Gravel Aquifer

pH Concentrations by Well
Midway Landfill

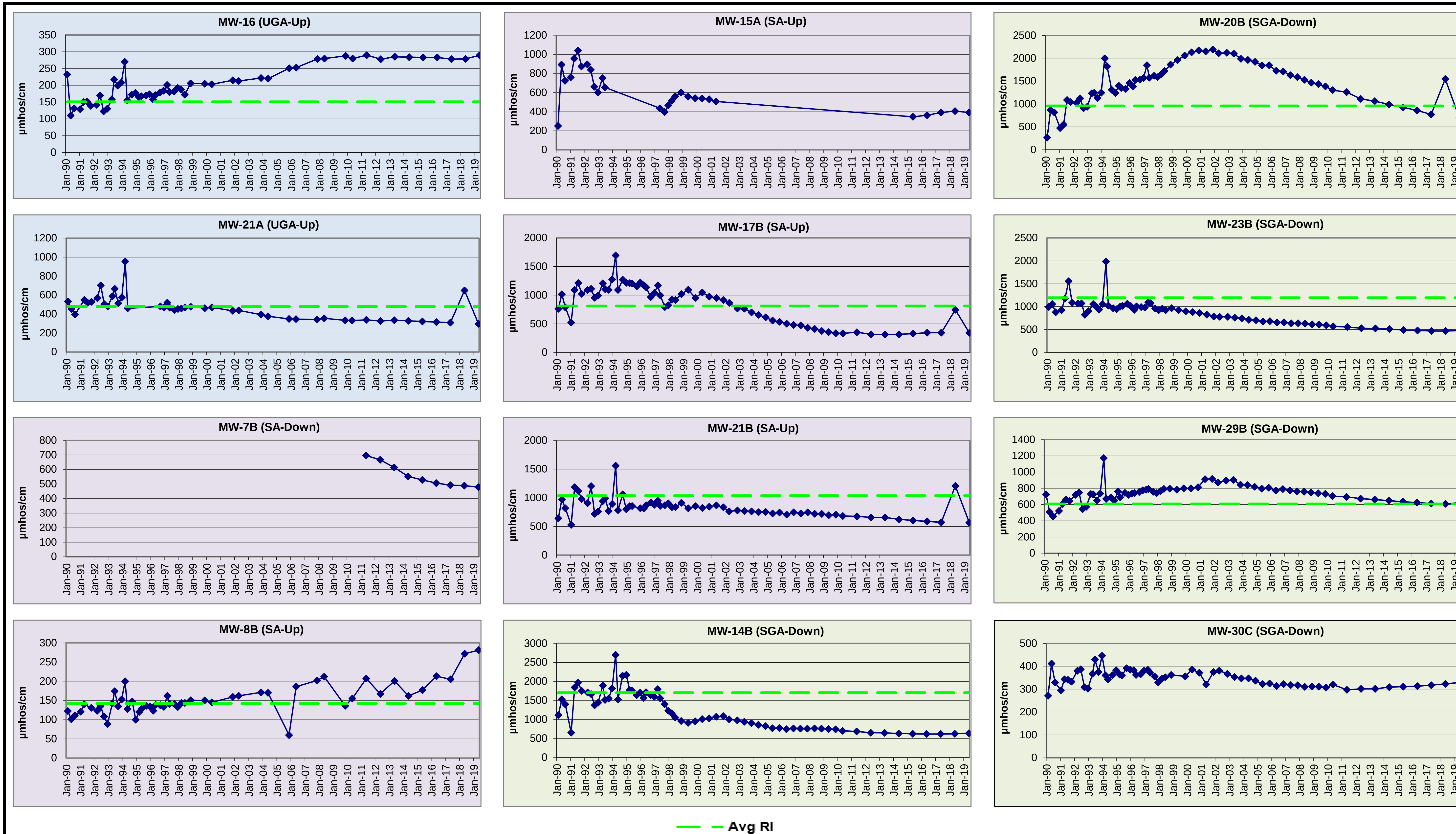






Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Specific Conductivity
Concentrations by Aquifer
Midway Landfill

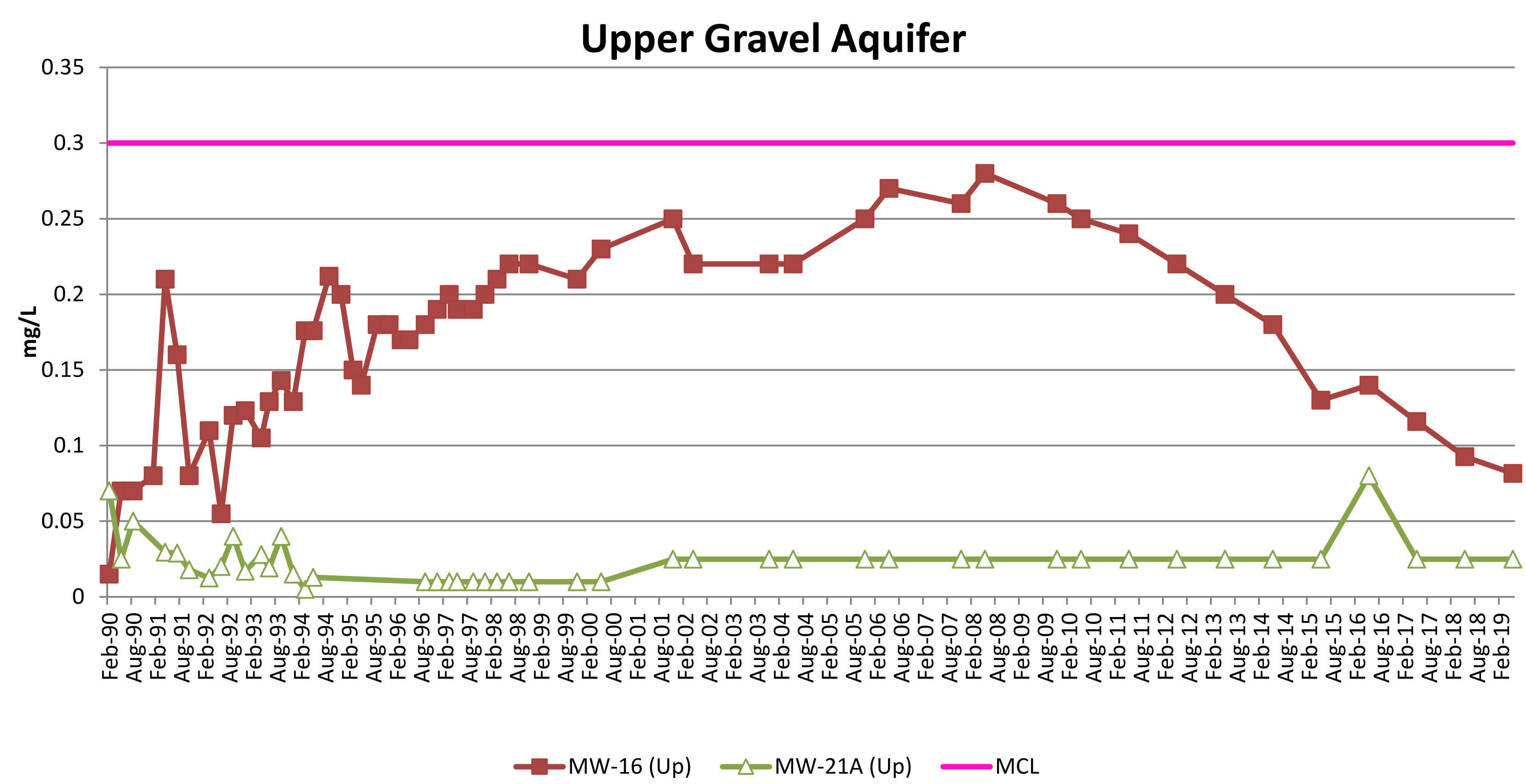


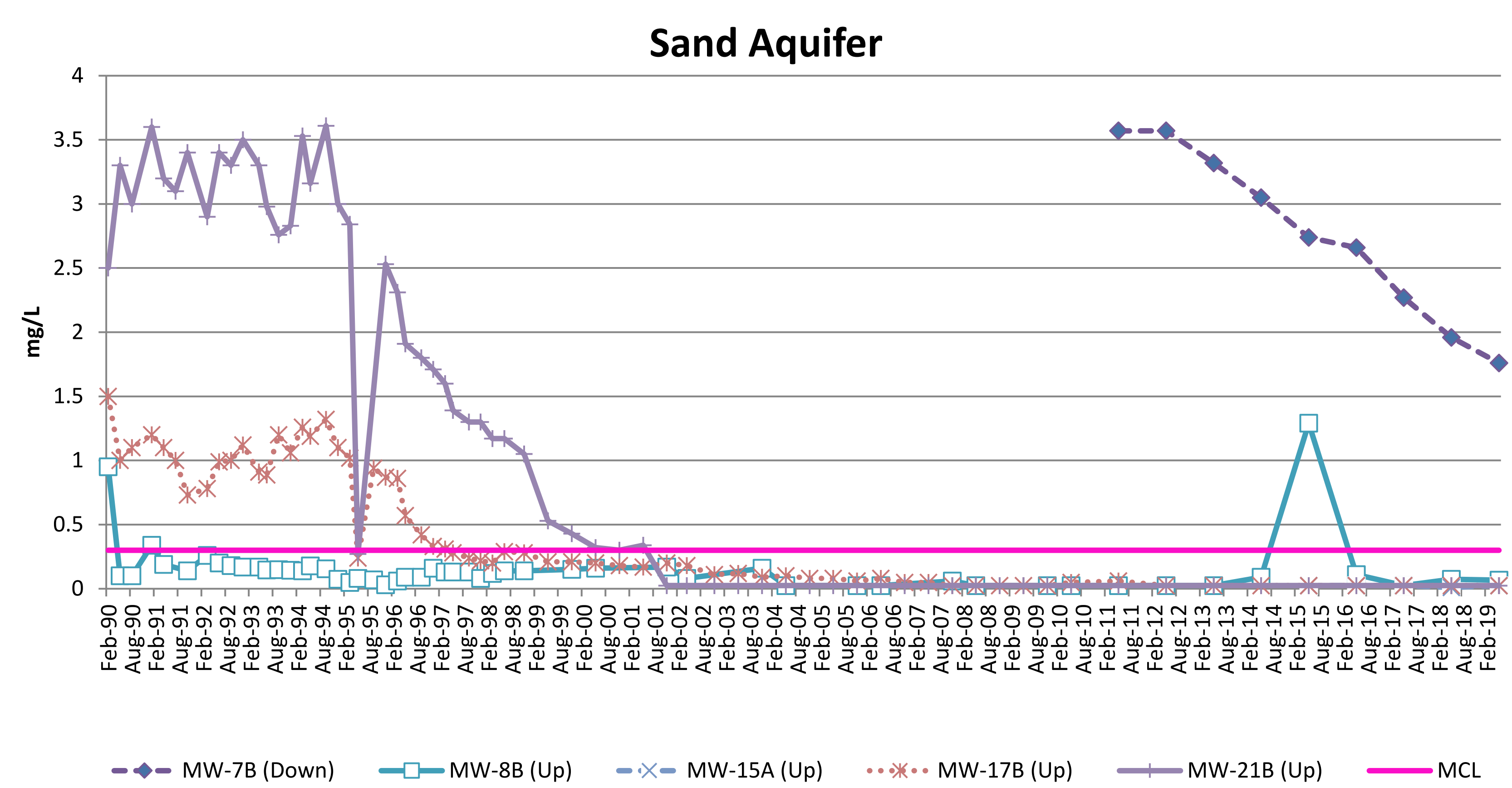
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

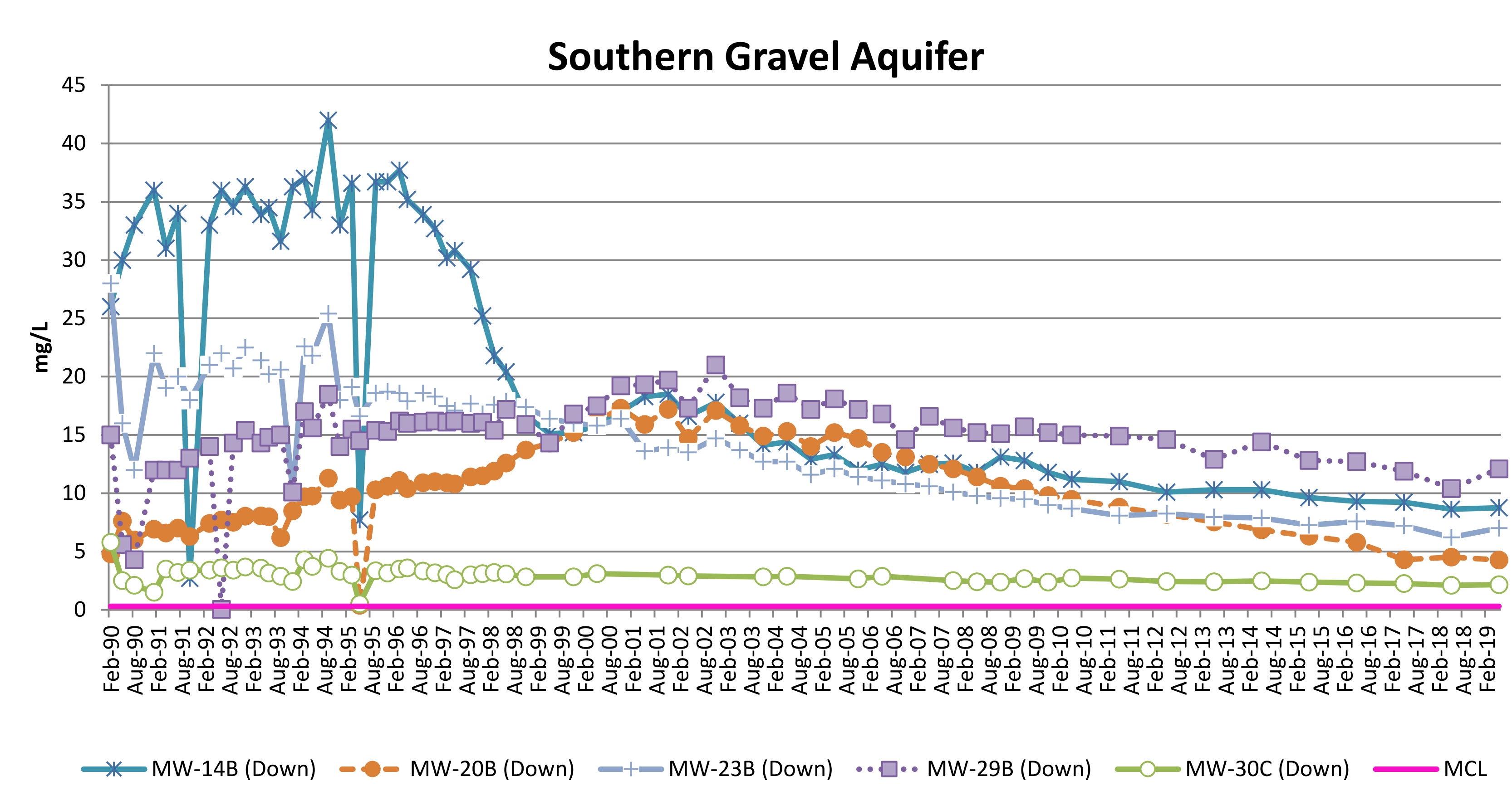
Notes: MCL = Primary of secondary maximum contaminat level standard.
RI = Remedial Investigation

	Upper Gravel Aquifer
	Sand Aquifer
	Southern Gravel Aquifer

Specific Conductivity Concentrations by Well
Midway Landfill



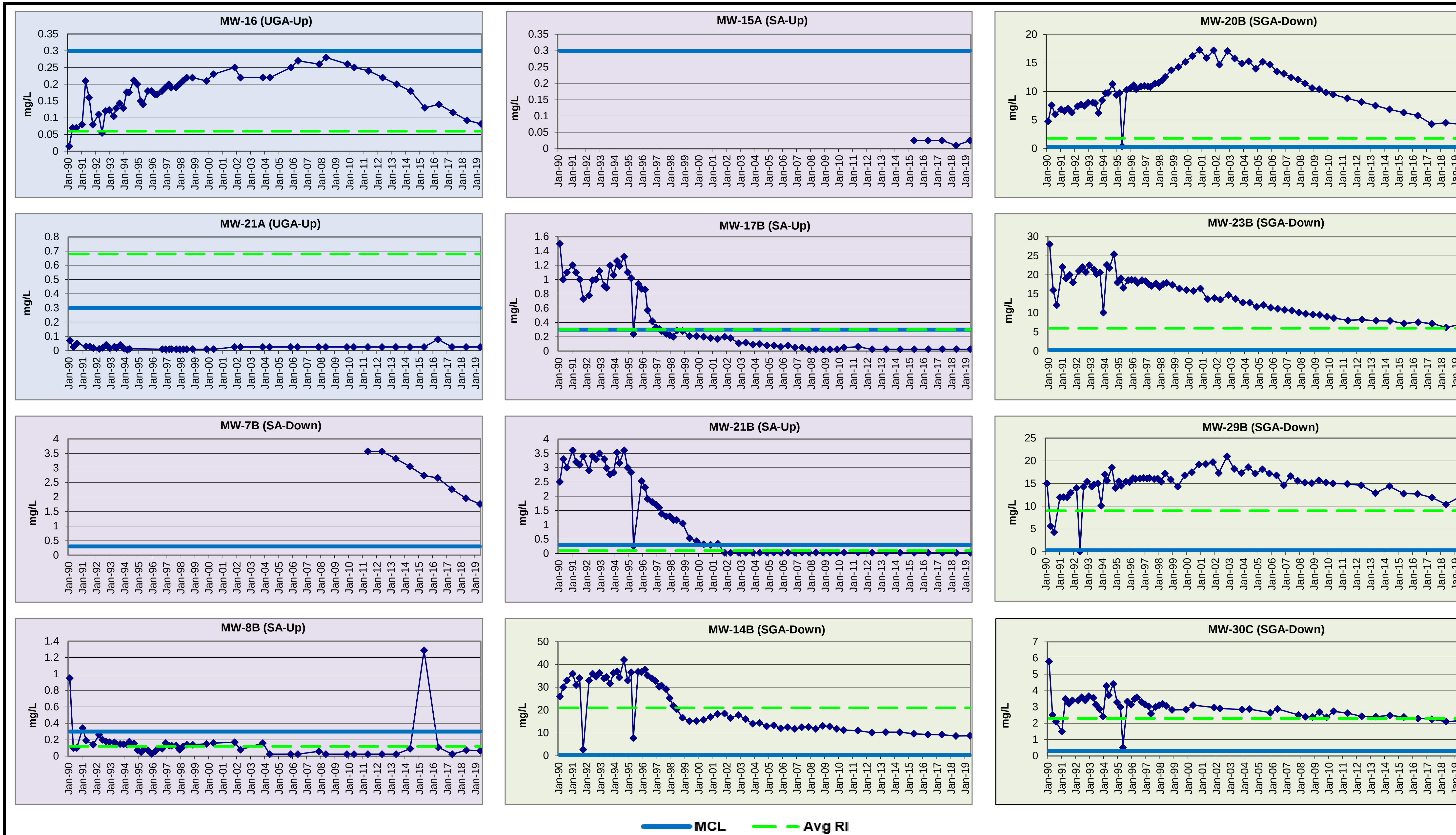




Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Iron Concentrations
by Aquifer
Midway Landfill

Notes: Non-detected values are shown as 1/2 the detection limit.
MCL = Primary of secondary maximum contaminat level standard.



Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.

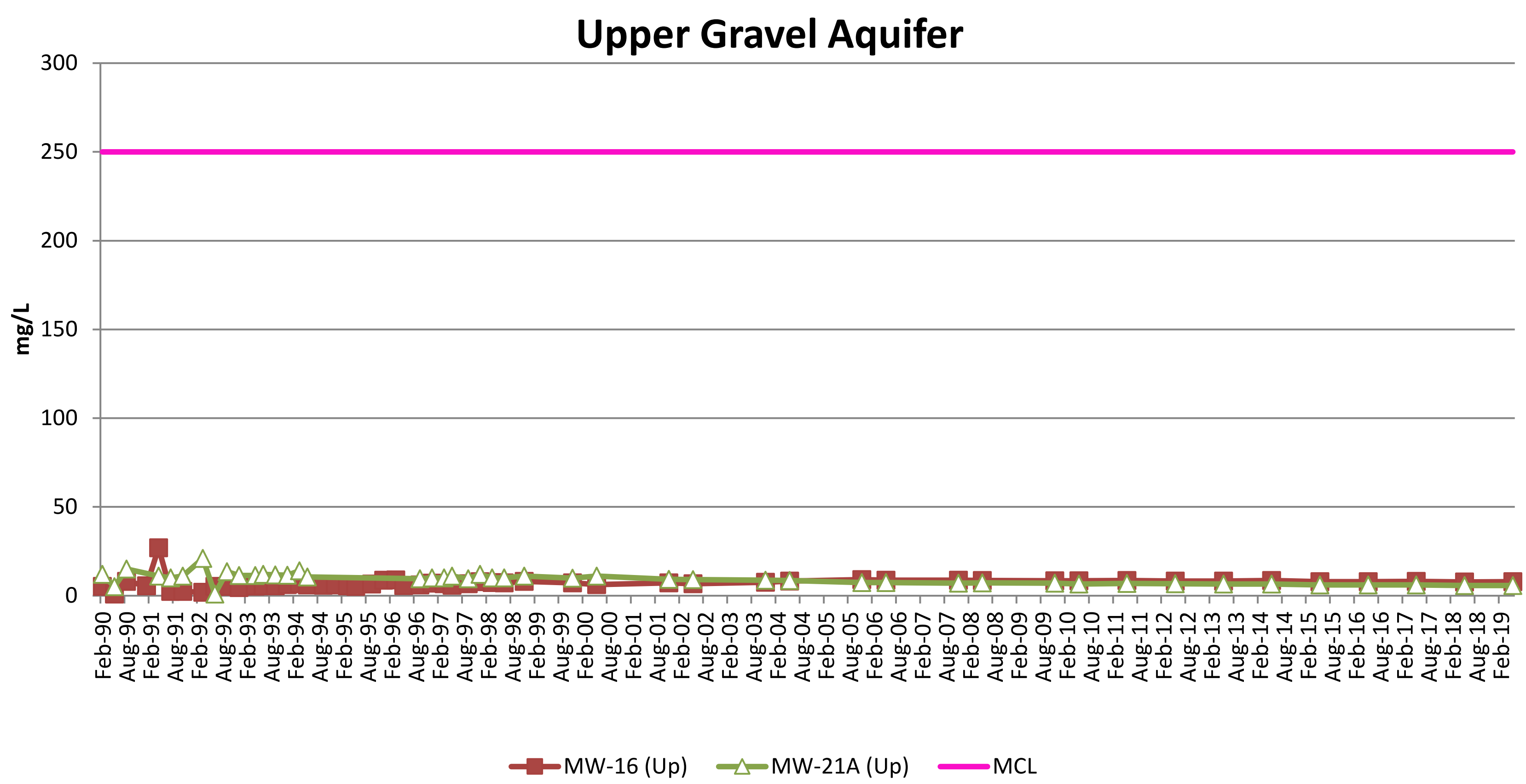
MCL = Primary of secondary maximum contaminat level standard.

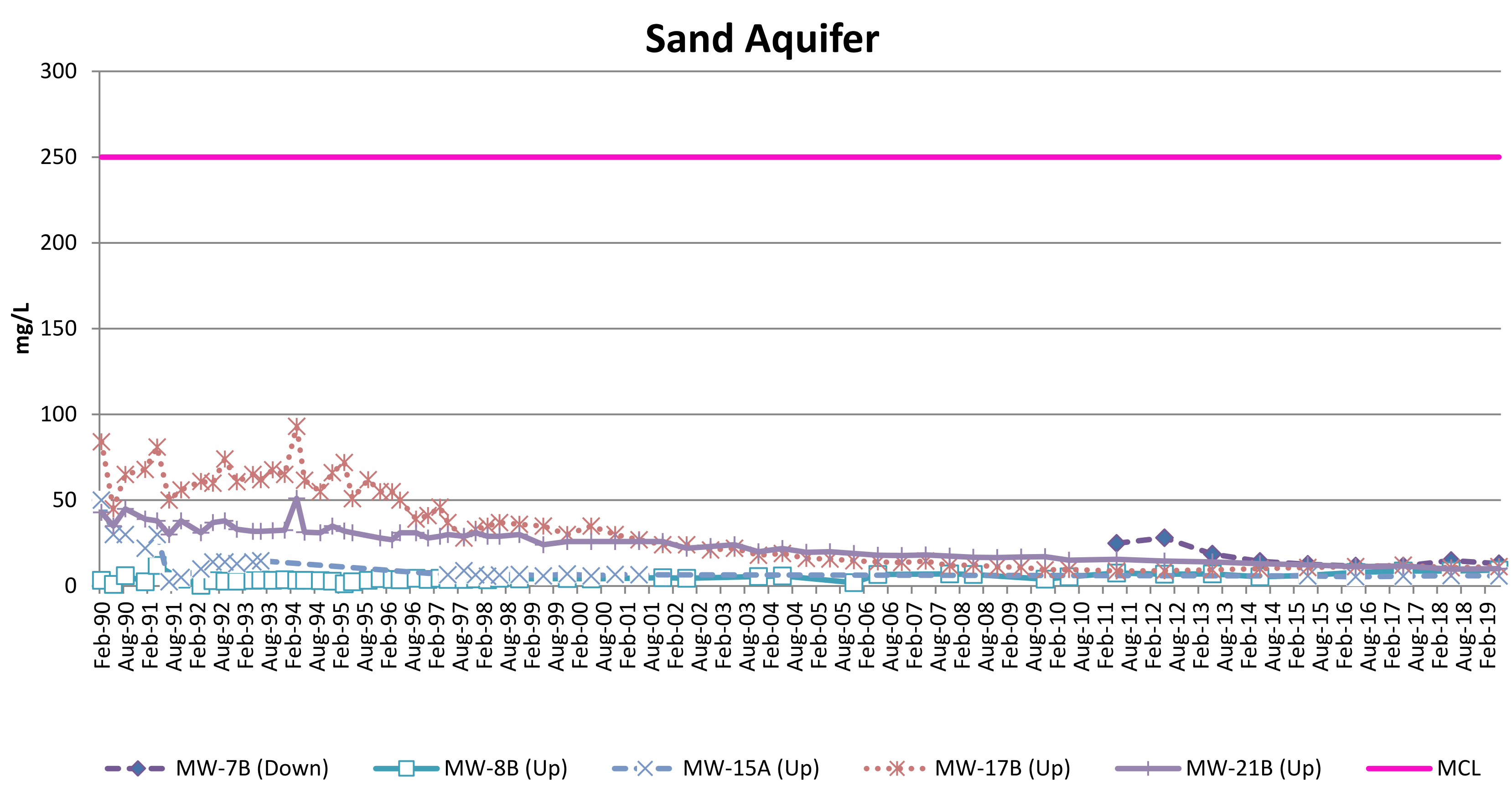
RI = Remedial Investigation

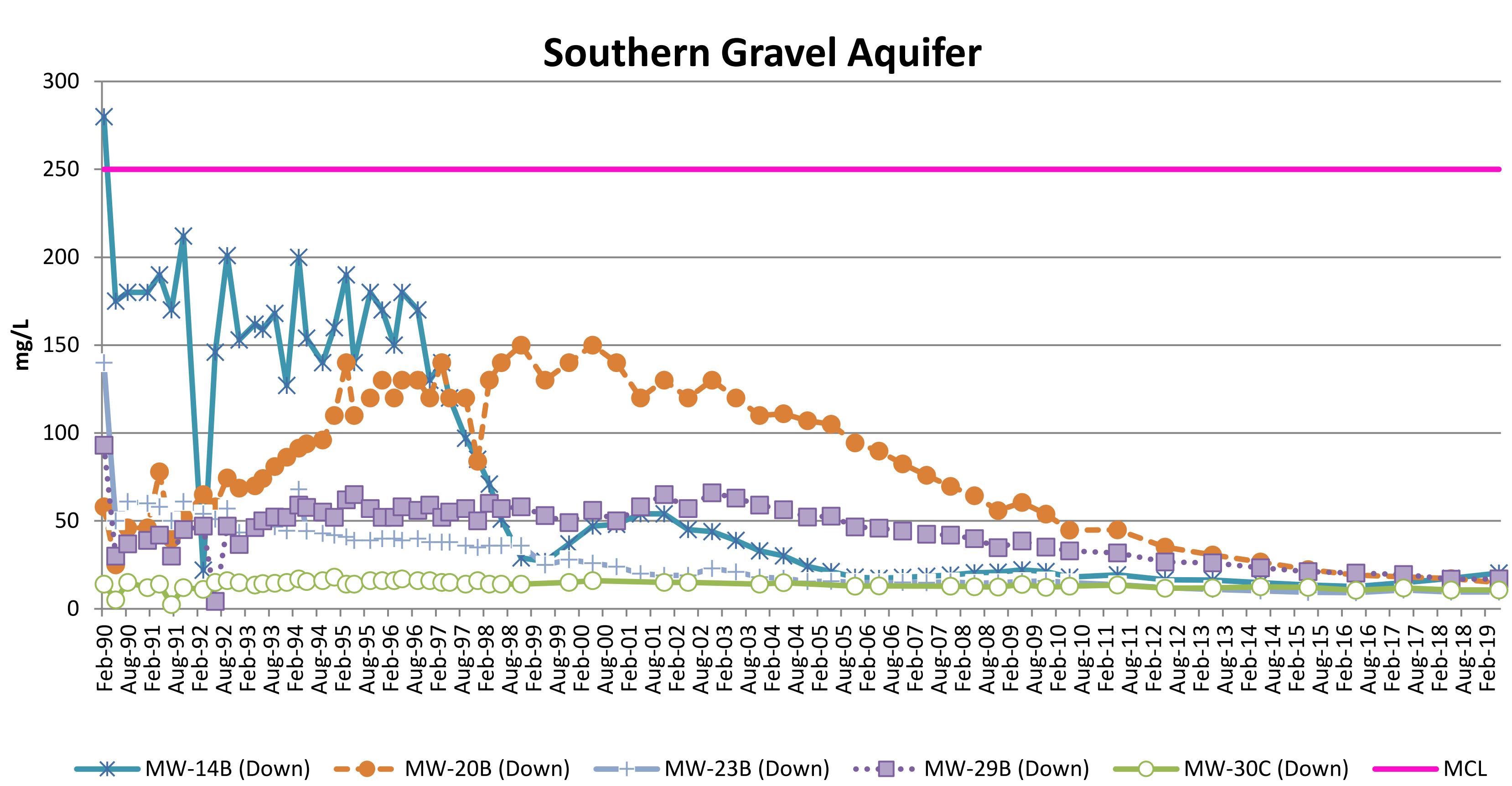
	Upper Gravel Aquifer
	Sand Aquifer
	Southern Gravel Aquifer

Iron Concentrations by Well

Midway Landfill



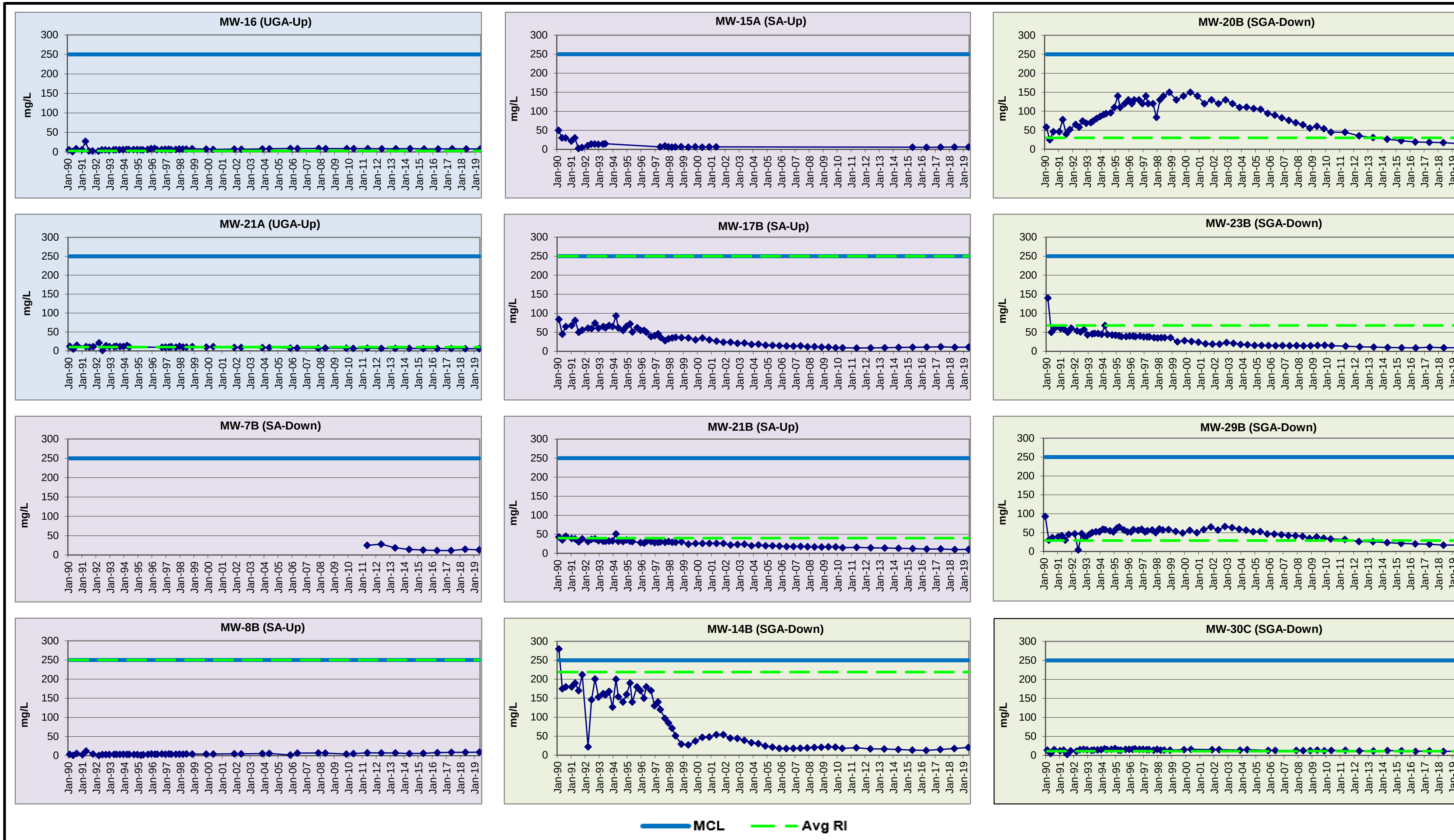




Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.
MCL = Primary of secondary maximum contaminat level standard.

Chloride Concentrations by Aquifer
Midway Landfill

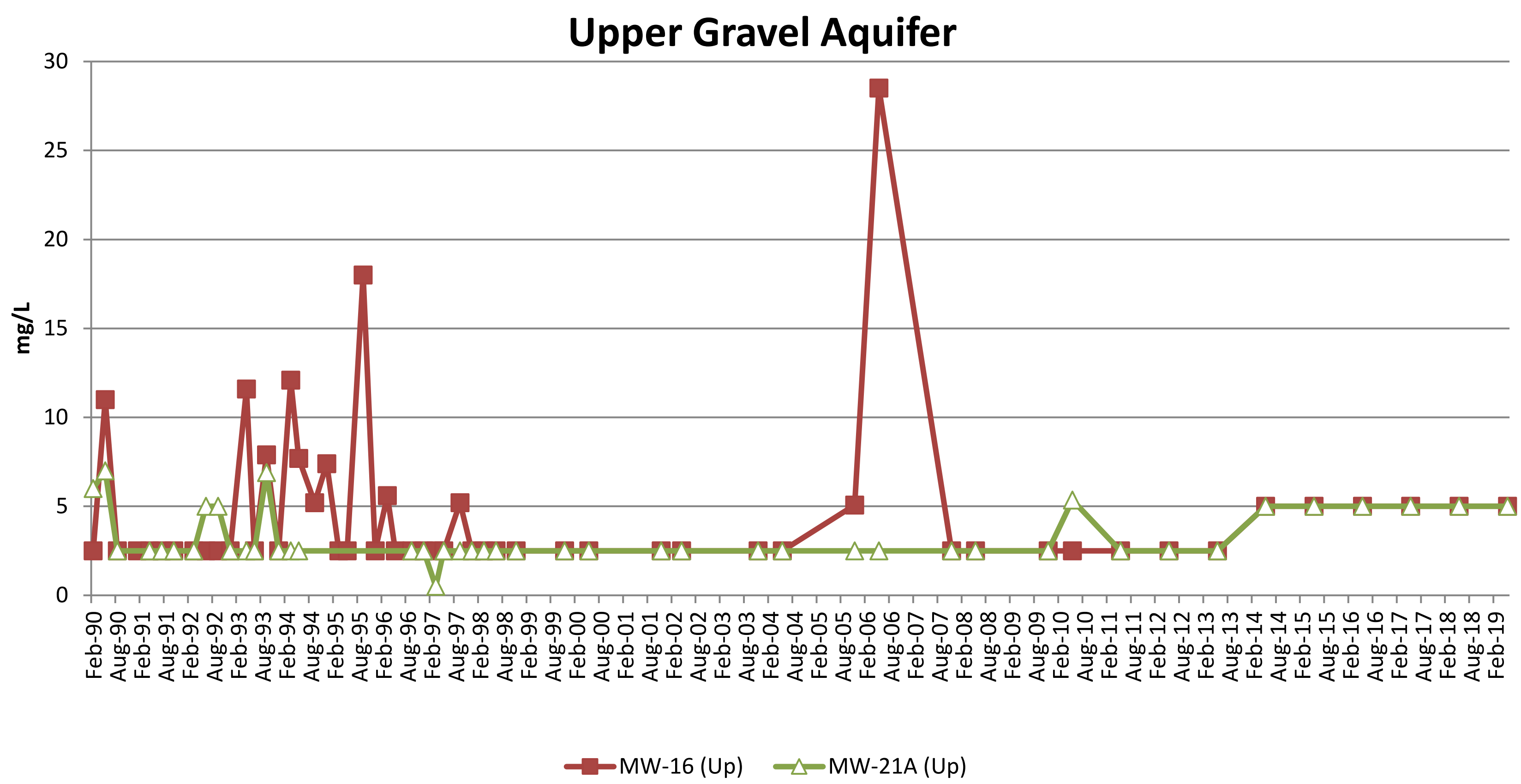


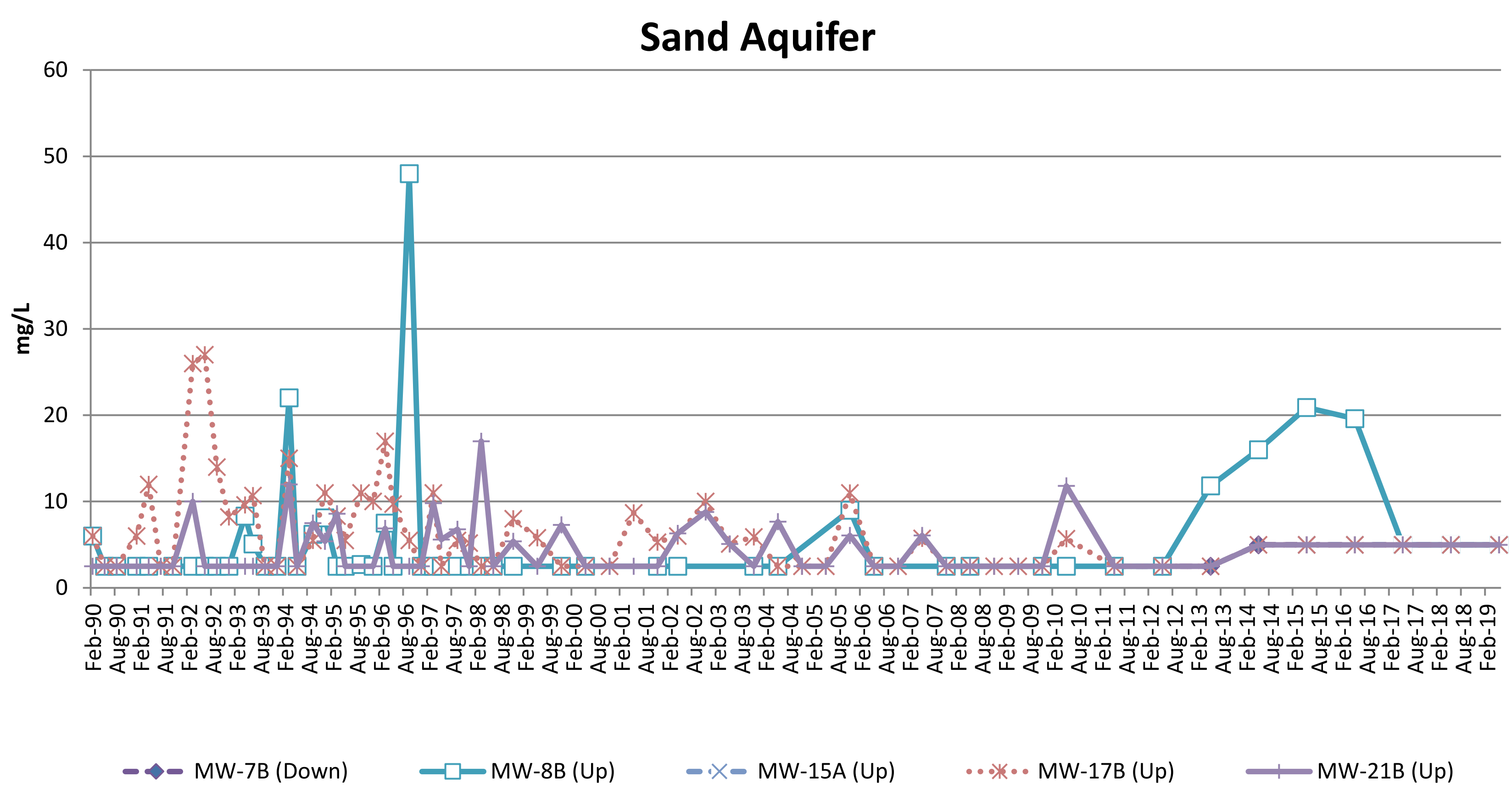
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

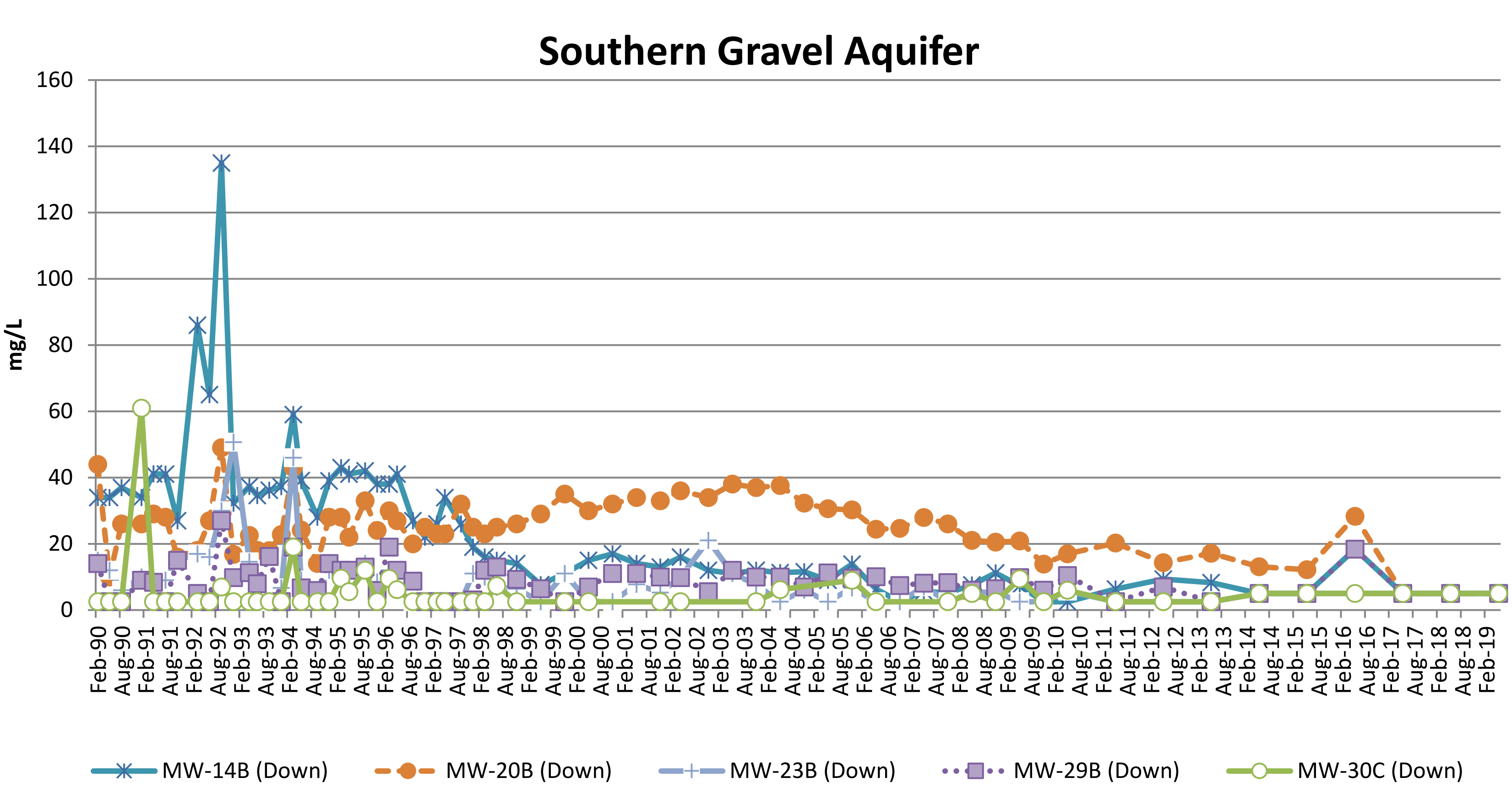
Notes: Non-detected values are shown as 1/2 the detection limit.
MCL = Primary of secondary maximum contaminat level standard.
RI = Remedial Investigation

	Upper Gravel Aquifer
	Sand Aquifer
	Southern Gravel Aquifer

Chloride Concentrations by Well
Midway Landfill



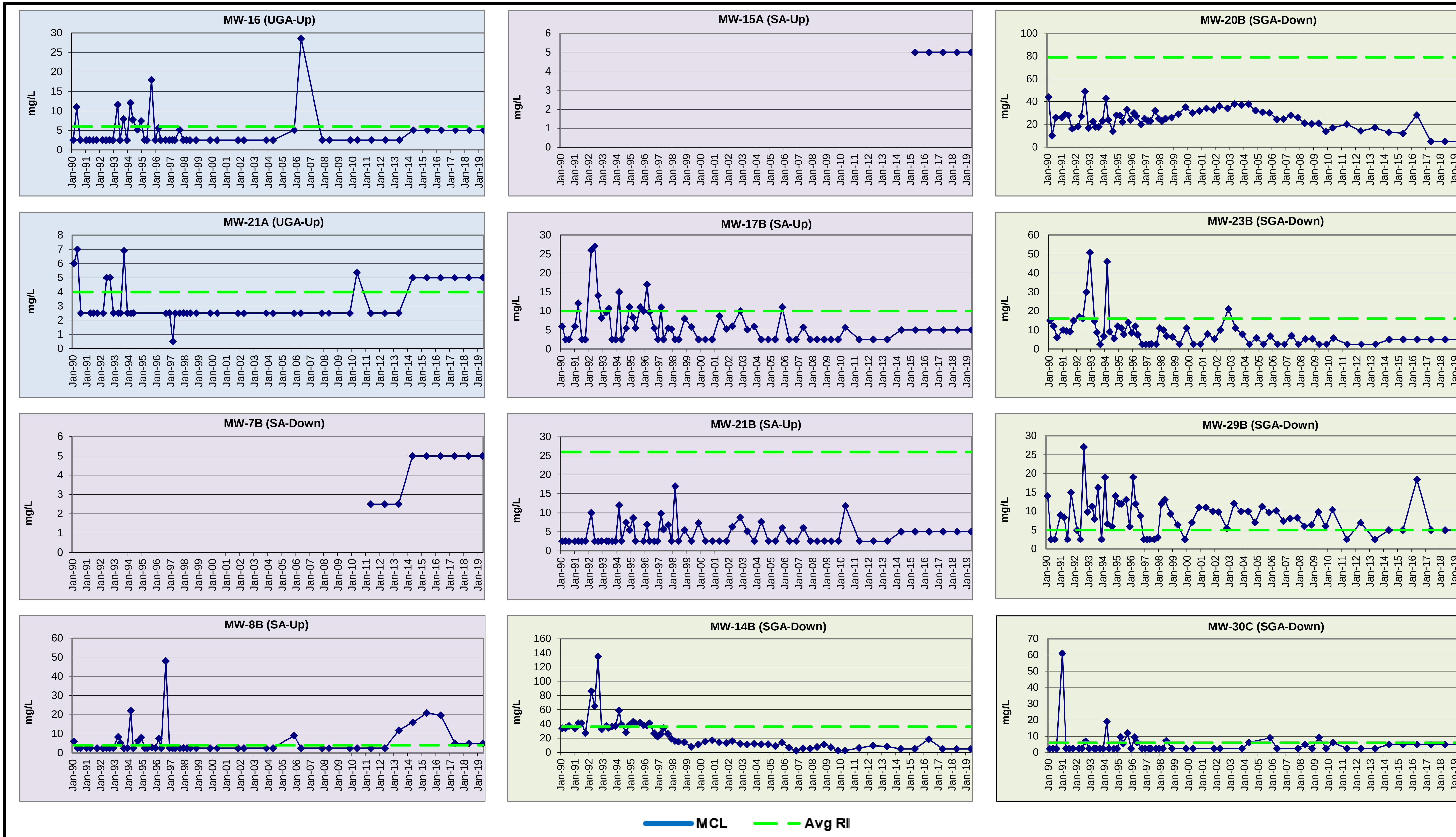




Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.
MCL = Primary of secondary maximum contaminat level standard.

COD Concentrations
by Aquifer
Midway Landfill

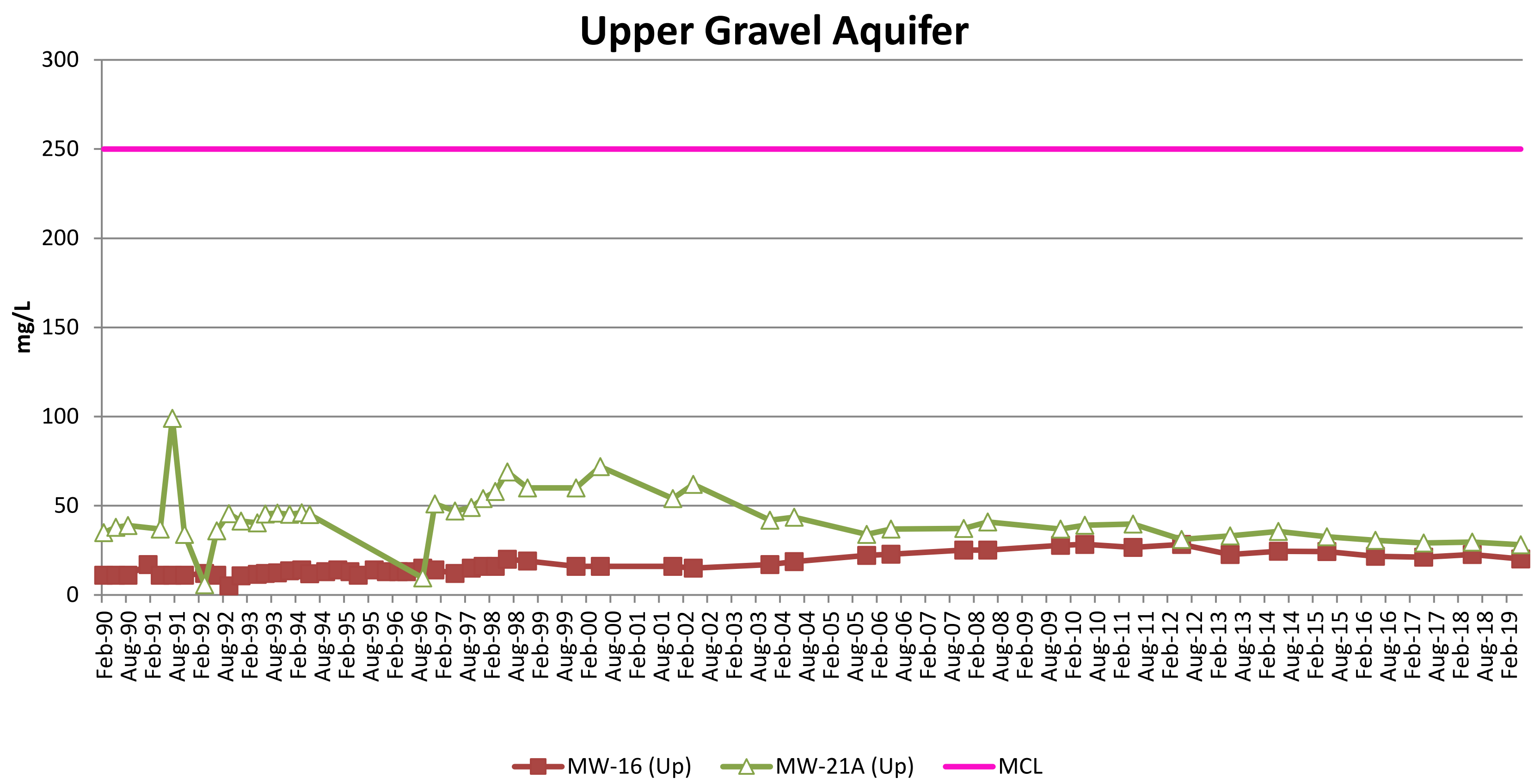


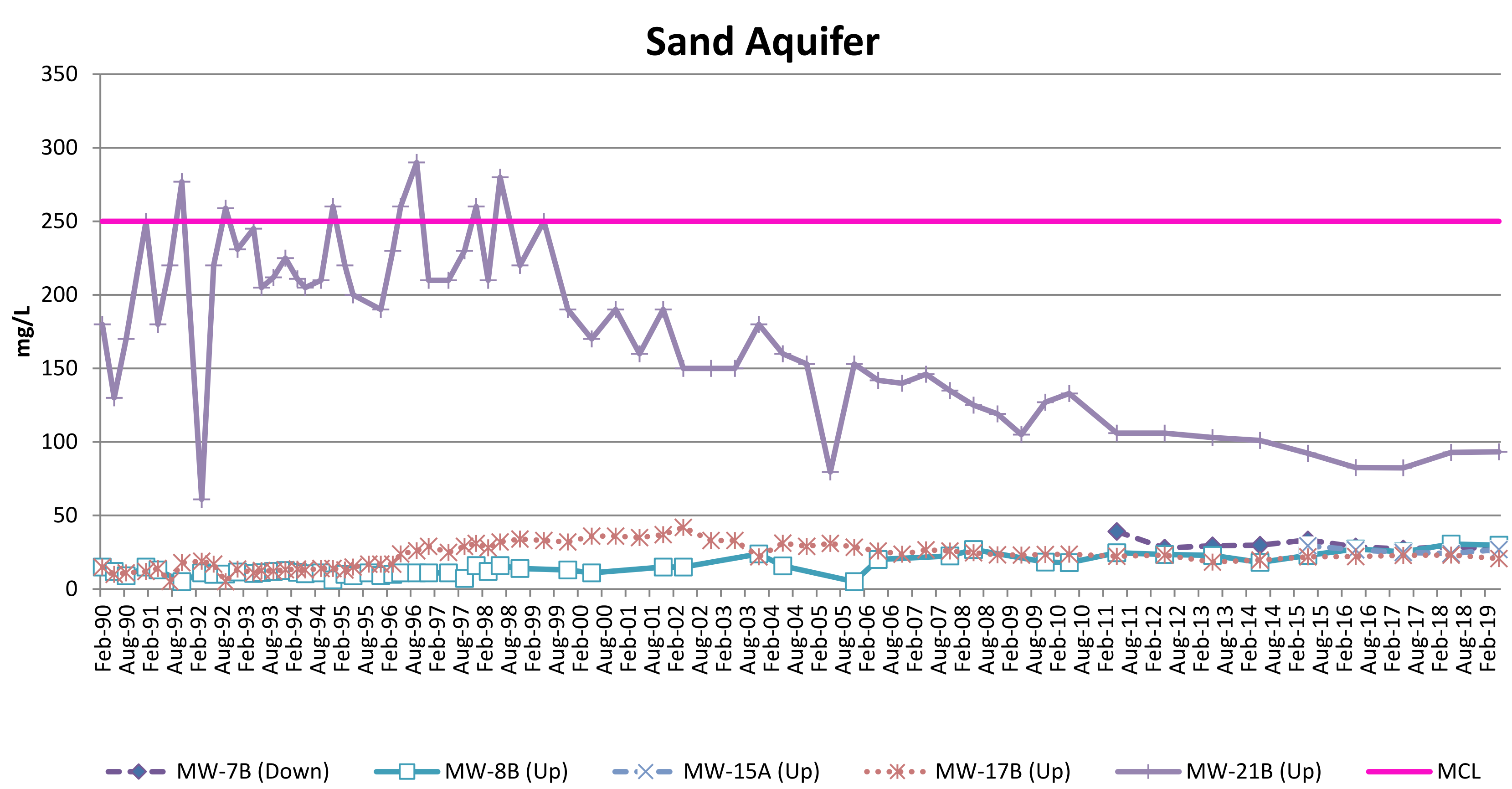
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

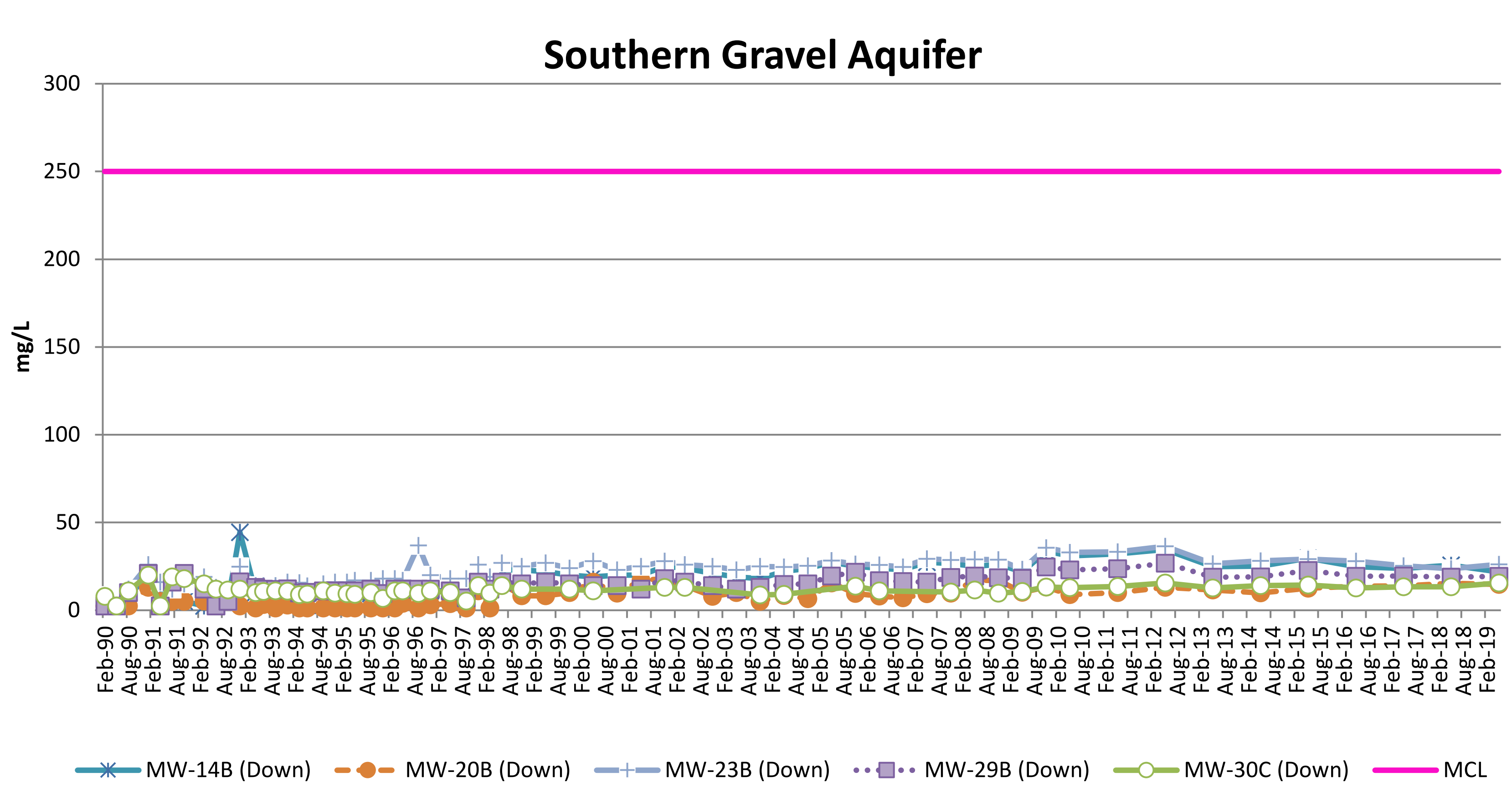
Notes: Non-detected values are shown as 1/2 the detection limit.
MCL = Primary of secondary maximum contaminat level standard.
RI = Remedial Investigation

	Upper Gravel Aquifer
	Sand Aquifer
	Southern Gravel Aquifer

COD Concentrations by Well
Midway Landfill



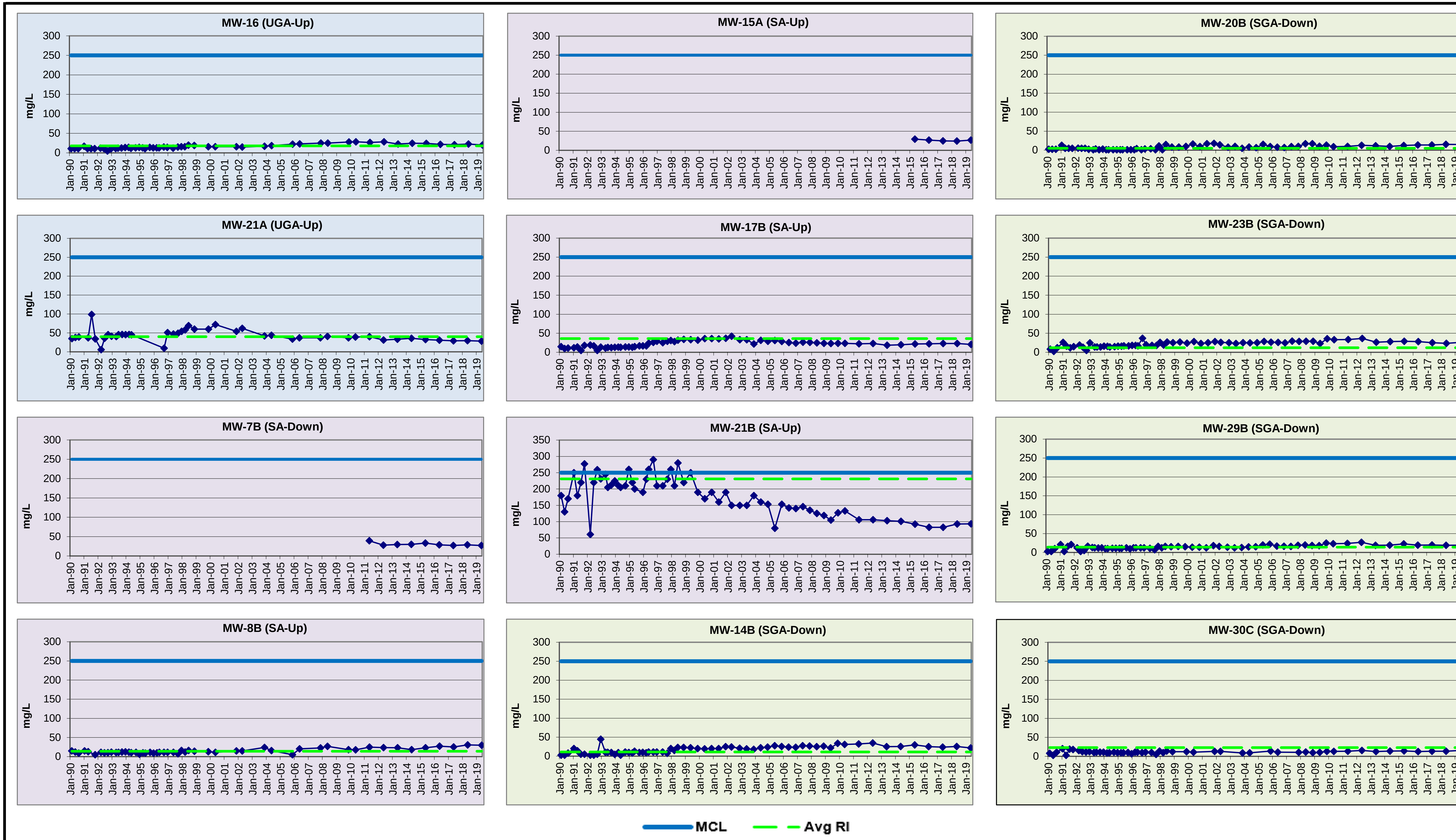




Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.
MCL = Primary of secondary maximum contaminat level standard.

Sulfate Concentrations by Aquifer
Midway Landfill



Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.

MCL = Primary of secondary maximum contaminat level standard.

RI = Remedial Investigation

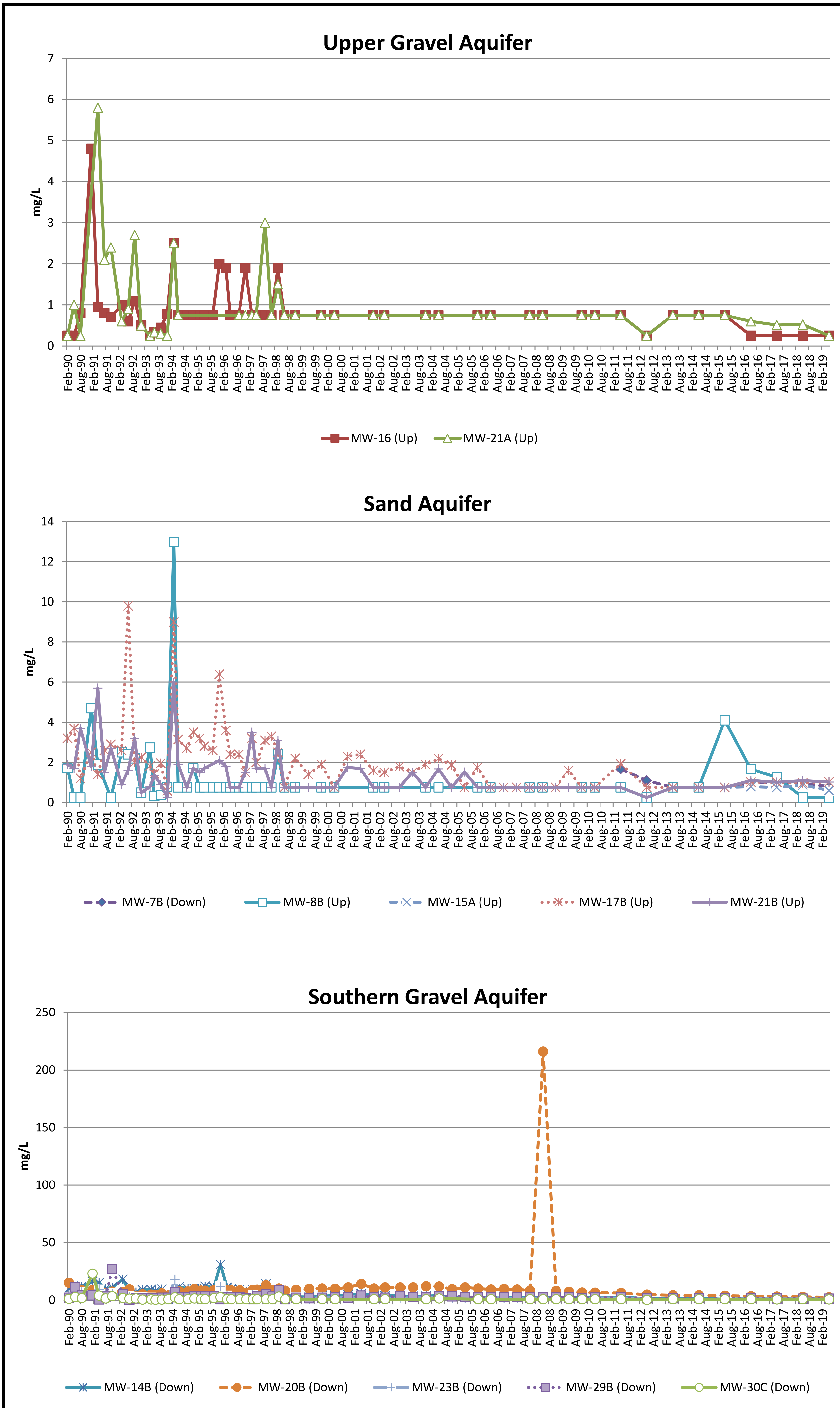
Upper Gravel Aquifer

Sand Aquifer

Southern Gravel Aquifer

Sulfate Concentrations by Well

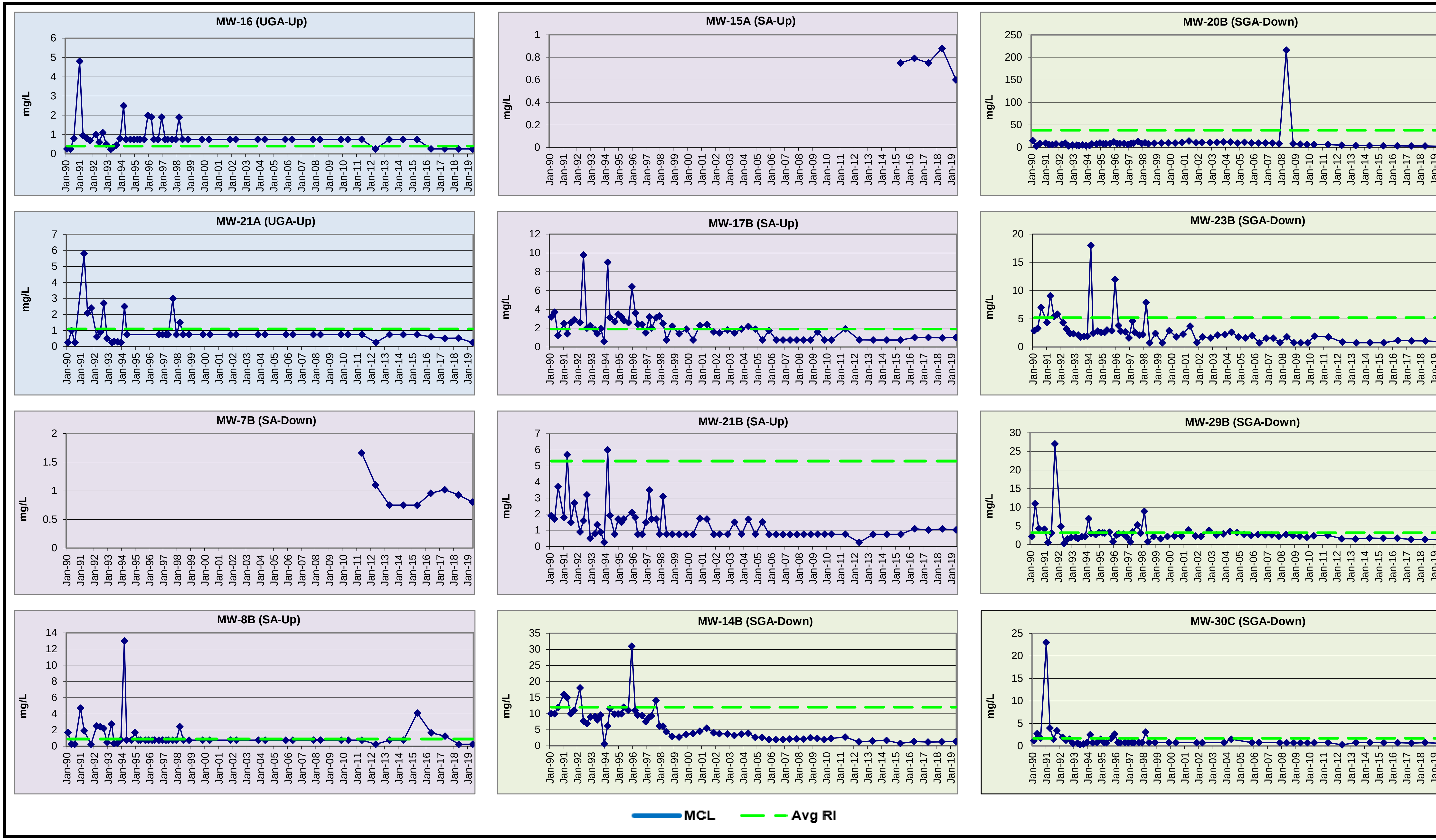
Midway Landfill



Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

TOC Concentrations by Aquifer
Midway Landfill

Notes: Non-detected values are shown as 1/2 the detection limit.

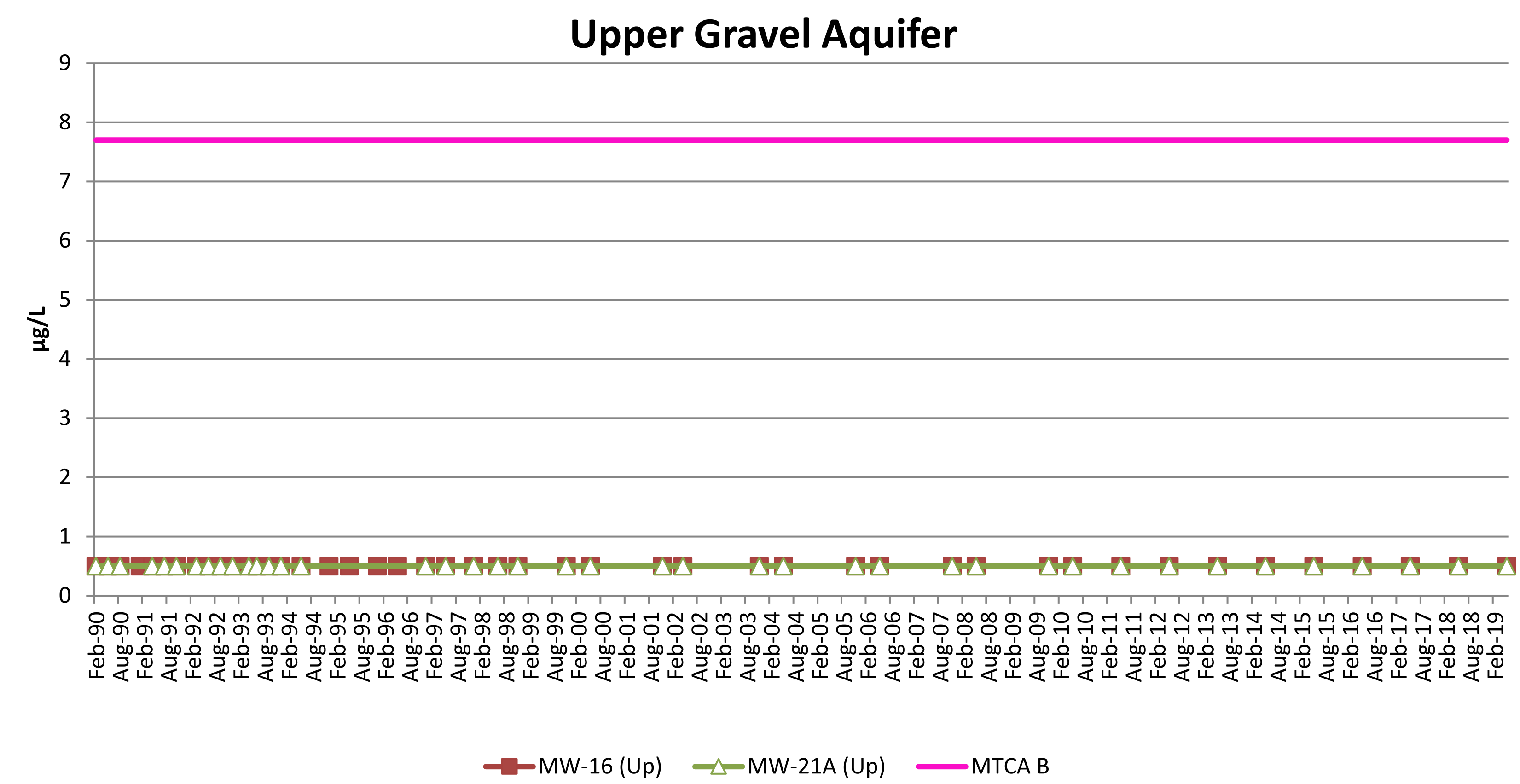


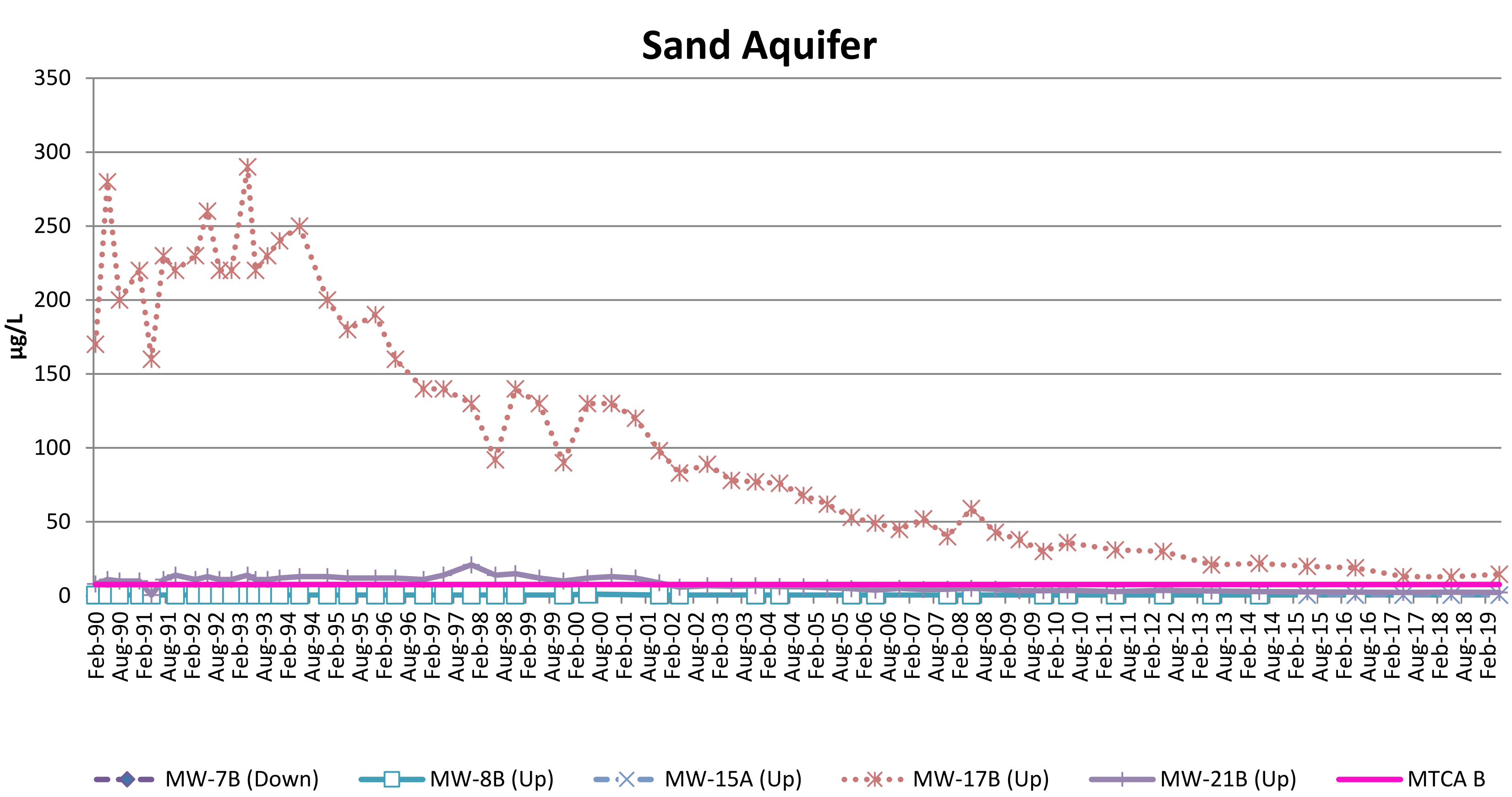
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

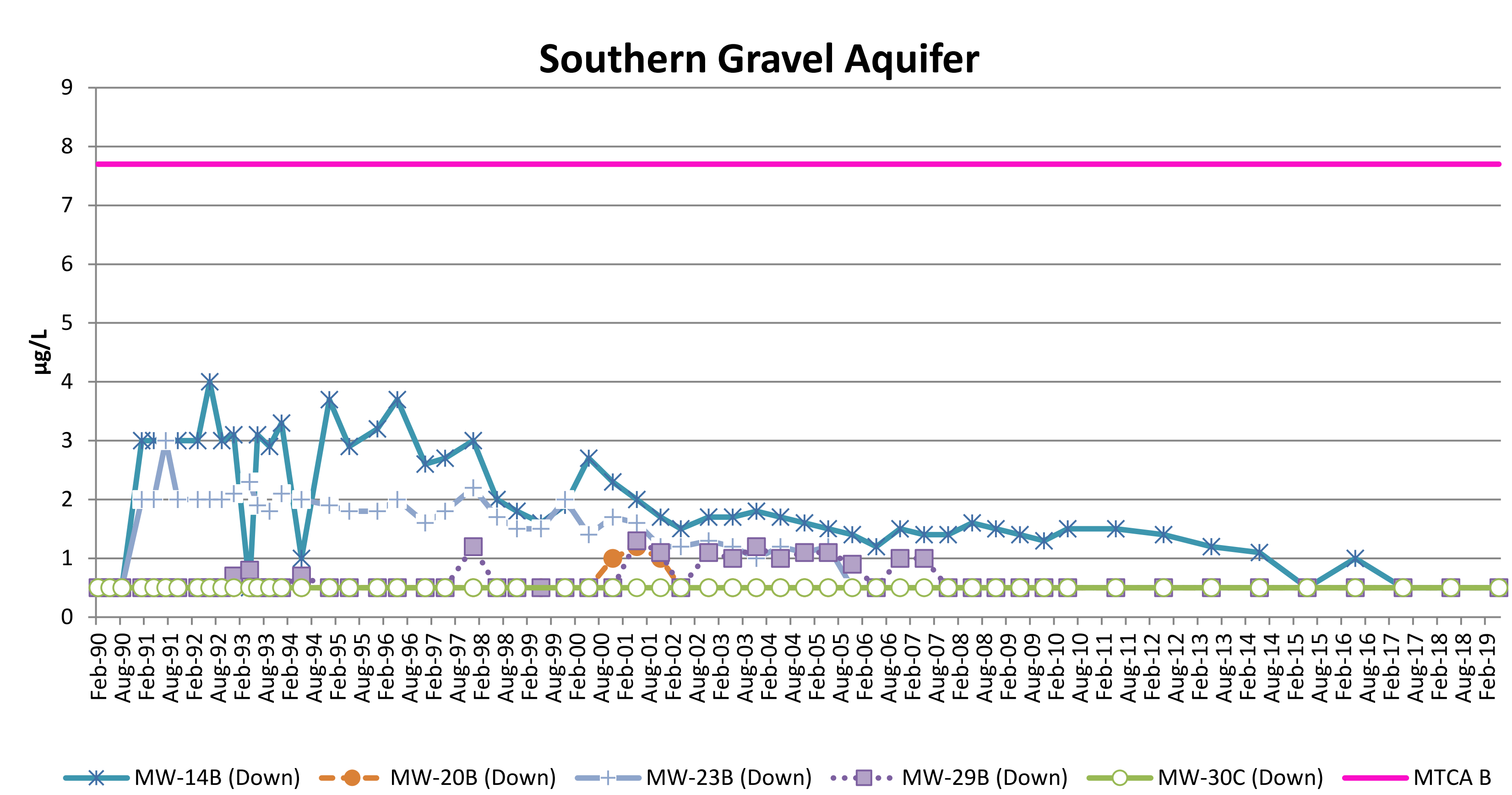
Notes: Non-detected values are shown as 1/2 the detection limit.
MCL = Primary of secondary maximum contaminat level standard.
RI = Remedial Investigation

	Upper Gravel Aquifer
	Sand Aquifer
	Southern Gravel Aquifer

TOC Concentrations by Well
Midway Landfill



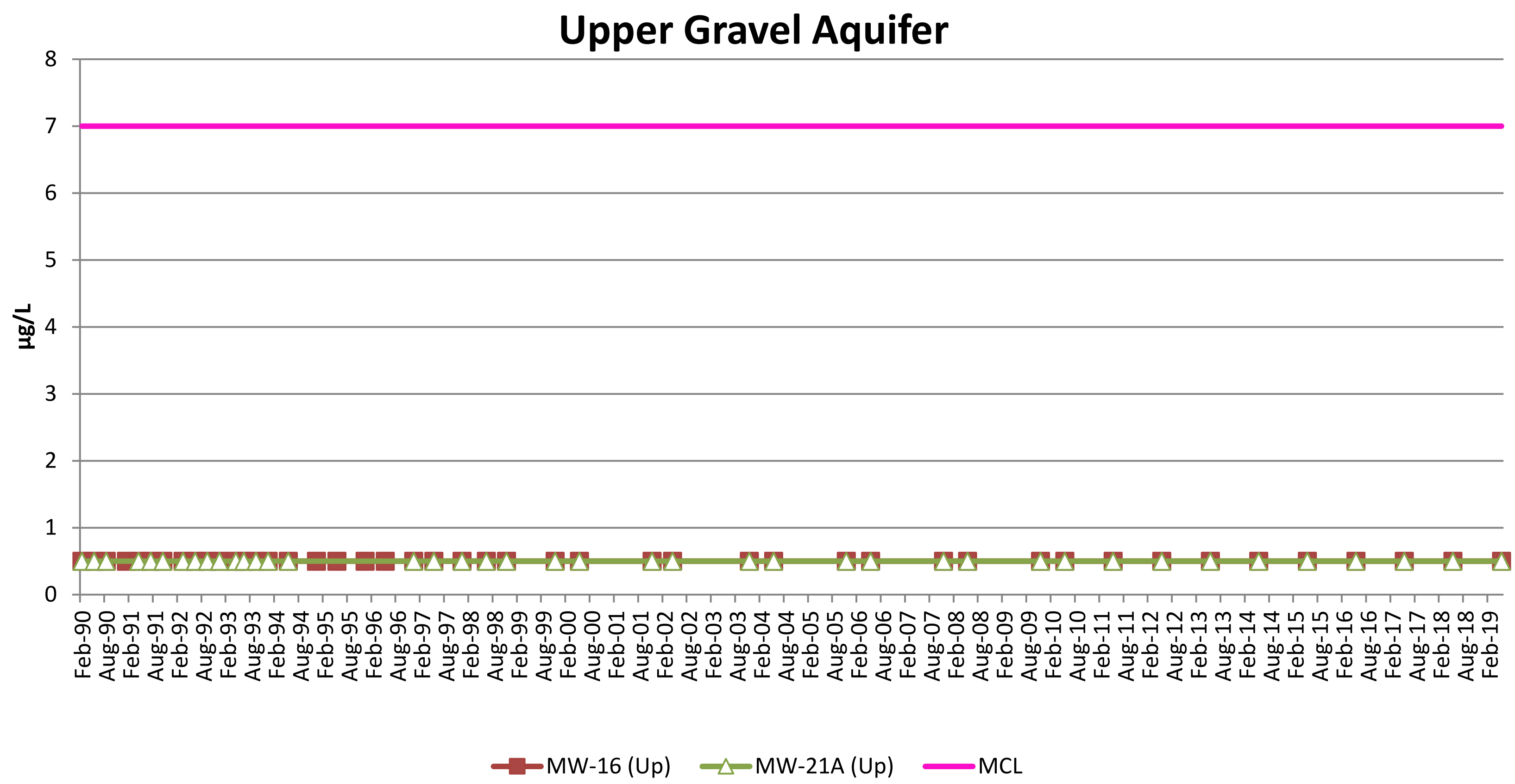


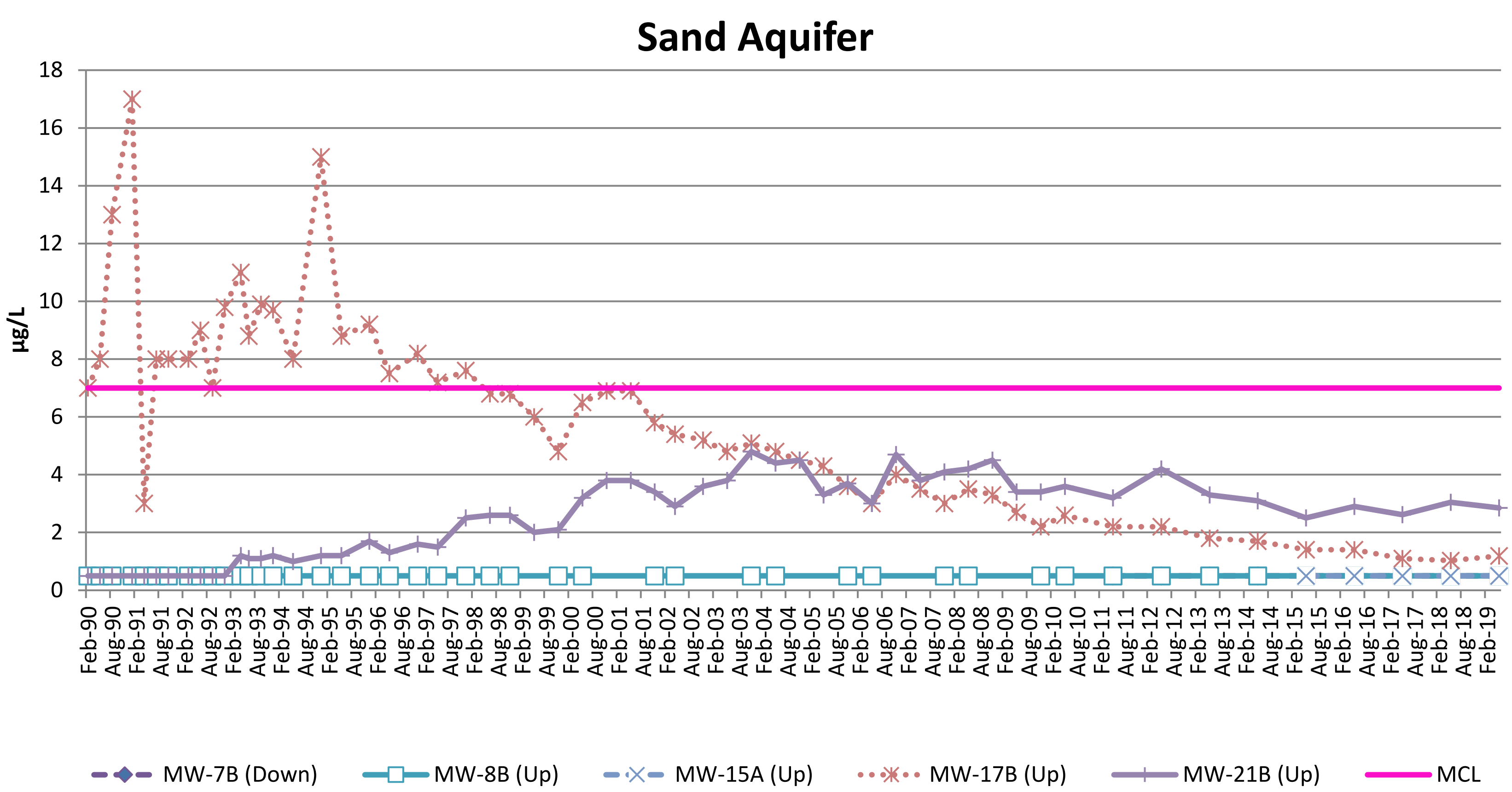


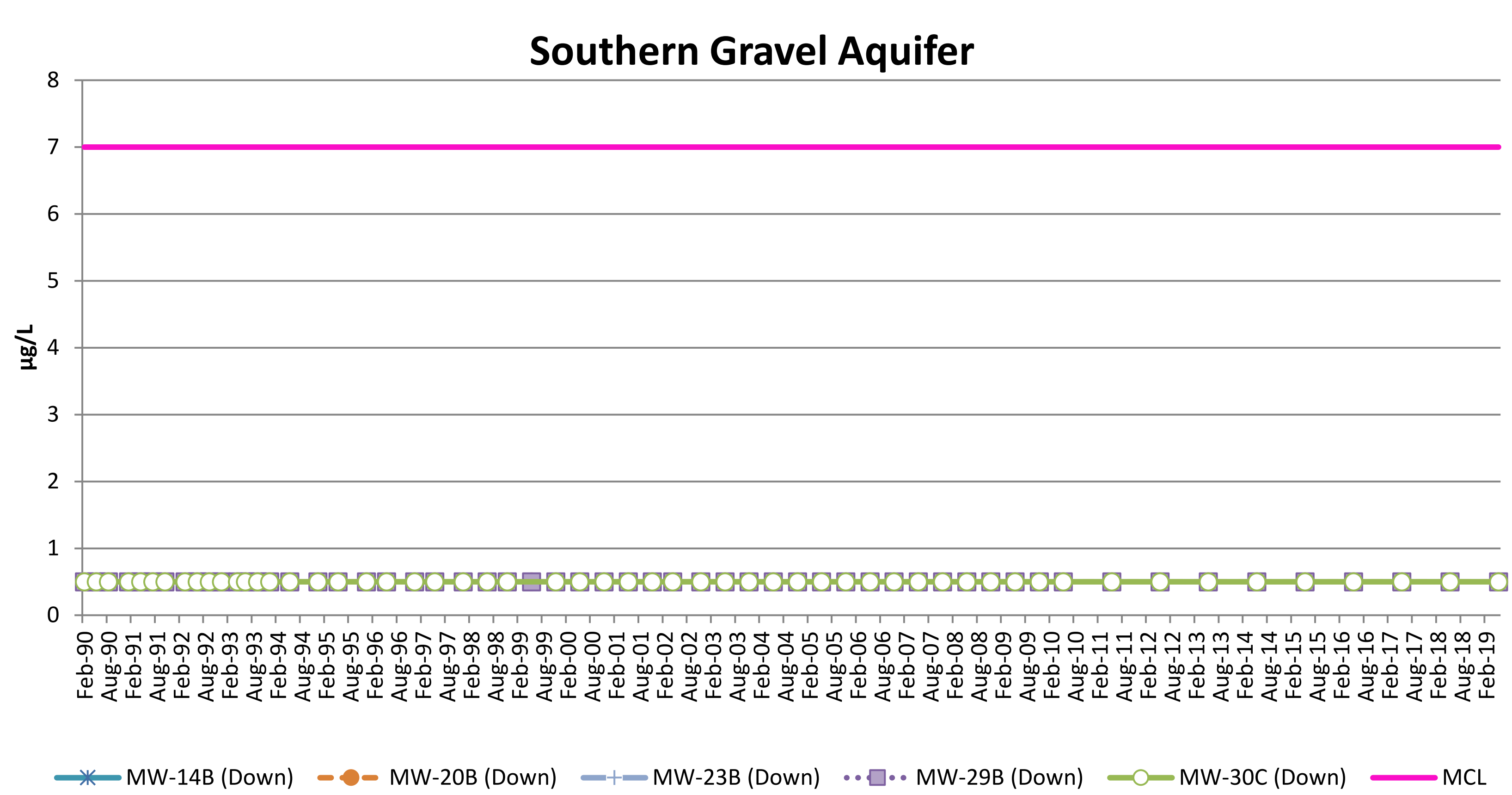
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.
MTCA B = Model Toxics Control Act (WAC 173-340) Method B cleanup level.

1,1-Dichloroethane Concentrations by Aquifer
Midway Landfill



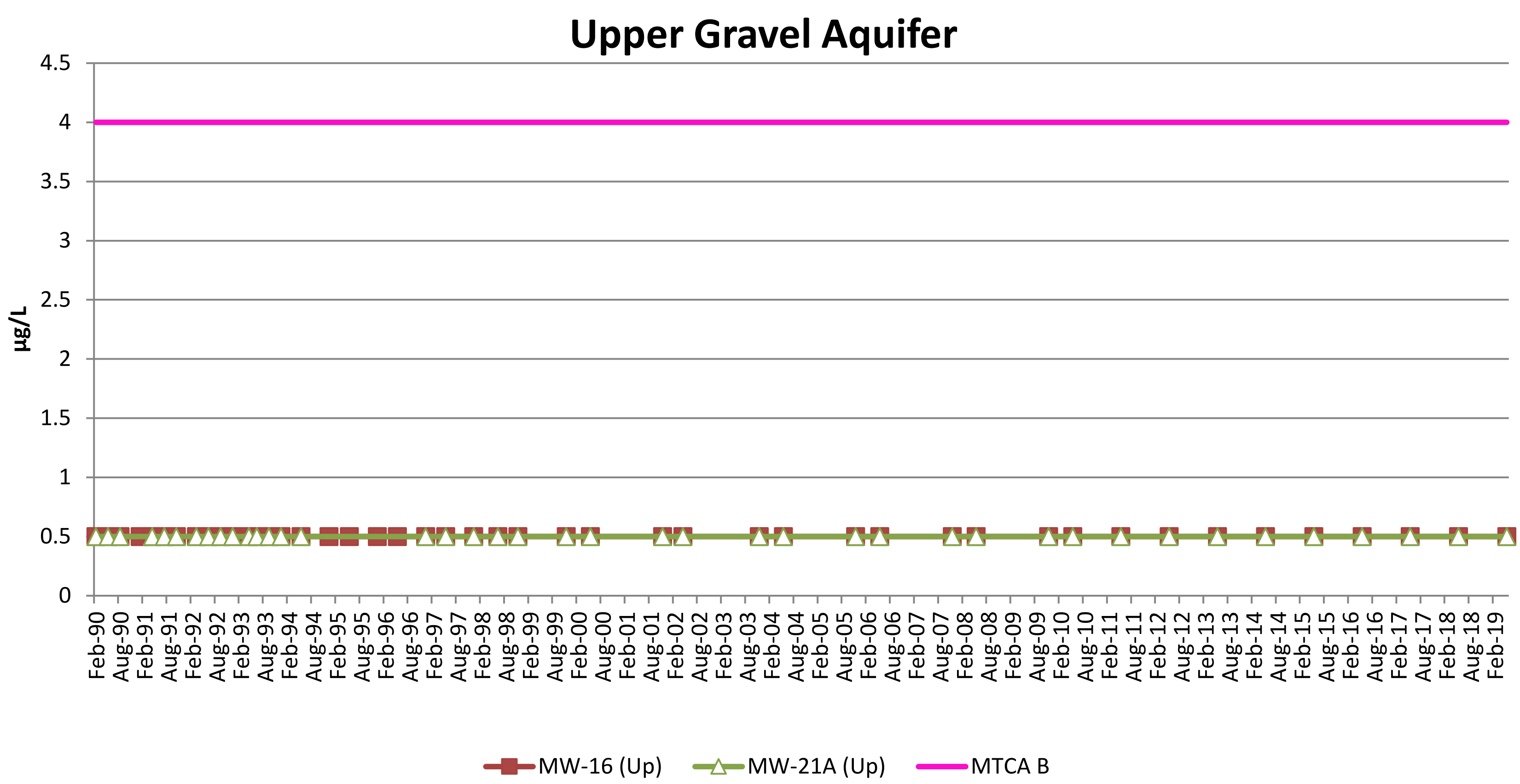


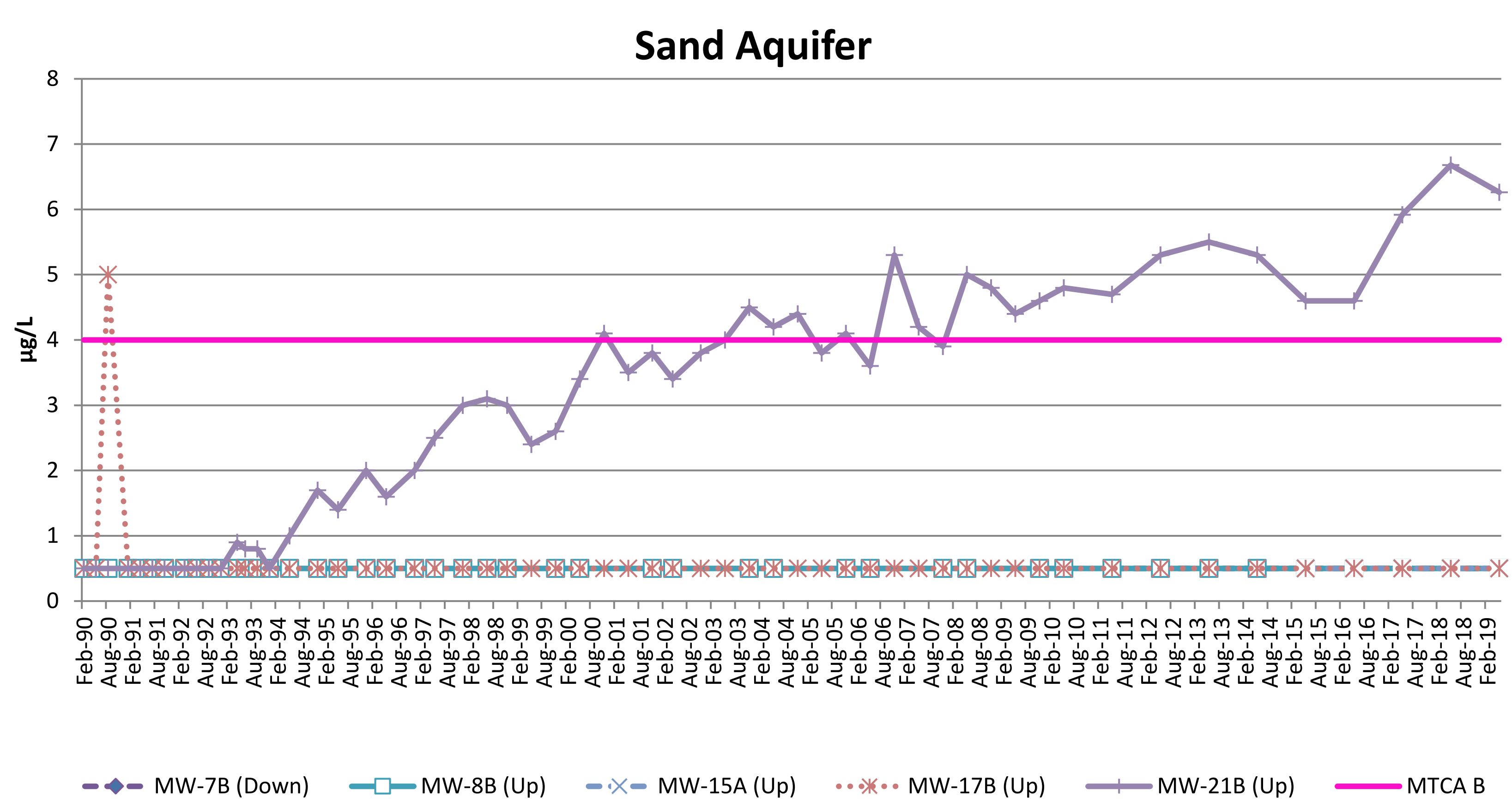


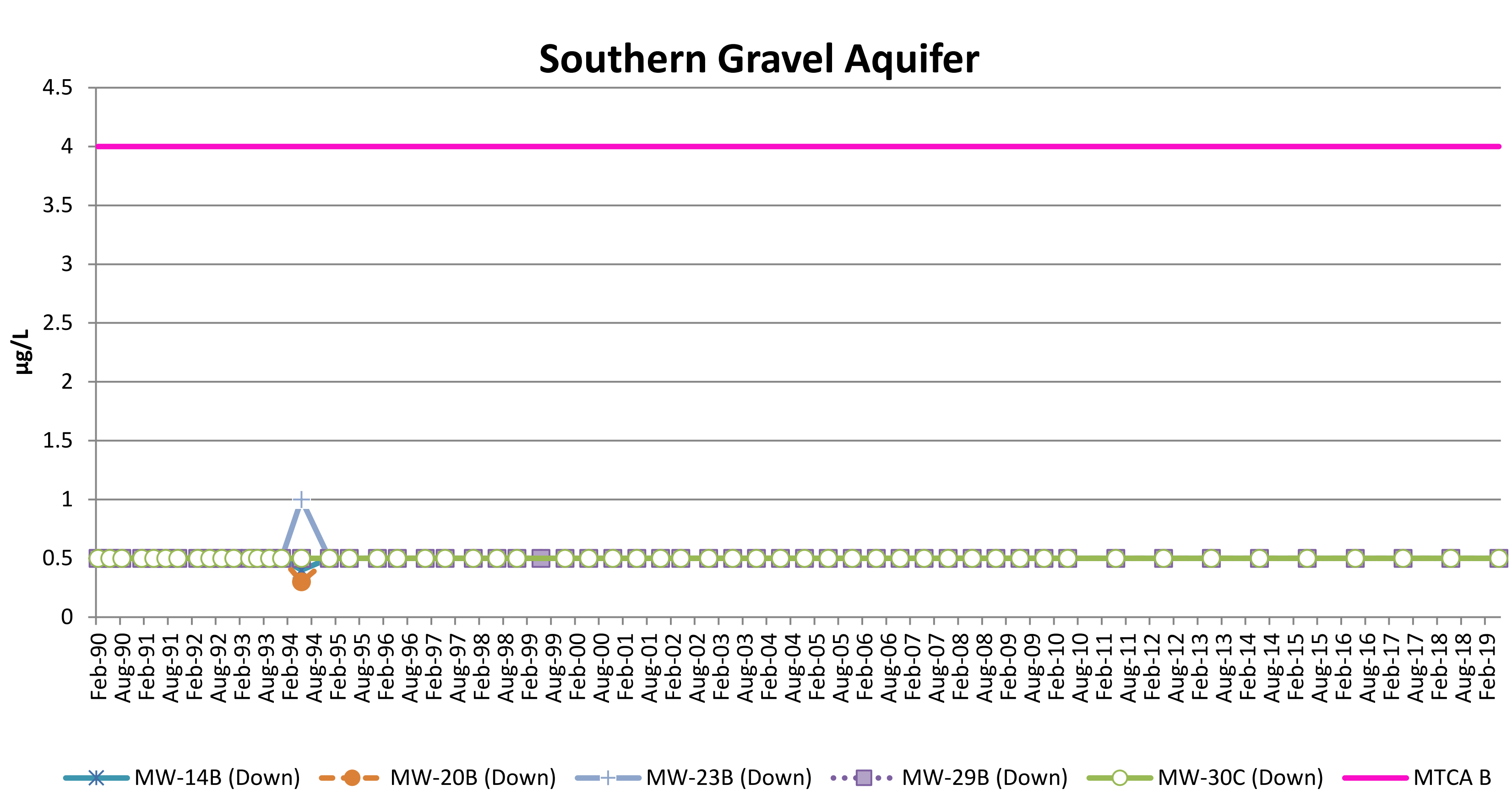
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.
MCL = Federal maximum contaminant level.

1,1-Dichloroethene
Concentrations by Aquifer
Midway Landfill



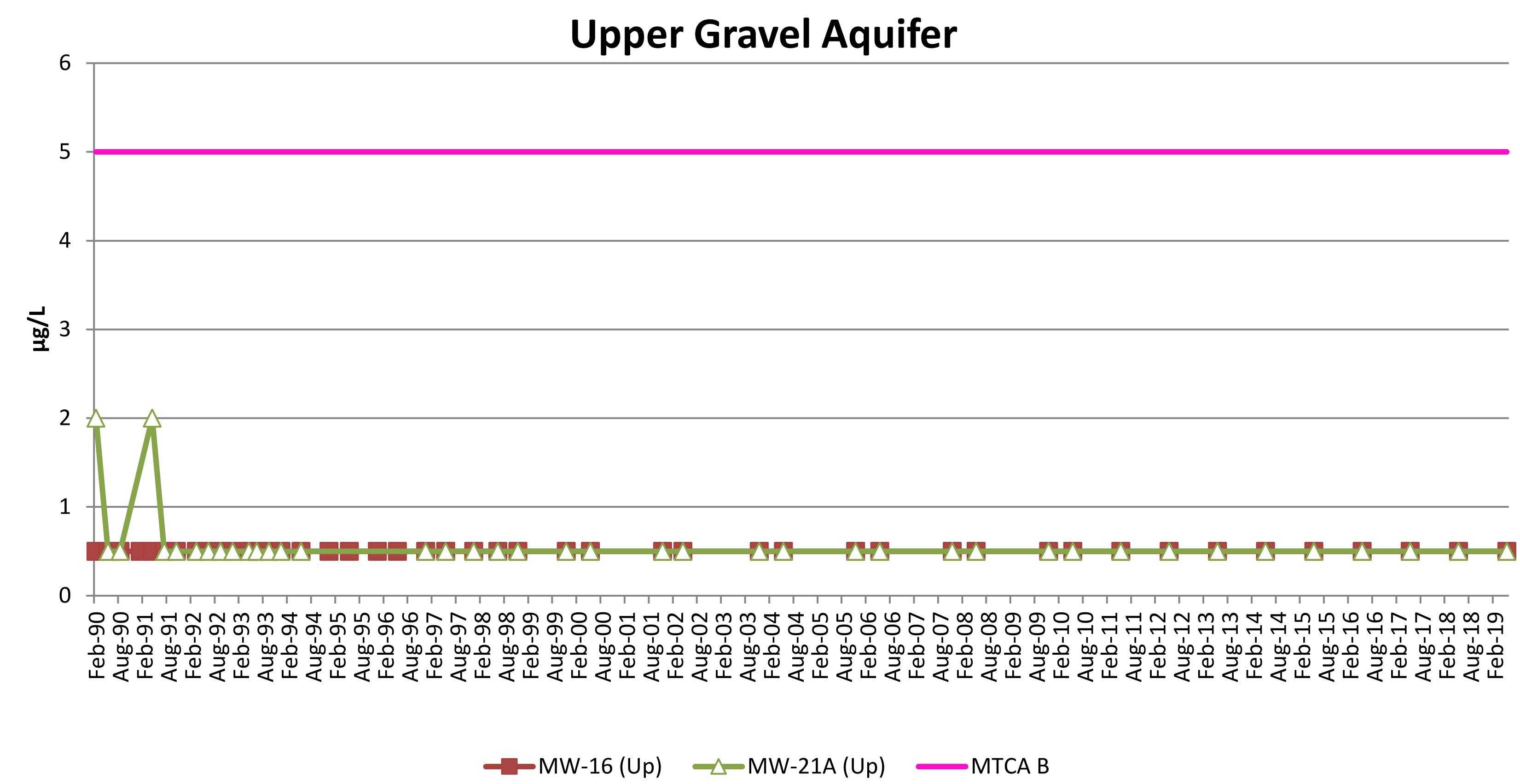


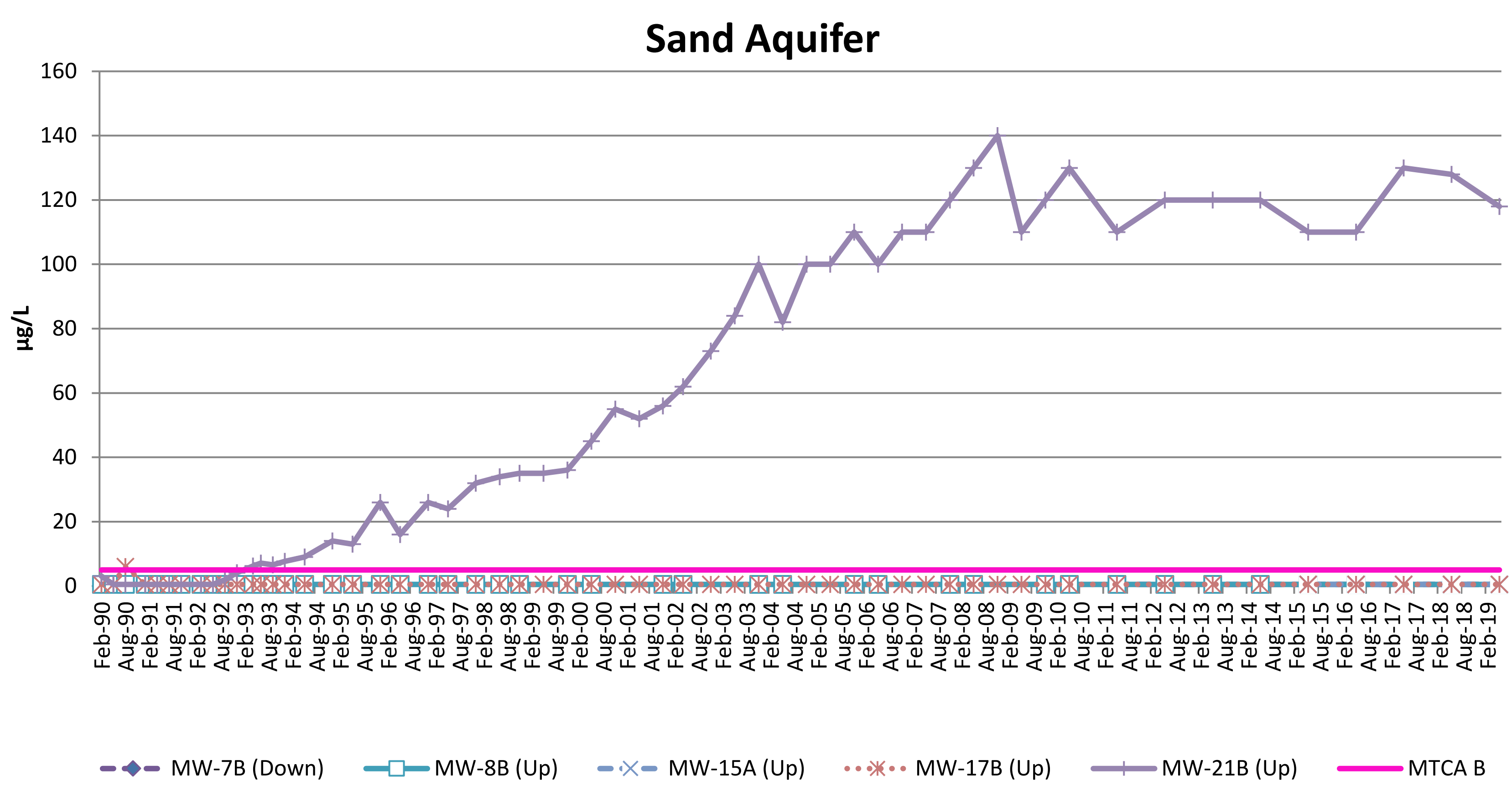


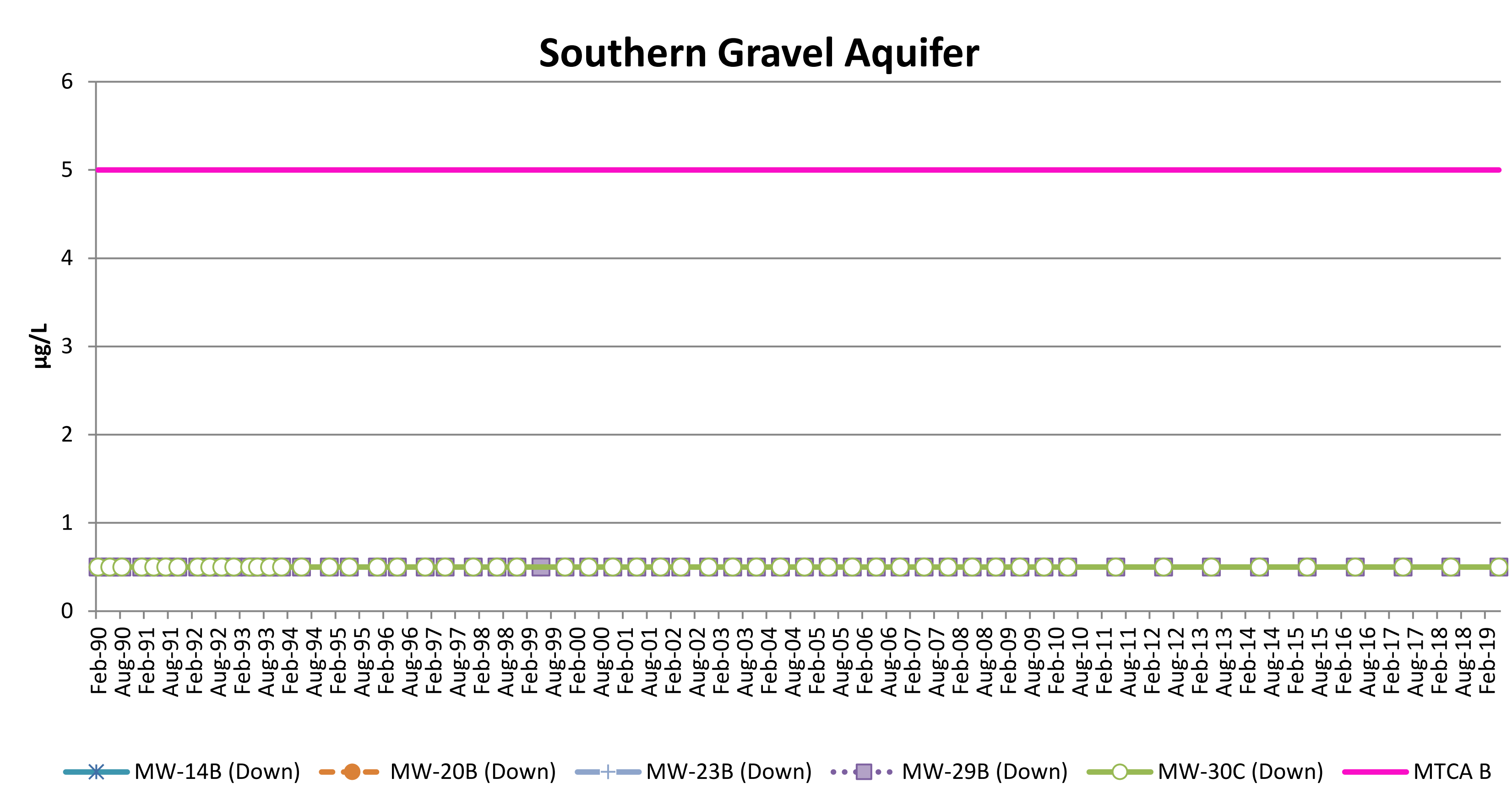
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.
MTCA B = Model Toxics Control Act (WAC 173-340) Method B cleanup level.

Trichloroethene
Concentrations by Aquifer
Midway Landfill



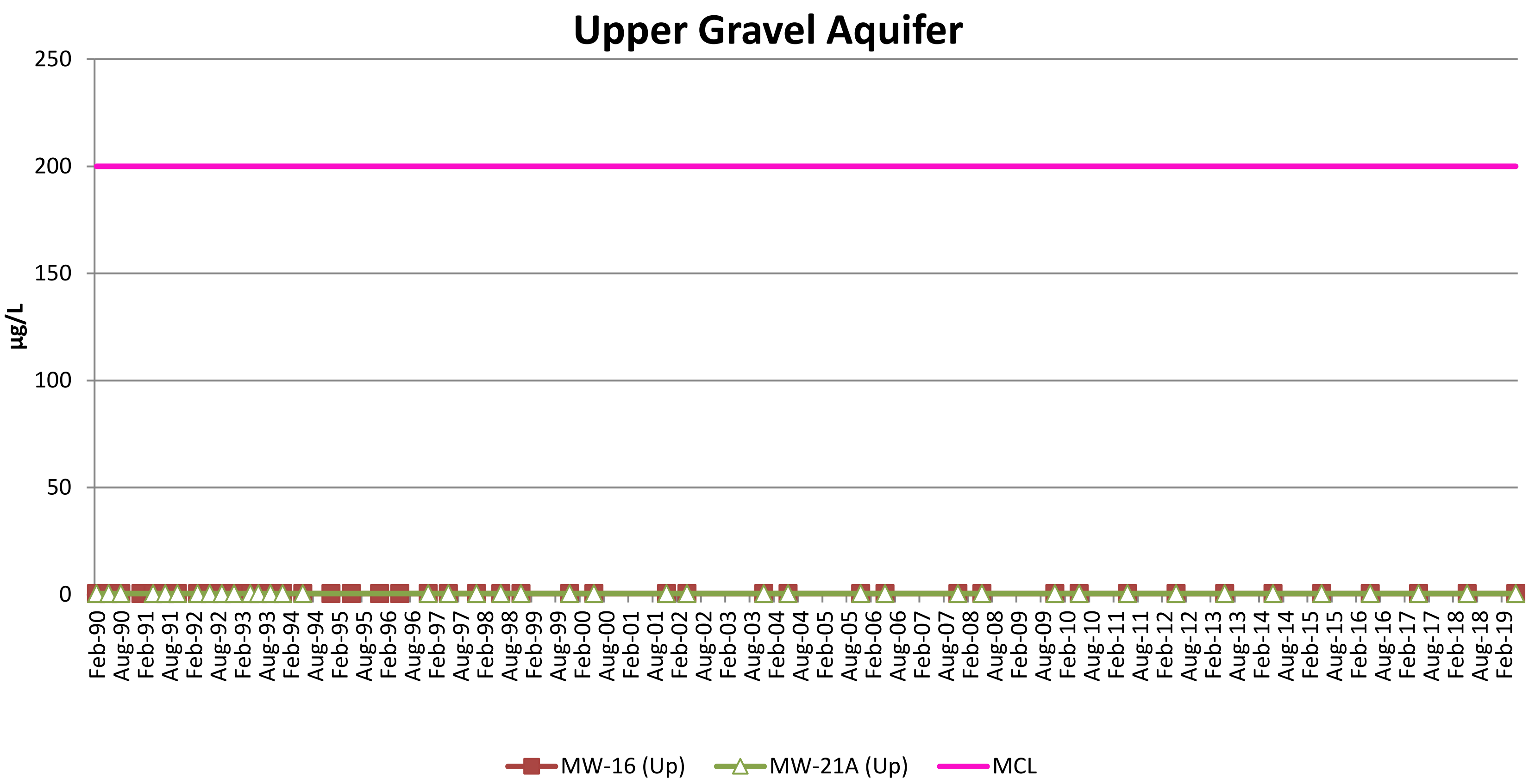


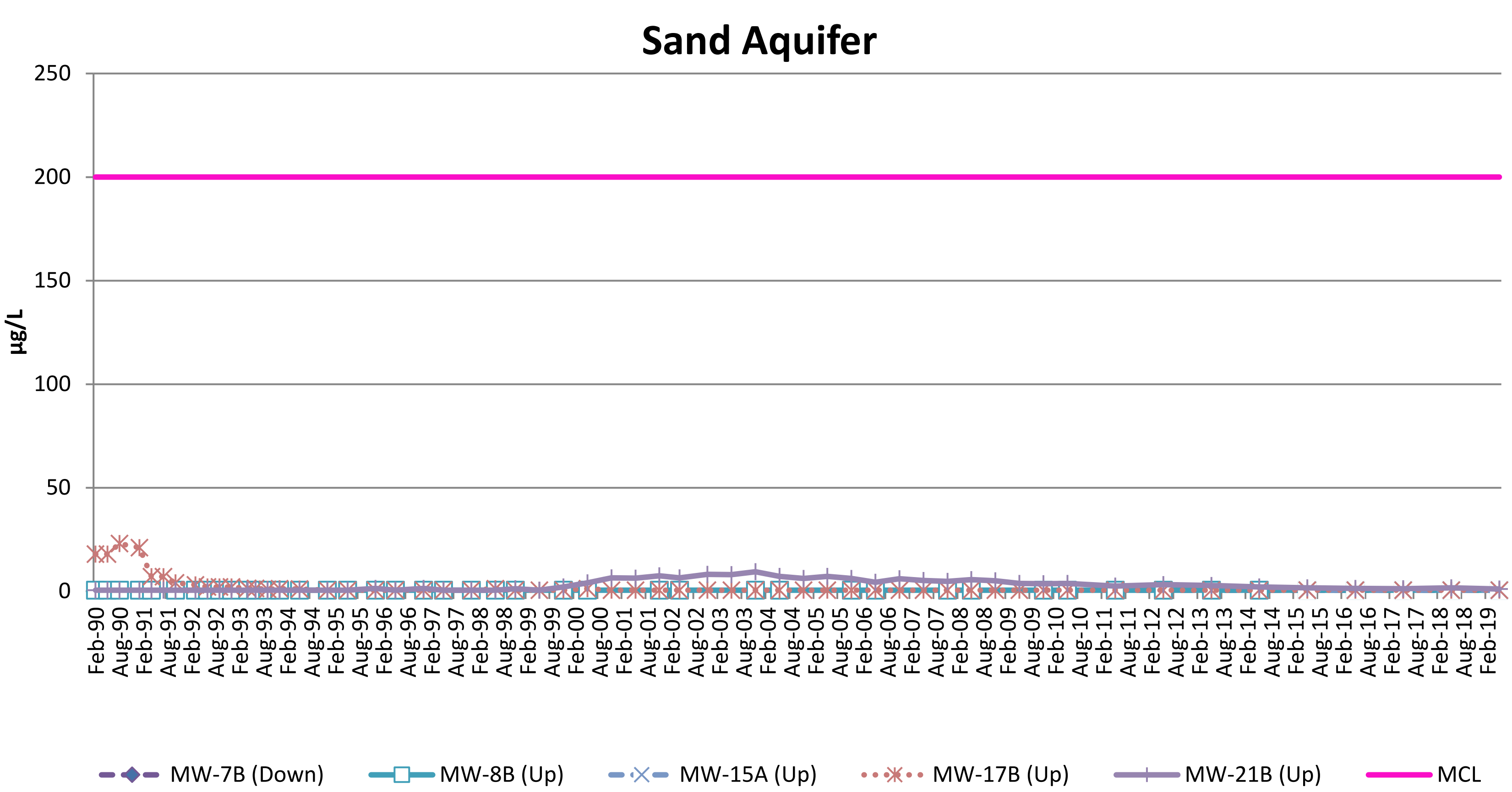


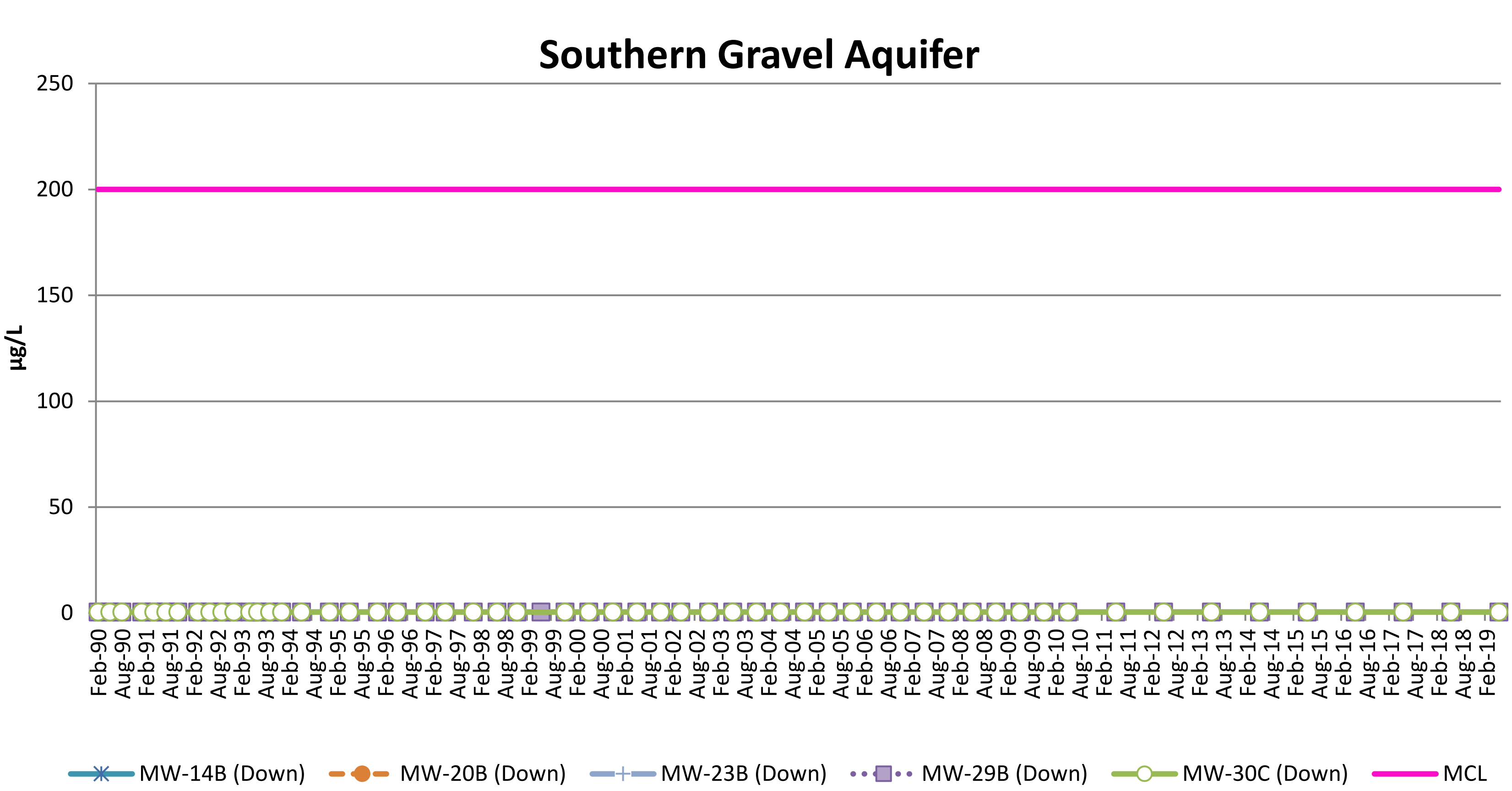
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.
MTCA B = Model Toxics Control Act (WAC 173-340) Method B cleanup level.

Tetrachloroethene
Concentrations by Aquifer
Midway Landfill



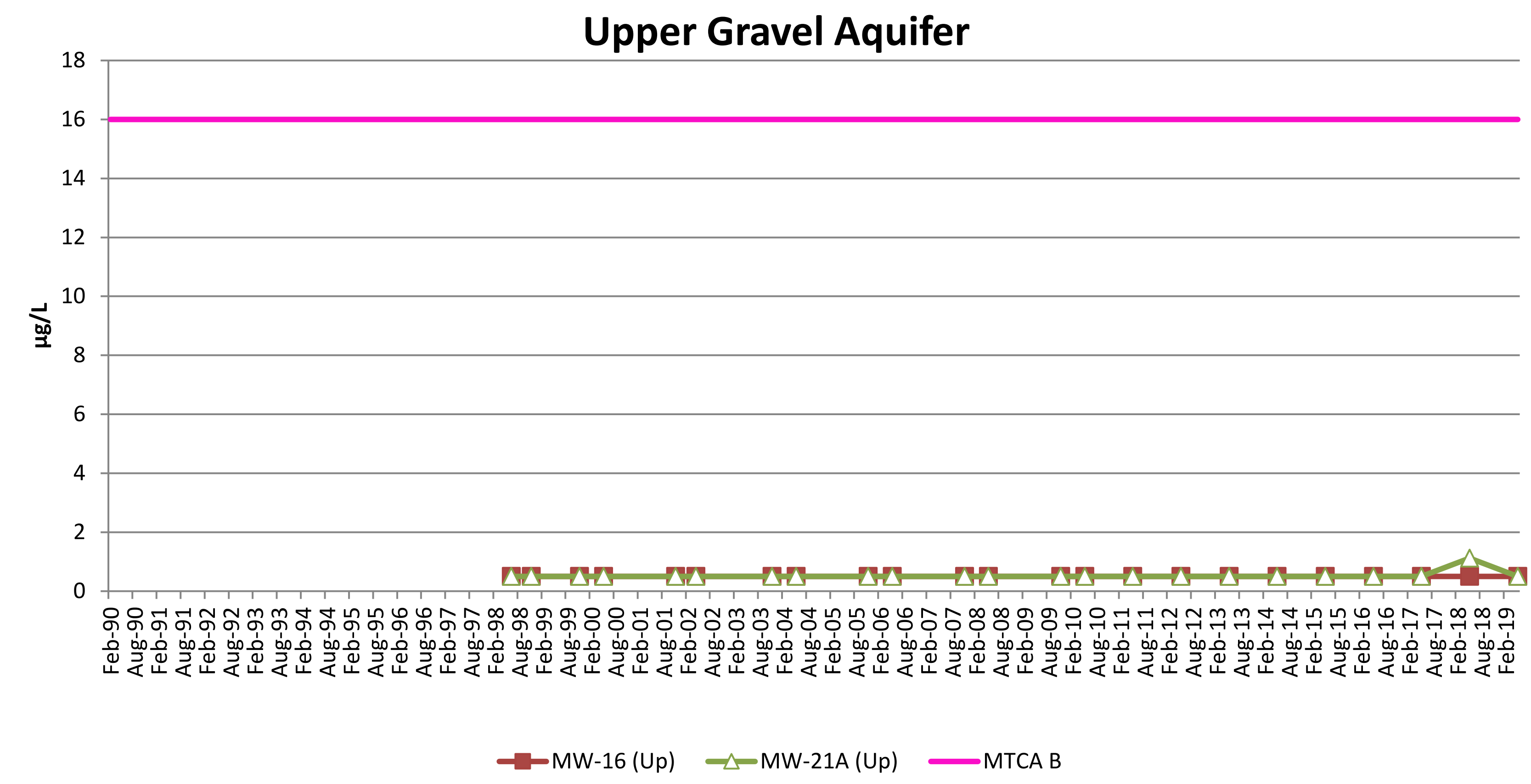


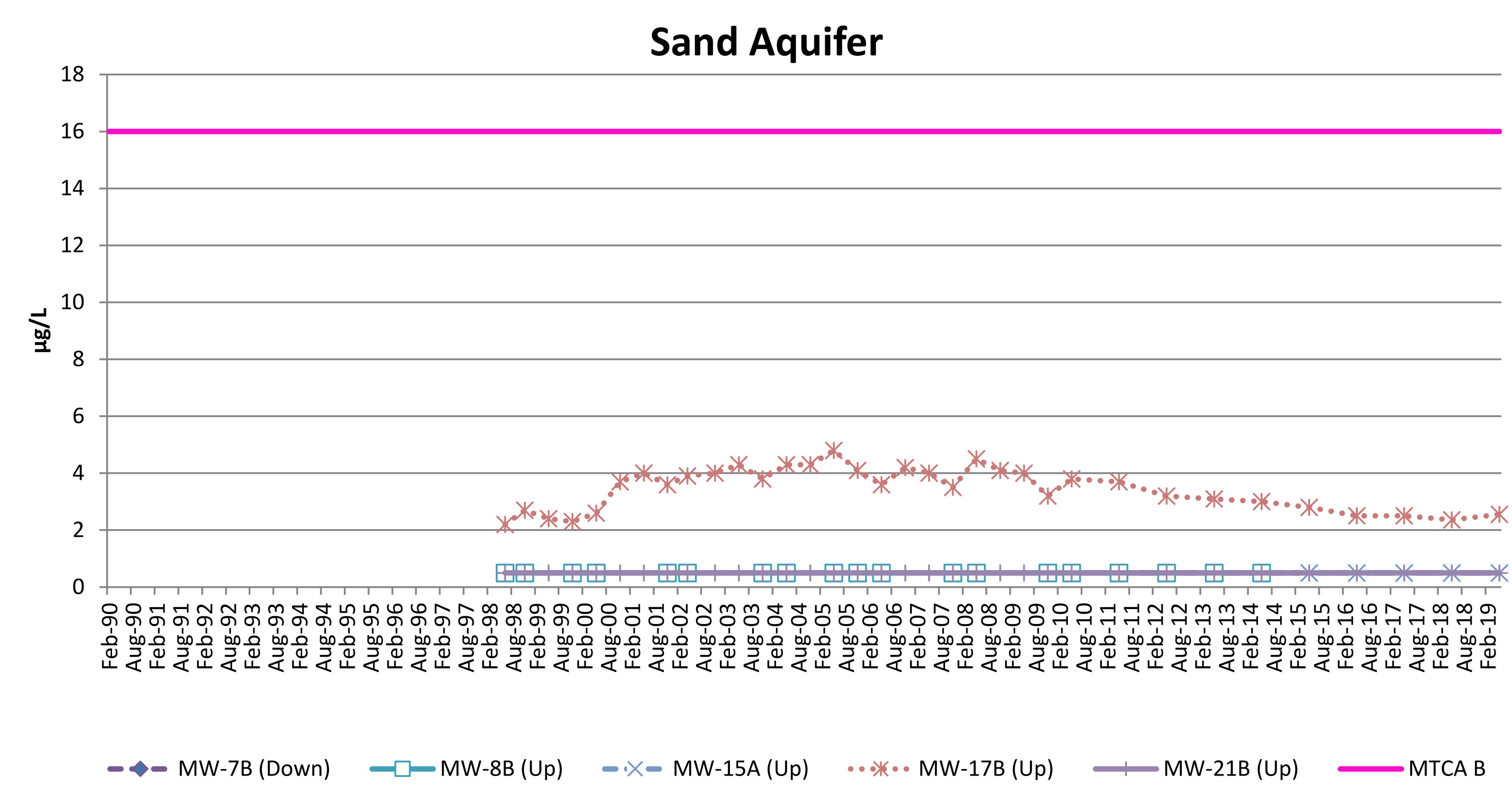


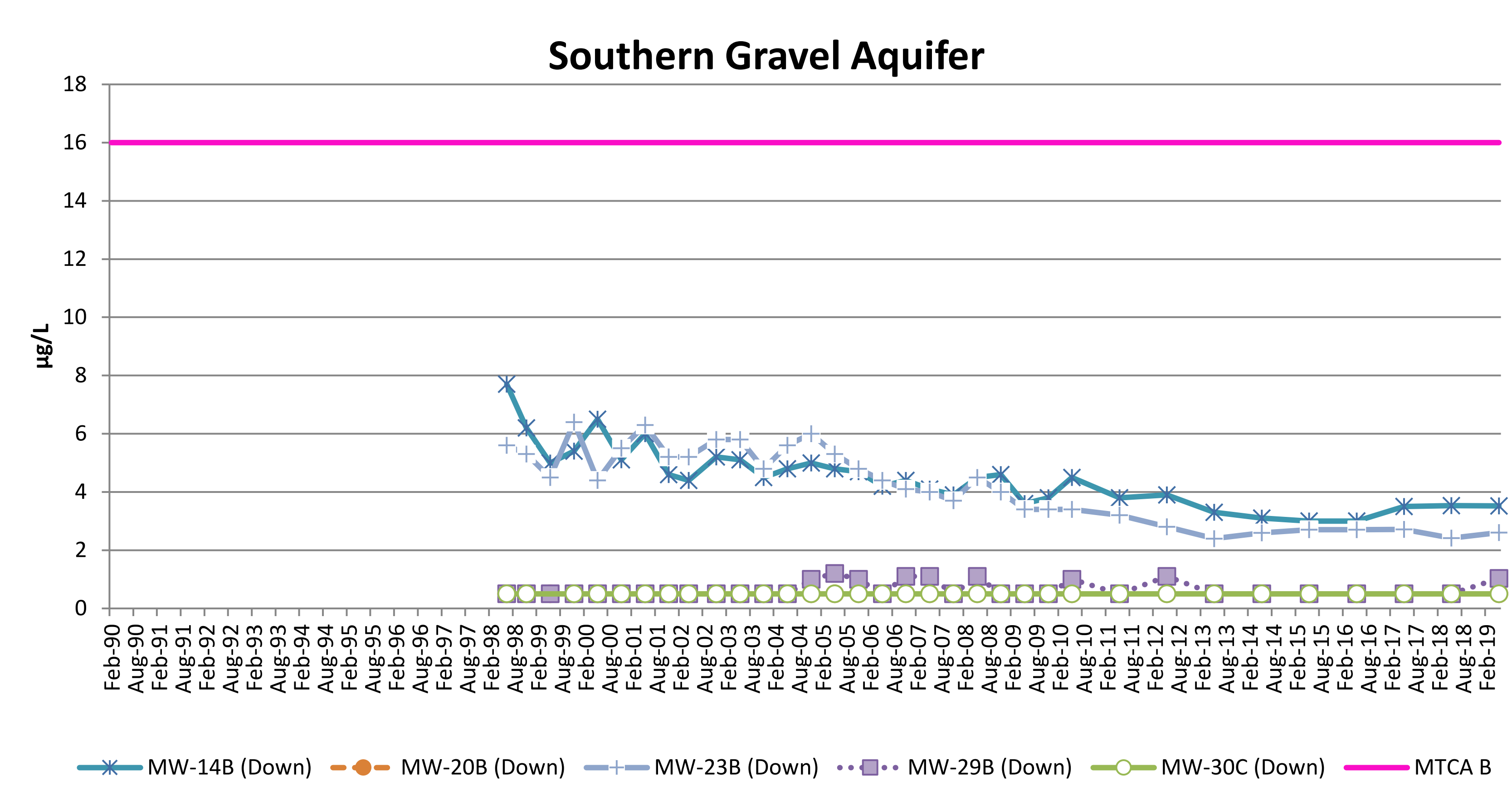
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Notes: Non-detected values are shown as 1/2 the detection limit.
MCL = Federal maximum contaminant level.

1,1,1-Trichloroethane
Concentrations by Aquifer
Midway Landfill



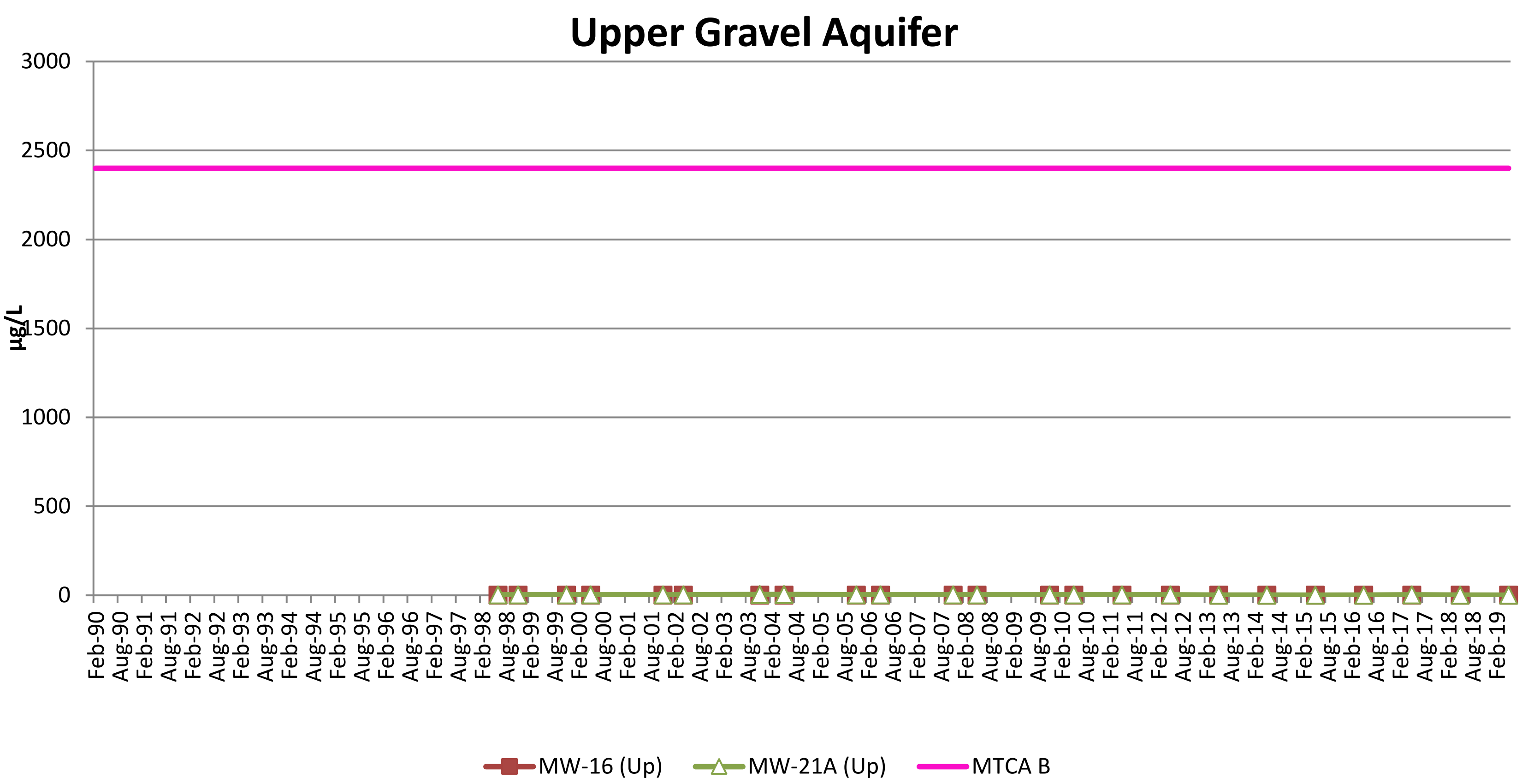


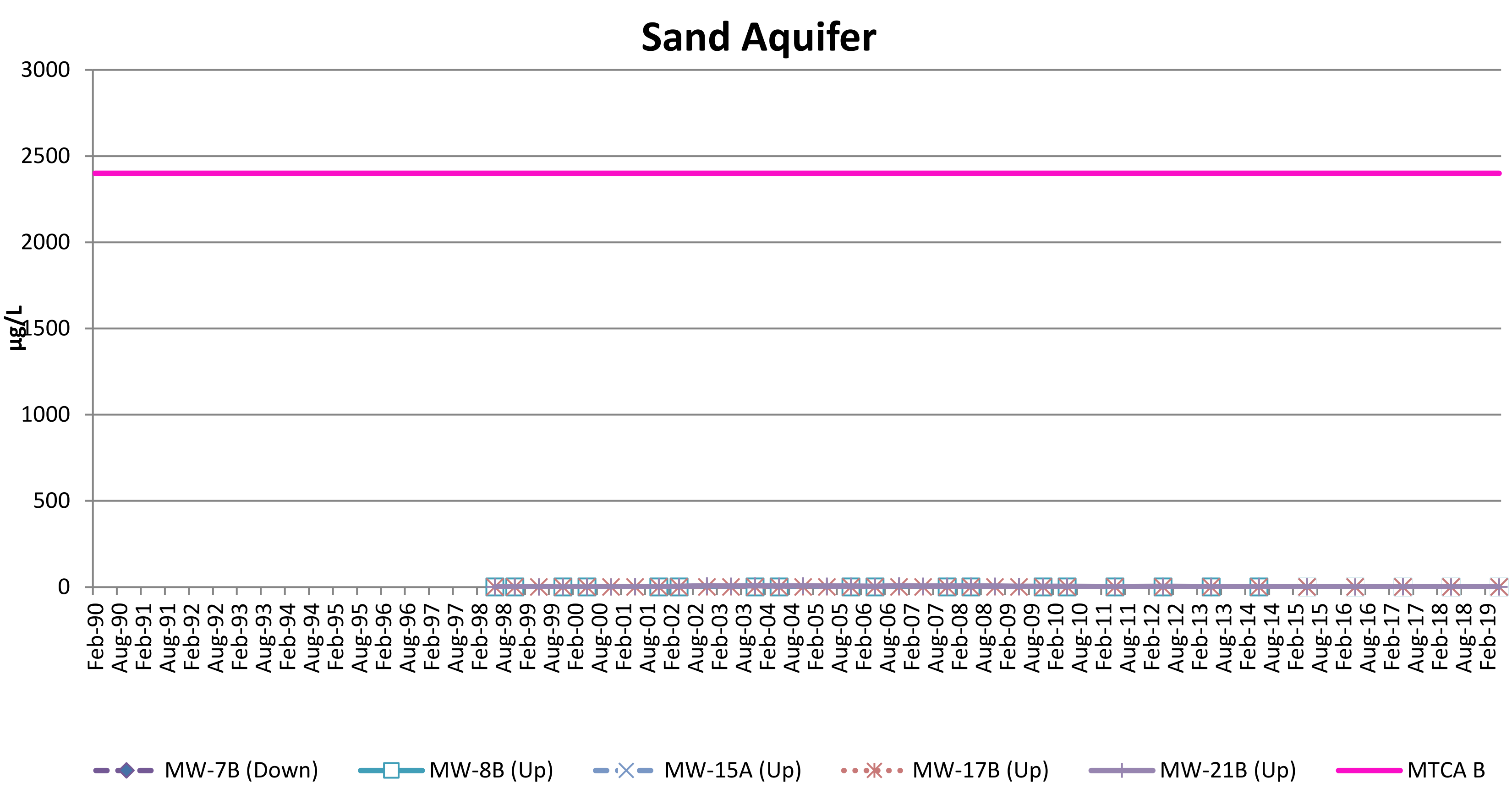


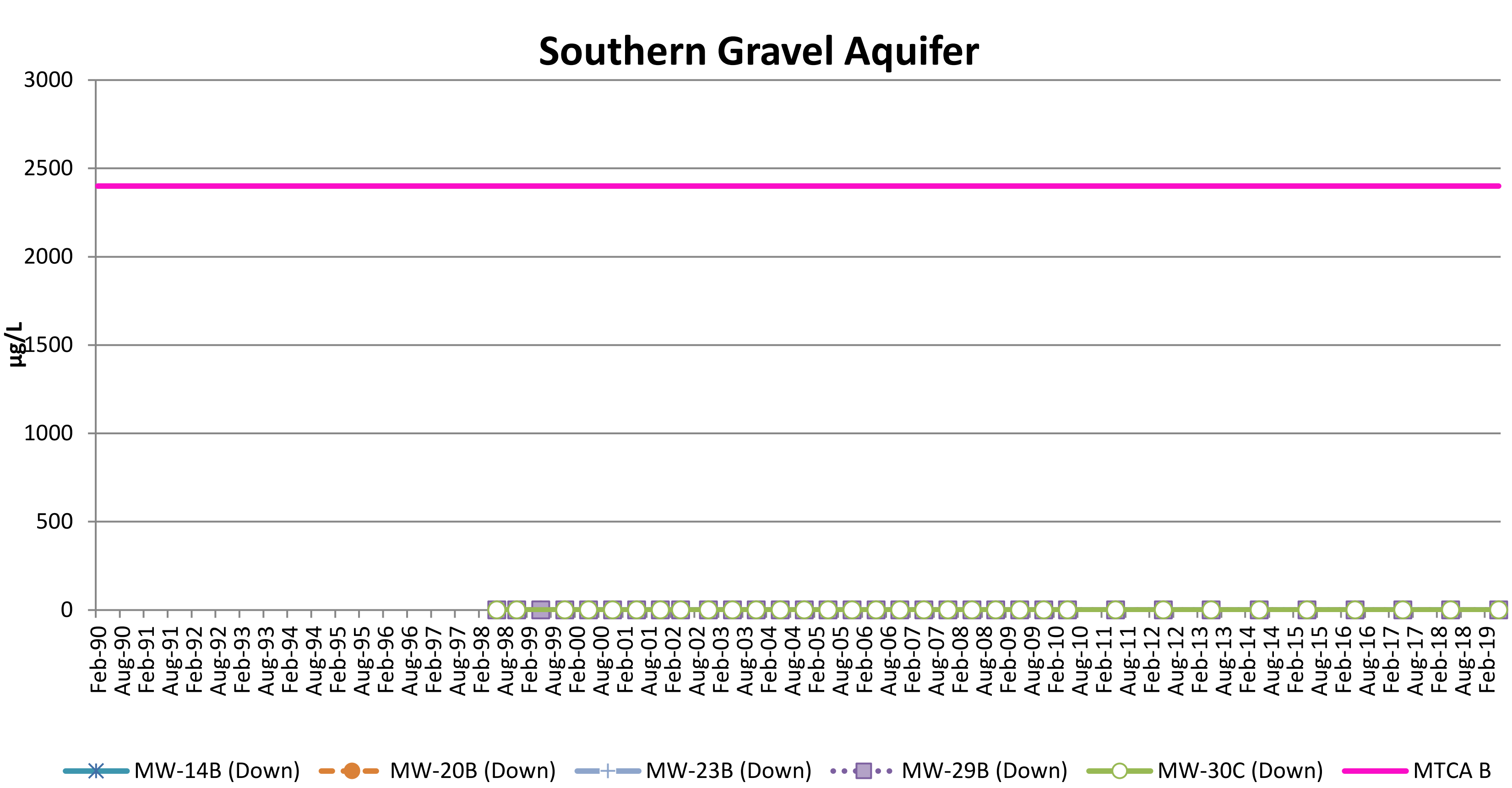
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Cis-1,2-Dichloroethene Concentrations by Aquifer
Midway Landfill

Notes: Non-detected values are shown as 1/2 the detection limit.
MTCA B = Model Toxics Control Act (WAC 173-340) Method B cleanup level.





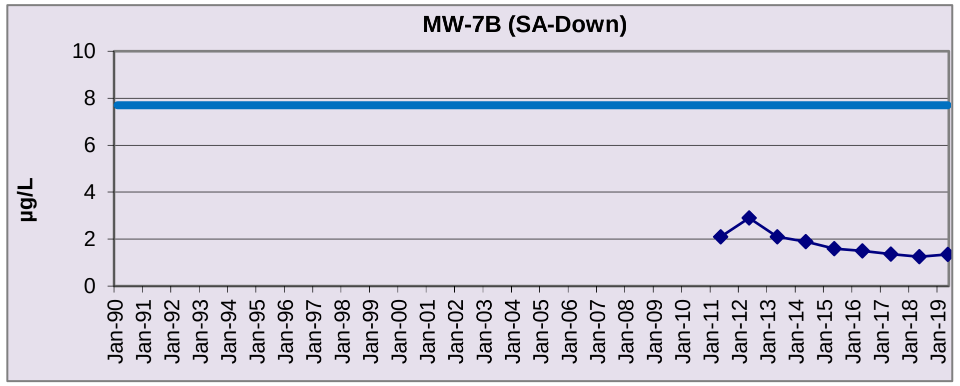


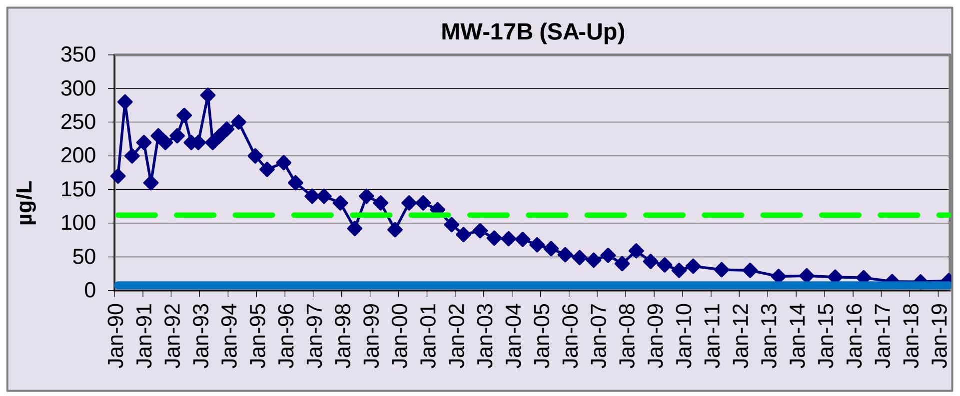
Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

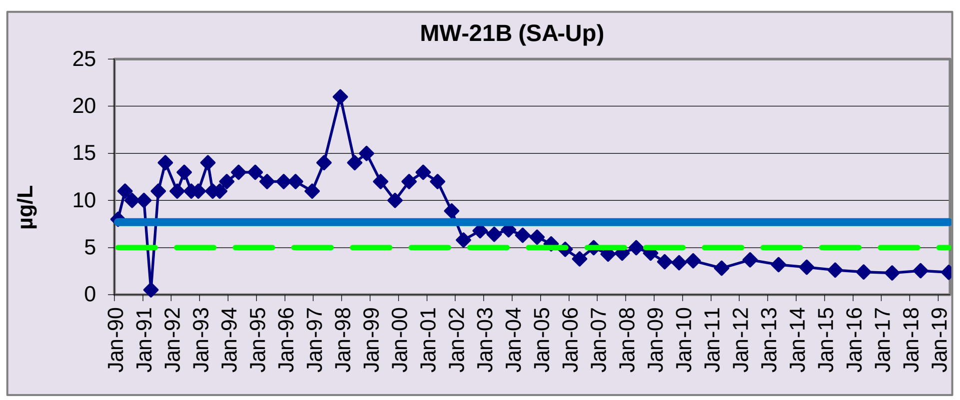
Notes: Non-detected values are shown as 1/2 the detection limit.
MTCA B = Model Toxics Control Act (WAC 173-340) Method B cleanup level.

Trichlorofluoromethane Concentrations by Aquifer
Midway Landfill

1,1-Dichloroethane

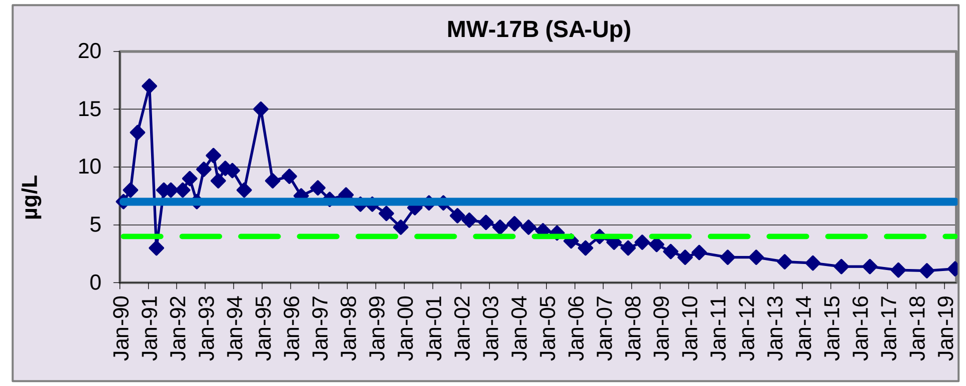


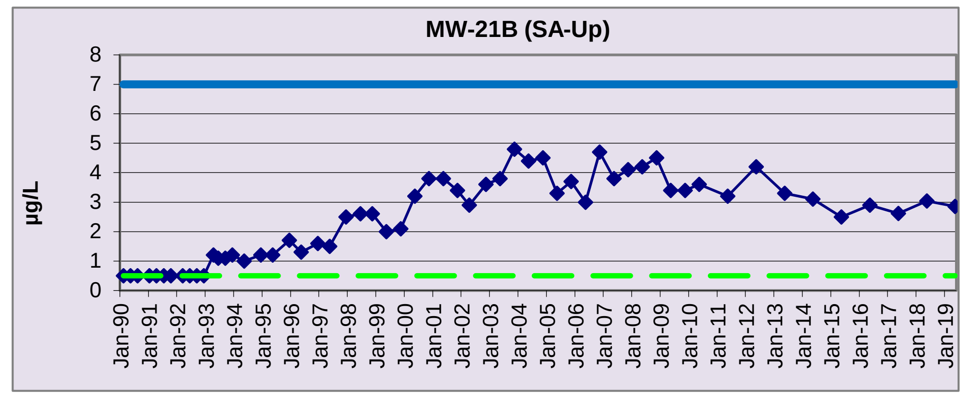




MTCA B — Avg RI

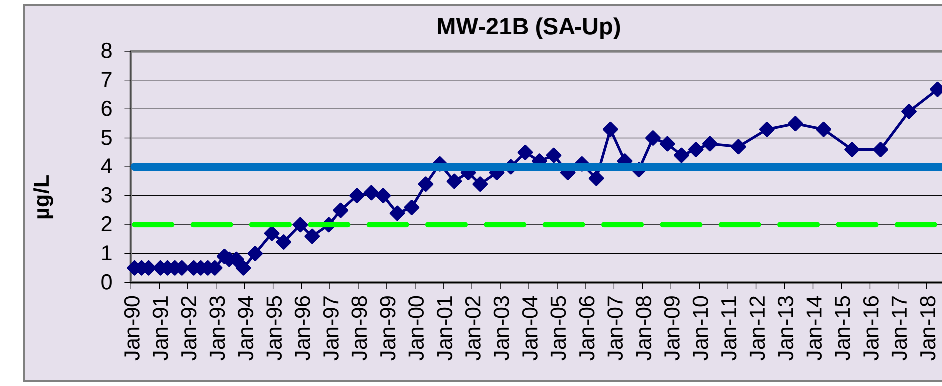
1,1-Dichloroethene





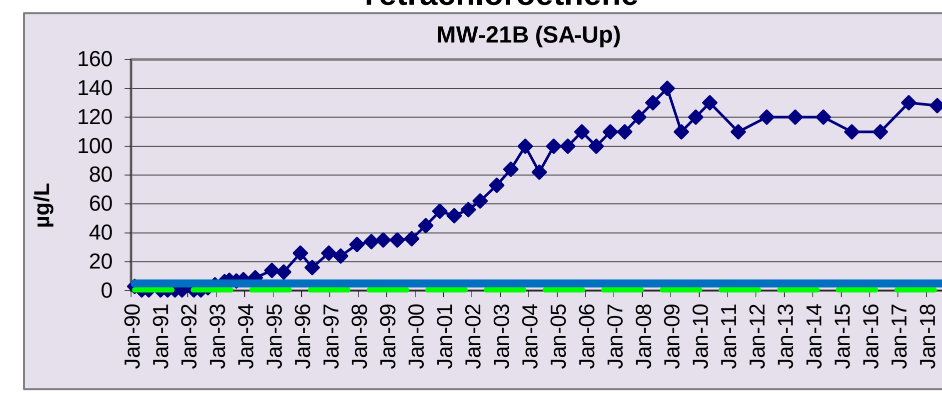
MCL — Avg RI

Trichloroethene



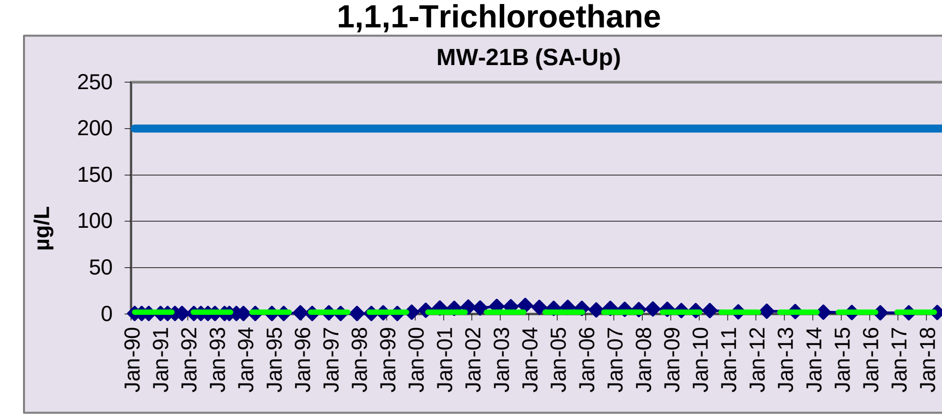
MTCA B — Avg RI

Tetrachloroethene



MTCA B — Avg RI

1,1,1-Trichloroethane



MCL — Avg RI

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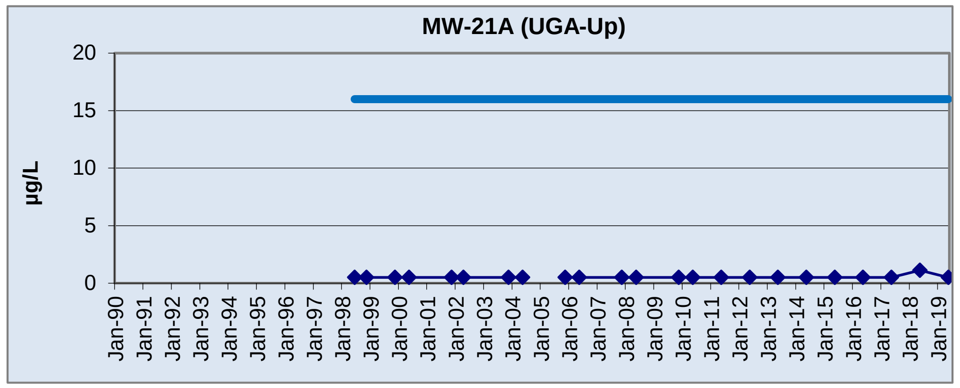
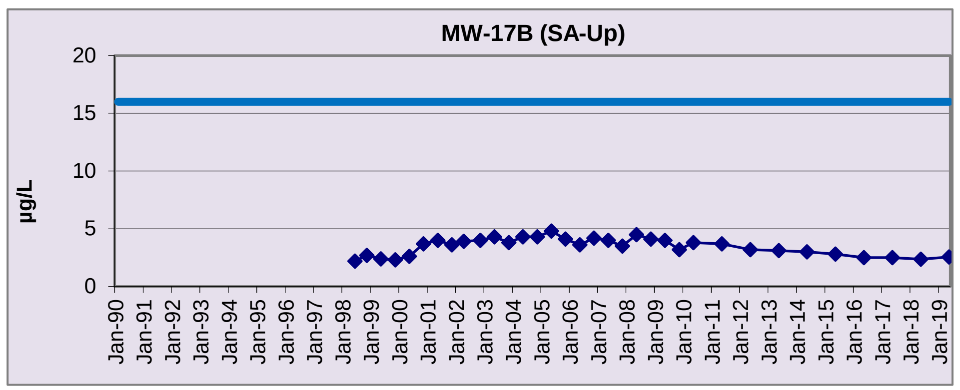
Notes: Non-detected values are shown as 1/2 the detection limit.
MCL = Federal maximum contaminant level.
MTCA B = Model Toxics Control Act (WAC 173-340) Method B cleanup level.
RI = Remedial Investigation

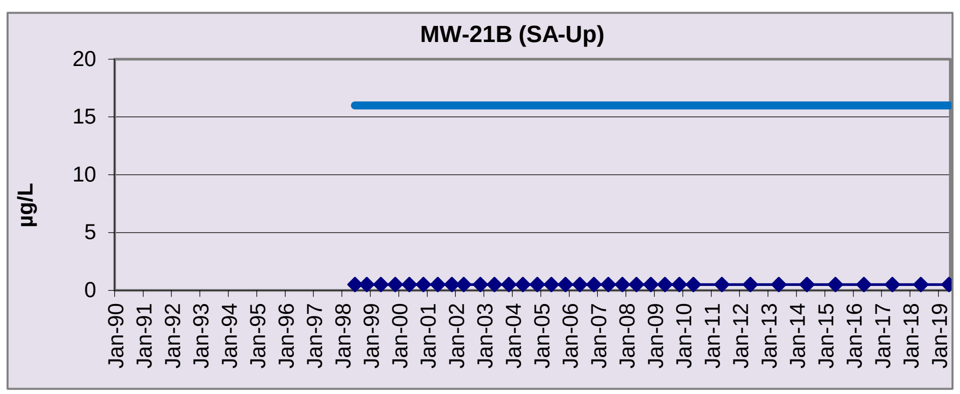
Upper Gravel Aquifer
Sand Aquifer
Southern Gravel Aquifer

Volatile Organic Compounds Concentrations by Well
Midway Landfill

Cis-1,2-Dichloroethene

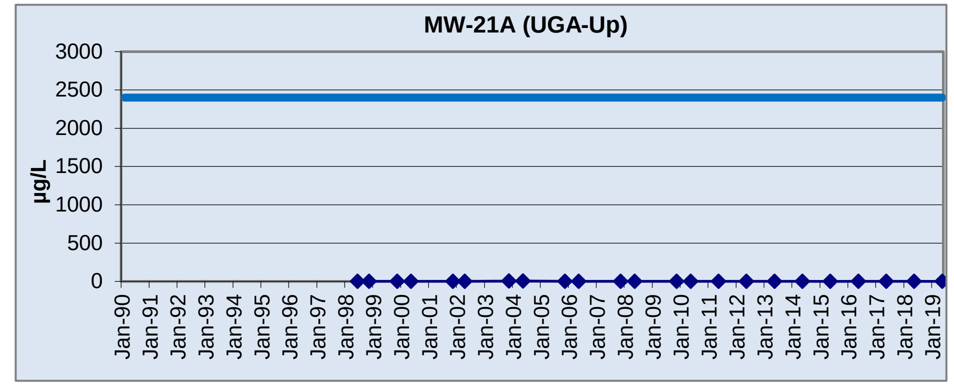


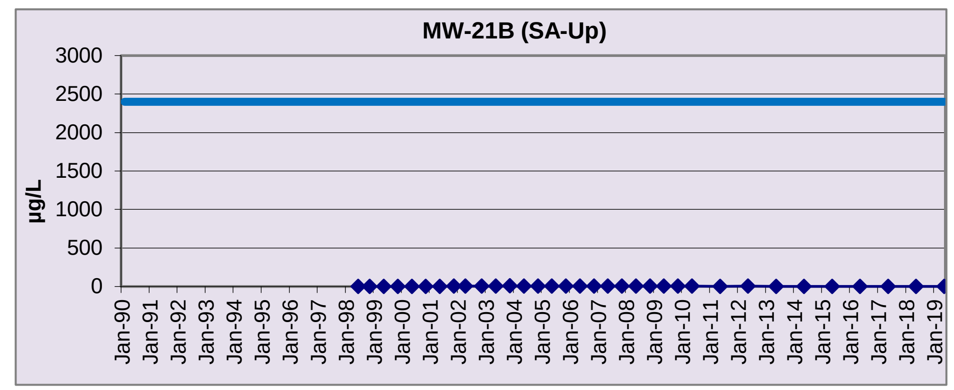




MTCA B   Avg RI

Trichlorofluoromethane





MTCA B   Avg RI

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Notes: Non-detected values are shown as 1/2 the detection limit.
MCL = Federal maximum contaminant level.
MTCA B = Model Toxics Control Act (WAC 173-340) Method B cleanup level.
RI = Remedial Investigation

Upper Gravel Aquifer
Sand Aquifer
Southern Gravel Aquifer

Volatile Organic Compounds
Concentrations by Well
Midway Landfill

A4 2019 Annual Notice

City of Seattle
Seattle Public Utilities

TRANSMITTAL

June 2, 2020

TO: Mark Adams, Washington State Department of Ecology
Yolanda Pon, Public Health Seattle King County
Highline Water District
Lakehaven Utility District
Active Well Drillers in King County (Washington State Department of Ecology list)
Owner of Well 37

Re: Midway Landfill Annual Groundwater Conditions Report
Informational – No Action Required

Enclosed is the annual notice of groundwater conditions in affected areas downgradient of the Midway Landfill for 2019. This is being sent to you pursuant to the requirements in the Midway Landfill Record of Decision (ROD) between the City of Seattle and the United States Environmental Protection Agency, and in compliance with a Consent Decree between the City of Seattle and the Washington State Department of Ecology (Ecology).

The City of Seattle is required to annually notify the Seattle-King County Department of Public Health, Ecology, the local water districts, and locally active well drillers of groundwater conditions in the affected areas downgradient of the Midway Landfill. You are hereby notified that no water supply wells are to be constructed or used in the areas of known groundwater contamination listed in Table 1 and shown on Figure 2.

If you have any questions or require additional information, please contact me at jeff.neuner@seattle.gov or at 206-684-7693.

Sincerely,

Jeff Neuner
Midway Landfill Manager

Enclosure

Mami Hara, General Manager/CEO
Seattle Public Utilities
PO Box 34018
Seattle, WA 98124-4018

Tel (206) 684-5851
Fax (206) 684-4631
TDD (206) 233-7241
http://www.seattle.gov/util

City of Seattle
Seattle Public Utilities

2019 ANNUAL NOTICE OF GROUNDWATER CONDITIONS IN AFFECTED AREAS DOWNGRADIENT OF THE MIDWAY LANDFILL[1]

For Informational Purposes Only—No Action Required

The City of Seattle is the owner and previous operator of the Midway Landfill, located north of South 252nd Street between SR-99 and I-5 in Kent, Washington (Figure 1).

Extensive testing of groundwater within and surrounding the landfill area has indicated the presence of various contaminants that do not meet federal drinking water standards (Maximum Contaminant Levels [MCLs]) or state groundwater standards (Model Toxic Control Act [MTCA; WAC 173-340] Method B cleanup levels).

Cleanup levels for contaminants of concern (COCs) were established in a Record of Decision (ROD) between the City of Seattle and the United States Environmental Protection Agency.

A summary of the concentrations of COCs and additional parameters in groundwater with concentrations greater than MCLs or MTCA B cleanup levels are presented in Table 1. The locations of wells with concentrations of COCs above ROD cleanup levels are shown on Figure 2.

In compliance with a Consent Decree between the City of Seattle and the Washington State Department of Ecology (Ecology), and in accordance with the ROD, Ecology and all appropriate local health districts, water districts, and certified well drillers are hereby notified that no water supply wells are to be constructed or used in the areas of known groundwater contamination as indicated on Table 1 and shown on Figure 2.

This is an annual notification.

[1] The City will annually notify the Seattle-King County Department of Public Health, Ecology, the local water districts, and locally active well drillers in writing of groundwater conditions in the affected areas downgradient of the landfill.

Mami Hara, SPU General Manager/CEO
Seattle Public Utilities
700 5th Avenue, Suite 4900
PO Box 34018
Seattle, WA 98124-4018

Tel (206) 684-5851
Fax (206) 684-4631
TDD (206) 233-7241
http://www.seattle.gov/util

Prepared by Parametrix: \\parametrix.com\pmx\PSO\Projects\ConfidClients\1550-CityofSeattle\553-1550-063 KentHighMidwyLFPost99Svcs\GIS\Midway_5yrRvw_Fig1_SiteMap.mxd, 6/3/2020

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N

0 250 500 750

Feet

City of Seattle, Seattle Public Utilities Owned Parcel Boundary That Includes Midway Landfill

Figure 1
Site Location Map
Midway Landfill
Kent, Washington

Image Source: EagleView Technologies, Inc.

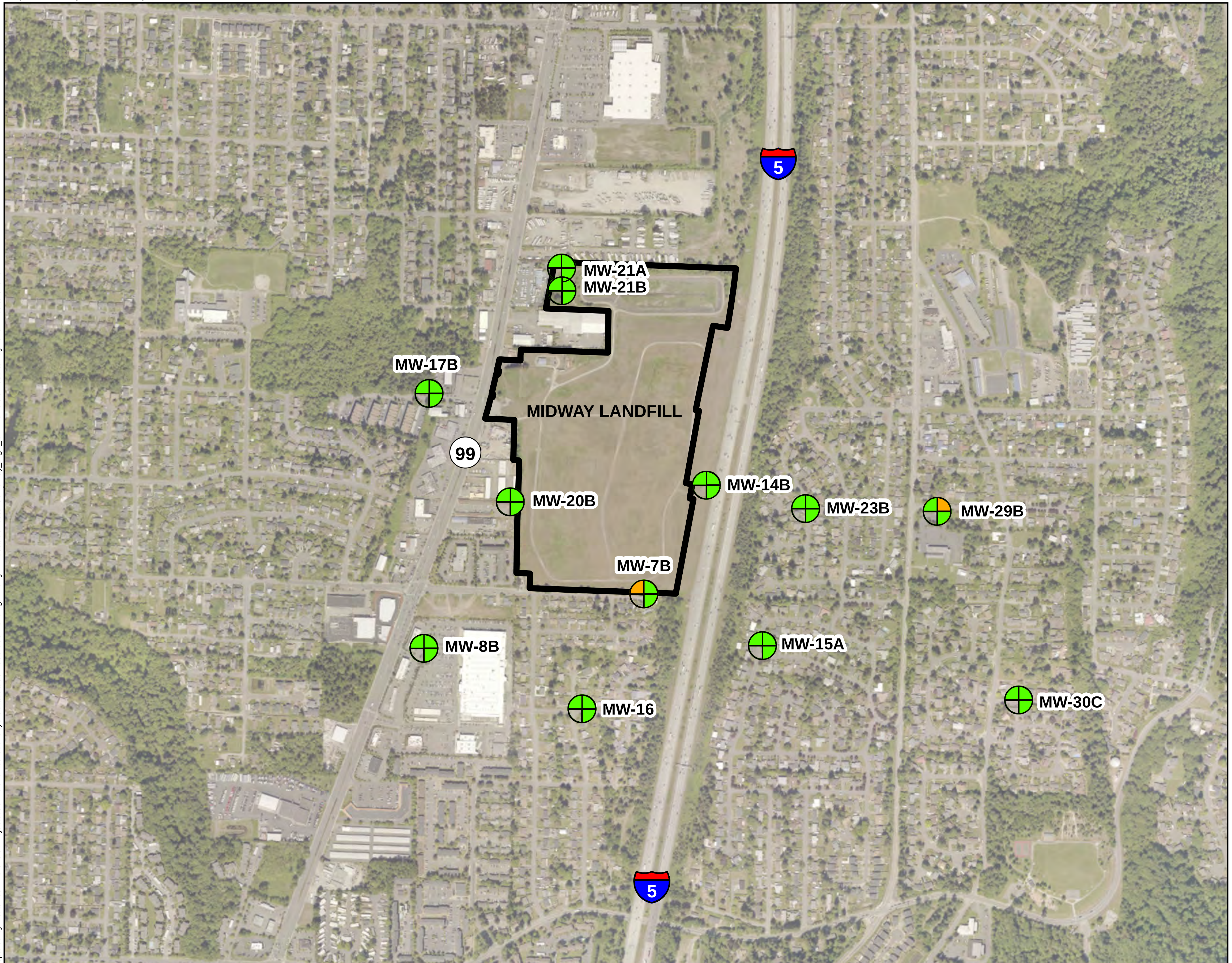

Figure 2
Comparison of Contaminants of Concern to ROD Cleanup Levels, May 2019
Midway Landfill
Kent, Washington

Manganese

Exceeds CUL (2.2 mg/L)

Does Not Exceed CUL

Vinyl Chloride

Exceeds CUL (0.29 ug/L)

Does Not Exceed CUL

1,2-Dichloroethane

Exceeds CUL (5 ug/L)

Does Not Exceed CUL

N

0 350 700 1,050

Feet

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Prepared by Parametrix: U:\PSO\Projects\ConfidClients\1550-CityofSeattle\553-1550-063 KentHighMidwyLFPost\99Svcs\GIS\Midway_Fig2_GWMonCOCResultsMay2019.mxd, 6/4/2020

Table 1. Groundwater Concentrations of Contaminants of Concern and Additional Parameters Not Included in the ROD, Midway Landfill, May 2019

				Upper Gravel Aquifer		Sand Aquifer					Southern Gravel Aquifer				
				MW-16 UP	MW-21A UP	MW-7B DOWN	MW-8B UP	MW-15A DOWN	MW-17B UP	MW-21B UP	MW-14B DOWN	MW-20B DOWN	MW-23B DOWN	MW-29B DOWN	MW-30C DOWN
Compound	Units	Comparison Standards		5/7/2019	5/8/2019	5/7/2019	5/7/2019	5/6/2019	5/8/2019	5/8/2019	5/7/2019	5/8/2019	5/6/2019	5/6/2019	5/6/2019
Contaminants of Concern															
		ROD Cleanup Level[a]													
Manganese	mg/L	2.2		0.0950	0.0010 U	**2.32**	0.275	0.0010 U	0.0330	0.345	0.884	1.61	0.109	0.812	0.669
Vinyl Chloride	µg/L	0.29[b]		0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.20 U	**0.337**	0.200 U
1,2-Dichloroethane	µg/L	5		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	2.14	1.00 U	1.00 U	1.00 U	1.81	3.92	1.03
Parameters Not Included in the ROD [c]															
		MCL[d]	**MTCA B[e]**												
Dissolved Metals															
Iron	mg/L	0.3**		0.0816	0.0500 U	**1.76**	0.0677	0.0500 U	0.0500 U	0.0500 U	**8.76**	**4.27**	**7.01**	**12.1**	**2.15**
Semi-Volatile Organics															
1,4-Dioxane	µg/L		0.44	0.4 U	0.4 U	**1.3**	0.4 U	0.4 U	**0.7**	**1.5**	**10.3**	**12.9**	**1.8**	**8.8**	**4.8**
Volatile Organics															
1,1-Dichloroethane	µg/L		7.7	1.00 U	1.00 U	1.35	1.00 U	1.00 U	**14.6**	2.39	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Trichloroethene	µg/L	5*	4	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**6.26**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Tetrachloroethene	µg/L	5*	5	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**118**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U

Notes: ROD = Record of Decision

UP or DOWN in column title denotes whether the well is located upgradient or downgradient of the landfill's influence.

[a] = Cleanup levels established in the Final EPA ROD for the Midway Landfill Site, September 6, 2000.

[b] = The revised cleanup level for vinyl chloride is 0.29 µg/L using the MTCA adjusted cancer risk of 1e-5.

[c] = Only includes parameters that have concentrations greater than MCL or MTCA B cleanup level

[d] = MCL/Federal maximum contaminant level.

[e] = MTCA B/Model Toxics Control Act (WAC 173-340) Method B Cleanup Level. CLARC II Database, Ecology.

(shaded) = Exceeds cleanup level established in the Final EPA ROD for the Midway Landfill Site, September 6, 2000 for COCs or exceeds Federal MCL or MTCA Method B Groundwater Cleanup Level for parameters not included in the ROD.

U = Indicates the compound was undetected at the reported concentration.

* = Primary MCL Standards; EPA National Primary Drinking Water Regulations (40 CFR 141 59 FR 34322).

** = Secondary MCL Standards; EPA National Primary Drinking Water Regulations (40 CFR 141 59 FR 34322).

Appendix B

Surface Water

B1 TV Inspection Report

STORMWATER MANAGEMENT • FULL GROUTING SERVICE • CCTV PIPE INSPECTION • HYDRO EXCAVATION • PIPE/LINE JETTING • VACUUM SWEEPERS

PHONE: 1(888)565-5665/(253)435-4382
EMAIL:info@pro-vac.com
ADDRESS: 6622 112TH Street E.
Puyallup, WA 98373

DATE OF SERVICE: August 2017

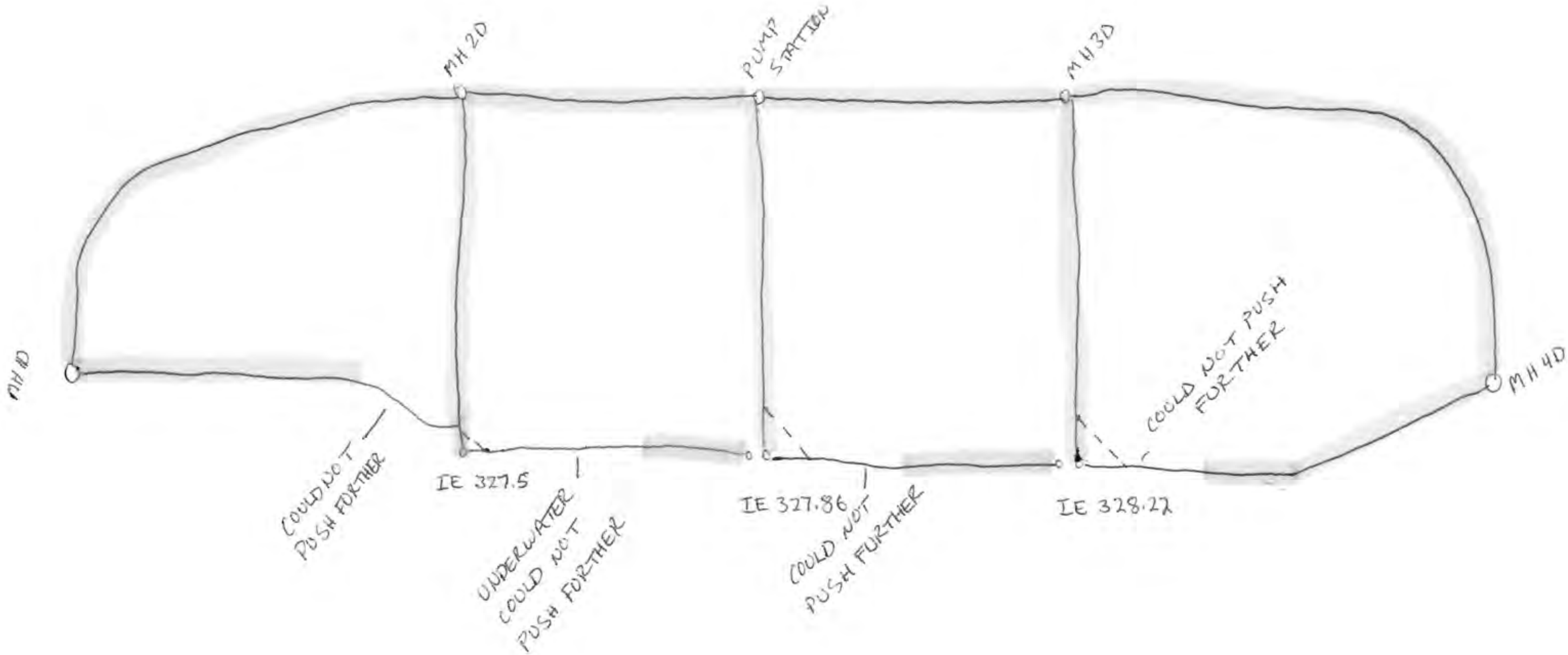
CUSTOMER NAME: *SPU Midway Landfill*

ADDRESS: *S 252nd St and Pacific Ave S Kent WA*

INSPECTION DETAILS: *CCTV Existing storm per maps*

☐ **SEWER**	☒ **STORM**	☐ **WATER**
☒ **NEW**	☐ **EXISTING**	☒ **REPAIR**

PRO-VAC'S CCTV PIPE INSPECTION TEAM IS NASSCO AND PACP CERTIFIED. OUR INSPECTION SERVICES INCLUDE STORM, SEWER, CONDUIT AND LATERAL LAUNCH FOR SIDE SEWERS. WE INSPECT PIPE DIAMETERS 2" TO 200" IN SIZE.



GREEN CCTV DONE

DOTTED LINE PROPOSED LINE DIRECTION

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by: Kyle Osborn 253-442-4335
Certificate No: U-614-06021605
Owner:
Survey Customer:
Drainage area:
Sheet number:

Work order:
Pipeline segment ref: MH-1-Inlet Structure
Start date/time: 2017/08/02 09:21
Street: Midway Landfill Onsite Drainage
City: Kent

Location details:
Upstream manhole No: MH-1
Rim to invert:
Grade to invert:
Rim to grade:

Downstream manhole No: Inlet Structure
Rim to invert:
Grade to invert:
Rim to grade:
Sewer use:
Direction: D
Flow control:
Height: 30

Width:
Shape: C
Material: RCP
Ln. method:
Pipe joint length:
Total length: 20.0
Length surveyed: 23.1
Year laid:
Year renewed:
Media label:

Purpose:
Sewer category:
Pre-cleaning: Z
Date cleaned:
Weather: 1
Location code:
Additional info:

Starting access point:
Easting:
Northing:
Elevation:
Coordinate system:
GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor Modifier/ Severity	Continuous Defect	S/M/L	Value Inches (mm) 1st	2nd	%	Joint	Circumferential Location At/From	to	Image Ref.	Remarks
0.0	17	AMH										Start at MH-1
0.0	28	MWL					5					
16.4	60	FS							12	12		
23.1	97	AEP										Stop at Inlet

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-2-MH-1	2017/08/02	09:28	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-2			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-1					U		30

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP			180.0	181.5			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	361	AMH										Start at MH-1
0.0	371	MWL					0					
181.5	347	AMH										Stop at MH-2

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-20-MH-2	2017/08/02	09:59	Midway Landfill Offsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-20			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-2					U		30

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				321.4			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		J		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	10	AMH										Start at MH-2
0.0	20	MWL					5					
321.4	514	AMH										Stop at MH-20

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-22FCS-MH-21	2017/08/02	10:41	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-22FCS			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-21					U		36

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				362.2			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	11	AMH										Start at MH-21
0.0	20	MWL					5					
152.5	331	CM	S01						12	2		
234.4	492	CM	F01						12	2		
248.4	537	CM	S02						1	3		
278.8	628	CM	F02						1	3		
297.6	682	CL							12			
360.1	817	MMC										CP to Metal
362.2	882	AMH										Stop at MH-22FCS

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-21-MH-20	2017/08/02	11:05	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-21			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-20					D		36

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				319.5			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref	Remarks
0.0	26	AMH										Start at MH-21
0.0	54	MWL					5					
84.9	240	CM	S01						11	1		
93.1	266	CM	F01						11	1		
319.5	612	AMH										Stop at MH-20

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Kyle Osborn 253-442-4335
Certificate No:	U-614-06021605
Owner:	
Survey Customer:	
Drainage area:	
Sheet number:	
Work order:	
Pipeline segment ref:	MH-20-MH-19
Start date/time:	2017/08/02 11:46
Street:	Midway Landfill Onsite Drainage
City:	Kent
Location details:	
Upstream manhole No:	MH-20
Rim to invert:	
Grade to invert:	
Rim to grade:	
Downstream manhole No:	MH-19
Rim to invert:	
Grade to invert:	
Rim to grade:	
Sewer use:	
Direction:	U
Flow control:	
Height:	36
Width:	
Shape:	C
Material:	RCP
Ln. method:	
Pipe joint length:	
Total length:	
Length surveyed:	361.7
Year laid:	
Year renewed:	
Media label:	
Purpose:	
Sewer category:	
Pre-cleaning	Z
Date cleaned:	
Weather:	1
Location code:	
Additional info:	

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	10	AMH										Start at MH-19
0.0	20	MWL					5					
322.4	647	OBR					5		6			
361.7	729	AMH										Stop at MH-20

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-19 Onsite-MH-19 Offsite	2017/08/02	12:05	Midway Landfill	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-19 Onsite			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-19 Offsite					D		36

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				220.9			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref	Remarks
0.0	23	AMH										Start at MH-19 Onsite
0.0	36	MWL					5					
220.9	433	AMH										Stop at MH-19 Offsite

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-19-MH-18	2017/08/02	12:14	S 248th St and HWY 99	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-19			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-18					D		36

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				376.0			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	16	AMH										Start at MH-19
0.0	24	MWL					5					
376.0	618	AMH										Stop at MH-18

Pro-Vac
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Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	Concrete Inlet Flume	2017/08/02	12:58	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	Upstream			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
Downstream					D		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
48	R	RCP				24.2			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref	Remarks
0.0	21	AEP										Start at Upstream End
0.0	34	MWL					0					
24.2	67	AEP										Stop at Downstream end

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Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by: Kyle Osborn 253-442-4335
Certificate No: U-614-06021605
Owner:
Survey Customer:
Drainage area:
Sheet number:

Work order:
Pipeline segment ref: MH-E-1-Inlet Structure
Start date/time: 2017/08/02 13:11
Street: Midway Landfill Onsite Drainage
City: Kent

Location details:
Upstream manhole No: MH-E-1
Rim to invert:
Grade to invert:
Rim to grade:

Downstream manhole No: Inlet Structure
Rim to invert:
Grade to invert:
Rim to grade:
Sewer use:
Direction: D
Flow control:
Height: 36

Width:
Shape: C
Material: RCP
Ln. method:
Pipe joint length:
Total length:
Length surveyed: 47.5
Year laid:
Year renewed:
Media label:

Purpose:
Sewer category:
Pre-cleaning: Z
Date cleaned:
Weather: 1
Location code:
Additional info:

Starting access point:
Easting:
Northing:
Elevation:
Coordinate system:
GPS accuracy:

Distance (Feet) (Meters)	Video Ref	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	12	AMH										Start at MH-E-1
0.0	21	MWL					0					
47.5	134	AEP										Stop at Inlet Structure

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Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-E-2-MH-E-1	2017/08/02	13:17	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-E-2			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-E-1					U		36

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				64.0			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	39	AMH										Start at MH-E-1
0.0	51	MWL					0					
64.0	156	AMH										Stop at MH-E-2

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Phone: 253-848-5250

PACP Sewer Report

Surveyed by: Kyle Osborn 253-442-4335
Certificate No: U-614-06021605
Owner:
Survey Customer:
Drainage area:
Sheet number:

Work order:
Pipeline segment ref: #4114-MH-E-2
Start date/time: 2017/08/02 13:19
Street: Midway Landfill West I-5
City: Kent

Location details:
Upstream manhole No: #4114
Rim to invert:
Grade to invert:
Rim to grade:

Downstream manhole No: MH-E-2
Rim to invert:
Grade to invert:
Rim to grade:
Sewer use:
Direction: U
Flow control:
Height: 36

Width:
Shape: C
Material: RCP
Ln. method:
Pipe joint length:
Total length:
Length surveyed: 113.3
Year laid:
Year renewed:
Media label:

Purpose:
Sewer category:
Pre-cleaning: Z
Date cleaned:
Weather: 1
Location code:
Additional info:

Starting access point:
Easting:
Northing:
Elevation:
Coordinate system:
GPS accuracy:

Distance (Feet) (Meters)	Video Ref	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	12	AMH										Start at MH-E-2
0.0	22	MWL					0					
107.1	203	TBI			6	2			5			
113.3	252	AMH										Stop at MH-E-3

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Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Kyle Osborn 253-442-4335
Certificate No:	U-614-06021605
Owner:	
Survey Customer:	
Drainage area:	
Sheet number:	
Work order:	
Pipeline segment ref:	Upstream-MH-E-1
Start date/time:	2017/08/02 13:54
Street:	Midway Landfill Onsite Draniage
City:	Kent
Location details:	
Upstream manhole No:	Upstream
Rim to invert:	
Grade to invert:	
Rim to grade:	
Downstream manhole No:	MH-E-1
Rim to invert:	
Grade to invert:	
Rim to grade:	
Sewer use:	
Direction:	U
Flow control:	
Height:	12
Width:	
Shape:	C
Material:	CMP
Ln. method:	
Pipe joint length:	
Total length:	
Length surveyed:	23.4
Year laid:	
Year renewed:	
Media label:	
Purpose:	
Sewer category:	
Pre-cleaning	Z
Date cleaned:	
Weather:	1
Location code:	
Additional info:	

Starting access point: Easting: Northing: Elevation: Coordinate system: GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd		Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	9	AMH										Start at MH-E-1
0.0	21	MWL					0					
21.2	57	D					10					
23.4	79	AEP										Stop at Upstream 90

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PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	Upstream-MH-E-2	2017/08/02	14:26	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	Upstream			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-E-2					U		6

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	PVC				53.8			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref	Remarks
0.0	1	AMH										Start at MH-E-2
0.0	24	MWL					0					
53.8	249	AEP										Stop at End of Slope Drain

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PACP Sewer Report

Surveyed by: Kyle Osborn 253-442-4335
Certificate No: U-614-06021605
Owner:
Survey Customer:
Drainage area:
Sheet number:

Work order:
Pipeline segment ref: MH-3D-Pump Station
Start date/time: 2017/08/02 14:50
Street: Midway Landfill Onsite Drainage
City: Kent

Location details:
Upstream manhole No: MH-3D
Rim to invert:
Grade to invert:
Rim to grade:

Downstream manhole No: Pump Station
Rim to invert:
Grade to invert:
Rim to grade:
Sewer use:
Direction: D
Flow control:
Height: 6

Width:
Shape: C
Material: PVC
Ln. method:
Pipe joint length:
Total length:
Length surveyed: 201.3
Year laid:
Year renewed:
Media label:

Purpose:
Sewer category:
Pre-cleaning: Z
Date cleaned:
Weather: 1
Location code:
Additional info:

Starting access point:
Easting:
Northing:
Elevation:
Coordinate system:
GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	15	AMH										Start at MH-3D
0.0	26	MWL					10					
1.0	35	DSGV	S01				5		5	7		
18.2	70	DSGV	F01				5		5	7		
192.1	378	MWLS					50					
201.3	508	AOC										Stop at Pump Station

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Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	Cleanout-MH-3D	2017/08/02	15:07	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	End PVC Sump			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-3D					U		6

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	PVC				125.7			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	16	AMH										Start at MH-3D
0.0	24	MWL					5					
124.5	280	TF			6				9			
125.7	319	ACO M										Stop at Upstream Cleanout

Pro-Vac
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Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by: Kyle Osborn 253-442-4335
Certificate No: U-614-06021605
Owner:
Survey Customer:
Drainage area:
Sheet number:

Work order:
Pipeline segment ref: MH-2D-Pump Station
Start date/time: 2017/08/02 15:28
Street: Midway Landfill Onsite Drainage
City: Kent

Location details:
Upstream manhole No: MH-2D
Rim to invert:
Grade to invert:
Rim to grade:

Downstream manhole No: Pump Station
Rim to invert:
Grade to invert:
Rim to grade:
Sewer use:
Direction: D
Flow control:
Height: 6

Width:
Shape: C
Material: PVC
Ln. method:
Pipe joint length:
Total length:
Length surveyed: 198.5
Year laid:
Year renewed:
Media label:

Purpose:
Sewer category:
Pre-cleaning: Z
Date cleaned:
Weather: 1
Location code:
Additional info:

Starting access point: Easting: Northing: Elevation: Coordinate system: GPS accuracy:

Distance (Feet) (Meters)	Video Ref	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref	Remarks
0.0	9	AMH										Start at MH-2D
0.0	21	MWL					15					
198.5	377	AOC										Stop at Pump Station

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Phone: 253-848-5250

PACP Sewer Report

Surveyed by: Kyle Osborn 253-442-4335
Certificate No: U-614-06021605
Owner:
Survey Customer:
Drainage area:
Sheet number:

Work order:
Pipeline segment ref: MH-4D-End PVC Sump
Start date/time: 2017/08/03 10:35
Street: Midway Landfill Onsite Drainage
City: Kent

Location details:
Upstream manhole No: MH-4D
Rim to invert:
Grade to invert:
Rim to grade:

Downstream manhole No: End PVC Sump
Rim to invert:
Grade to invert:
Rim to grade:
Sewer use:
Direction: D
Flow control:
Height: 6

Width:
Shape: C
Material: PVC
Ln. method:
Pipe joint length:
Total length:
Length surveyed: 135.4
Year laid:
Year renewed:
Media label:

Purpose:
Sewer category:
Pre-cleaning: Z
Date cleaned:
Weather: 1
Location code:
Additional info:

Starting access point:
Easting:
Northing:
Elevation:
Coordinate system:
GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref	Remarks
0.0	9	AMH										Startat MH-4D
0.0	24	MWL					10					
135.4	271	LR					25					
135.4	278	MSA										Due to Bend in pipe

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Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	Cleanout-MH-2D	2017/08/03	10:55	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	End PVC Sump			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-2D					U		6

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	PVC				123.9			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	2nd	%	Joint	Circumferential Location At/From	to	Image Ref.	Remarks
0.0	9	AMH										Start at MH-2D
0.0	19	MWL					0					
118.6	163	TF			6				3			
121.7	185	TF			6				9			
123.9	203	ACO M										Stop at Cleanout

Pro-Vac
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Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-1D-Tee Connection	2017/08/03	11:23	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-1D			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
Tee Connection					D		6

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	PVC				228.2			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	9	AMH										Start at MH-1D
0.0	24	MWL					5					
228.2	364	LR					30					
228.2	375	MSA										Due to bend

Pro-Vac
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Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Kyle Osborn 253-442-4335
Certificate No:	U-614-06021605
Owner:	
Survey Customer:	
Drainage area:	
Sheet number:	
Work order:	
Pipeline segment ref:	Concrete Outlet-MH-22FCS
Start date/time:	2017/08/03 12:30
Street:	Midway Landfill Onsite Drainage
City:	Kent
Location details:	
Upstream manhole No:	Concrete Outlet
Rim to invert:	
Grade to invert:	
Rim to grade:	
Downstream manhole No:	MH-22FCS
Rim to invert:	
Grade to invert:	
Rim to grade:	
Sewer use:	
Direction:	D
Flow control:	
Height:	36
Width:	
Shape:	C
Material:	RCP
Ln. method:	
Pipe joint length:	
Total length:	
Length surveyed:	59.0
Year laid:	
Year renewed:	
Media label:	
Purpose:	
Sewer category:	
Pre-cleaning	Z
Date cleaned:	
Weather:	1
Location code:	
Additional info:	

Starting access point: Easting: Northing: Elevation: Coordinate system: GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	23	AEP										Start at Concrete Outlet
0.0	40	MWL					5					
59.0	127	AMH										Stop at MH-22FCS

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Phone: 253-848-5250

PACP Sewer Report

Surveyed by: Kyle Osborn 253-442-4335	Certificate No: U-614-06021605	Owner:	Survey Customer:	Drainage area:	Sheet number:

Work order:	Pipeline segment ref: MH-18-MH-17	Start date/time: 2017/08/03 13:16	Street: 2627 S 248th St	City: Kent

Location details:	Upstream manhole No: MH-18	Rim to invert:	Grade to invert:	Rim to grade:

Downstream manhole No: MH-17	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction: D	Flow control:	Height: 36	

Width:	Shape: C	Material: RCP	Ln. method:	Pipe joint length:	Total length:	Length surveyed: 63.8	Year laid:	Year renewed:	Media label:

Purpose:	Sewer category:	Pre-cleaning: Z	Date cleaned:	Weather: 1	Location code:	Additional info:

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	14	AMH										Start at MH-18
0.0	22	MWL					5					
63.8	244	AMH										Stop at MH-17

Pro-Vac
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Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Kyle Osborn 253-442-4335
Certificate No:	U-614-06021605
Owner:	
Survey Customer:	
Drainage area:	
Sheet number:	
Work order:	
Pipeline segment ref:	MH-17-MH-16
Start date/time:	2017/08/03 13:21
Street:	2627 S 248th St
City:	Kent
Location details:	
Upstream manhole No:	MH-17
Rim to invert:	
Grade to invert:	
Rim to grade:	
Downstream manhole No:	MH-16
Rim to invert:	
Grade to invert:	
Rim to grade:	
Sewer use:	
Direction:	D
Flow control:	
Height:	36
Width:	
Shape:	C
Material:	RCP
Ln. method:	
Pipe joint length:	
Total length:	
Length surveyed:	353.5
Year laid:	
Year renewed:	
Media label:	
Purpose:	
Sewer category:	
Pre-cleaning	Z
Date cleaned:	
Weather:	1
Location code:	
Additional info:	

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	2nd	%	Joint	Circumferential Location At/From	To	Image Ref.	Remarks
0.0	14	AMH										Start at MH-17
0.0	27	MWL					5					
353.5	561	AMH										Stop at MH-16

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-15-MH-14	2017/08/03	14:03	S 249th Pl and 25th Ave S	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-15			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-14					U		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				151.7			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref	Remarks
0.0	13	AMH										Start at MH-14
0.0	22	MWL					5					
151.7	309	AMH										Stop at MH-15

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-16-MH-15	2017/08/03	14:09	S 249th Pl	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-16			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-15					U		36

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				170.1			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	12	AMH										Start at MH-15
0.0	21	MWL					5					
170.1	254	AMH										Stop at MH-16

Pro-Vac
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Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-14-MH-13	2017/08/03	14:26	25th Ave S and S 249th Pl	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-14			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-13					D		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				122.4			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor Modifier/ Severity	Continuous Defect	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	13	AMH										Start at MH-14
0.0	21	MWL					5					
122.4	335	AMH										Stop at MH-13

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-13-MH-12	2017/08/03	14:32	S 250th St and 25th Ave S	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-13			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-12					D		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				54.2			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref	Remarks
0.0	13	AMH										Start at MH-13
0.0	21	MWL					5					
54.2	153	AMH										Stop at MH-12

Pro-Vac
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Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-12-MH-11	2017/08/03	14:53	S 250th St and 25th Ave S	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-12			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-11					U		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				255.3			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	12	AMH										Start at MH-11
0.0	20	MWL					5					
255.3	518	AMH										Stop at MH-12

Pro-Vac
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Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Kyle Osborn 253-442-4335
Certificate No:	U-614-06021605
Owner:	
Survey Customer:	
Drainage area:	
Sheet number:	
Work order:	
Pipeline segment ref:	MH-11-MH-10
Start date/time:	2017/08/03 15:08
Street:	2255 S 250th St
City:	Kent
Location details:	
Upstream manhole No:	MH-11
Rim to invert:	
Grade to invert:	
Rim to grade:	
Downstream manhole No:	MH-10
Rim to invert:	
Grade to invert:	
Rim to grade:	
Sewer use:	
Direction:	D
Flow control:	
Height:	24
Width:	
Shape:	C
Material:	RCP
Ln. method:	
Pipe joint length:	
Total length:	
Length surveyed:	337.3
Year laid:	
Year renewed:	
Media label:	
Purpose:	
Sewer category:	
Pre-cleaning	Z
Date cleaned:	
Weather:	1
Location code:	
Additional info:	

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	14	AMH										Start at MH-11
0.0	25	MWL					5					
337.3	611	AMH										Stop at MH-10

Pro-Vac
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PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-10-MH-9	2017/08/03	15:36	22nd Ave S and S 150th St	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-10			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-9					U		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				287.9			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	14	AMH										Start at MH-10
0.0	28	MWL					5					
287.9	585	AMH										Stop at MH-9

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PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-9-MH-8	2017/08/03	15:53	S 250th St and 22nd Ave S	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-9			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-8					D		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				216.7			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref	Remarks
0.0	9	AMH										Start at MH-9
0.0	16	MWL					5					
216.7	415	AMH										Stop at MH-8

Pro-Vac
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PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-8-MH-7	2017/08/03	16:02	2127 S 250th St	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-8			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-7					D		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				222.3			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		J		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref	Remarks
0.0	14	AMH										Start at MH-8
0.0	23	MWL					5					
222.3	361	AMH										Stop at MH-7

Pro-Vac
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Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-E-3-MH #4112	2017/08/04	08:33	W Side of I-5	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-E-3			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH #4112					D		36

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				9.6			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref	Remarks
0.0	19	AMH										Start at MH-E-3
0.0	32	MWL					0					
9.6	170	AMH										Stop at MH #4112

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-E-4-MH-E-3	2017/08/04	09:33	W Side of I-5	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-E-4			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-E-3					U		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				352.2			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref	Group/ Descriptor	Modifier/ Severity Continuous Defect	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref	Remarks
0.0	11	AMH										Start at MH-E-3
0.0	21	MWL					0					
34.3	84	FC							11	3		
158.1	280	CM							10	2		
171.6	321	CM							11	1		
253.9	516	FM							1	4		
338.7	738	FC							12	12		
352.2	796	AMH										Stop at MH-E-4

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-E-3A-MH-E-3	2017/08/04	09:58	W Side of I-5	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-E-3A			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-E-3					U		18

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	CMP				6.1			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/J	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	20	AMH										Start at MH-E-3
0.0	32	MWL					0					
1.0	0	SCP	S01						12	12		
6.1	56	AMH										Stop at MH-E-3A
6.1		SCP	F01						12	12		

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-E-4A-MH-E-3A	2017/08/04	10:12	W Side of I-5	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-E-4A			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-E-3A					U		18

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	CMP				351.1			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	14	AMH										Start at MH-E-3A
0.0	25	MWL					0					
61.8	112	DSG V	S01				5		5	7		
69.2	132	DSG V	F01				5		5	7		
100.5	178	DSG V					5		5	7		
116.0	217	DSG V	S02				5		5	7		
126.9	259	DSG V	F02				5		5	7		

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250
Fax: 407-425-1569

Surveyed by:	Owner:	Start date/time:	Upstream manhole No:	Pipeline segment ref:	Sheet number:
Kyle Osborn 253-442-4335		2017/08/04	MH-E-4A	MH-E-4A-MH-E-3A	

Distance (Feet) (Meters)	Video Ref	Group/ Descriptor Modifier/ Severity	Continuous Defect	S/M/L	Value Inches (mm) 1st	2nd	%	Joint	Circumferential Location At/From	to	Image Ref	Remarks
139.9	296	DSG V					5		5	7		
258.3	531	TB			8				2			
278.5	582	DSG V	S03				5		4	8		
299.4	781	DSG V	F03				10		4	8		
321.5	823	DSG V					5		5	7		
351.1	891	AMH										Stop at MH-E-4A

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-E-7-MH-E-5A	2017/08/04	11:27	W Side of I-5	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-E-7			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-E-5A					D		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	CMP				346.6			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	17	AMH										Start at MH-E-7
0.0	29	MWL					0					
346.6	625	AMH										Stop at MH-E-5A

Pro-Vac
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Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	Upstream MH-MH-E-7	2017/08/04	11:57	W Side of I-5	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	Upstream MH			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-E-7					U		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				85.6			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	11	AMH											Start at MH-E-7
0.0	25	MWL						0					
19.0	58	CS								11	1		
85.6	196	ACB											Stop at Upstream CB in median of I-5

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by: Kyle Osborn 253-442-4335

Certificate No: U-614-06021605

Owner:

Survey Customer:

Drainage area:

Sheet number:

Work order:

Pipeline segment ref: MH-E-6-MH-E-5

Start date/time: 2017/08/04 12:13

Street: W Side of I-5

City: Kent

Location details:

Upstream manhole No: MH-E-6

Rim to invert:

Grade to invert:

Rim to grade:

Downstream manhole No: MH-E-5

Rim to invert:

Grade to invert:

Rim to grade:

Sewer use:

Direction: D

Flow control:

Height: 24

Width:

Shape: C

Material: RCP

Ln. method:

Pipe joint length:

Total length:

Length surveyed: 337.3

Year laid:

Year renewed:

Media label:

Purpose:

Sewer category:

Pre-cleaning: Z

Date cleaned:

Weather: 1

Location code:

Additional info:

Starting access point:

Easting:

Northing:

Elevation:

Coordinate system:

GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	12	AMH										Start at MH-E-6
0.0	23	MWL					0					
30.2	91	FC							12	12		
74.4	202	DSF					5		5	7		
97.9	253	FS							8	4		
248.0	594	DSF					5		5	7		
337.3	824	AMH										Stop at MH-E-5

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-E-7-MH-E-6	2017/08/04	12:42	W Side of I-5	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-E-7			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-E-6					U		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				11.4			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	2nd	%	Joint	Circumferential Location At/From	to	Image Ref.	Remarks
0.0	11	AMH										Start at MH-E-6
0.0	23	MWL					0					
11.4	55	AMH										Stop at MH-E-7

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by: Kyle Osborn 253-442-4335
Certificate No: U-614-06021605
Owner:
Survey Customer:
Drainage area:
Sheet number:

Work order:
Pipeline segment ref: MH-E-5A-MH-E-4A
Start date/time: 2017/08/04 13:30
Street: W Side of I-5
City: Kent

Location details:
Upstream manhole No: MH-E-5A
Rim to invert:
Grade to invert:
Rim to grade:

Downstream manhole No: MH-E-4A
Rim to invert:
Grade to invert:
Rim to grade:
Sewer use:
Direction: D
Flow control:
Height: 24

Width:
Shape: C
Material: CMP
Ln. method:
Pipe joint length:
Total length:
Length surveyed: 348.3
Year laid:
Year renewed:
Media label:

Purpose:
Sewer category:
Pre-cleaning: Z
Date cleaned:
Weather: 1
Location code:
Additional info:

Starting access point: Easting: Northing: Elevation: Coordinate system: GPS accuracy:

Distance (Feet) (Meters)	Video Ref	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref	Remarks
0.0	10	AMH										Start at MH-E-5A
0.0	21	MWL					0					
11.2	74	TB			6				9			
104.1	188	OBR	S01				5		5	7		
128.3	222	OBR	F01				5		5	7		
144.4	250	OBR	S02				10		5	7		
170.7	287	OBR	F02				10		5	7		
179.9	307	DSG V	S03				10		4	8		

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250
Fax: 407-425-1569

Surveyed by:	Owner:	Start date/time:	Upstream manhole No:	Pipeline segment ref:	Sheet number:
Kyle Osborn 253-442-4335		2017/08/04	MH-E-5A	MH-E-5A-MH-E-4A	

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor Modifier/ Severity	Continuous Defect	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
239.3	392	TB			6				9			
302.8	599	DSG V	F03				10		4	8		
348.3	674	AMH										Start at MH-E-4A

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-E-5-MH-E-4	2017/08/04	13:55	W Side of I-5	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-E-5			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-E-4					D		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				353.5			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	10	AMH										Start at MH-E-5
0.0	21	MWL					0					
107.8	135	FC							12	12		
128.9	165	FC							4	8		
253.8	531	DSF	S01				5		5	7		
272.5	560	DSF	F01				5		5	7		
337.3	644	DSF	S02				5		5	7		
349.9	668	DSF	F02				5		5	7		
353.5	690	AMH										Stop at MH-E-4

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-7-MH-6	2017/08/04	14:40	S 250th St and 21st Ave S	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-7			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-6					D		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				323.8			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref	Remarks
0.0	15	AMH										Start at MH-7
0.0	25	MWL					5					
323.8	567	AMH										Stop at MH-6

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by: Kyle Osborn 253-442-4335
Certificate No: U-614-06021605
Owner:
Survey Customer:
Drainage area:
Sheet number:

Work order:
Pipeline segment ref: MH-6-MH-5
Start date/time: 2017/08/04 14:51
Street: S 250th St and 20th Ave S
City: Kent

Location details:
Upstream manhole No: MH-6
Rim to invert:
Grade to invert:
Rim to grade:

Downstream manhole No: MH-5
Rim to invert:
Grade to invert:
Rim to grade:
Sewer use:
Direction: D
Flow control:
Height: 24

Width:
Shape: C
Material: RCP
Ln. method:
Pipe joint length:
Total length:
Length surveyed: 194.5
Year laid:
Year renewed:
Media label:

Purpose:
Sewer category:
Pre-cleaning: Z
Date cleaned:
Weather: 1
Location code:
Additional info:

Starting access point:
Easting:
Northing:
Elevation:
Coordinate system:
GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd		Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	13	AMH										Start at MH-6
0.0	23	MWL					5					
194.5	328	AMH										Stop at MH-5

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-5-MH-4	2017/08/07	09:34	S 250th St and 19th Pl S	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-5			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-4					D		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				214.8			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	12	AMH										Start at MH-5
0.0	20	MWL					5					
76.0	274	CS	S01						11	1		
93.3	326	CS	F01						11	1		
214.8	605	AMH										Stop at MH-4

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-4-MH-3	2017/08/07	09:45	S 250th St and 19th Pl S	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-4			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-3					D		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				240.9			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	9	AMH										Start at MH-4
0.0	18	MWL					5					
189.9	378	CS	S01						11	1		
212.9	418	CS	F01						11	1		
240.9	479	AMH										Srop at MH-3

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-3-MH-2	2017/08/07	10:19	1607 S 250th St	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-3			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-2					U		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				353.4			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref	Remarks
0.0	13	AMH										Start at MH-3
0.0	21	MWL					5					
34.2	150	CS	S01						11	1		
42.4	186	CS	F01						11	1		
268.0	524	CS	S02						11	1		
343.9	638	CS	F02						11	1		
353.4	686	AMH										Stop at MH-3

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-2-MH-1_1	2017/08/07	10:52	1607 S 250th St	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-2			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-1					D		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				25.5			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	9	AMH										Start at MH-2
0.0	18	MWL					5					
23.6	125	IR							3			
25.5	140	AMH										Stop at MH-1

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-1-Outlet Structure	2017/08/07	10:54	1607 S 250th St	Bellevue

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-1			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
Outlet Structure					D		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				75.0			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/I	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref	Remarks
0.0	9	AMH										Start at MH-1
0.0	18	MWL					5					
5.2	39	LD					30					
41.1	107	MGO										Pipe appears to be DIP
75.0	178	AOC										Stop at Outlet structure

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	Bend-CO IE 328.22	2017/08/07	12:18	Midland Landfill	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	Bend			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
CO IE 328.22					D		6

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	PVC				0.0			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/J	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	2	AEP										Start at Bend in Pipe
0.0	13	MWL					5					
0.0	1021	MSA										End of Inspection cant push any further

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by: Kyle Osborn 253-442-4335
Certificate No: U-614-06021605
Owner:
Survey Customer:
Drainage area:
Sheet number:

Work order:
Pipeline segment ref: MH-22-MH-20A
Start date/time: 2017/08/07 13:21
Street: Pacific Ave S Offsite Drainage
City: Kent

Location details:
Upstream manhole No: MH-22
Rim to invert:
Grade to invert:
Rim to grade:

Downstream manhole No: MH-20A
Rim to invert:
Grade to invert:
Rim to grade:
Sewer use:
Direction: D
Flow control:
Height: 12

Width:
Shape: C
Material: DIP
Ln. method:
Pipe joint length:
Total length:
Length surveyed: 16.2
Year laid:
Year renewed:
Media label:

Purpose:
Sewer category:
Pre-cleaning: Z
Date cleaned:
Weather: 1
Location code:
Additional info:

Starting access point:
Easting:
Northing:
Elevation:
Coordinate system:
GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/J	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	8	AMH										Start at MH-22
0.0	20	MWL					5					
16.2	66	AMH										Stop at MH-20

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	EX CB-MH-22	2017/08/07	13:26	Pacific Ave S Offsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	EX CB			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-22					U		12

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	CP				116.2			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	9	AMH										Start at MH-22
0.0	20	MWL					15					
104.6	147	MWL					50					
116.2	204	ACB										Stop at EX CB

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Kyle Osborn 253-442-4335
Certificate No:	U-614-06021605
Owner:	
Survey Customer:	
Drainage area:	
Sheet number:	
Work order:	
Pipeline segment ref:	MH-21FCS-MH-20A
Start date/time:	2017/08/07 13:41
Street:	Pacific Ave S Offsite Drainage
City:	Kent
Location details:	
Upstream manhole No:	MH-21FCS
Rim to invert:	
Grade to invert:	
Rim to grade:	
Downstream manhole No:	MH-20A
Rim to invert:	
Grade to invert:	
Rim to grade:	
Sewer use:	
Direction:	U
Flow control:	
Height:	12
Width:	
Shape:	C
Material:	CP
Ln. method:	
Pipe joint length:	
Total length:	
Length surveyed:	73.4
Year laid:	
Year renewed:	
Media label:	
Purpose:	
Sewer category:	
Pre-cleaning	Z
Date cleaned:	
Weather:	1
Location code:	
Additional info:	

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	22	AMH										Start at MH-20A
0.0	32	MWL					15					
11.2	53	DSF	S01				15		4	8		
47.2	131	DSF	F01				15		4	8		
73.4	190	AMH										Stop at MH-21FCS

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-20A-MH-20	2017/08/07	13:58	Pacific Ave S Offsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-20A			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-20					U		24

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	RCP				10.5			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	8	AMH										Start at MH-20
0.0	25	MWL					0					
10.5	64	AMH										Stop at MH-20A

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	EX CB IE 339.1-EX CB STA 1+43	2017/08/07	14:13	Pacific Ave S Offsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	EX CB IE 339.1			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
EX CB STA 1+43					U		12

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	CP				35.2			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	13	ACB										Start at CB STA 1+43
0.0	28	MWL					0					
35.2	100	ACB										Stop at CB IE 339.1

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by: Kyle Osborn 253-442-4335
Certificate No: U-614-06021605
Owner:
Survey Customer:
Drainage area:
Sheet number:

Work order:
Pipeline segment ref: MH-4D-MH-3D
Start date/time: 2017/08/07 14:51
Street: Midway Landfill Onsite Drainage
City: Kent

Location details:
Upstream manhole No: MH-4D
Rim to invert:
Grade to invert:
Rim to grade:

Downstream manhole No: MH-3D
Rim to invert:
Grade to invert:
Rim to grade:
Sewer use:
Direction: D
Flow control:
Height: 6

Width:
Shape: C
Material: PVC
Ln. method:
Pipe joint length:
Total length:
Length surveyed: 108.3
Year laid:
Year renewed:
Media label:

Purpose:
Sewer category:
Pre-cleaning: Z
Date cleaned:
Weather: 1
Location code:
Additional info:

Starting access point: Easting: Northing: Elevation: Coordinate system: GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	1	AMH										Start at MH-4D
0.0	10	MWL					5					
60.0	119	LR					35					
89.4	188	MCU	S01									
108.3	228	MCU	F01									
108.3	247	MSA										Due to bends

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-4D-MH-3D	2017/08/07	15:21	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-4D			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-3D					U		6

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	PVC				255.1			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	2	AMH										Start at MH-3D
0.0	17	MWL					15					
7.1	33	RFB	S01						3	9		
12.8	89	RFB	F01						3	9		
12.8	101	MWL					40					
25.1	157	MWL					10					
255.1	656	MSA										End of reverse inspection

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	CO IE 327.86-Pump Station	2017/08/08	08:52	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	CO IE 327.86			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
Pump Station					U		6

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	PVC				125.9			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Continuous Defect Severity	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	16	AOC										Start at Pump Station
0.0	43	MWL					20					
1.0	130	MWL S	S01				20					
22.8	117	MWL					5					
22.9	141	MWL S	F01				20					
121.2	349	TF			6				9			
125.9	415	ACO M										Stop at CO IE 327.86

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-1D-MH-2D	2017/08/08	10:01	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-1D			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-2D					U		6

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	PVC				250.9			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		J		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	2	AMH										Start at MH-2D
0.0	22	MWL					15					
8.5	50	RFB	S01						5			
16.0	87	RFB	F01						5			
28.5	165	DAE	S02				5		3	9		
34.9	212	D					5					
43.5	255	DAE	F02				5		3	9		
108.4	431	MWL S					25					

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250
Fax: 407-425-1569

Surveyed by:	Owner:	Start date/time:	Upstream manhole No:	Pipeline segment ref:	Sheet number:
Kyle Osborn 253-442-4335		2017/08/08	MH-1D	MH-1D-MH-2D	

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
159.6	576	MWL						5					
185.4	662	D						5					
193.1	699	MWL						15					
214.0	771	MWL						5					
250.8	859	LL						45					
250.9	869	MSA											Due to 45

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	C/O IE 328.22-C/O IE 327.86	2017/08/08	12:13	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	C/O IE 328.22			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
C/O IE 327.86					D		6

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	PVC				108.0			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		Z		1		

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	2nd	%	Joint	Circumferential Location At/From	To	Image Ref.	Remarks
0.0	22	ACO M										Start at CO IE 328.22
0.0	42	MWL					5					
20.0	105	DSF	S01				5		4	8		
108.0	1022	DSF	F01				5		4	8		
108.0	1036	MSA										Can not push cam further

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Certificate No:	Owner:	Survey Customer:	Drainage area:	Sheet number:
Kyle Osborn 253-442-4335	U-614-06021605				

Work order:	Pipeline segment ref:	Start date/time:		Street:	City:
	MH-1D-MH-2D	2017/08/08	13:46	Midway Landfill Onsite Drainage	Kent

Location details:	Upstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:
	MH-1D			

Downstream manhole No:	Rim to invert:	Grade to invert:	Rim to grade:	Sewer use:	Direction:	Flow control:	Height:
MH-2D					D		6

Width:	Shape:	Material:	Ln. method:	Pipe joint length:	Total length:	Length surveyed:	Year laid:	Year renewed:	Media label:
	C	PVC				103.3			

Purpose:	Sewer category:	Pre-cleaning	Date cleaned:	Weather:	Location code:	Additional info:
		J		1		

Starting access point:	Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location to	Image Ref.	Remarks
0.0	2	AMH										Start at MH-1D
0.0	13	MWL					5					
50.0	75	LR					45					
103.3	166	LR					45					
103.3	175	MSA										End of reverse insepction

Pro-Vac
14023 131st St E
Orting, W.A. 98360
Phone: 253-848-5250

PACP Sewer Report

Surveyed by:	Kyle Osborn 253-442-4335
Certificate No:	0
Owner:	
Survey Customer:	
Drainage area:	
Sheet number:	
Work order:	
Pipeline segment ref:	C/O IE 327.86-C/O IE 327.5
Start date/time:	2017/08/08 14:59
Street:	Midway Landfill Onsite Drainage
City:	Kent
Location details:	
Upstream manhole No:	C/O IE 327.86
Rim to invert:	
Grade to invert:	
Rim to grade:	
Downstream manhole No:	C/O IE 327.5
Rim to invert:	
Grade to invert:	
Rim to grade:	
Sewer use:	
Direction:	D
Flow control:	
Height:	6
Width:	
Shape:	C
Material:	PVC
Ln. method:	
Pipe joint length:	
Total length:	
Length surveyed:	73.7
Year laid:	
Year renewed:	
Media label:	
Purpose:	
Sewer category:	
Pre-cleaning	J
Date cleaned:	
Weather:	1
Location code:	
Additional info:	

Starting access point:

Easting:	Northing:	Elevation:	Coordinate system:	GPS accuracy:

Distance (Feet) (Meters)	Video Ref.	Group/ Descriptor	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches (mm) 1st	Value Inches (mm) 2nd	%	Joint	Circumferential Location At/From	Circumferential Location To	Image Ref.	Remarks
0.0	12	ACOM											Start at C/) IE 327.86
0.0	31	MWL						5					
0.0	239	MGO											Recorderd in reverse to see pipe condition
2.0	82	MWLS		S01				30					
73.7	164	MWLS		F01				20					
73.7	270	MSA											No visibility

B2 City Attorney Analysis of NPDES Requirements

MEMORANDUM

To: Jeff Neuner

From: Tad H. Shimazu, Assistant City Attorney

Date: May 29, 2019

RE: NPDES Requirements at Midway and Kent Highlands Landfills

---

ISSUE

You requested an analysis regarding the issue paraphrased as follows:

> **ISSUE:** Whether the City must obtain National Pollutant Discharge Elimination System ("NPDES") permits at the Midway and Kent Highlands Landfills for stormwater discharges resulting from the implementation of required remedial actions at the landfills?
>
> **SHORT ANSWER: NO**. The Minimum Functional Standards for landfills, the Model Toxics Control Act and a memorandum from the Assistant Attorney General representing the State Department of Ecology dictate that NPDES Permits are not required at Midway and Kent Highlands Landfill.

ANALYSIS

I. MTCA and CERCLA have express permit exemption provisions

Washington State's Model Toxics Control Act ("MTCA") at RCW 70.105D.090, expressly states:

> (1) A person conducting a remedial action at a facility under a consent decree, order, or agreed order… [is] exempt from the procedural requirements of chapters 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 RCW, and the procedural requirements of any laws requiring or authorizing local government permits or approvals for the remedial action. The department shall ensure compliance with the substantive provisions of chapters 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 RCW, and the substantive provisions of any laws requiring or authorizing local government permits of approvals.

Similarly, CERCLA, at 42 USC §9621(e) states:

> No Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely onsite where such remedial action is selected and carried out in compliance with this section.

Both Federal and State hazardous substances cleanup laws exempt remedial actions from the necessity of obtaining permits, **BUT REQUIRE SUBSTANTIVE COMPLIANCE WITH APPROPRIATE CONDITIONS**.

II. Cleanup Action Plans Incorporated into the Consent Decrees Impose Substantive Requirements Specifically Designed for the Landfill Sites

The Consent Decrees issued at Kent Highlands and Midway expressly recite that the orders are based, in part, on the authority granted by the state Water Pollution Control Act (Ch. 90.48 RCW), which is the statute that governs the state's NPDES permit program. Thus, the Consent Decrees impose conditions that are required under the Water Pollution Control Act, just as a NPDES Permit would impose such conditions.

The Cleanup Action Plans (CAPs) for the landfills have been reviewed and approved by the agencies (as well as undergoing public comment) and are incorporated into the Consent Decrees. These required CAPs are developed and designed to address the specific characteristics and contaminants at these specific Sites. Quite simply, the Consent Decrees and the CAPs require the "substantive requirements" that would have been imposed via any permits.

For example, the Third Amendment to Consent Order at Kent Highlands expressly states: "Seattle must comply with the substantive requirements of the NPDES program . . . In order to comply with these substantive requirements, Seattle shall comply with the provisions of Exhibit A, Technical Memorandum, Kent Highlands Landfill Spring Drain Separation." (Third Amendment, p. 2)

At the Midway Landfill, the CAP incorporates EPA's Record of Decision, which **requires Seattle to "construct a 10-million-gallon stormwater detention pond with permanent dewater system**." Ecology's Ching Pi Wang confirmed that the MTCA exemption applies to this activity, and that the City is required to comply with the substantive requirements of the ROD, but no NPDES permit is required.

As described, the CAP imposes necessary measures to "ensure the protection of human health and the environment" at this specific site. For that reason, the CAP is equivalent to, and in fact, more suitably and stringent, than the usual construction/development permits that might be required.

In addition to the inclusion of the substantive requirements in the CAP and Consent Orders, these landfills are subject to continuing "5 Year Reviews" that ensure that the CAP is still functioning as designed and that it is still protective of Human Health and the Environment. If the CAP is not protective, then it will be modified to ensure compliance with any updated standards to ensure protection of human health and the environment.

III. 1987 Assistant Attorney General Memo: No Permit Required on Closed Landfills Complying with Consent Order

T.C. Richmond, Assistant Attorney General for the Department of Ecology, wrote a memorandum dated 10/28/1987, in which she cited WAC 173-304-600(1)(b):

"Permits are not required for corrective actions at solid waste handling facilities performed . . . to comply with a state and/or federal cleanup order…"

WAC 173-304-600(1)(b) has not changed since Ms. Richmond's memorandum was written. The memo goes on to state:

"Corrective Action … is meant to encompass the activities normally done during the closure of the landfill. It would be reasonable to interpret this to include … remedial actions which are undertaken as corrective action in leu of or jointly with closure."

"If a consent order or decree covering the corrective action is currently being implemented at a landfill addressing WAC 173-304-600(1)(b), then no permit is required. (Kent Highlands Landfill Consent Order covers remedial action and, therefore, no permit is required."

The AAG's determination that permits are not required at Kent Highlands is underscored by the 1996 Amendment to the Kent Highlands Consent Order, which states: "subsequent remedial actions will likely be exempt from the procedural or permit requirement of applicable state or local laws."

Although this 1987 memo distinguished Midway Landfill from Kent Highlands Landfill by pointing out that the (then existing) Midway Consent Decree covered "only Remedial Investigation and Feasibility Study," and not the cleanup itself. However, the AAG stated that "if a consent decree under the new Toxic Bill [*the bill that eventually became MTCA]* is issued, then no permit is required." In 2006, a Midway Consent Decree Amendment (King Co. No. 90-2-13283-8SEA) was entered imposing remedial actions to be performed as part of landfill closure. Therefore, the AG memo also applies to Midway.

IV. CONCLUSION

Based on the foregoing analysis, neither Midway Landfill nor the Kent Highlands Landfill is required to obtain NPDES permits for the stormwater discharges resulting from implementation of remedial actions at the Sites.

B3 Example Surface Water Monitoring Field Form

MIDWAY DETENTION POND

SURFACE WATER QUALITY TEST

DATE: 12-13-19

PERSON(s) SAMPLING: Jason

TEMP C°	CONDUCTIVITY µS/cm	pH	DISSOLVED O^2 MG/L	TURBIDITY NTU	TIME	POND NAME OR WATER ORIGIN	COMMENTS
10.4	82.51	6.71	8.91	6.64	0820	POND DISCHARGED	
10.6	153.5	6.22	9.87	4.89	0821	LANDFILL INFLOW	
NA						HIWAY 99 INFLOW	
11.40	77.58	6.71	10.74	7.20	0822	I - 5 INFLOW	

POND LEVEL AT : 180'

DISCHARGE VALVE AT : 15 TURNS

WEATHER : Overcast

OTHER COMMENTS :

MIDWAY DETENTION POND

SURFACE WATER QUALITY TEST

DATE: 12/12/19

PERSON(s) SAMPLING: SS JM

TEMP C°	CONDUCTIVITY µS/cm	pH	DISSOLVED O^2 MG/L	TURBIDITY NTU	TIME	POND NAME OR WATER ORIGIN	COMMENTS
11.5	66.52	7.13	9.39	5.75	0827	POND DISCHARGED	
12.9	69.86	7.08	9.96	4.5	0828	LANDFILL INFLOW	
11.9	39.18	7.34	11.0	2.95	0829	HIWAY 99 INFLOW	
12.6	82.18	7.25	10.58	6.2	0830	I - 5 INFLOW	

POND LEVEL AT : 1.75'

DISCHARGE VALVE AT : 15 TURNS

WEATHER : Overcast

Rainfall : 0.59"

OTHER COMMENTS :

10/2017 -- RL

B4 Surface Water Monitoring Data

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
01/05/2015	JA/RL	1.50	Rain	0.60	15	I-5 Inflow	8:43	13.9	74.00	7.30	10.60	10.51	oil sheen
01/05/2015	JA/RL	1.50	Rain	0.60	15	Hwy-99 Inflow	8:45	12.1	55.00	7.46	10.56	18.62	
01/05/2015	JA/RL	1.50	Rain	0.60	15	Landfill Inflow	8:43	13.3	51.00	6.83	9.54	10.05	
01/05/2015	JA/RL	1.50	Rain	0.60	15	Discharge	8:40	10.6	54.00	6.97	9.62	13.41	
01/06/2015	JA/FM	1.30	Overcast	0.09	15	I-5 Inflow							No Flow
01/06/2015	JA/FM	1.30	Overcast	0.09	15	Hwy-99 Inflow							No Flow
01/06/2015	JA/FM	1.30	Overcast	0.09	15	Landfill Inflow	12:42	13.1	49.00	6.71	11.03	11.36	
01/06/2015	JA/FM	1.30	Overcast	0.09	15	Discharge	12:39	11.7	57.00	6.59	8.71	17.25	
01/16/2015	JA/RL	1.30	Sunny	0.43	15	I-5 Inflow							No Flow
01/16/2015	JA/RL	1.30	Sunny	0.43	15	Hwy-99 Inflow	8:40	12.1	60.00	7.48	10.28	7.35	
01/16/2015	JA/RL	1.30	Sunny	0.43	15	Landfill Inflow	8:37	11.3	56.00	6.57	10.39	10.75	
01/16/2015	JA/RL	1.30	Sunny	0.43	15	Discharge	8:35	8.6	59.00	6.31	10.36	10.18	
01/20/2015	JA/RL	3.00	Fog	1.76	15	I-5 Inflow							No Flow
01/20/2015	JA/RL	3.00	Fog	1.76	15	Hwy-99 Inflow							No Flow
01/20/2015	JA/RL	3.00	Fog	1.76	15	Landfill Inflow	8:33	10.0	43.00	6.40	10.28	8.41	
01/20/2015	JA/RL	3.00	Fog	1.76	15	Discharge	8:30	9.5	48.00	6.56	9.37	9.26	
01/21/2015	RL	2.80	Sunny	0.00	15	I-5 Inflow							No Flow
01/21/2015	RL	2.80	Sunny	0.00	15	Hwy-99 Inflow							No Flow
01/21/2015	RL	2.80	Sunny	0.00	15	Landfill Inflow	8:46	9.8	46.00	6.51	11.15	9.60	
01/21/2015	RL	2.80	Sunny	0.00	15	Discharge	8:43	8.3	77.00	6.72	9.05	8.50	
01/22/2015	JA/RL	2.50	Cloudy	0.04	15	I-5 Inflow							No flow
01/22/2015	JA/RL	2.50	Cloudy	0.04	15	Hwy-99 Inflow							No Flow
01/22/2015	JA/RL	2.50	Cloudy	0.04	15	Landfill Inflow	8:28	10.7	50.00	6.66	10.05	9.02	
01/22/2015	JA/RL	2.50	Cloudy	0.04	15	Discharge	8:25	9.3	46.00	6.71	9.58	8.76	
01/23/2015	JA	2.25	Rain	0.09	15	I-5 Inflow							No Flow
01/23/2015	JA	2.25	Rain	0.09	15	Hwy-99 Inflow							No flow
01/23/2015	JA	2.25	Rain	0.09	15	Landfill Inflow	8:26	11.8	49.00	6.59	9.81	8.99	
01/23/2015	JA	2.25	Rain	0.09	15	Discharge	8:24	10.8	50.00	6.57	8.75	7.96	
01/26/2015	JA/RL	1.80	Fog	0.43	15	I-5 Inflow							No Flow
01/26/2015	JA/RL	1.80	Fog	0.43	15	Hwy-99 Inflow							No Flow
01/26/2015	JA/RL	1.80	Fog	0.43	15	Landfill Inflow	8:50	11.4	51.00	6.47	10.20	9.55	
01/26/2015	JA/RL	1.80	Fog	0.43	15	Discharge	8:45	10.4	65.00	6.67	8.50	7.49	
01/27/2015	RL	1.30	Overcast	0.03	15	I-5 Inflow							No Flow
01/27/2015	RL	1.30	Overcast	0.03	15	Hwy-99 Inflow							No Flow
01/27/2015	RL	1.30	Overcast	0.03	15	Landfill Inflow	10:30	11.3	52.00	6.75	10.21	9.70	
01/27/2015	RL	1.30	Overcast	0.03	15	Discharge	10:25	12.1	107.00	6.66	5.61	8.80	
02/05/2015	FM/RL	2.00	Rain	0.77	15	I-5 Inflow	9:45	13.7	60.00	6.46	10.39	20.80	
02/05/2015	FM/RL	2.00	Rain	0.77	15	Hwy-99 Inflow	9:40	13.0	45.00	7.04	11.01	38.80	
02/05/2015	FM/RL	2.00	Rain	0.77	15	Landfill Inflow	9:35	13.0	42.00	6.82	10.22	11.00	
02/05/2015	FM/RL	2.00	Rain	0.77	15	Discharge	9:30	12.1	48.00	7.43	10.52	37.50	
02/05/2015	FM/RL	2.00	Rain	0.77	15	Discharge	13:30	12.1		7.32			
02/06/2015	JA	3.30	Rain	0.16	15	Discharge	13:40	14.6	43.00	6.65	9.33	13.91	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
02/06/2015	JA/RL	3.00	Rain	0.16	15	I-5 Inflow	9:15	13.2	65.00	6.63	8.98	6.72	
02/06/2015	JA/RL	3.00	Rain	0.16	15	Hwy-99 Inflow	9:10	13.5	67.00	7.47	9.63	16.50	
02/06/2015	JA/RL	3.00	Rain	0.16	15	Landfill Inflow	9:05	12.4	40.00	6.25	9.64	7.29	
02/06/2015	JA/RL	3.00	Rain	0.16	15	Discharge	9:00	11.7	46.00	6.70	9.58	17.40	
02/09/2015	JA/RL	3.10	Rain	1.55	15	I-5 Inflow	8:45	13.1	52.00	6.62	8.71	6.50	
02/09/2015	JA/RL	3.10	Rain	1.55	15	Hwy-99 Inflow	8:40	13.1	63.00	7.00	8.51	50.40	
02/09/2015	JA/RL	3.10	Rain	1.55	15	Landfill Inflow	8:35	12.5	90.00	6.52	8.79	6.50	
02/09/2015	JA/RL	3.10	Rain	1.55	15	Discharge	8:30	13.4	60.00	6.89	8.76	7.20	
02/10/2015	JA/FM	3.15	Overcast	0.40	15	I-5 Inflow	8:41	13.1	52.00	7.59	10.09	6.32	
02/10/2015	JA/FM	3.15	Overcast	0.40	15	Hwy-99 Inflow	8:40	12.6	78.00	7.57	10.54	10.84	
02/10/2015	JA/FM	3.15	Overcast	0.40	15	Landfill Inflow	8:38	12.6	41.00	6.69	9.94	6.32	
02/10/2015	JA/FM	3.15	Overcast	0.40	15	Discharge	8:36	12.2	53.00	7.43	9.59	9.12	
02/11/2015	JA/FM	3.00	Fog	0.00	15	I-5 Inflow							No flow
02/11/2015	JA/FM	3.00	Fog	0.00	15	Hwy-99 Inflow							No Flow
02/11/2015	JA/FM	3.00	Fog	0.00	15	Landfill Inflow	8:52	12.6	46.00	7.23	10.12	7.65	
02/11/2015	JA/FM	3.00	Fog	0.00	15	Discharge	8:47	11.7	54.00	7.09	9.30	7.57	
02/12/2015	JA/FM	2.80	Sunny	0.07	15	I-5 Inflow							No Flow
02/12/2015	JA/FM	2.80	Sunny	0.07	15	Hwy-99 Inflow							No Flow
02/12/2015	JA/FM	2.80	Sunny	0.07	15	Landfill Inflow	9:10	12.5	46.00	6.51	10.28	7.80	
02/12/2015	JA/FM	2.80	Sunny	0.07	15	Discharge	9:07	12.5	55.00	6.62	9.34	6.35	
02/13/2015	JA/FM	2.55	Fog	0.00	15	I-5 Inflow							No Flow
02/13/2015	JA/FM	2.55	Fog	0.00	15	Hwy-99 Inflow							No Flow
02/13/2015	JA/FM	2.55	Fog	0.00	15	Landfill Inflow	9:38	12.6	49.00	7.00	9.97	8.00	
02/13/2015	JA/FM	2.55	Fog	0.00	15	Discharge	9:36	12.4	70.00	6.93	8.48	5.28	
02/27/2015	JA/RL	2.50	Overcast	1.09	15	I-5 Inflow	10:15	13.1	73.00	6.70	9.97	14.29	
02/27/2015	JA/RL	2.50	Overcast	1.09	15	Hwy-99 Inflow	10:10	13.5	45.00	7.10	10.53	10.76	
02/27/2015	JA/RL	2.50	Overcast	1.09	15	Landfill Inflow	10:05	13.8	51.00	6.35	9.69	10.76	
02/27/2015	JA/RL	2.50	Overcast	1.09	15	Discharge	10:00	13.8	46.00	6.69	10.24	22.60	
03/02/2015	JA/RL	1.80	Overcast	0.08	15	I-5 Inflow							No Flow
03/02/2015	JA/RL	1.80	Overcast	0.08	15	Hwy-99 Inflow							No Flow
03/02/2015	JA/RL	1.80	Overcast	0.08	15	Landfill Inflow	8:38	9.3	53.00	6.45	10.65	10.20	
03/02/2015	JA/RL	1.80	Overcast	0.08	15	Discharge	8:35	9.8	64.00	6.56	8.03	8.20	
03/16/2015	RL	3.40	Overcast	3.05	15	I-5 Inflow							No Flow
03/16/2015	RL	3.40	Overcast	3.05	15	Hwy-99 Inflow	9:51	12.4	47.00	7.13	10.83	8.30	
03/16/2015	RL	3.40	Overcast	3.05	15	Landfill Inflow	9:48	13.7	34.00	6.92	10.30	7.50	
03/16/2015	RL	3.40	Overcast	3.05	15	Discharge	9:45	11.8	47.00	6.89	9.90	8.30	
03/17/2015	JA/FM	3.00	Sunny	0.03	15	I-5 Inflow							No Flow
03/17/2015	JA/FM	3.00	Sunny	0.03	15	Hwy-99 Inflow							No Flow
03/17/2015	JA/FM	3.00	Sunny	0.03	15	Landfill Inflow	10:53	14.0	42.00	6.15	10.10	8.49	
03/17/2015	JA/FM	3.00	Sunny	0.03	15	Discharge	10:50	12.6	42.00	6.23	9.71	8.26	
03/18/2015	JA/FM	2.90	Sunny	0.03	15	I-5 Inflow							No Flow
03/18/2015	JA/FM	2.90	Sunny	0.03	15	Hwy-99 Inflow							No Flow

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
03/18/2015	JA/FM	2.90	Sunny	0.03	15	Landfill Inflow	9:10	13.1	47.00	5.96	8.76	9.05	
03/18/2015	JA/FM	2.90	Sunny	0.03	15	Discharge	9:06	12.0	52.00	6.81	8.23	7.36	
03/19/2015	JA/FM	2.60	Overcast	0.02	15	I-5 Inflow							No Flow
03/19/2015	JA/FM	2.60	Overcast	0.02	15	Hwy-99 Inflow							No Flow
03/19/2015	JA/FM	2.60	Overcast	0.02	15	Landfill Inflow	10:25	12.4	48.00	6.65	9.99	6.20	
03/19/2015	JA/FM	2.60	Overcast	0.02	15	Discharge	10:20	12.7	54.00	6.72	9.03	6.70	
03/20/2015	JA/FM	2.35	Overcast	0.00	15	I-5 Inflow							No Flow
03/20/2015	JA/FM	2.35	Overcast	0.00	15	Hwy-99 Inflow							No Flow
03/20/2015	JA/FM	2.35	Overcast	0.00	15	Landfill Inflow	10:02	13.4	50.00	6.01	9.25	9.17	
03/20/2015	JA/FM	2.35	Overcast	0.00	15	Discharge	9:58	13.3	61.00	6.06	8.06	7.06	
03/23/2015	JA/RL	1.70	Fog	0.41	15	I-5 Inflow							No Flow
03/23/2015	JA/RL	1.70	Fog	0.41	15	Hwy-99 Inflow							No Flow
03/23/2015	JA/RL	1.70	Fog	0.41	15	Landfill Inflow	8:27	11.8	59.00	6.23	8.64	9.26	
03/23/2015	JA/RL	1.70	Fog	0.41	15	Discharge	8:22	12.0	64.00	6.60	8.15	10.20	
03/24/2015	JA/FM	2.40	Rain	0.62	15	I-5 Inflow	8:59	12.4	54.00	7.30	11.96	19.70	
03/24/2015	JA/FM	2.40	Rain	0.62	15	Hwy-99 Inflow	8:55	12.5	46.00	7.55	12.03	66.60	
03/24/2015	JA/FM	2.40	Rain	0.62	15	Landfill Inflow	8:50	11.2	46.00	6.49	10.41	8.40	
03/24/2015	JA/FM	2.40	Rain	0.62	15	Discharge	8:49	12.7	46.00	6.70	11.18	33.20	
03/25/2015	JA/FM	2.60	Overcast	0.30	15	I-5 Inflow	9:14	13.7	66.00	6.11	9.88	12.35	
03/25/2015	JA/FM	2.60	Overcast	0.30	15	Hwy-99 Inflow	9:13	13.8	61.00	6.82	9.76	17.84	
03/25/2015	JA/FM	2.60	Overcast	0.30	15	Landfill Inflow	9:12	11.6	47.00	5.62	9.74	7.62	
03/25/2015	JA/FM	2.60	Overcast	0.30	15	Discharge	9:10	11.1	51.00	6.43	9.65	11.23	
03/26/2015	JA/FM	2.50	Sunny	0.08	15	I-5 Inflow							No Flow
03/26/2015	JA/FM	2.50	Sunny	0.08	15	Hwy-99 Inflow							No Flow
03/26/2015	JA/FM	2.50	Sunny	0.08	15	Landfill Inflow	8:49	13.1	51.00	5.86	9.70	8.31	
03/26/2015	JA/FM	2.50	Sunny	0.08	15	Discharge	8:47	12.7	56.00	6.51	8.44	9.26	
03/27/2015	JA/RL	2.30	Fog	0.00	15	I-5 Inflow							No Flow
03/27/2015	JA/RL	2.30	Fog	0.00	15	Hwy-99 Inflow							No Flow
03/27/2015	JA/RL	2.30	Fog	0.00	15	Landfill Inflow	8:10	12.0	57.00	6.84	8.91	8.27	
03/27/2015	JA/RL	2.30	Fog	0.00	15	Discharge	8:05	14.1	75.00	6.75	8.18	6.73	
04/14/2015	JA	1.70	Partly Cloudy	0.60	15	I-5 Inflow							No Flow
04/14/2015	JA	1.70	Partly Cloudy	0.60	15	Hwy-99 Inflow	9:29	14.2	55.00	7.66	8.97	9.38	
04/14/2015	JA	1.70	Partly Cloudy	0.60	15	Landfill Inflow	9:28	13.5	61.00	6.04	8.89	8.30	
04/14/2015	JA	1.70	Partly Cloudy	0.60	15	Discharge	9:22	10.5	56.00	6.59	8.30	8.17	
10/12/2015	JA	1.90	Sunny	1.70	15	I-5 Inflow							No Flow
10/12/2015	JA	1.90	Sunny	1.70	15	Hwy-99 Inflow							No Flow
10/12/2015	JA	1.90	Sunny	1.70	15	Landfill Inflow	11:00	18.4	114.00	7.86	9.05	28.90	
10/12/2015	JA	1.90	Sunny	1.70	15	Discharge	10:55	16.1	55.00	6.06	6.09	8.23	
10/13/2015	JA	1.35	Overcast	0.20	15	I-5 Inflow							No Flow
10/13/2015	JA	1.35	Overcast	0.20	15	Hwy-99 Inflow	8:33	16.8	30.00	7.09	9.35	2.07	
10/13/2015	JA	1.35	Overcast	0.20	15	Landfill Inflow	8:25	17.0	93.00	6.75	8.54	25.30	
10/13/2015	JA	1.35	Overcast	0.20	15	Discharge	8:20	15.7	89.00	6.55	6.15	17.25	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
11/02/2015	JA/RL	3.10	Overcast	2.50	15	I-5 Inflow	8:42	16.0	83.00	6.50	7.23	5.25	
11/02/2015	JA/RL	3.10	Overcast	2.50	15	Hwy-99 Inflow	8:38	15.6	80.00	7.72	10.04	5.10	
11/02/2015	JA/RL	3.10	Overcast	2.50	15	Landfill Inflow	8:47	14.6	51.00	5.24	8.97	7.95	
11/02/2015	JA/RL	3.10	Overcast	2.50	15	Discharge	8:35	13.9	83.00	6.25	8.26	6.17	
11/03/2015	JA	3.00	Overcast	0.05	15	Hwy-99 Inflow							No Flow
11/03/2015	JA	3.00	Overcast	0.05	15	I-5 Inflow	9:20	14.7	66.00	6.68	8.45	4.42	
11/03/2015	JA	3.00	Overcast	0.05	15	Landfill Inflow	9:14	13.5	54.00	6.59	8.46	8.54	
11/03/2015	JA	3.00	Overcast	0.05	15	Discharge	9:10	13.9	55.00	6.49	8.75	7.63	
11/04/2015	JA	2.80	Sunny	0.06	15	I-5 Inflow							No Flow
11/04/2015	JA	2.80	Sunny	0.06	15	Hwy-99 Inflow							No Flow
11/04/2015	JA	2.80	Sunny	0.06	15	Landfill Inflow	9:26	14.8	59.00	6.50	8.49	8.65	
11/04/2015	JA	2.80	Sunny	0.06	15	Discharge	9:20	11.7	57.00	6.59	8.13	7.89	
11/05/2015	JA	2.50	Overcast	0.02	15	Hwy-99 Inflow							No Flow
11/05/2015	JA	2.50	Overcast	0.02	15	I-5 Inflow	9:24	15.7	71.00	6.64	9.26	4.02	
11/05/2015	JA	2.50	Overcast	0.02	15	Landfill Inflow	9:18	14.5	60.00	6.46	8.31	8.53	
11/05/2015	JA	2.50	Overcast	0.02	15	Discharge	9:10	13.0	62.00	6.80	8.20	8.24	
11/06/2015	JA	2.20	Overcast	0.13	15	Hwy-99 Inflow							No Flow
11/06/2015	JA	2.20	Overcast	0.13	15	I-5 Inflow	9:35	15.1	71.00	7.12	8.25	3.38	
11/06/2015	JA	2.20	Overcast	0.13	15	Landfill Inflow	9:27	14.4	62.00	7.01	8.03	8.19	
11/06/2015	JA	2.20	Overcast	0.13	15	Discharge	9:24	11.3	65.00	6.65	8.33	5.44	
11/09/2015	RL	1.80	Overcast	0.67	15	I-5 Inflow							No Flow
11/09/2015	RL	1.80	Overcast	0.67	15	Hwy-99 Inflow	9:15	13.2	60.00	6.98	10.31	3.40	
11/09/2015	RL	1.80	Overcast	0.67	15	Landfill Inflow	9:10	13.4	60.00	6.74	9.54	8.80	
11/09/2015	RL	1.80	Overcast	0.67	15	Discharge	9:05	12.7	171.00	6.86	8.79	7.80	
11/10/2015	RL	1.60	Fog	0.25	15	I-5 Inflow							No Flow
11/10/2015	RL	1.60	Fog	0.25	15	Hwy-99 Inflow							No Flow
11/10/2015	RL	1.60	Fog	0.25	15	Landfill Inflow	9:35	14.2	75.00	7.24	10.02	8.60	
11/10/2015	RL	1.60	Fog	0.25	15	Discharge	9:30	12.4	69.00	7.34	9.37	6.50	
11/13/2015	JA/RL	1.80	Rain	0.48	15	I-5 Inflow	9:10	12.8	49.00	7.63	9.67	7.42	
11/13/2015	JA/RL	1.80	Rain	0.48	15	Hwy-99 Inflow	9:05	12.2	47.00	7.69	9.81	10.15	
11/13/2015	JA/RL	1.80	Rain	0.48	15	Landfill Inflow	9:00	13.7	56.00	6.65	9.30	7.58	
11/13/2015	JA/RL	1.80	Rain	0.48	15	Discharge	8:55	12.6	52.00	7.70	8.91	8.12	
11/13/2015	JA/RL	1.80	Rain	0.48	15	Discharge	13:50	15.2		7.20			
11/16/2015	JA/RL	3.10	Sunny	3.54	15	I-5 Inflow							No Flow
11/16/2015	JA/RL	3.10	Sunny	3.54	15	Hwy-99 Inflow							No Flow
11/16/2015	JA/RL	3.10	Sunny	3.54	15	Landfill Inflow	8:05	11.9	37.00	6.90	9.98	5.53	
11/16/2015	JA/RL	3.10	Sunny	3.54	15	Discharge	8:00	9.2	40.00	7.12	9.12	5.29	
11/17/2015	JA/RL	3.30	Rain	0.38	15	I-5 Inflow	11:05	13.3	41.00	7.92	9.96	14.60	
11/17/2015	JA/RL	3.30	Rain	0.38	15	Hwy-99 Inflow	11:00	13.0	38.00	7.91	10.11	16.30	
11/17/2015	JA/RL	3.30	Rain	0.38	15	Landfill Inflow	10:55	14.7	36.00	6.98	9.56	6.06	
11/17/2015	JA/RL	3.30	Rain	0.38	15	Discharge	10:50	12.5	44.00	7.74	9.66	7.92	
11/17/2015	JA/RL	3.30	Rain	0.38	15	Discharge	14:00	14.1		7.29			

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (μS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
11/18/2015	JA/RL	3.20	Partly Cloudy	0.71	15	I-5 Inflow	8:05	11.6	49.00	7.49	9.72	4.80	
11/18/2015	JA/RL	3.20	Partly Cloudy	0.71	15	Hwy-99 Inflow	8:00	11.3	107.00	7.55	10.34	3.20	
11/18/2015	JA/RL	3.20	Partly Cloudy	0.71	15	Landfill Inflow	7:55	12.5	37.00	6.22	8.47	4.70	
11/18/2015	JA/RL	3.20	Partly Cloudy	0.71	15	Discharge	7:50	10.2	39.00	7.35	9.06	9.20	
11/19/2015	RL	3.00	Partly Cloudy	0.18	15	I-5 Inflow							No Flow
11/19/2015	RL	3.00	Partly Cloudy	0.18	15	Hwy-99 Inflow							No Flow
11/19/2015	RL	3.00	Partly Cloudy	0.18	15	Landfill Inflow	10:55	12.7	41.00	6.98	9.81	4.90	
11/19/2015	RL	3.00	Partly Cloudy	0.18	15	Discharge	10:50	10.9	40.00	7.04	9.34	5.40	
11/20/2015	JA/RL	2.90	Fog	0.00	15	I-5 Inflow							No Flow
11/20/2015	JA/RL	2.90	Fog	0.00	15	Hwy-99 Inflow							No Flow
11/20/2015	JA/RL	2.90	Fog	0.00	15	Landfill Inflow	8:25	10.0	46.00	7.06	8.92	5.20	
11/20/2015	JA/RL	2.90	Fog	0.00	15	Discharge	8:20	7.7	55.00	7.93	8.73	5.00	
11/20/2015	JA/RL	2.90	Fog	0.00	15	Discharge	8:20	7.7	55.00	7.93	8.73	5.00	
11/21/2015	JA/RL	2.10	Partly Cloudy	0.00	15	I-5 Inflow							No Flow
11/21/2015	JA/RL	2.10	Partly Cloudy	0.00	15	Hwy-99 Inflow							No Flow
11/21/2015	JA/RL	2.10	Partly Cloudy	0.00	15	Landfill Inflow	8:55	10.1	52.00	6.94	8.16	5.40	
11/21/2015	JA/RL	2.10	Partly Cloudy	0.00	15	Discharge	8:50	6.9	53.00	7.00	6.65	3.20	
11/24/2015	JA/RL	1.90	Rain	0.28	15	I-5 Inflow							No Flow
11/24/2015	JA/RL	1.90	Rain	0.28	15	Hwy-99 Inflow							No Flow
11/24/2015	JA/RL	1.90	Rain	0.28	15	Landfill Inflow	8:35	10.5	51.00	6.99	7.90	4.80	
11/24/2015	JA/RL	1.90	Rain	0.28	15	Discharge	8:30	8.8	55.00	7.36	8.96	4.60	
11/25/2015	JA/RL	1.70	Sunny	0.10	15	I-5 Inflow							No Flow
11/25/2015	JA/RL	1.70	Sunny	0.10	15	Hwy-99 Inflow							No Flow
11/25/2015	JA/RL	1.70	Sunny	0.10	15	Landfill Inflow	8:40	9.1	53.00	7.56	9.06	5.20	
11/25/2015	JA/RL	1.70	Sunny	0.10	15	Discharge	8:36	6.9	55.00	7.72	9.16	5.00	
12/02/2015	JA/RL	1.40	Overcast	0.53	15	I-5 Inflow	9:15	11.8	61.00	7.46	8.69	5.95	
12/02/2015	JA/RL	1.40	Overcast	0.53	15	Hwy-99 Inflow	9:10	10.3	50.00	8.09	9.87	1.47	
12/02/2015	JA/RL	1.40	Overcast	0.53	15	Landfill Inflow	9:05	10.3	56.00	7.66	9.52	5.26	
12/02/2015	JA/RL	1.40	Overcast	0.53	15	Discharge	9:00	8.0	53.00	8.11	10.33	4.44	
12/03/2015	JA/RL	1.80	Rain	0.44	15	I-5 Inflow	8:25	9.8	72.00	6.84	10.85	19.20	
12/03/2015	JA/RL	1.80	Rain	0.44	15	Hwy-99 Inflow	8:20	8.3	50.00	7.76	10.12	13.50	
12/03/2015	JA/RL	1.80	Rain	0.44	15	Discharge	8:10	7.7	49.00	8.18	10.51	8.10	
12/04/2015	JA/RL	2.00	Partly Cloudy	0.33	15	I-5 Inflow							No Flow
12/04/2015	JA/RL	2.00	Partly Cloudy	0.33	15	Hwy-99 Inflow	9:10	10.6	57.00	7.63	10.84	4.24	
12/04/2015	JA/RL	2.00	Partly Cloudy	0.33	15	Landfill Inflow	9:05	10.3	46.00	7.29	8.28	5.69	
12/04/2015	JA/RL	2.00	Partly Cloudy	0.33	15	Discharge	9:00	11.5	53.00	7.56	10.05	7.57	
12/07/2015	JA/RL	2.70	Rain	1.03	15	I-5 Inflow	8:40	11.7	60.00	6.52	8.55	11.04	
12/07/2015	JA/RL	2.70	Rain	1.03	15	Hwy-99 Inflow	8:35	12.1	65.00	7.56	8.55	30.80	
12/07/2015	JA/RL	2.70	Rain	1.03	15	Landfill Inflow	8:30	11.7	41.00	7.44	8.60	4.50	
12/07/2015	JA/RL	2.70	Rain	1.03	15	Discharge	8:25	10.1	42.00	7.66	9.02	4.80	
12/08/2015	JA/RL	3.65	Rain	1.61	15	I-5 Inflow	8:41	13.9	49.00	7.55	10.92	9.10	
12/08/2015	JA/RL	3.65	Rain	1.61	15	Hwy-99 Inflow	8:37	12.4	46.00	8.05	10.02	17.56	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
12/08/2015	JA/RL	3.65	Rain	1.61	15	Landfill Inflow	8:32	11.9	29.00	7.36	9.98	3.24	
12/08/2015	JA/RL	3.65	Rain	1.61	15	Discharge	8:30	11.6	32.00	7.37	10.24	4.27	
12/08/2015	JA/RL	4.00	Rain	1.61	15	Discharge	14:15	12.6	38.00	7.77	10.06	17.38	
12/09/2015	JA/RL	4.20	Partly Cloudy	1.97	15	I-5 Inflow	12:35	12.9	67.00	7.70	9.73	5.91	
12/09/2015	JA/RL	4.20	Partly Cloudy	1.97	15	Hwy-99 Inflow	12:30	13.0	67.00	7.80	10.88	11.26	
12/09/2015	JA/RL	4.20	Partly Cloudy	1.97	15	Landfill Inflow	12:25	12.7	29.00	7.57	10.23	2.95	
12/09/2015	JA/RL	4.20	Partly Cloudy	1.97	15	Discharge	12:20	12.0	45.00	7.67	9.82	8.59	
12/10/2015	JA/RL	3.30	Overcast	0.33	15	I-5 Inflow	8:10	12.5	51.00	7.03	9.36	5.45	
12/10/2015	JA/RL	3.30	Overcast	0.33	15	Hwy-99 Inflow	8:05	11.5	87.00	7.84	8.87	7.25	
12/10/2015	JA/RL	3.30	Overcast	0.33	15	Discharge	7:55	10.4	49.00	7.75	8.76	5.16	
12/11/2015	RL	3.10	Overcast	0.30	15	I-5 Inflow	9:15	11.1	55.00	7.50	10.72	6.30	
12/11/2015	RL	3.10	Overcast	0.30	15	Hwy-99 Inflow	9:10	11.0	108.00	7.38	10.75	5.20	
12/11/2015	RL	3.10	Overcast	0.30	15	Landfill Inflow	9:05	10.7	37.00	7.46	10.12	3.70	
12/11/2015	RL	3.10	Overcast	0.30	15	Discharge	9:00	9.9	48.00	7.56	9.13	5.10	
12/14/2015	JA/RL	3.00	Partly Cloudy	0.53	15	I-5 Inflow							No Flow
12/14/2015	JA/RL	3.00	Partly Cloudy	0.53	15	Hwy-99 Inflow							No Flow
12/14/2015	JA/RL	3.00	Partly Cloudy	0.53	15	Landfill Inflow	8:45	10.0	43.00	7.56	9.10	3.74	
12/14/2015	JA/RL	3.00	Partly Cloudy	0.53	15	Discharge	8:40	8.4	49.00	7.84	8.77	3.57	
12/15/2015	JA	2.80	Fog	0.03	15	I-5 Inflow							No Flow
12/15/2015	JA	2.80	Fog	0.03	15	Hwy-99 Inflow							No Flow
12/15/2015	JA	2.80	Fog	0.03	15	Landfill Inflow	8:15	9.0	45.00	7.31	9.10	3.84	
12/15/2015	JA	2.80	Fog	0.03	15	Discharge	8:12	9.5	51.00	7.34	8.80	3.58	
12/16/2015	JA	2.65	Overcast	0.33	15	I-5 Inflow							No Flow
12/16/2015	JA	2.65	Overcast	0.33	15	Hwy-99 Inflow							No Flow
12/16/2015	JA	2.65	Overcast	0.33	15	Landfill Inflow	8:45	10.9	46.00	7.08	10.00	3.96	
12/16/2015	JA	2.65	Overcast	0.33	15	Discharge	8:40	8.5	50.00	7.74	8.88	3.83	
12/17/2015	RL	2.50	Rain	0.03	15	I-5 Inflow	9:35	9.8	80.00	7.20	10.37	19.54	
12/17/2015	RL	2.50	Rain	0.03	15	Hwy-99 Inflow	9:30	8.8	33.00	7.39	10.69	25.20	
12/17/2015	RL	2.50	Rain	0.03	15	Landfill Inflow	9:25	9.4	47.00	7.17	10.05	4.42	
12/17/2015	RL	2.50	Rain	0.03	15	Discharge	9:20	7.4	61.00	7.30	9.39	3.59	
12/18/2015	RL	3.40	Rain	1.27	15	I-5 Inflow	9:10	7.8	54.00	8.03	11.86	6.50	
12/18/2015	RL	3.40	Rain	1.27	15	Hwy-99 Inflow	9:05	7.4	51.00	8.04	12.39	19.00	
12/18/2015	RL	3.40	Rain	1.27	15	Landfill Inflow	9:00	10.4	37.00	7.35	11.08	4.10	
12/18/2015	RL	3.40	Rain	1.27	15	Discharge	8:55	7.8	46.00	8.07	10.72	7.40	
12/21/2015	RL	3.10	Rain	0.65	15	I-5 Inflow	9:15	8.9	61.00	6.77	12.69	33.60	
12/21/2015	RL	3.10	Rain	0.65	15	Hwy-99 Inflow	9:10	7.5	27.00	7.91	11.48	23.00	
12/21/2015	RL	3.10	Rain	0.65	15	Landfill Inflow	9:05	9.2	41.00	7.65	10.11	4.30	
12/21/2015	RL	3.10	Rain	0.65	15	Discharge	9:00	7.2	53.00	7.84	10.00	4.20	
12/22/2015	RL	3.20	Overcast	1.04	15	I-5 Inflow	9:00	9.6	56.00	7.39	11.80	4.70	
12/22/2015	RL	3.20	Overcast	1.04	15	Hwy-99 Inflow	8:55	6.9	72.00	8.08	12.12	20.90	
12/22/2015	RL	3.20	Overcast	1.04	15	Landfill Inflow	8:50	9.3	34.00	7.53	10.98	3.70	
12/22/2015	RL	3.20	Overcast	1.04	15	Discharge	8:45	7.2	41.00	8.27	10.10	5.50	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
12/23/2015	RL	3.10	Overcast	0.18	15	I-5 Inflow							No Flow
12/23/2015	RL	3.10	Overcast	0.18	15	Hwy-99 Inflow	8:05	9.2	93.00	7.13	11.66	4.70	
12/23/2015	RL	3.10	Overcast	0.18	15	Landfill Inflow	9:00	9.3	37.00	7.27	10.56	3.20	
12/23/2015	RL	3.10	Overcast	0.18	15	Discharge	8:55	8.3	47.00	7.34	10.74	4.40	
12/24/2015	RL	3.10	Overcast	0.32	15	I-5 Inflow							No Flow
12/24/2015	RL	3.10	Overcast	0.32	15	Hwy-99 Inflow	10:00	7.0	67.00	8.16		9.40	
12/24/2015	RL	3.10	Overcast	0.32	15	Landfill Inflow	10:01	8.8	37.00	7.82	13.95	3.10	
12/24/2015	RL	3.10	Overcast	0.32	15	Discharge	10:02	5.9	54.00	8.26	13.83	7.50	
12/28/2015	JA/RL	3.00	Overcast	0.83	15	I-5 Inflow	8:45	8.9	61.00	8.10	12.94	5.40	
12/28/2015	JA/RL	3.00	Overcast	0.83	15	Hwy-99 Inflow	8:40	8.4	73.00	8.24	11.00	3.70	
12/28/2015	JA/RL	3.00	Overcast	0.83	15	Landfill Inflow	8:35	8.7	42.00	8.18	11.51	3.40	
12/28/2015	JA/RL	3.00	Overcast	0.83	15	Discharge	8:30	7.5	47.00	8.00	11.88	3.50	
12/29/2015	JA/RL	2.90	Overcast	0.00	15	Landfill Inflow							No Flow
12/29/2015	JA/RL	2.90	Overcast	0.00	15	I-5 Inflow	10:10	9.4	52.00	7.48	10.61	3.50	
12/29/2015	JA/RL	2.90	Overcast	0.00	15	Landfill Inflow	10:05	8.6	44.00	7.49	10.50	3.70	
12/29/2015	JA/RL	2.90	Overcast	0.00	15	Discharge	10:00	6.6	60.00	7.72	9.43	5.60	
12/30/2015	RL	2.60	Sunny	0.00	15	I-5 Inflow							No Flow
12/30/2015	RL	2.60	Sunny	0.00	15	Hwy-99 Inflow							No Flow
12/30/2015	RL	2.60	Sunny	0.00	15	Landfill Inflow	9:42	7.1	48.00	7.44	11.90	4.50	
12/30/2015	RL	2.60	Sunny	0.00	15	Discharge	9:38	5.8	53.00	7.51	11.29	4.20	
12/31/2015	JA	2.40	Sunny	0.04	15	Hwy-99 Inflow							No flow
12/31/2015	JA	2.40	Sunny	0.04	15	Discharge	8:55	2.6	55.00	7.56	10.00	3.45	Frozen
12/31/2015	JA	2.40	Sunny	0.04	15	I-5 Inflow	9:04	6.9	52.00	7.60	10.21	4.38	
12/31/2015	JA	2.40	Sunny	0.04	15	Landfill Inflow	8:59	5.9	49.00	7.42	10.06	4.14	
01/13/2016	JA	2.50	Rain	0.62	15	I-5 Inflow	12:20	8.9	47.00	7.87	8.51	25.10	
01/13/2016	JA	2.50	Rain	0.62	15	Hwy-99 Inflow	12:15	12.2	49.00	7.88	8.69	65.50	
01/13/2016	JA	2.50	Rain	0.62	15	Landfill Inflow	12:17	12.6	39.00	7.35	8.16	12.98	
01/13/2016	JA	2.50	Rain	0.62	15	Discharge	12:10	7.6	42.00	7.89	8.72	38.20	
01/14/2016	JA/RL	3.00	Sunny	0.77	15	I-5 Inflow	9:20	7.7	63.00	7.82	9.73	5.24	
01/14/2016	JA/RL	3.00	Sunny	0.77	15	Hwy-99 Inflow	9:15	9.7	88.00	7.76	8.71	61.40	
01/14/2016	JA/RL	3.00	Sunny	0.77	15	Landfill Inflow	9:10	7.4	10.00	7.85	10.60	4.87	
01/14/2016	JA/RL	3.00	Sunny	0.77	15	Discharge	9:05	5.9	44.00	8.21	10.33	13.93	
01/15/2016	JA/RL	2.80	Rain	0.04	15	I-5 Inflow							No Flow
01/15/2016	JA/RL	2.80	Rain	0.04	15	Hwy-99 Inflow							No Flow
01/15/2016	JA/RL	2.80	Rain	0.04	15	Landfill Inflow	8:37	7.3	41.00	7.71	9.55	4.81	
01/15/2016	JA/RL	2.80	Rain	0.04	15	Discharge	8:33	6.7	51.00	7.90	10.02	10.96	
01/19/2016	JA/RL	2.90	Cloudy	0.85	15	I-5 Inflow							No flow
01/19/2016	JA/RL	2.90	Cloudy	0.85	15	Hwy-99 Inflow							No Flow
01/19/2016	JA/RL	2.90	Cloudy	0.85	15	Landfill Inflow	8:35	6.7	43.00	8.39	8.16	3.78	
01/19/2016	JA/RL	2.90	Cloudy	0.85	15	Discharge	8:30	6.1	63.00	8.72	8.29	5.16	
01/19/2016	JA/RL	2.90	Cloudy	0.85	15	Discharge	13:40	8.2		7.28			
01/20/2016	RL	2.80	Cloudy	0.56	15	I-5 Inflow							No Flow

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (^{o}C)	Conductivity (μS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
01/20/2016	RL	2.80	Cloudy	0.56	15	Hwy-99 Inflow	9:15	9.8	67.00	7.74	10.28	26.80	
01/20/2016	RL	2.80	Cloudy	0.56	15	Landfill Inflow	9:10	10.4	73.00	7.61	9.81	3.80	
01/20/2016	RL	2.80	Cloudy	0.56	15	Discharge	9:05	8.9	60.00	7.65	8.71	8.50	
01/21/2016	JA	3.50	Rain	0.98	15	I-5 Inflow	10:04	11.5	48.00	7.60	10.24	15.75	
01/21/2016	JA	3.50	Rain	0.98	15	Hwy-99 Inflow	10:07	11.3	35.00	7.71	10.49	26.90	
01/21/2016	JA	3.50	Rain	0.98	15	Landfill Inflow	10:10	11.4	30.00	7.15	10.28	3.77	
01/21/2016	JA	3.50	Rain	0.98	15	Discharge	10:00	9.3	32.00	7.48	9.86	5.22	
01/22/2016	JA/RL	3.10	Rain	0.46	15	I-5 Inflow	8:40	10.5	48.00	8.81	10.16	7.27	
01/22/2016	JA/RL	3.10	Rain	0.46	15	Hwy-99 Inflow	8:35	11.3	56.00	7.74	9.95	20.20	
01/22/2016	JA/RL	3.10	Rain	0.46	15	Landfill Inflow	8:30	10.0	33.00	7.64	9.86	2.97	
01/22/2016	JA/RL	3.10	Rain	0.46	15	Discharge	8:25	8.7	40.00	8.20	9.45	7.07	
01/25/2016	JA/RL	3.00	Overcast	1.02	15	I-5 Inflow							No Flow
01/25/2016	JA/RL	3.00	Overcast	1.02	15	Hwy-99 Inflow							No Flow
01/25/2016	JA/RL	3.00	Overcast	1.02	15	Landfill Inflow	8:30	9.1	39.00	8.25	10.27	3.48	
01/25/2016	JA/RL	3.00	Overcast	1.02	15	Discharge	8:25	7.2	45.00	8.21	9.84	4.29	
01/26/2016	JA	2.90	Rain	0.03	15	I-5 Inflow							No Flow
01/26/2016	JA	2.90	Rain	0.03	15	Hwy-99 Inflow							No Flow
01/26/2016	JA	2.90	Rain	0.03	15	Landfill Inflow	9:56	9.8	42.00	7.34	10.52	3.57	
01/26/2016	JA	2.90	Rain	0.03	15	Discharge	9:50	8.2	53.00	7.13	10.16	4.15	
01/27/2016	JA	3.00	Rain	0.38	15	I-5 Inflow	9:07	13.2	62.00	7.31	8.95	8.98	
01/27/2016	JA	3.00	Rain	0.38	15	Hwy-99 Inflow	9:01	11.6	50.00	7.64	10.05	27.50	
01/27/2016	JA	3.00	Rain	0.38	15	Landfill Inflow	8:53	11.5	42.00	7.09	9.92	4.16	
01/27/2016	JA	3.00	Rain	0.38	15	Discharge	8:45	9.8	62.00	7.37	9.02	6.03	
01/28/2016	JA/RL	3.50	Rain	0.88	15	I-5 Inflow	8:55	12.4	51.00	8.72	9.61	13.43	
01/28/2016	JA/RL	3.50	Rain	0.88	15	Hwy-99 Inflow	8:50	11.5	44.00	8.31	9.55	3.39	
01/28/2016	JA/RL	3.50	Rain	0.88	15	Landfill Inflow	8:45	10.8	34.00	8.48	9.55	3.39	
01/28/2016	JA/RL	3.50	Rain	0.88	15	Discharge	8:40	10.4	42.00	8.71	8.52	7.50	
01/29/2016	JA/RL	3.10	Rain	0.18	15	I-5 Inflow	9:00	9.8	72.00	7.48	9.44	11.20	
01/29/2016	JA/RL	3.10	Rain	0.18	15	Hwy-99 Inflow	8:55	8.0	67.00	8.59	10.43	21.90	
01/29/2016	JA/RL	3.10	Rain	0.18	15	Landfill Inflow	8:50	9.0	38.00	8.19	8.17	3.72	
01/29/2016	JA/RL	3.10	Rain	0.18	15	Discharge	8:45	8.5	52.00	8.58	9.10	5.84	
01/29/2016	JA/RL	3.10	Rain	0.18	15	Discharge	13:35	8.9		7.76			
02/01/2016	JA/RL	2.80	Overcast	0.47	15	I-5 Inflow							No Flow
02/01/2016	JA/RL	2.80	Overcast	0.47	15	Hwy-99 Inflow							No Flow
02/01/2016	JA/RL	2.80	Overcast	0.47	15	Landfill Inflow	9:25	8.4	44.00	8.92	10.28	3.54	
02/01/2016	JA/RL	2.80	Overcast	0.47	15	Discharge	9:20	6.7	53.00	8.82	10.52	3.73	
02/02/2016	JA/RL	2.60	Sunny	0.02	15	I-5 Inflow							No Flow
02/02/2016	JA/RL	2.60	Sunny	0.02	15	Hwy-99 Inflow							No Flow
02/02/2016	JA/RL	2.60	Sunny	0.02	15	Landfill Inflow	9:10	7.0	46.00	8.25	10.88	3.58	
02/02/2016	JA/RL	2.60	Sunny	0.02	15	Discharge	9:05	5.9	50.00	8.77	11.15	4.84	
02/03/2016	JA/RL	2.40	Overcast	0.04	15	I-5 Inflow							No Flow
02/03/2016	JA/RL	2.40	Overcast	0.04	15	Hwy-99 Inflow							No Flow

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
02/03/2016	JA/RL	2.40	Overcast	0.04	15	Landfill Inflow	8:42	7.6	49.00	7.47	10.60	3.60	
02/03/2016	JA/RL	2.40	Overcast	0.04	15	Discharge	8:37	6.2	67.00	8.18	9.84	4.24	
02/04/2016	JA/RL	2.60	Rain	0.58	15	I-5 Inflow	9:00	0.4	56.00	8.24	10.33	9.15	
02/04/2016	JA/RL	2.60	Rain	0.58	15	Hwy-99 Inflow	8:55	7.2	62.00	8.26	10.75	4.97	
02/04/2016	JA/RL	2.60	Rain	0.58	15	Landfill Inflow	8:50	7.2	45.00	8.37	9.94	4.14	
02/04/2016	JA/RL	2.60	Rain	0.58	15	Discharge	8:45	6.6	53.00	8.51	9.94	7.17	
02/05/2016	JA	2.65	Overcast	0.13	15	I-5 Inflow							No Flow
02/05/2016	JA	2.65	Overcast	0.13	15	Hwy-99 Inflow							No Flow
02/05/2016	JA	2.65	Overcast	0.13	15	Landfill Inflow	9:42	7.7	45.00	8.06	9.90	4.02	
02/05/2016	JA	2.65	Overcast	0.13	15	Discharge	9:54	9.5	54.00	7.90	10.57	5.54	
02/08/2016	JA/RL	2.20	Sunny	0.20	15	I-5 Inflow							No Flow
02/08/2016	JA/RL	2.20	Sunny	0.20	15	Hwy-99 Inflow							No Flow
02/08/2016	JA/RL	2.20	Sunny	0.20	15	Landfill Inflow	9:00	7.1	50.00	8.65	10.91	3.96	
02/08/2016	JA/RL	2.20	Sunny	0.20	15	Discharge	8:55	6.2	72.00	8.80	10.18	4.96	
02/09/2016	RL	1.90	Fog	0.20	15	I-5 Inflow							No Flow
02/09/2016	RL	1.90	Fog	0.20	15	Hwy-99 Inflow							No Flow
02/09/2016	RL	1.90	Fog	0.20	15	Landfill Inflow	9:25	9.3	51.00	7.11	10.69	4.01	
02/09/2016	RL	1.90	Fog	0.20	15	Discharge	9:20	8.5	100.00	6.76	8.36	6.03	
02/10/2016	RL	1.50	Cloudy	0.00	15	I-5 Inflow							No Flow
02/10/2016	RL	1.50	Cloudy	0.00	15	Hwy-99 Inflow							No Flow
02/10/2016	RL	1.50	Cloudy	0.00	15	Landfill Inflow	8:30	10.2	48.00	6.70	8.59	4.34	
02/10/2016	RL	1.50	Cloudy	0.00	15	Discharge	8:25	8.4	99.00	6.68	7.65	11.30	
02/12/2016	JA/RL	2.80	Partly Cloudy	1.27	15	I-5 Inflow	8:45	10.7	51.00	8.11	9.70	15.00	
02/12/2016	JA/RL	2.80	Partly Cloudy	1.27	15	Hwy-99 Inflow	8:40	12.9	41.00	8.41	9.65	23.30	
02/12/2016	JA/RL	2.80	Partly Cloudy	1.27	15	Landfill Inflow	8:35	10.1	39.00	8.00	9.17	5.01	
02/12/2016	JA/RL	2.80	Partly Cloudy	1.27	15	Discharge	8:30	9.9	37.00	8.82	9.46	28.80	
02/16/2016	JA/RL	3.00	Overcast	1.05	15	I-5 Inflow							No Flow
02/16/2016	JA/RL	3.00	Overcast	1.05	15	Hwy-99 Inflow							No Flow
02/16/2016	JA/RL	3.00	Overcast	1.05	15	Landfill Inflow	9:10	10.2	54.00	7.86	9.62	3.49	
02/16/2016	JA/RL	3.00	Overcast	1.05	15	Discharge	9:05	11.3	53.00	7.49	9.47	4.85	
02/17/2016	JA/RL	2.90	Overcast	0.01	15	I-5 Inflow							No Flow
02/17/2016	JA/RL	2.90	Overcast	0.01	15	Hwy-99 Inflow							No Flow
02/17/2016	JA/RL	2.90	Overcast	0.01	15	Landfill Inflow	8:40	11.1	46.00	8.16	9.53	4.76	
02/17/2016	JA/RL	2.90	Overcast	0.01	15	Discharge	8:35	10.1	64.00	8.28	8.39	4.45	
02/18/2016	RL	3.10	Overcast	0.50	15	I-5 Inflow							No Flow
02/18/2016	RL	3.10	Overcast	0.50	15	Hwy-99 Inflow	13:30	11.4		7.52	9.30	25.40	
02/18/2016	RL	3.10	Overcast	0.50	15	Landfill Inflow	13:30	11.6	44.00	6.98	9.01	3.91	
02/18/2016	RL	3.10	Overcast	0.50	15	Discharge	13:30	11.8	54.00	7.03	9.33	5.30	
02/19/2016	JA/RL	3.10	Rain	0.15	15	I-5 Inflow	8:45	8.5	62.00	7.81	9.99	12.45	
02/19/2016	JA/RL	3.10	Rain	0.15	15	Hwy-99 Inflow	8:40	8.5	46.00	7.96	9.11	18.54	
02/19/2016	JA/RL	3.10	Rain	0.15	15	Landfill Inflow	8:35	10.9	45.00	7.21	8.67	3.47	
02/19/2016	JA/RL	3.10	Rain	0.15	15	Discharge	8:30	9.1	57.00	7.94	8.69	5.06	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (^{o}C)	Conductivity ($\mu S/cm$)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
02/22/2016	JA/RL	2.90	Rain	0.50	15	I-5 Inflow	10:05	7.7	51.00	8.50	10.38	20.40	
02/22/2016	JA/RL	2.90	Rain	0.50	15	Hwy-99 Inflow	10:00	6.7	27.00	8.37	10.21	21.50	
02/22/2016	JA/RL	2.90	Rain	0.50	15	Landfill Inflow	9:55	9.1	48.00	8.13	8.91	3.37	
02/22/2016	JA/RL	2.90	Rain	0.50	15	Discharge	9:50	7.3	59.00	8.12	9.89	4.62	
02/23/2016	JA	2.80	Sunny	0.27	15	I-5 Inflow							No Flow
02/23/2016	JA	2.80	Sunny	0.27	15	Hwy-99 Inflow							No Flow
02/23/2016	JA	2.80	Sunny	0.27	15	Landfill Inflow	8:39	8.8	48.00	7.05	10.73	3.60	
02/23/2016	JA	2.80	Sunny	0.27	15	Discharge	8:32	6.2	50.00	7.53	8.71	4.08	
02/24/2016	JA	2.60	Overcast	0.00	15	I-5 Inflow							No Flow
02/24/2016	JA	2.60	Overcast	0.00	15	Hwy-99 Inflow							No Flow
02/24/2016	JA	2.60	Overcast	0.00	15	Landfill Inflow	8:35	10.3	50.00	6.99	9.90	3.30	
02/24/2016	JA	2.60	Overcast	0.00	15	Discharge	8:26	8.1	65.00	7.18	10.52	4.43	
02/25/2016	RL	2.30	Sunny	0.00	15	I-5 Inflow							No Flow
02/25/2016	RL	2.30	Sunny	0.00	15	Hwy-99 Inflow							No Flow
02/25/2016	RL	2.30	Sunny	0.00	15	Landfill Inflow	8:52	9.9	52.00	7.40	9.39	6.54	
02/25/2016	RL	2.30	Sunny	0.00	15	Discharge	8:47	10.9	81.00	7.12	9.97	4.16	
02/26/2016	RL	2.00	Overcast	0.00	15	I-5 Inflow							No Flow
02/26/2016	RL	2.00	Overcast	0.00	15	Hwy-99 Inflow							No Flow
02/26/2016	RL	2.00	Overcast	0.00	15	Landfill Inflow	8:25	9.7	54.00	7.19	8.75	3.62	
02/26/2016	RL	2.00	Overcast	0.00	15	Discharge	8:20	9.5	80.00	7.55	8.56	4.51	
02/29/2016	JA/RL	2.30	Overcast	0.93	15	I-5 Inflow	9:05	9.9	58.00	7.73	9.30	4.87	
02/29/2016	JA/RL	2.30	Overcast	0.93	15	Hwy-99 Inflow	9:00	10.7	66.00	7.63	9.23	20.30	
02/29/2016	JA/RL	2.30	Overcast	0.93	15	Landfill Inflow	8:55	10.0	48.00	7.59	7.94	3.99	
02/29/2016	JA/RL	2.30	Overcast	0.93	15	Discharge	8:50	8.9	51.00	7.72	9.17	5.68	
03/01/2016	JA/RL	2.30	Overcast	0.39	15	I-5 Inflow	8:35	11.8	22.00	6.15	8.56	6.13	
03/01/2016	JA/RL	2.30	Overcast	0.39	15	Hwy-99 Inflow	8:30	10.5	56.00	7.43	9.52	10.25	
03/01/2016	JA/RL	2.30	Overcast	0.39	15	Landfill Inflow	8:25	9.8	46.00	6.99	8.09	5.30	
03/01/2016	JA/RL	2.30	Overcast	0.39	15	Discharge	8:20	9.2	48.00	7.26	9.31	4.95	
03/02/2016	JA/RL	3.10	Overcast	0.70	15	I-5 Inflow	8:25	9.5	62.00	8.20	9.59	4.96	
03/02/2016	JA/RL	3.10	Overcast	0.70	15	Hwy-99 Inflow	8:20	9.0	61.00	8.13	9.95	11.21	
03/02/2016	JA/RL	3.10	Overcast	0.70	15	Landfill Inflow	8:15	10.7	39.00	8.46	8.77	3.20	
03/02/2016	JA/RL	3.10	Overcast	0.70	15	Discharge	8:10	8.7	47.00	8.03	9.15	10.08	
03/03/2016	JA	3.15	Sunny	0.23	15	I-5 Inflow	9:30	11.9	58.00	7.28	9.32	4.06	
03/03/2016	JA	3.15	Sunny	0.23	15	Hwy-99 Inflow	9:27	12.3	73.00	7.50	8.74	12.83	
03/03/2016	JA	3.15	Sunny	0.23	15	Landfill Inflow	9:18	12.4	41.00	7.28	7.87	3.04	
03/03/2016	JA	3.15	Sunny	0.23	15	Discharge	9:15	10.5	50.00	7.36	9.00	4.90	
03/04/2016	JA	2.95	Overcast	0.02	15	I-5 Inflow							No Flow
03/04/2016	JA	2.95	Overcast	0.02	15	Hwy-99 Inflow							No Flow
03/04/2016	JA	2.95	Overcast	0.02	15	Landfill Inflow	10:55	12.7	45.00	7.09	8.94	3.88	
03/04/2016	JA	2.95	Overcast	0.02	15	Discharge	10:44	10.7	50.00	7.30	8.52	7.06	
03/07/2016	JA/RL	3.00	Rain	0.70	15	I-5 Inflow	8:45	9.7	51.00	7.75	8.53	15.20	
03/07/2016	JA/RL	3.00	Rain	0.70	15	Hwy-99 Inflow	8:40	9.9	33.00	7.82	10.15	28.10	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
03/07/2016	JA/RL	3.00	Rain	0.70	15	Landfill Inflow	8:35	9.8	48.00	7.50	7.56	3.36	
03/07/2016	JA/RL	3.00	Rain	0.70	15	Discharge	8:30	9.8	64.00	7.62	8.69	5.07	
03/08/2016	JA	3.00	Sunny	0.20	15	I-5 Inflow							No Flow
03/08/2016	JA	3.00	Sunny	0.20	15	Hwy-99 Inflow							No Flow
03/08/2016	JA	3.00	Sunny	0.20	15	Landfill Inflow	8:47	8.6	48.00	7.40	9.89	3.52	
03/08/2016	JA	3.00	Sunny	0.20	15	Discharge	8:44	8.7	58.00	8.03	9.55	3.64	
03/09/2016	JA/RL	3.00	Rain	0.29	15	I-5 Inflow	12:00	11.1	61.00	6.97	9.90	4.16	
03/09/2016	JA/RL	3.00	Rain	0.29	15	Hwy-99 Inflow	11:55	10.9	71.00	7.95	9.67	7.90	
03/09/2016	JA/RL	3.00	Rain	0.29	15	Landfill Inflow	11:50	12.0	49.00	6.95	9.94	3.04	
03/09/2016	JA/RL	3.00	Rain	0.29	15	Discharge	11:45	10.7	50.00	7.19	10.38	3.32	
03/09/2016	JA/RL	3.00	Rain	0.29	15	Discharge	13:48	9.9	54.00	6.47	10.00	4.89	
03/10/2016	JA/RL	3.20	Overcast	0.91	15	I-5 Inflow	9:00	10.2	57.00	7.89	10.12	3.88	
03/10/2016	JA/RL	3.20	Overcast	0.91	15	Hwy-99 Inflow	8:55	10.0	65.00	8.01	9.65	13.29	
03/10/2016	JA/RL	3.20	Overcast	0.91	15	Landfill Inflow	8:50	11.5	39.00	7.49	10.34	2.90	
03/10/2016	JA/RL	3.20	Overcast	0.91	15	Discharge	8:45	9.8	55.00	7.81	10.12	4.54	
03/11/2016	JA/RL	3.10	Overcast	0.27	15	I-5 Inflow	8:55	11.2	61.00	7.08	10.18	5.13	
03/11/2016	JA/RL	3.10	Overcast	0.27	15	Hwy-99 Inflow	8:50	10.5	97.00	7.24	10.54	15.64	
03/11/2016	JA/RL	3.10	Overcast	0.27	15	Landfill Inflow	8:45	10.3	42.00	6.90	9.35	3.32	
03/11/2016	JA/RL	3.10	Overcast	0.27	15	Discharge	8:40	9.3	43.00	7.28	9.63	3.04	
03/14/2016	JA	3.10	Rain	1.05	15	I-5 Inflow	9:00	11.1	55.00	7.17	14.98	3.04	
03/14/2016	JA	3.10	Rain	1.05	15	Hwy-99 Inflow	8:55	11.1	69.00	7.22	15.87	7.11	
03/14/2016	JA	3.10	Rain	1.05	15	Landfill Inflow	8:50	10.3	44.00	7.02	12.31	2.40	
03/14/2016	JA	3.10	Rain	1.05	15	Discharge	8:38	7.7	47.00	7.50	12.95	2.53	
03/15/2016	JA	3.08	Overcast	0.33	15	I-5 Inflow	9:29	10.6	59.00	7.16	10.35	3.10	
03/15/2016	JA	3.08	Overcast	0.33	15	Hwy-99 Inflow	9:25	10.4	84.00	7.32	10.60	9.18	
03/15/2016	JA	3.08	Overcast	0.33	15	Landfill Inflow	9:18	9.9	44.00	7.12	9.69	3.01	
03/15/2016	JA	3.08	Overcast	0.33	15	Discharge	9:14	6.8	53.00	7.24	10.37	3.29	
03/16/2016	JA/RL	3.00	Overcast	0.00	15	I-5 Inflow	8:35	1.3	55.00	6.92	9.27	2.85	
03/16/2016	JA/RL	3.00	Overcast	0.00	15	Hwy-99 Inflow							No Flow
03/16/2016	JA/RL	3.00	Overcast	0.00	15	Landfill Inflow	8:30	9.0	48.00	6.85	10.55	2.69	
03/16/2016	JA/RL	3.00	Overcast	0.00	15	Discharge	8:25	9.1	60.00	7.72	10.24	4.08	
03/17/2016	JA/RL	2.80	Sunny	0.00	15	I-5 Inflow	8:45	10.7	70.00	7.35	10.40	3.35	
03/17/2016	JA/RL	2.80	Sunny	0.00	15	Hwy-99 Inflow							No Flow
03/17/2016	JA/RL	2.80	Sunny	0.00	15	Landfill Inflow	8:40	8.8	51.00	7.27	10.21	2.71	
03/17/2016	JA/RL	2.80	Sunny	0.00	15	Discharge	8:35	8.0	64.00	8.52	10.07	2.84	
03/18/2016	JA	2.60	Sunny	0.02	15	I-5 Inflow	9:12	11.7	62.00	7.26	10.08	3.01	
03/18/2016	JA	2.60	Sunny	0.02	15	Hwy-99 Inflow							No Flow
03/18/2016	JA	2.60	Sunny	0.02	15	Landfill Inflow	9:07	9.9	54.00	7.19	9.30	2.95	
03/18/2016	JA	2.60	Sunny	0.02	15	Discharge	9:02	8.4	74.00	7.41	10.91	2.43	
03/21/2016	JA/RL	1.80	Overcast	0.25	15	I-5 Inflow	9:00	11.7	7.00	7.45	9.30	8.79	
03/21/2016	JA/RL	1.80	Overcast	0.25	15	Hwy-99 Inflow							No Flow
03/21/2016	JA/RL	1.80	Overcast	0.25	15	Landfill Inflow	8:55	11.1	59.00	7.13	9.28	2.65	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
03/21/2016	JA/RL	1.80	Overcast	0.25	15	Discharge	8:50	10.8	91.00	6.91	7.33	7.85	
03/22/2016	JA	1.80	Overcast	0.30	15	I-5 Inflow	9:20	11.8	65.00	6.75	9.12	5.72	
03/22/2016	JA	1.80	Overcast	0.30	15	Hwy-99 Inflow	9:15	11.7	60.00	6.92	9.37	3.30	
03/22/2016	JA	1.80	Overcast	0.30	15	Landfill Inflow	9:11	9.5	56.00	6.57	9.65	3.19	
03/22/2016	JA	1.80	Overcast	0.30	15	Discharge	9:05	8.6	81.00	7.32	8.11	5.66	
03/23/2016	JA	1.45	Overcast	0.00	15	I-5 Inflow	8:49	12.1	59.00	6.66	9.62	3.66	
03/23/2016	JA	1.45	Overcast	0.00	15	Hwy-99 Inflow							No Flow
03/23/2016	JA	1.45	Overcast	0.00	15	Landfill Inflow	8:42	9.9	57.00	6.45	9.71	3.04	
03/23/2016	JA	1.45	Overcast	0.00	15	Discharge	8:36	9.0	96.00	6.75	6.42	4.75	algae
03/24/2016	JA/RL	1.10	Partly Cloudy	0.23	15	I-5 Inflow							No Flow
03/24/2016	JA/RL	1.10	Partly Cloudy	0.23	15	Hwy-99 Inflow							No Flow
03/24/2016	JA/RL	1.10	Partly Cloudy	0.23	15	Landfill Inflow	9:05	11.4	58.00	7.40	9.70	3.00	
03/24/2016	JA/RL	1.10	Partly Cloudy	0.23	15	Discharge	9:00	8.2	78.00	7.16	8.37	7.97	
10/14/2016	RL	2.50	Rain	1.54	15	I-5 Inflow	9:05	13.6	46.00	7.61	9.96	24.90	
10/14/2016	RL	2.50	Rain	1.54	15	Hwy-99 Inflow	9:00	14.2	34.00	7.70	9.10	20.40	
10/14/2016	RL	2.50	Rain	1.54	15	Landfill Inflow	8:55	15.3	89.00	7.46	9.43	17.40	
10/14/2016	RL	2.50	Rain	1.54	15	Discharge	8:50	13.5	104.00	8.23	9.40	10.40	
10/17/2016	JA/RL	3.20	Overcast	2.46	15	I-5 Inflow	8:41	15.2	69.00	8.12	8.30	13.16	
10/17/2016	JA/RL	3.20	Overcast	2.46	15	Hwy-99 Inflow	8:36	13.1	40.00	8.13	8.93	2.02	
10/17/2016	JA/RL	3.20	Overcast	2.46	15	Landfill Inflow	8:31	14.9	63.00	7.20	8.60	10.09	
10/17/2016	JA/RL	3.20	Overcast	2.46	15	Discharge	8:26	14.0	61.00	7.82	8.00	9.96	
10/17/2016	JA/RL	3.20	Overcast	2.46	15	Discharge	13:51			7.97			
10/18/2016	RL	3.10	Overcast	0.30	15	I-5 Inflow	9:15	14.8	71.00	7.40	9.11	11.00	
10/18/2016	RL	3.10	Overcast	0.30	15	Hwy-99 Inflow	9:10	14.1	42.00	7.50	9.54	3.00	
10/18/2016	RL	3.10	Overcast	0.30	15	Landfill Inflow	9:05	15.4	65.00	6.84	8.90	11.50	
10/18/2016	RL	3.10	Overcast	0.30	15	Discharge	9:00	14.0	101.00	7.13	8.16	10.00	
10/19/2016	JA/RL	2.90	Sunny	0.00	15	I-5 Inflow							No Flow
10/19/2016	JA/RL	2.90	Sunny	0.00	15	Hwy-99 Inflow							No Flow
10/19/2016	JA/RL	2.90	Sunny	0.00	15	Landfill Inflow	8:45	14.1	68.00	6.38	7.78	11.92	
10/19/2016	JA/RL	2.90	Sunny	0.00	15	Discharge	8:40	12.8	63.00	6.92	6.98	8.70	
10/20/2016	JA	3.60	Rain	0.78	15	I-5 Inflow	11:32	15.1	45.00	7.02	9.45	15.28	
10/20/2016	JA	3.60	Rain	0.78	15	Hwy-99 Inflow	11:28	14.6	33.00	7.13	9.59	19.73	
10/20/2016	JA	3.60	Rain	0.78	15	Landfill Inflow	11:24	14.9	51.00	6.84	8.94	6.99	
10/20/2016	JA	3.60	Rain	0.78	15	Discharge	11:21	14.4	53.00	8.07	8.86	7.75	
10/21/2016	JA/RL	3.10	Overcast	0.56	15	I-5 Inflow							No Flow
10/21/2016	JA/RL	3.10	Overcast	0.56	15	Hwy-99 Inflow							No Flow
10/21/2016	JA/RL	3.10	Overcast	0.56	15	Landfill Inflow	8:45	14.3	57.00	6.85	8.42	6.52	
10/21/2016	JA/RL	3.10	Overcast	0.56	15	Discharge	8:40	14.1	57.00	7.09	8.15	6.41	
10/24/2016	JA/RL	2.60	Overcast	0.28	15	I-5 Inflow							No Flow
10/24/2016	JA/RL	2.60	Overcast	0.28	15	Hwy-99 Inflow							No Flow
10/24/2016	JA/RL	2.60	Overcast	0.28	15	Landfill Inflow	8:25	14.9	63.00	6.99	8.22	6.30	
10/24/2016	JA/RL	2.60	Overcast	0.28	15	Discharge	8:20	13.6	70.00	7.31	6.98	5.02	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
10/25/2016	JA	2.40	Overcast	0.10	15	I-5 Inflow							No Flow
10/25/2016	JA	2.40	Overcast	0.10	15	Hwy-99 Inflow							No Flow
10/25/2016	JA	2.40	Overcast	0.10	15	Landfill Inflow	8:59	14.1	66.00	7.09	8.50	6.57	
10/25/2016	JA	2.40	Overcast	0.10	15	Discharge	8:55	12.3	70.00	7.62	7.32	5.13	
10/26/2016	JA	2.20	Rain	0.05	15	I-5 Inflow	9:14	13.7	43.00	7.25	11.68	17.03	
10/26/2016	JA	2.20	Rain	0.05	15	Hwy-99 Inflow	9:10	12.5	11.00	7.53	11.61	20.80	
10/26/2016	JA	2.20	Rain	0.05	15	Landfill Inflow	9:06	14.0	66.00	6.90	10.17	6.43	
10/26/2016	JA	2.20	Rain	0.05	15	Discharge	8:58	12.9	70.00	7.18	9.76	5.55	
10/27/2016	JA/RL	3.20	Overcast	1.58	15	I-5 Inflow	8:40	14.6	68.00	7.31	8.98	5.42	
10/27/2016	JA/RL	3.20	Overcast	1.58	15	Hwy-99 Inflow	8:35	14.2	54.00	7.49	9.40	3.58	
10/27/2016	JA/RL	3.20	Overcast	1.58	15	Landfill Inflow	8:30	13.3	49.00	7.58	8.75	3.96	
10/27/2016	JA/RL	3.20	Overcast	1.58	15	Discharge	8:25	13.4	49.00	7.33	8.66	6.88	
10/28/2016	JA/RL	3.00	Sunny	0.07	15	I-5 Inflow							No Flow
10/28/2016	JA/RL	3.00	Sunny	0.07	15	Hwy-99 Inflow							No Flow
10/28/2016	JA/RL	3.00	Sunny	0.07	15	Landfill Inflow	8:50	14.6	53.00	7.10	8.56	4.13	
10/28/2016	JA/RL	3.00	Sunny	0.07	15	Discharge	8:45	13.0	60.00	7.37	7.81	4.62	
10/31/2016	JA	2.70	Rain	0.68	15	I-5 Inflow	9:11	13.4	44.00	7.06	9.43	14.82	
10/31/2016	JA	2.70	Rain	0.68	15	Hwy-99 Inflow	9:07	13.3	31.00	7.12	9.94	12.20	
10/31/2016	JA	2.70	Rain	0.68	15	Landfill Inflow	8:58	13.9	60.00	6.73	8.76	3.80	
10/31/2016	JA	2.70	Rain	0.68	15	Discharge	8:51	12.3	58.00	7.25	8.12	3.68	
11/01/2016	JA	3.15	Rain	0.54	15	I-5 Inflow	8:36	13.2	45.00	7.11	12.95	9.91	
11/01/2016	JA	3.15	Rain	0.54	15	Hwy-99 Inflow	8:32	13.1	43.00	7.21	13.21	18.74	
11/01/2016	JA	3.15	Rain	0.54	15	Landfill Inflow	8:29	13.5	53.00	6.91	12.09	3.58	
11/01/2016	JA	3.15	Rain	0.54	15	Discharge	8:23	12.5	56.00	7.41	11.86	4.32	
11/02/2016	JA	3.10	Rain	0.38	15	I-5 Inflow	9:05	14.1	70.00	7.17	9.06	6.45	
11/02/2016	JA	3.10	Rain	0.38	15	Hwy-99 Inflow	9:01	13.6	65.00	7.26	9.96	12.19	
11/02/2016	JA	3.10	Rain	0.38	15	Landfill Inflow	8:57	14.2	55.00	6.93	8.36	3.41	
11/02/2016	JA	3.10	Rain	0.38	15	Discharge	8:50	12.3	55.00	7.01	8.45	3.65	
11/03/2016	JA	3.10	Sunny	0.39	15	I-5 Inflow		14.7	61.00	7.37	8.81	3.51	
11/03/2016	JA	3.10	Sunny	0.39	15	Hwy-99 Inflow		13.8	69.00	7.71	9.77	1.60	
11/03/2016	JA	3.10	Sunny	0.39	15	Landfill Inflow		14.1	54.00	7.29	8.58	3.28	
11/03/2016	JA	3.10	Sunny	0.39	15	Discharge	9:08	12.0	54.00	7.45	8.04	3.40	
11/04/2016	JA	2.95	Fog	0.03	15	I-5 Inflow	9:59	13.6	63.00	6.97	9.11	3.81	
11/04/2016	JA	2.95	Fog	0.03	15	Hwy-99 Inflow	9:55	14.7	126.00	7.16	9.01	1.59	
11/04/2016	JA	2.95	Fog	0.03	15	Landfill Inflow	9:47	13.6	57.00	6.79	8.60	3.66	
11/04/2016	JA	2.95	Fog	0.03	15	Discharge	9:42	11.3	58.00	6.92	7.03	3.25	
11/07/2016	JA/RL	3.10	Overcast	1.74	15	I-5 Inflow	9:05	14.6	59.00	7.09	9.40	4.16	
11/07/2016	JA/RL	3.10	Overcast	1.74	15	Hwy-99 Inflow	9:00	13.8	150.00	7.26	9.09	1.51	
11/07/2016	JA/RL	3.10	Overcast	1.74	15	Landfill Inflow	8:55	14.6	49.00	6.95	8.55	3.08	
11/07/2016	JA/RL	3.10	Overcast	1.74	15	Discharge	8:50	13.3	51.00	6.98	8.03	3.55	
11/08/2016	JA	2.95	Sunny	0.00	15	I-5 Inflow	8:20	14.0	58.00	7.17	8.51	3.88	
11/08/2016	JA	2.95	Sunny	0.00	15	Hwy-99 Inflow							No Flow

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
11/08/2016	JA	2.95	Sunny	0.00	15	Landfill Inflow	8:14	14.6	52.00	6.72	8.31	3.24	
11/08/2016	JA	2.95	Sunny	0.00	15	Discharge	8:06	12.2	56.00	6.99	6.43	3.51	
11/09/2016	JA	2.80	Rain	0.08	15	I-5 Inflow	8:42	13.9	69.00	7.25	8.66	8.47	
11/09/2016	JA	2.80	Rain	0.08	15	Hwy-99 Inflow							No Flow
11/09/2016	JA	2.80	Rain	0.08	15	Landfill Inflow	8:36	14.8	56.00	6.92	8.21	3.33	
11/09/2016	JA	2.80	Rain	0.08	15	Discharge	8:30	12.8	59.00	7.09	6.93	3.75	
11/10/2016	JA	2.70	Fog	0.28	15	I-5 Inflow	8:40	14.0	62.00	6.97	9.50	3.88	
11/10/2016	JA	2.70	Fog	0.28	15	Hwy-99 Inflow							No Flow
11/10/2016	JA	2.70	Fog	0.28	15	Landfill Inflow	8:35	13.3	58.00	6.85	8.89	3.37	
11/10/2016	JA	2.70	Fog	0.28	15	Discharge	8:30	12.4	60.00	7.31	7.01	3.96	
11/14/2016	JA/RL	2.10	Rain	0.70	15	I-5 Inflow	8:45	13.3	58.00	7.13	9.17	5.37	
11/14/2016	JA/RL	2.10	Rain	0.70	15	Hwy-99 Inflow	8:40	13.3	58.00	7.49	9.52	2.45	
11/14/2016	JA/RL	2.10	Rain	0.70	15	Landfill Inflow	8:35	13.7	59.00	7.02	8.42	3.58	
11/14/2016	JA/RL	2.10	Rain	0.70	15	Discharge	8:30	13.2	62.00	7.08	8.40	4.99	
11/15/2016	JA/RL	3.20	Rain	0.97	15	I-5 Inflow	8:25	12.3	46.00	7.43	8.58	9.57	
11/15/2016	JA/RL	3.20	Rain	0.97	15	Hwy-99 Inflow	8:20	11.4	46.00	7.47	9.23	14.10	
11/15/2016	JA/RL	3.20	Rain	0.97	15	Landfill Inflow	8:15	13.3	45.00	6.96	8.13	4.38	
11/15/2016	JA/RL	3.20	Rain	0.97	15	Discharge	8:10	11.8	45.00	7.00	8.85	21.60	
11/16/2016	RL	3.10	Overcast	0.17	15	I-5 Inflow							No Flow
11/16/2016	RL	3.10	Overcast	0.17	15	Hwy-99 Inflow		12.7	91.00	7.02	8.99	3.30	
11/16/2016	RL	3.10	Overcast	0.17	15	Landfill Inflow		12.4	87.00	6.68	8.13	3.90	
11/16/2016	RL	3.10	Overcast	0.17	15	Discharge		12.0	50.00	6.52	6.87	5.30	
11/17/2016	RL	2.90	Sunny	0.04	15	I-5 Inflow							No Flow
11/17/2016	RL	2.90	Sunny	0.04	15	Hwy-99 Inflow							No Flow
11/17/2016	RL	2.90	Sunny	0.04	15	Landfill Inflow	10:30	14.5	50.00	6.81	9.72	3.70	
11/17/2016	RL	2.90	Sunny	0.04	15	Discharge	10:25	11.8	55.00	7.28	7.13	3.90	
11/18/2016	JA/RL	2.70	Overcast	0.00	15	I-5 Inflow							No Flow
11/18/2016	JA/RL	2.70	Overcast	0.00	15	Hwy-99 Inflow							No Flow
11/18/2016	JA/RL	2.70	Overcast	0.00	15	Landfill Inflow	8:50	11.3	53.00	7.00	8.70	3.57	
11/18/2016	JA/RL	2.70	Overcast	0.00	15	Discharge	8:45	9.4	58.00	6.96	7.87	3.61	
11/21/2016	RL	1.90	Partly Cloudy	0.10	15	I-5 Inflow							No Flow
11/21/2016	RL	1.90	Partly Cloudy	0.10	15	Hwy-99 Inflow							No Flow
11/21/2016	RL	1.90	Partly Cloudy	0.10	15	Landfill Inflow	8:35	12.7	59.00	7.13	8.36	3.90	
11/21/2016	RL	1.90	Partly Cloudy	0.10	15	Discharge	8:30	10.7	73.00	7.17	5.74	5.00	
11/22/2016	RL	1.50	Overcast	0.00	15	I-5 Inflow							No Flow
11/22/2016	RL	1.50	Overcast	0.00	15	Hwy-99 Inflow							No Flow
11/22/2016	RL	1.50	Overcast	0.00	15	Landfill Inflow	9:05	11.5	60.00	7.20	8.36	3.30	
11/22/2016	RL	1.50	Overcast	0.00	15	Discharge	9:00	9.1	14.30	6.95	5.86	12.30	
11/23/2016	RL	1.60	Cloudy	0.46	15	I-5 Inflow	9:30	13.4	61.00	6.70	9.29	10.40	
11/23/2016	RL	1.60	Cloudy	0.46	15	Hwy-99 Inflow	9:25	12.8	49.00	6.94	9.96	2.80	
11/23/2016	RL	1.60	Cloudy	0.46	15	Landfill Inflow	9:20	12.7	58.00	6.67	8.82	3.50	
11/23/2016	RL	1.60	Cloudy	0.46	15	Discharge	9:15	11.8	47.00	6.95	7.59	4.70	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
11/28/2016	RL	2.80	Overcast	1.59	15	I-5 Inflow							No Flow
11/28/2016	RL	2.80	Overcast	1.59	15	Hwy-99 Inflow							No Flow
11/28/2016	RL	2.80	Overcast	1.59	15	Landfill Inflow	8:55	11.1	46.00	7.39	8.67	3.39	
11/28/2016	RL	2.80	Overcast	1.59	15	Discharge	8:50	8.8	53.00	7.01	8.52	4.24	
11/29/2016	JA/RL	2.60	Overcast	0.00	15	I-5 Inflow							No Flow
11/29/2016	JA/RL	2.60	Overcast	0.00	15	Hwy-99 Inflow							No Flow
11/29/2016	JA/RL	2.60	Overcast	0.00	15	Landfill Inflow	8:30	10.7	54.00	6.67	10.42	3.96	
11/29/2016	JA/RL	2.60	Overcast	0.00	15	Discharge	8:25	10.2	52.00	6.75	9.64	3.97	
11/30/2016	JA/RL	2.40	Rain	0.14	15	I-5 Inflow							No Flow
11/30/2016	JA/RL	2.40	Rain	0.14	15	Hwy-99 Inflow							No Flow
11/30/2016	JA/RL	2.40	Rain	0.14	15	Landfill Inflow	8:15	10.4	55.00	7.95	8.55	3.45	
11/30/2016	JA/RL	2.40	Rain	0.14	15	Discharge	8:10	8.4	64.00	7.01	8.01	3.84	
12/01/2016	JA	2.20	Overcast	0.02	15	I-5 Inflow							No Flow
12/01/2016	JA	2.20	Overcast	0.02	15	Hwy-99 Inflow							No Flow
12/01/2016	JA	2.20	Overcast	0.02	15	Landfill Inflow	9:18	10.2	54.00	7.21	9.82	3.33	
12/01/2016	JA	2.20	Overcast	0.02	15	Discharge	9:13	7.9	56.00	7.32	7.92	3.69	
12/02/2016	JA/RL	2.00	Rain	0.12	15	I-5 Inflow	10:00	10.5	71.00	7.77	9.33	10.82	
12/02/2016	JA/RL	2.00	Rain	0.12	15	Hwy-99 Inflow							No Flow
12/02/2016	JA/RL	2.00	Rain	0.12	15	Landfill Inflow	9:55	11.3	55.00	7.60	9.08	3.52	
12/02/2016	JA/RL	2.00	Rain	0.12	15	Discharge	9:50	8.4	65.00	7.52	8.10	3.67	
12/05/2016	RL	1.40	Snow	0.38	15	I-5 Inflow	8:55	5.5	95.00	7.14	10.20	25.70	
12/05/2016	RL	1.40	Snow	0.38	15	Hwy-99 Inflow							No Flow
12/05/2016	RL	1.40	Snow	0.38	15	Landfill Inflow	8:50	8.2	54.00	7.02	9.30	3.73	
12/05/2016	RL	1.40	Snow	0.38	15	Discharge	8:45	4.4	74.00	6.97	8.48	5.37	
12/06/2016	JA	1.20	Sunny	0.27	15	I-5 Inflow	12:11	11.6	57.00	7.05	9.84	5.86	
12/06/2016	JA	1.20	Sunny	0.27	15	Hwy-99 Inflow							No Flow
12/06/2016	JA	1.20	Sunny	0.27	15	Landfill Inflow	12:06	10.0	53.00	6.91	9.48	3.82	
12/06/2016	JA	1.20	Sunny	0.27	15	Discharge	11:58	5.8	85.00	6.90	8.12	8.02	
12/13/2016	JA/RL	1.20	Overcast	0.30	15	I-5 Inflow							No Flow
12/13/2016	JA/RL	1.20	Overcast	0.30	15	Hwy-99 Inflow							No Flow
12/13/2016	JA/RL	1.20	Overcast	0.30	15	Landfill Inflow	8:15	5.7	51.00	7.39	10.02	3.99	
12/13/2016	JA/RL	1.20	Overcast	0.30	15	Discharge	8:10	4.4	59.00	7.65	9.46	4.74	
12/19/2016	RL	1.50	Overcast	0.34	15	I-5 Inflow	11:25	8.3	248.00	7.13	9.09	17.50	
12/19/2016	RL	1.50	Overcast	0.34	15	Hwy-99 Inflow	11:20	6.6	109.00	7.47	10.33	16.40	
12/19/2016	RL	1.50	Overcast	0.34	15	Landfill Inflow	11:15	6.4	56.00	7.10	9.34	6.60	
12/19/2016	RL	1.50	Overcast	0.34	15	Discharge	11:10	5.6	183.00	6.83	8.47	14.30	
12/20/2016	JA/RL	1.80	Overcast	0.34	15	I-5 Inflow	8:10	8.5	89.00	7.52	9.91	6.16	
12/20/2016	JA/RL	1.80	Overcast	0.34	15	Hwy-99 Inflow	8:05	5.7	179.00	8.19	10.65	8.32	
12/20/2016	JA/RL	1.80	Overcast	0.34	15	Landfill Inflow	8:00	8.1	70.00	8.08	9.79	4.82	
12/20/2016	JA/RL	1.80	Overcast	0.34	15	Discharge	7:55	6.6	98.00	7.63	9.65	8.61	
12/21/2016	JA	1.50	Sunny	0.00	15	I-5 Inflow	8:20	7.2	58.00	7.20	9.78	7.18	
12/21/2016	JA	1.50	Sunny	0.00	15	Hwy-99 Inflow							No Flow

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (μS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
12/21/2016	JA	1.50	Sunny	0.00	15	Landfill Inflow	8:28	7.0	49.00	6.83	9.29	4.55	
12/21/2016	JA	1.50	Sunny	0.00	15	Discharge	8:10	2.9	112.00	6.81	8.71	4.97	
12/23/2016	JA/RL	1.50	Rain	0.48	15	I-5 Inflow	8:35	6.8	113.00	7.46	9.94	13.98	
12/23/2016	JA/RL	1.50	Rain	0.48	15	Hwy-99 Inflow	8:30	4.3	152.00	7.57	9.11	14.55	
12/23/2016	JA/RL	1.50	Rain	0.48	15	Landfill Inflow	8:25	6.5	46.00	7.13	10.36	4.50	
12/23/2016	JA/RL	1.50	Rain	0.48	15	Discharge	8:20	4.6	111.00	7.33	10.21	9.28	
12/27/2016	JA/RL	1.80	Overcast	0.78	15	I-5 Inflow							No Flow
12/27/2016	JA/RL	1.80	Overcast	0.78	15	Hwy-99 Inflow							No Flow
12/27/2016	JA/RL	1.80	Overcast	0.78	15	Landfill Inflow	8:28	6.6	43.00	7.81	9.49	3.86	
12/27/2016	JA/RL	1.80	Overcast	0.78	15	Discharge	8:23	4.6	54.00	7.47	10.08	6.45	
12/28/2016	JA/RL	1.70	Partly Cloudy	0.10	15	I-5 Inflow							No Flow
12/28/2016	JA/RL	1.70	Partly Cloudy	0.10	15	Hwy-99 Inflow							No Flow
12/28/2016	JA/RL	1.70	Partly Cloudy	0.10	15	Landfill Inflow	8:45	5.1	45.00	7.09	10.48	3.95	
12/28/2016	JA/RL	1.70	Partly Cloudy	0.10	15	Discharge	8:40	3.4	65.00	7.73	10.42	5.40	
12/29/2016	JA/RL	1.40	Overcast	0.00	15	I-5 Inflow							No Flow
12/29/2016	JA/RL	1.40	Overcast	0.00	15	Hwy-99 Inflow							No Flow
12/29/2016	JA/RL	1.40	Overcast	0.00	15	Landfill Inflow	8:25	6.9	45.00	7.92	10.57	3.99	
12/29/2016	JA/RL	1.40	Overcast	0.00	15	Discharge	8:20	4.7	46.00	8.14	12.01	3.77	
01/18/2017	JA/RL	3.60	Rain	2.30	15	I-5 Inflow	8:10	8.0	288.00	6.84	8.74	39.80	
01/18/2017	JA/RL	3.60	Rain	2.30	15	Hwy-99 Inflow	8:05	5.7	58.00	9.04	11.04	42.70	
01/18/2017	JA/RL	3.60	Rain	2.30	15	Landfill Inflow	8:00	5.8	26.00	8.76	10.93	4.04	
01/18/2017	JA/RL	3.60	Rain	2.30	15	Discharge	7:55	4.4	67.00	9.23	11.45	11.12	
01/19/2017	JA	3.20	Rain	0.64	15	I-5 Inflow	12:16	10.3	91.00	7.37	9.53	4.78	
01/19/2017	JA	3.20	Rain	0.64	15	Hwy-99 Inflow	12:10	10.1	175.00	7.51	9.79	11.66	
01/19/2017	JA	3.20	Rain	0.64	15	Landfill Inflow	12:04	9.6	33.00	7.52	10.04	3.16	
01/19/2017	JA	3.20	Rain	0.64	15	Discharge	11:57	7.0	53.00	7.14	10.40	5.79	
01/20/2017	RL	3.10	Overcast	0.10	15	I-5 Inflow							No Flow
01/20/2017	RL	3.10	Overcast	0.10	15	Hwy-99 Inflow	9:00	7.9	235.00	7.40	9.57	4.10	
01/20/2017	RL	3.10	Overcast	0.10	15	Landfill Inflow	8:55	7.8	38.00	7.74	8.28	3.70	
01/20/2017	RL	3.10	Overcast	0.10	15	Discharge	8:50	5.3	76.00	7.78	8.23	7.80	
01/23/2017	JA/RL	2.50	Overcast	0.80	15	I-5 Inflow							No Flow
01/23/2017	JA/RL	2.50	Overcast	0.80	15	Hwy-99 Inflow							No Flow
01/23/2017	JA/RL	2.50	Overcast	0.80	15	Landfill Inflow	8:20	5.4	42.00	8.36	10.02	3.22	
01/23/2017	JA/RL	2.50	Overcast	0.80	15	Discharge	8:15	2.8	57.00	8.10	9.51	4.58	
01/24/2017	JA	2.30	Partly Cloudy	0.00	15	I-5 Inflow	9:13	7.1	48.00	7.79	11.12	7.54	
01/24/2017	JA	2.30	Partly Cloudy	0.00	15	Hwy-99 Inflow							No Flow
01/24/2017	JA	2.30	Partly Cloudy	0.00	15	Landfill Inflow	9:07	3.4	45.00	8.19	11.70	3.28	
01/24/2017	JA	2.30	Partly Cloudy	0.00	15	Discharge	9:00	3.7	58.00	7.79	10.59	3.82	
01/25/2017	JA	2.00	Overcast	0.00	15	I-5 Inflow	9:08	7.3	46.00	6.96	9.84	7.36	
01/25/2017	JA	2.00	Overcast	0.00	15	Hwy-99 Inflow							No Flow
01/25/2017	JA	2.00	Overcast	0.00	15	Landfill Inflow	9:01	5.4	46.00	7.68	10.19	3.46	
01/25/2017	JA	2.00	Overcast	0.00	15	Discharge	8:52	2.6	51.00	8.38	9.80	3.43	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
01/26/2017	JA	1.60	Misty	0.03	15	I-5 Inflow	9:06	8.5	47.00	7.28	9.69	7.88	
01/26/2017	JA	1.60	Misty	0.03	15	Hwy-99 Inflow							No Flow
01/26/2017	JA	1.60	Misty	0.03	15	Landfill Inflow	8:59	6.5	48.00	7.15	9.97	3.52	
01/26/2017	JA	1.60	Misty	0.03	15	Discharge	8:52	4.8	81.00	7.44	8.09	3.75	
02/07/2017	JA/RL	3.10	Overcast	0.18	15	I-5 Inflow	9:20	5.8	157.00	7.98	10.44	5.10	
02/07/2017	JA/RL	3.10	Overcast	0.18	15	Hwy-99 Inflow	9:15	5.4	134.00	7.84	11.00	6.53	
02/07/2017	JA/RL	3.10	Overcast	0.18	15	Landfill Inflow	9:10	5.1	32.00	8.07	10.94	2.69	
02/07/2017	JA/RL	3.10	Overcast	0.18	15	Discharge	9:05	3.0	39.00	7.62	11.19	3.61	
02/08/2017	JA/RL	3.00	Snow	0.00	15	I-5 Inflow	8:50	3.7	236.00	7.93	10.86	4.25	
02/08/2017	JA/RL	3.00	Snow	0.00	15	Hwy-99 Inflow	8:45	5.0	184.00	8.18	10.48	18.50	
02/08/2017	JA/RL	3.00	Snow	0.00	15	Landfill Inflow	8:40	4.5	34.00	7.82	10.29	2.76	
02/08/2017	JA/RL	3.00	Snow	0.00	15	Discharge	8:35	2.6	38.00	8.10	10.36	3.25	
02/08/2017	JA/RL	3.00	Snow	0.00	15	Discharge	14:00	7.1	58.00	7.23	7.95	5.94	
02/09/2017	JA/RL	4.20	Rain	1.29	15	I-5 Inflow	8:55	7.8	77.00	6.88	9.57	36.30	
02/09/2017	JA/RL	4.20	Rain	1.29	15	Hwy-99 Inflow	8:50	6.1	69.00	8.31	10.68	55.10	
02/09/2017	JA/RL	4.20	Rain	1.29	15	Landfill Inflow	8:45	7.0	19.00	8.19	9.64	5.87	
02/09/2017	JA/RL	4.20	Rain	1.29	15	Discharge	8:40	5.4	53.00	8.29	10.20	11.10	
02/10/2017	JA/RL	3.30	Sunny	0.70	15	I-5 Inflow	9:00	7.2	100.00	7.42	10.87	3.60	
02/10/2017	JA/RL	3.30	Sunny	0.70	15	Hwy-99 Inflow	8:55	6.7	141.00	8.04	10.97	6.13	
02/10/2017	JA/RL	3.30	Sunny	0.70	15	Landfill Inflow	8:50	6.4	29.00	7.99	10.88	2.83	
02/10/2017	JA/RL	3.30	Sunny	0.70	15	Discharge	8:45	6.7	85.00	7.80	10.62	26.60	
02/13/2017	JA/RL	2.80	Sunny	0.10	15	I-5 Inflow	8:50	5.0	54.00	8.23	10.32	4.32	
02/13/2017	JA/RL	2.80	Sunny	0.10	15	Hwy-99 Inflow							No Flow
02/13/2017	JA/RL	2.80	Sunny	0.10	15	Landfill Inflow	8:45	5.1	38.00	8.24	10.60	3.00	
02/13/2017	JA/RL	2.80	Sunny	0.10	15	Discharge	8:40	2.7	51.00	8.50	9.07	4.83	
02/14/2017	JA	2.60	Overcast	0.00	15	I-5 Inflow	9:10	8.9	53.00	7.04	10.24	4.55	
02/14/2017	JA	2.60	Overcast	0.00	15	Hwy-99 Inflow							No Flow
02/14/2017	JA	2.60	Overcast	0.00	15	Landfill Inflow	9:04	6.8	40.00	6.77	10.84	3.22	
02/14/2017	JA	2.60	Overcast	0.00	15	Discharge	8:55	3.6	45.00	7.38	10.56	3.22	
02/15/2017	RL	3.30	Rain	0.95	15	I-5 Inflow	11:10	11.0	103.00	6.89	9.86	28.30	
02/15/2017	RL	3.30	Rain	0.95	15	Hwy-99 Inflow	11:05	11.6	53.00	7.27	10.09	23.10	
02/15/2017	RL	3.30	Rain	0.95	15	Landfill Inflow	11:00	10.8	25.00	7.60	10.31	9.50	
02/15/2017	RL	3.30	Rain	0.95	15	Discharge	10:55	9.5	52.00	6.88	10.00	12.90	
02/16/2017	RL	4.40	Sunny	1.77	15	I-5 Inflow	10:10	9.0	76.00	7.66	9.64	6.30	
02/16/2017	RL	4.40	Sunny	1.77	15	Hwy-99 Inflow	10:05	12.2	47.00	7.25	9.13	17.60	
02/16/2017	RL	4.40	Sunny	1.77	15	Landfill Inflow	10:00	11.0	26.00	6.91	9.37	4.30	
02/16/2017	RL	4.40	Sunny	1.77	15	Discharge	9:55	10.5	55.00	7.04	8.88	14.10	
02/17/2017	JA/RL	4.10	Sunny	0.02	15	I-5 Inflow	11:05	10.7	75.00	7.48	9.32	4.10	
02/17/2017	JA/RL	4.10	Sunny	0.02	15	Hwy-99 Inflow	11:00	10.3	139.00	7.54	9.42	3.17	
02/17/2017	JA/RL	4.10	Sunny	0.02	15	Landfill Inflow	10:55	11.3	33.00	7.81	9.33	2.78	
02/17/2017	JA/RL	4.10	Sunny	0.02	15	Discharge	10:50	10.1	55.00	7.64	8.85	7.10	
02/21/2017	JA	3.05	Overcast	0.64	15	I-5 Inflow	14:10	10.1	70.00	7.51	10.07	3.75	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
02/21/2017	JA	3.05	Overcast	0.64	15	Hwy-99 Inflow	14:13	9.2	81.00	7.88	8.64	4.26	
02/21/2017	JA	3.05	Overcast	0.64	15	Landfill Inflow	14:07	8.5	40.00	8.01	9.55	2.35	
02/21/2017	JA	3.05	Overcast	0.64	15	Discharge	14:00	9.8	46.00	7.43	9.72	3.35	
02/22/2017	RL	2.90	Overcast	0.07	15	I-5 Inflow	10:00	8.3	58.00	7.24	10.19	4.30	
02/22/2017	RL	2.90	Overcast	0.07	15	Hwy-99 Inflow	9:55	9.4	121.00	7.05	9.76	4.00	
02/22/2017	RL	2.90	Overcast	0.07	15	Landfill Inflow	9:50	9.4	41.00	6.53	9.79	3.60	
02/22/2017	RL	2.90	Overcast	0.07	15	Discharge	9:45	9.7	73.00	6.27	8.29	5.30	
02/23/2017	RL	2.70	Overcast	0.00	15	I-5 Inflow	8:10	8.1	54.0	7.04	9.12	4.40	
02/23/2017	RL	2.70	Overcast	0.00	15	Hwy-99 Inflow							No Flow
02/23/2017	RL	2.70	Overcast	0.00	15	Landfill Inflow	8:05	6.1	45.0	7.04	9.58	3.10	
02/23/2017	RL	2.70	Overcast	0.00	15	Discharge	8:00	6.7	69.0	7.44	8.92	3.60	
02/24/2017	JA/RL	2.60	Overcast	0.12	15	I-5 Inflow	8:45	5.9	63.00	8.06	10.76	4.98	
02/24/2017	JA/RL	2.60	Overcast	0.12	15	Hwy-99 Inflow							No Flow
02/24/2017	JA/RL	2.60	Overcast	0.12	15	Landfill Inflow	8:40	6.8	42.00	8.07	10.05	2.73	
02/24/2017	JA/RL	2.60	Overcast	0.12	15	Discharge	8:35	4.0	58.00	8.44	10.61	4.35	
02/27/2017	JA/RL	2.10	Rain	0.33	15	I-5 Inflow	8:20	5.9	88.00	7.77	10.53	4.60	
02/27/2017	JA/RL	2.10	Rain	0.33	15	Hwy-99 Inflow							No Flow
02/27/2017	JA/RL	2.10	Rain	0.33	15	Landfill Inflow	8:15	7.3	45.00	7.10	10.24	3.50	
02/27/2017	JA/RL	2.10	Rain	0.33	15	Discharge	8:10	4.6	64.00	7.80	9.22	4.65	
02/28/2017	JA/RL	1.90	Overcast	0.15	15	I-5 Inflow							No Flow
02/28/2017	JA/RL	1.90	Overcast	0.15	15	Hwy-99 Inflow							No Flow
02/28/2017	JA/RL	1.90	Overcast	0.15	15	Landfill Inflow	9:20	6.6	45.00	7.94	10.27	3.00	
02/28/2017	JA/RL	1.90	Overcast	0.15	15	Discharge	9:15	4.1	68.00	8.44	9.57	5.20	
03/01/2017	JA/RL	2.60	Overcast	0.07	15	I-5 Inflow	8:10	6.3	113.00	7.82	10.24	7.33	
03/01/2017	JA/RL	2.60	Overcast	0.07	15	Hwy-99 Inflow							No Flow
03/01/2017	JA/RL	2.60	Overcast	0.07	15	Landfill Inflow	8:05	7.2	46.00	8.05	10.83	2.98	
03/01/2017	JA/RL	2.60	Overcast	0.07	15	Discharge	8:00	5.5	105.00	7.61	7.79	5.95	
03/08/2017	JA/RL	2.10	Overcast	0.66	15	I-5 Inflow							No Flow
03/08/2017	JA/RL	2.10	Overcast	0.66	15	Hwy-99 Inflow							No Flow
03/08/2017	JA/RL	2.10	Overcast	0.66	15	Landfill Inflow	8:00	6.7	41.00	8.11	10.48	3.15	
03/08/2017	JA/RL	2.10	Overcast	0.66	15	Discharge	7:55	5.1	47.00	8.46	10.26	6.29	
03/09/2017	JA	2.25	Overcast	0.30	15	I-5 Inflow	8:53	9.7	78.00	7.69	10.59	8.33	
03/09/2017	JA	2.25	Overcast	0.30	15	Hwy-99 Inflow	8:42	8.1	62.00	7.18	10.15	13.61	
03/09/2017	JA	2.25	Overcast	0.30	15	Landfill Inflow	8:48	6.9	39.00	6.98	8.43	2.84	
03/09/2017	JA	2.25	Overcast	0.30	15	Discharge	8:37	5.9	54.00	7.45	9.03	5.72	
03/10/2017	RL	3.10	Overcast	0.63	15	I-5 Inflow	7:55	10.1	69.00	6.40	10.24	7.30	
03/10/2017	RL	3.10	Overcast	0.63	15	Hwy-99 Inflow	7:50	9.9	73.00	6.72	10.45	7.00	
03/10/2017	RL	3.10	Overcast	0.63	15	Landfill Inflow	7:45	10.1	35.00	6.53	9.41	3.00	
03/10/2017	RL	3.10	Overcast	0.63	15	Discharge	7:40	9.8	43.00	6.62	10.11	7.30	
03/13/2017	JA/RL	3.00	Rain	0.49	15	I-5 Inflow	8:55	11.3	81.00	7.04	9.97	17.60	
03/13/2017	JA/RL	3.00	Rain	0.49	15	Hwy-99 Inflow	8:50	9.4	48.00	8.16	8.60	29.20	
03/13/2017	JA/RL	3.00	Rain	0.49	15	Landfill Inflow	8:45	10.3	40.00	7.46	10.01	3.30	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
03/13/2017	JA/RL	3.00	Rain	0.49	15	Discharge	8:40	8.5	62.00	8.34	9.91	4.68	
03/14/2017	JA	3.20	Rain	0.88	15	I-5 Inflow	8:40	11.1	65.00	6.42	9.02	5.85	
03/14/2017	JA	3.20	Rain	0.88	15	Hwy-99 Inflow	8:35	10.9	61.00	7.47	8.84	18.31	
03/14/2017	JA	3.20	Rain	0.88	15	Landfill Inflow	8:31	9.8	36.00	6.79	8.90	2.28	
03/14/2017	JA	3.20	Rain	0.88	15	Discharge	8:25	9.3	53.00	7.58	8.10	8.45	
03/15/2017	JA	3.50	Rain	0.58	15	I-5 Inflow	9:37	12.4	51.00	6.67	9.62	13.00	
03/15/2017	JA	3.50	Rain	0.58	15	Hwy-99 Inflow	9:32	12.3	48.00	6.91	8.51	20.90	
03/15/2017	JA	3.50	Rain	0.58	15	Landfill Inflow	9:25	11.5	32.00	6.30	7.82	2.35	
03/15/2017	JA	3.50	Rain	0.58	15	Discharge	9:17	9.6	43.00	6.89	8.40	6.75	
03/16/2017	JA/RL	3.10	Sunny	0.56	15	I-5 Inflow	9:30	10.7	60.00	7.12	10.50	4.20	
03/16/2017	JA/RL	3.10	Sunny	0.56	15	Hwy-99 Inflow	9:25	10.7	101.00	7.07	10.35	35.80	
03/16/2017	JA/RL	3.10	Sunny	0.56	15	Landfill Inflow	9:20	10.6	38.00	7.10	8.38	2.50	
03/16/2017	JA/RL	3.10	Sunny	0.56	15	Discharge	9:15	10.0	45.00	6.69	10.04	5.30	
03/17/2017	JA/RL	3.00	Overcast	0.00	15	I-5 Inflow							No Flow
03/17/2017	JA/RL	3.00	Overcast	0.00	15	Hwy-99 Inflow							No Flow
03/17/2017	JA/RL	3.00	Overcast	0.00	15	Landfill Inflow	9:05	9.0	42.00	7.15	9.53	2.19	
03/17/2017	JA/RL	3.00	Overcast	0.00	15	Discharge	9:00	8.2	55.00	6.51	9.55	3.19	
03/20/2017	JA/RL	3.00	Partly Cloudy	1.10	15	I-5 Inflow							No Flow
03/20/2017	JA/RL	3.00	Partly Cloudy	1.10	15	Hwy-99 Inflow							No Flow
03/20/2017	JA/RL	3.00	Partly Cloudy	1.10	15	Landfill Inflow	9:00	8.0	42.00	7.26	9.44	3.32	
03/20/2017	JA/RL	3.00	Partly Cloudy	1.10	15	Discharge	8:55	7.1	60.00	6.69	9.99	2.30	
03/21/2017	RL	2.90	Overcast	0.17	15	I-5 Inflow							No Flow
03/21/2017	RL	2.90	Overcast	0.17	15	Hwy-99 Inflow							No Flow
03/21/2017	RL	2.90	Overcast	0.17	15	Landfill Inflow		12.0	45.00	6.28	8.75	2.40	
03/21/2017	RL	2.90	Overcast	0.17	15	Discharge		12.4	61.00	6.59	9.67	2.90	
03/22/2017	JA	2.90	Overcast	0.15	15	I-5 Inflow	9:29	10.8	59.00	6.59	9.91	2.85	
03/22/2017	JA	2.90	Overcast	0.15	15	Hwy-99 Inflow							No Flow
03/22/2017	JA	2.90	Overcast	0.15	15	Landfill Inflow	9:26	9.8	46.00	6.48	10.62	2.29	
03/22/2017	JA	2.90	Overcast	0.15	15	Discharge	9:20	9.4	68.00	6.89	10.40	3.71	
03/23/2017	JA/RL	2.70	Overcast	0.05	15	I-5 Inflow							No Flow
03/23/2017	JA/RL	2.70	Overcast	0.05	15	Hwy-99 Inflow							No Flow
03/23/2017	JA/RL	2.70	Overcast	0.05	15	Landfill Inflow	8:15	8.9	48.00	6.82	9.46	2.53	
03/23/2017	JA/RL	2.70	Overcast	0.05	15	Discharge	8:10	8.5	72.00	6.99	9.33	2.79	
03/24/2017	JA/RL	2.70	Rain	0.29	15	I-5 Inflow	8:25	10.7	82.00	6.61	10.67	14.09	
03/24/2017	JA/RL	2.70	Rain	0.29	15	Hwy-99 Inflow	8:20	9.3	52.00	7.22	10.65	35.00	
03/24/2017	JA/RL	2.70	Rain	0.29	15	Landfill Inflow	8:15	10.2	48.00	6.33	10.01	2.58	
03/24/2017	JA/RL	2.70	Rain	0.29	15	Discharge	8:10	9.5	66.00	6.89	10.11	3.98	
03/27/2017	JA	2.50	Overcast	0.57	15	I-5 Inflow	9:10	12.2	70.00	6.77	9.02	5.61	
03/27/2017	JA	2.50	Overcast	0.57	15	Hwy-99 Inflow	8:56	10.6	66.00	7.17	8.80	1.83	
03/27/2017	JA	2.50	Overcast	0.57	15	Landfill Inflow	9:07	10.6	49.00	6.27	8.82	2.65	
03/27/2017	JA	2.50	Overcast	0.57	15	Discharge	8:50	8.6	62.00	6.61	8.48	4.34	
03/28/2017	JA	2.35	Overcast	0.13	15	I-5 Inflow	9:20	9.8	68.00	6.89	9.89	3.42	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
03/28/2017	JA	2.35	Overcast	0.13	15	Hwy-99 Inflow							No Flow
03/28/2017	JA	2.35	Overcast	0.13	15	Landfill Inflow	9:25	10.5	51.00	6.61	9.72	2.72	
03/28/2017	JA	2.35	Overcast	0.13	15	Discharge	9:12	8.8	75.00	6.91	8.94	3.95	
03/30/2017	JA	2.70	Overcast	0.11	15	I-5 Inflow	9:07	11.3	73.00	6.73	9.55	3.76	
03/30/2017	JA	2.70	Overcast	0.11	15	Hwy-99 Inflow	9:13	9.5	92.00	7.12	9.22	1.82	
03/30/2017	JA	2.70	Overcast	0.11	15	Landfill Inflow	9:18	10.7	48.00	6.57	9.00	2.93	
03/30/2017	JA	2.70	Overcast	0.11	15	Discharge	9:00	9.7	62.00	7.02	9.62	4.93	
03/31/2017	JA	2.50	Overcast	0.02	15	I-5 Inflow	9:00	10.9	80.00	6.86	10.32	5.11	
03/31/2017	JA	2.50	Overcast	0.02	15	Hwy-99 Inflow							No Flow
03/31/2017	JA	2.50	Overcast	0.02	15	Landfill Inflow	9:15	10.0	48.00	6.59	9.96	2.94	
03/31/2017	JA	2.50	Overcast	0.02	15	Discharge	9:02	9.6	81.00	6.84	9.94	3.14	
04/03/2017	JA/RL	1.60	Overcast	0.10	15	I-5 Inflow							No Flow
04/03/2017	JA/RL	1.60	Overcast	0.10	15	Hwy-99 Inflow							No Flow
04/03/2017	JA/RL	1.60	Overcast	0.10	15	Landfill Inflow	9:05	10.5	55.00	6.80	9.97	2.88	
04/03/2017	JA/RL	1.60	Overcast	0.10	15	Discharge	9:00	9.2	89.00	6.59	6.80	4.65	
04/05/2017	JA/RL	1.30	Rain	0.26	15	I-5 Inflow	9:20	11.3	62.00	7.35	9.07	12.29	
04/05/2017	JA/RL	1.30	Rain	0.26	15	Hwy-99 Inflow							No Flow
04/05/2017	JA/RL	1.30	Rain	0.26	15	Landfill Inflow	9:15	11.3	59.00	6.93	8.73	2.80	
04/05/2017	JA/RL	1.30	Rain	0.26	15	Discharge	9:10	10.2	58.00	7.23	9.47	26.70	
04/06/2017	JA	1.80	Rain	0.35	15	I-5 Inflow	9:25	10.6	70.00	7.09	8.92	19.84	
04/06/2017	JA	1.80	Rain	0.35	15	Hwy-99 Inflow	9:21	10.9	44.00	7.36	9.89	17.88	
04/06/2017	JA	1.80	Rain	0.35	15	Landfill Inflow	9:16	10.6	53.00	6.88	9.14	3.66	
04/06/2017	JA	1.80	Rain	0.35	15	Discharge	9:10	10.1	61.00	7.18	8.87	15.40	
04/07/2017	JA/RL	1.90	Overcast	0.31	15	I-5 Inflow	8:40	11.3	88.00	6.44	7.42	5.27	
04/07/2017	JA/RL	1.90	Overcast	0.31	15	Hwy-99 Inflow							No flow
04/07/2017	JA/RL	1.90	Overcast	0.31	15	Landfill Inflow	8:35	12.2	53.00	7.10	8.67	3.25	
04/07/2017	JA/RL	1.90	Overcast	0.31	15	Discharge	8:30	11.0	78.00	6.92	7.71	4.97	
04/12/2017	JA/RL	1.60	Rain	0.27	15	I-5 Inflow	11:25	12.2	68.00	7.14	9.50	8.82	
04/12/2017	JA/RL	1.60	Rain	0.27	15	Hwy-99 Inflow	11:20	13.9	59.00	7.47	10.02	4.98	
04/12/2017	JA/RL	1.60	Rain	0.27	15	Landfill Inflow	11:16	13.2	55.00	6.95	9.51	6.56	
04/12/2017	JA/RL	1.60	Rain	0.27	15	Discharge	11:10	11.5	52.00	7.16	10.13	22.60	
04/13/2017	JA/RL	2.00	Overcast	0.50	15	I-5 Inflow	8:50	11.3	65.00	7.18	8.96	10.19	
04/13/2017	JA/RL	2.00	Overcast	0.50	15	Hwy-99 Inflow	8:45	11.5	57.00	7.45	9.70	4.57	
04/13/2017	JA/RL	2.00	Overcast	0.50	15	Landfill Inflow	8:40	10.9	51.00	6.96	9.41	4.91	
04/13/2017	JA/RL	2.00	Overcast	0.50	15	Discharge	8:35	10.3	55.00	7.15	9.08	7.26	
04/14/2017	JA/RL	1.90	Overcast	0.09	15	I-5 Inflow	8:20	9.8	69.00	7.68	10.36	5.20	
04/14/2017	JA/RL	1.90	Overcast	0.09	15	Hwy-99 Inflow							No Flow
04/14/2017	JA/RL	1.90	Overcast	0.09	15	Landfill Inflow	8:15	10.3	52.00	7.22	9.64	3.30	
04/14/2017	JA/RL	1.90	Overcast	0.09	15	Discharge	8:10	9.5	69.00	7.24	8.19	4.45	
04/20/2017	JA/RL	1.50	Overcast	0.37	15	I-5 Inflow	10:25	11.0	65.00	7.39	9.67	11.30	
04/20/2017	JA/RL	1.50	Overcast	0.37	15	Hwy-99 Inflow							No Flow
04/20/2017	JA/RL	1.50	Overcast	0.37	15	Landfill Inflow	10:20	12.1	55.00	7.07	9.12	3.07	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (^{o}C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
04/20/2017	JA/RL	1.50	Overcast	0.37	15	Discharge	10:15	11.1	55.00	7.38	9.80	3.20	
04/26/2017	JA/RL	1.60	Overcast	0.05	15	I-5 Inflow							No Flow
04/26/2017	JA/RL	1.60	Overcast	0.05	15	Hwy-99 Inflow							No Flow
04/26/2017	JA/RL	1.60	Overcast	0.05	15	Landfill Inflow	8:35	12.6	54.00	6.74	9.22	3.80	
04/26/2017	JA/RL	1.60	Overcast	0.05	15	Discharge	8:30	11.8	75.00	6.76	8.14	3.11	
05/05/2017	JA/RL	2.00	Overcast	0.80	15	I-5 Inflow	8:30	15.1	57.00	7.32	9.45	30.00	
05/05/2017	JA/RL	2.00	Overcast	0.80	15	Hwy-99 Inflow	8:25	17.5	50.00	7.40	8.67	3.81	
05/05/2017	JA/RL	2.00	Overcast	0.80	15	Landfill Inflow	8:20	15.2	59.00	6.85	8.74	3.60	
05/05/2017	JA/RL	2.00	Overcast	0.80	15	Discharge	8:15	15.7	38.00	7.68	8.44	17.10	
10/19/2017	JM/JA	2.25	Rain	1.63	15	I-5 Inflow	10:19	14.8	61.00	7.52	9.35	9.20	
10/19/2017	JM/JA	2.25	Rain	1.63	15	Hwy-99 Inflow	10:18	15.1	27.00	7.92	9.45	7.63	
10/19/2017	JM/JA	2.25	Rain	1.63	15	Landfill Inflow	10:14	15.7	69.00	6.20	9.31	13.50	
10/19/2017	JM/JA	2.25	Rain	1.63	15	Discharge	10:14	15.2	45.00	7.81	9.15	12.30	
10/20/2017	JM/JA	2.95	Rain	0.77	15	I-5 Inflow	9:38	12.6	70.00	6.82	10.07	39.80	
10/20/2017	JM/JA	2.95	Rain	0.77	15	Hwy-99 Inflow	9:34	14.7	44.00	8.70	10.02	51.40	
10/20/2017	JM/JA	2.95	Rain	0.77	15	Landfill Inflow	9:42	15.8	69.00	6.89	9.31	26.00	
10/20/2017	JM/JA	2.95	Rain	0.77	15	Discharge	9:30	14.5	60.00	6.71	8.63	22.00	
10/23/2017	RL	3.00	Overcast	1.95	15	I-5 Inflow							No Flow
10/23/2017	RL	3.00	Overcast	1.95	15	Hwy-99 Inflow							No Flow
10/23/2017	RL	3.00	Overcast	1.95	15	Landfill Inflow	9:05	13.1	75.00	8.52	9.05	11.60	
10/23/2017	RL	3.00	Overcast	1.95	15	Discharge	9:00	14.0	56.00	7.03	8.29	9.70	
10/24/2017	RL	2.80	Sunny	0.00	15	I-5 Inflow							No Flow
10/24/2017	RL	2.80	Sunny	0.00	15	Hwy-99 Inflow							No Flow
10/24/2017	RL	2.80	Sunny	0.00	15	Landfill Inflow	9:05	13.7	58.00	7.12	9.61	10.30	
10/24/2017	RL	2.80	Sunny	0.00	15	Discharge	9:00	13.1	58.00	7.31	8.58	8.50	
10/25/2017	RL	2.60	Partly Cloudy	0.00	15	I-5 Inflow							No Flow
10/25/2017	RL	2.60	Partly Cloudy	0.00	15	Hwy-99 Inflow							No Flow
10/25/2017	RL	2.60	Partly Cloudy	0.00	15	Landfill Inflow	9:00	13.9	61.00	6.77	9.06	10.50	
10/25/2017	RL	2.60	Partly Cloudy	0.00	15	Discharge	8:55	13.0	62.00	6.99	9.15	10.60	
10/26/2017	JA/RL	2.30	Overcast	0.00	15	I-5 Inflow							No Flow
10/26/2017	JA/RL	2.30	Overcast	0.00	15	Hwy-99 Inflow							No Flow
10/26/2017	JA/RL	2.30	Overcast	0.00	15	Landfill Inflow	8:20	14.6	69.00	7.06	9.09	9.11	
10/26/2017	JA/RL	2.30	Overcast	0.00	15	Discharge	8:15	13.8	65.00	6.97	6.23	7.98	
10/27/2017	RL	2.00	Sunny	0.00	15	I-5 Inflow							No Flow
10/27/2017	RL	2.00	Sunny	0.00	15	Hwy-99 Inflow							No Flow
10/27/2017	RL	2.00	Sunny	0.00	15	Landfill Inflow	8:45	13.1	66.00	7.19	9.57	8.54	
10/27/2017	RL	2.00	Sunny	0.00	15	Discharge	8:40	12.0	75.00	6.89	7.56	8.40	
11/06/2017	JM/JA	2.10	Overcast	1.18	15	Discharge	8:15	10.2	113.00	6.56	9.66	5.53	
11/06/2017	JM/JA	2.10	Overcast	1.18	15	Landfill Inflow	8:20	10.7	59.00	6.61	9.96	5.30	
11/06/2017	JM/JA	2.10	Overcast	1.18	15	Hwy-99 Inflow	8:24	16.9	51.00	7.35	8.95	2.05	
11/06/2017	JM/JA	2.10	Overcast	1.18	15	I-5 Inflow	8:30	12.4	68.00	7.20	10.11	6.55	
11/07/2017	JM/JA	1.80	Overcast	0.00	15	Discharge	11:55	8.4	57.00	6.51	8.28	4.80	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
11/07/2017	JM/JA	1.80	Overcast	0.00	15	Landfill Inflow	12:00	11.5	81.00	7.13	10.99	5.43	
11/07/2017	JM/JA	1.80	Overcast	0.00	15	Hwy-99 Inflow							No Flow
11/07/2017	JM/JA	1.80	Overcast	0.00	15	I-5 Inflow	12:05	12.9	104.00	6.98	9.86	7.30	
11/08/2017	RL	1.30	Overcast	0.00	15	Discharge	8:30	9.8	139.00	6.96	7.43	3.91	
11/08/2017	RL	1.30	Overcast	0.00	15	Landfill Inflow	8:35	10.1	59.00	6.94	9.98	5.08	
11/08/2017	RL	1.30	Overcast	0.00	15	Hwy-99 Inflow							No Flow
11/08/2017	RL	1.30	Overcast	0.00	15	I-5 Inflow							No Flow
11/13/2017	JM/RL	2.00	Cloudy	1.25	15	Discharge	8:45	10.1	48.00	6.68	8.74	9.00	
11/13/2017	JM/RL	2.00	Cloudy	1.25	15	Landfill Inflow	8:50	11.5	73.00	7.24	9.57	3.90	
11/13/2017	JM/RL	2.00	Cloudy	1.25	15	Hwy-99 Inflow	8:55	11.2	48.00	7.38	10.41	16.00	
11/13/2017	JM/RL	2.00	Cloudy	1.25	15	I-5 Inflow	9:00	14.3	95.00	7.40	9.53	10.00	
11/14/2017	JM/JA	3.18	Overcast	0.89	15	Discharge	11:40	11.6	43.00	8.86	10.29	8.00	
11/14/2017	JM/JA	3.18	Overcast	0.89	15	Landfill Inflow	11:45	12.1	38.00	6.61	10.42	3.20	
11/14/2017	JM/JA	3.18	Overcast	0.89	15	Hwy-99 Inflow	11:47	12.1	62.00	7.34	10.59	4.20	
11/14/2017	JM/JA	3.18	Overcast	0.89	15	I-5 Inflow	11:50	12.6	56.00	6.90	10.08	4.60	
11/15/2017	JM	3.21	Cloudy	0.36	15	Discharge	9:05	11.6	55.00	7.15	9.69	8.40	
11/15/2017	JM	3.21	Cloudy	0.36	15	Landfill Inflow	9:07	11.9	58.00	6.49	9.06	3.10	
11/15/2017	JM	3.21	Cloudy	0.36	15	Hwy-99 Inflow	9:11	11.7	50.00	6.34	10.32	19.10	
11/15/2017	JM	3.21	Cloudy	0.36	15	I-5 Inflow	9:13	12.1	46.00	6.35	10.10	6.40	
11/16/2017	JA/RL	3.00	Rain	0.08	15	Discharge	9:15	12.1	43.00	7.79	9.22	6.57	
11/16/2017	JA/RL	3.00	Rain	0.08	15	Landfill Inflow	9:20	11.9	46.00	7.50	7.63	3.55	
11/16/2017	JA/RL	3.00	Rain	0.08	15	Hwy-99 Inflow	9:25	12.6	77.00	8.11	8.86	8.58	
11/16/2017	JA/RL	3.00	Rain	0.08	15	I-5 Inflow	9:30	12.4	46.00	8.19	9.40	6.90	
11/17/2017	JM/JA	2.88	Overcast	0.11	15	Discharge	8:13	10.6	47.00	7.07	8.41	3.33	
11/17/2017	JM/JA	2.88	Overcast	0.11	15	Landfill Inflow	8:16	10.5	45.00	7.99	9.04	2.80	
11/17/2017	JM/JA	2.88	Overcast	0.11	15	Hwy-99 Inflow	8:20	10.3	80.00	7.67	9.60	1.63	
11/17/2017	JM/JA	2.88	Overcast	0.11	15	I-5 Inflow	8:25	11.4	52.00	7.70	9.69	4.33	
11/20/2017	JM	2.93	Rain	0.70	15	Discharge	8:49	11.3	50.00	8.37	8.70	6.80	
11/20/2017	JM	2.93	Rain	0.70	15	Landfill Inflow	8:51	11.0	40.00	7.78	8.33	3.40	
11/20/2017	JM	2.93	Rain	0.70	15	Hwy-99 Inflow	8:53	10.4	45.00	8.32	9.43	51.20	
11/20/2017	JM	2.93	Rain	0.70	15	I-5 Inflow	8:54	10.9	28.00	8.21	9.19	12.30	
11/21/2017	JM/JA	3.17	Rain	0.63	15	Discharge	8:43	10.0	60.00	7.19	9.62	3.90	
11/21/2017	JM/JA	3.17	Rain	0.63	15	Landfill Inflow	8:40	9.8	39.00	6.59	9.00	2.80	
11/21/2017	JM/JA	3.17	Rain	0.63	15	Hwy-99 Inflow	8:45	8.6	28.00	7.54	10.83	43.90	
11/21/2017	JM/JA	3.17	Rain	0.63	15	I-5 Inflow	8:49	10.1	45.00	7.97	10.86	13.90	
11/21/2017	JM/JA	3.53	Rain	0.63	15	Discharge	13:26	11.5	68.00	7.75	9.42	3.20	
11/22/2017	JA	3.31	Overcast	1.08	15	Discharge	8:50	14.2	50.00	7.38	9.71	4.07	
11/22/2017	JA	3.31	Overcast	1.08	15	Landfill Inflow	8:53	12.9	36.00	6.83	8.66	2.38	
11/22/2017	JA	3.31	Overcast	1.08	15	Hwy-99 Inflow	8:58	13.8	58.00	7.89	9.74	3.88	
11/22/2017	JA	3.31	Overcast	1.08	15	I-5 Inflow	9:03	13.7	60.00	7.69	10.91	3.91	
11/27/2017	JM/JA	3.06	Cloudy	1.42	15	Discharge	8:51	10.4	53.00	6.77	8.75	3.04	
11/27/2017	JM/JA	3.06	Cloudy	1.42	15	Landfill Inflow	8:51	10.4	45.00	6.68	9.80	2.20	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
11/27/2017	JM/JA	3.06	Cloudy	1.42	15	Hwy-99 Inflow	8:53	10.0	71.00	7.38	10.84	1.13	
11/27/2017	JM/JA	3.06	Cloudy	1.42	15	I-5 Inflow	8:54	11.3	52.00	7.14	10.41	3.04	
11/28/2017	JM/JA	2.85	Rain	0.06	15	Discharge	8:07	10.6	46.00	6.58	9.82	2.30	
11/28/2017	JM/JA	2.85	Rain	0.06	15	Landfill Inflow	8:12	10.5	51.00	6.67	9.68	1.70	
11/28/2017	JM/JA	2.85	Rain	0.06	15	Hwy-99 Inflow	8:17	10.8	34.00	8.34	11.66	78.60	
11/28/2017	JM/JA	2.85	Rain	0.06	15	I-5 Inflow	8:20	10.8	64.00	7.42	8.80	17.00	
11/28/2017	JM/JA	2.85	Rain	0.06	15	Discharge	13:45			6.72			
11/29/2017	JM/JA	3.05	Overcast	0.63	15	Discharge	8:50	10.7	49.00	7.87	9.19	2.87	
11/29/2017	JM/JA	3.05	Overcast	0.63	15	Landfill Inflow	8:56	10.4	44.00	6.84	10.40	2.30	
11/29/2017	JM/JA	3.05	Overcast	0.63	15	Hwy-99 Inflow	9:00	11.2	74.00	8.15	9.17	1.45	
11/29/2017	JM/JA	3.05	Overcast	0.63	15	I-5 Inflow	9:03	11.3	54.00	7.88	9.36	3.11	
11/30/2017	JM/JA	2.94	Rain	0.03	15	Discharge	9:13	10.1	48.00	7.01	9.17	2.40	
11/30/2017	JM/JA	2.94	Rain	0.03	15	Landfill Inflow	9:10	11.1	69.00	6.76	8.59	2.40	
11/30/2017	JM/JA	2.94	Rain	0.03	15	Hwy-99 Inflow	9:18	8.4	26.00	7.12	10.56	47.10	
11/30/2017	JM/JA	2.94	Rain	0.03	15	I-5 Inflow	9:15	11.2	65.00	7.71	10.55	14.30	
11/30/2017	JM/JA	2.94	Rain	0.03	15	Discharge	13:40			6.94			
12/01/2017	JA/RL	2.90	Cloudy	0.26	15	Discharge	8:30	9.5	54.00	6.88	9.71	2.90	
12/01/2017	JA/RL	2.90	Cloudy	0.26	15	Landfill Inflow	8:35	13.4	46.00	7.70	11.89	2.72	
12/01/2017	JA/RL	2.90	Cloudy	0.26	15	Hwy-99 Inflow							No flow
12/01/2017	JA/RL	2.90	Cloudy	0.26	15	I-5 Inflow	8:40	11.6	52.00	7.44	12.96	3.76	
12/04/2017	JM/JA	3.03	Overcast	1.34	15	Discharge	8:30	9.4	49.00	6.69	9.78	2.49	
12/04/2017	JM/JA	3.03	Overcast	1.34	15	Landfill Inflow	8:35	13.1	43.00	7.56	9.17	2.75	
12/04/2017	JM/JA	3.03	Overcast	1.34	15	Hwy-99 Inflow	8:39	11.1	88.00	7.83	9.06	1.49	
12/04/2017	JM/JA	3.03	Overcast	1.34	15	I-5 Inflow	8:43	12.2	55.00	7.49	9.85	2.82	
12/05/2017	JA	2.86	Overcast	0.00	15	Discharge	9:35	8.9	49.00	6.67	10.26	2.58	
12/05/2017	JA	2.86	Overcast	0.00	15	Landfill Inflow	9:40	10.6	45.00	6.35	10.92	2.88	
12/05/2017	JA	2.86	Overcast	0.00	15	Hwy-99 Inflow							No flow
12/05/2017	JA	2.86	Overcast	0.00	15	I-5 Inflow	9:44	10.9	50.00	6.58	11.69	3.25	
12/06/2017	JA	2.89	Sunny	0.00	15	Discharge	11:20	10.0	55.00	7.72	8.57	2.72	
12/06/2017	JA	2.89	Sunny	0.00	15	Landfill Inflow	11:27	11.8	48.00	7.39	9.68	2.74	
12/06/2017	JA	2.89	Sunny	0.00	15	Hwy-99 Inflow							No flow
12/06/2017	JA	2.89	Sunny	0.00	15	I-5 Inflow	11:35	11.9	51.00	7.49	10.31	3.65	
12/07/2017	JM/JA	2.30	Sunny	0.00	15	Discharge	9:14	6.7	58.00	7.74	9.08	2.30	
12/07/2017	JM/JA	2.30	Sunny	0.00	15	Landfill Inflow	9:15	10.0	67.00	7.40	10.06	3.00	
12/07/2017	JM/JA	2.30	Sunny	0.00	15	Hwy-99 Inflow							No flow
12/07/2017	JM/JA	2.30	Sunny	0.00	15	I-5 Inflow	9:16	14.0	50.00	7.85	10.53	3.60	
12/08/2017	JM/JA	2.00	Sunny	0.00	15	Discharge	8:56	4.5	58.00	6.71	7.42	1.80	
12/08/2017	JM/JA	2.00	Sunny	0.00	15	Landfill Inflow	8:48	7.5	54.00	6.65	10.95	3.00	
12/08/2017	JM/JA	2.00	Sunny	0.00	15	Hwy-99 Inflow							No flow
12/08/2017	JM/JA	2.00	Sunny	0.00	15	I-5 Inflow	9:01	11.2	52.00	7.75	11.04	3.80	
12/19/2017	JM	2.53	Rain	1.21	15	Discharge	8:32	11.3	38.10	6.91	8.13	17.50	
12/19/2017	JM	2.53	Rain	1.21	15	Landfill Inflow	8:33	10.7	41.43	6.62	8.01	4.40	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (μS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
12/19/2017	JM	2.53	Rain	1.21	15	Hwy-99 Inflow	8:48	11.1	42.08	7.60	8.57	28.40	
12/19/2017	JM	2.53	Rain	1.21	15	I-5 Inflow	8:45	9.8	44.17	6.24	8.27	15.40	
12/20/2017	JM	3.20	Cloudy	0.61	15	Discharge	8:20	13.2	36.43	6.63	7.99	3.00	
12/20/2017	JM	3.20	Cloudy	0.61	15	Landfill Inflow	8:06	11.1	36.91	6.67	8.31	2.80	
12/20/2017	JM	3.20	Cloudy	0.61	15	Hwy-99 Inflow	8:30	15.1	68.81	7.50	8.85	3.40	
12/20/2017	JM	3.20	Cloudy	0.61	15	I-5 Inflow	8:32	11.8	58.56	7.06	8.22	3.20	
12/21/2017	JM/JA	2.86	Cloudy	0.00	15	Discharge	10:04	5.3	46.49	6.73	9.29	6.90	
12/21/2017	JM/JA	2.86	Cloudy	0.00	15	Landfill Inflow	10:10	8.8	41.91	6.74	11.42	3.00	
12/21/2017	JM/JA	2.86	Cloudy	0.00	15	Hwy-99 Inflow							No flow
12/21/2017	JM/JA	2.86	Cloudy	0.00	15	I-5 Inflow	10:16	8.4	47.25	7.23	11.41	8.10	
12/22/2017	JM/JA	2.60	Overcast	0.13	15	Discharge	8:20	7.0	43.04	6.72	8.73	3.10	
12/22/2017	JM/JA	2.60	Overcast	0.13	15	Landfill Inflow	8:24	8.9	42.03	6.62	10.45	2.92	
12/22/2017	JM/JA	2.60	Overcast	0.13	15	Hwy-99 Inflow							No flow
12/22/2017	JM/JA	2.60	Overcast	0.13	15	I-5 Inflow	8:27	8.5	81.04	7.20	9.51	14.98	
12/29/2017	JM/RL	2.60	Rain	1.03	15	Discharge	9:25	10.8	39.27	6.68	10.70	5.90	
12/29/2017	JM/RL	2.60	Rain	1.03	15	Landfill Inflow	9:30	10.5	34.60	6.73	12.80	7.30	
12/29/2017	JM/RL	2.60	Rain	1.03	15	Hwy-99 Inflow	9:35	9.9	38.00	7.23	9.90	34.60	
12/29/2017	JM/RL	2.60	Rain	1.03	15	I-5 Inflow	9:40	10.6	62.61	7.23	10.70	24.10	
12/29/2017	JM/RL	2.60	Rain	1.03	15	Discharge	12:50			6.67			
01/02/2018	JM/JA	2.54	Sunny	0.91	15	Discharge	8:58	5.5	47.46	6.77	7.12	10.00	
01/02/2018	JM/JA	2.54	Sunny	0.91	15	Landfill Inflow	8:55	6.1	42.61	6.69	11.44	6.00	
01/02/2018	JM/JA	2.54	Sunny	0.91	15	Hwy-99 Inflow							No flow
01/02/2018	JM/JA	2.54	Sunny	0.91	15	I-5 Inflow	8:59	9.1	44.31	7.14	9.72	6.70	
01/03/2018	JM/JA	2.36	Sunny	0.00	15	Discharge	9:40	8.0	53.84	7.08	7.54	5.08	
01/03/2018	JM/JA	2.36	Sunny	0.00	15	Landfill Inflow	9:44	7.7	43.31	6.82	10.09	3.13	
01/03/2018	JM/JA	2.36	Sunny	0.00	15	Hwy-99 Inflow							No flow
01/03/2018	JM/JA	2.36	Sunny	0.00	15	I-5 Inflow	9:50	9.6	46.05	7.08	11.48	6.62	
01/04/2018	JM/JA	2.00	Overcast	0.00	15	Discharge	8:20	5.3	60.90	6.68	9.25	3.60	
01/04/2018	JM/JA	2.00	Overcast	0.00	15	Landfill Inflow	8:21	7.3	45.47	6.88	10.01	2.72	
01/04/2018	JM/JA	2.00	Overcast	0.00	15	Hwy-99 Inflow							No flow
01/04/2018	JM/JA	2.00	Overcast	0.00	15	I-5 Inflow	8:24	9.1	45.58	7.27	9.54	6.72	
01/05/2018	JM/JA	1.50	Rain	0.23	15	Discharge	8:21	9.2	46.81	6.90	9.81	2.91	
01/05/2018	JM/JA	1.50	Rain	0.23	15	Landfill Inflow	8:24	9.8	44.20	6.77	10.81	2.62	
01/05/2018	JM/JA	1.50	Rain	0.23	15	Hwy-99 Inflow							No flow
01/05/2018	JM/JA	1.50	Rain	0.23	15	I-5 Inflow	8:33	10.9	85.78	7.19	9.94	6.59	
01/08/2018	JA/RL	1.80	Overcast	0.78	15	Discharge	8:55	8.3	49.67	6.66	10.23	4.75	
01/08/2018	JA/RL	1.80	Overcast	0.78	15	Landfill Inflow	9:00	9.1	42.60	6.73	10.40	3.12	
01/08/2018	JA/RL	1.80	Overcast	0.78	15	Hwy-99 Inflow							No flow
01/08/2018	JA/RL	1.80	Overcast	0.78	15	I-5 Inflow	9:05	8.7	68.72	7.09	10.97	4.67	
01/09/2018	JA	1.98	Rain	0.33	15	Discharge	9:02	9.0	51.26	6.80	9.97	11.83	
01/09/2018	JA	1.98	Rain	0.33	15	Landfill Inflow	9:05	8.8	41.54	6.68	10.34	2.99	
01/09/2018	JA	1.98	Rain	0.33	15	Hwy-99 Inflow	9:14	10.1	121.40	7.31	11.32	6.27	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (^{o}C)	Conductivity ($\mu S/cm$)	pH	Dissoved (O^{2})	Turbiduty (NTU)	Comments
01/09/2018	JA	1.98	Rain	0.33	15	I-5 Inflow	9:11	9.5	61.77	7.07	10.58	5.11	
01/10/2018	JA	1.88	Overcast	0.02	15	Discharge	8:33	7.4	67.29	6.93	9.61	3.85	
01/10/2018	JA	1.88	Overcast	0.02	15	Landfill Inflow	8:36	7.9	42.95	6.84	10.79	3.15	
01/10/2018	JA	1.88	Overcast	0.02	15	Hwy-99 Inflow							No flow
01/10/2018	JA	1.88	Overcast	0.02	15	I-5 Inflow	8:40	9.8	52.95	7.25	11.09	5.75	
01/11/2018	JM/JA	3.00	Rain	0.44	15	Discharge	8:25	8.5	52.85	6.85	10.53	5.80	
01/11/2018	JM/JA	3.00	Rain	0.44	15	Landfill Inflow	8:28	9.8	39.01	6.75	10.51	4.40	
01/11/2018	JM/JA	3.00	Rain	0.44	15	Hwy-99 Inflow	8:38	10.0	53.06	7.38	11.40	32.90	
01/11/2018	JM/JA	3.00	Rain	0.44	15	I-5 Inflow	8:33	8.9	50.13	7.21	10.65	18.00	
01/11/2018	JM/JA	3.00	Rain	0.44	15	Discharge	13:55			6.69			
01/12/2018	JM/JA	3.15	Overcast	0.95	15	Discharge	8:25	9.2	41.74	6.76	8.23	4.10	
01/12/2018	JM/JA	3.15	Overcast	0.95	15	Landfill Inflow	8:28	9.4	35.38	6.71	10.32	2.50	
01/12/2018	JM/JA	3.15	Overcast	0.95	15	Hwy-99 Inflow	8:35	10.5	111.17	7.43	9.14	3.38	
01/12/2018	JM/JA	3.15	Overcast	0.95	15	I-5 Inflow	8:30	9.8	56.88	7.14	8.51	4.23	
01/16/2018	JM	2.45	Sunny	0.34	15	Discharge	9:11	10.6	55.01	6.74	8.06	4.60	
01/16/2018	JM	2.45	Sunny	0.34	15	Landfill Inflow	9:12	11.1	44.10	6.71	8.37	2.60	
01/16/2018	JM	2.45	Sunny	0.34	15	Hwy-99 Inflow							No flow
01/16/2018	JM	2.45	Sunny	0.34	15	I-5 Inflow	9:17	11.6	62.63	7.04	10.88	4.70	
01/17/2018	JM	2.25	Overcast	0.03	15	Discharge	8:45	9.8	63.57	6.80	9.18	3.90	
01/17/2018	JM	2.25	Overcast	0.03	15	Landfill Inflow	8:40	11.4	44.30	6.73	10.64	2.90	
01/17/2018	JM	2.25	Overcast	0.03	15	Hwy-99 Inflow							No flow
01/17/2018	JM	2.25	Overcast	0.03	15	I-5 Inflow	8:50	11.1	55.50	7.05	9.27	5.30	
01/18/2018	JM/JA	2.88	Overcast	0.75	15	Discharge	10:03	9.7	43.27	6.69	10.04	4.10	
01/18/2018	JM/JA	2.88	Overcast	0.75	15	Landfill Inflow	10:00	9.2	40.85	6.62	10.51	2.67	
01/18/2018	JM/JA	2.88	Overcast	0.75	15	Hwy-99 Inflow	10:05	8.9	78.85	7.35	10.95	7.44	
01/18/2018	JM/JA	2.88	Overcast	0.75	15	I-5 Inflow	1:40	10.5	60.12	7.14	10.84	4.80	
01/19/2018	JA	2.89	Overcast	0.09	15	Discharge	8:57	8.0	56.64	6.91	9.83	5.35	
01/19/2018	JA	2.89	Overcast	0.09	15	Landfill Inflow	9:00	8.9	40.43	6.73	10.39	3.18	
01/19/2018	JA	2.89	Overcast	0.09	15	Hwy-99 Inflow	9:08	9.8	100.80	7.52	11.12	2.07	
01/19/2018	JA	2.89	Overcast	0.09	15	I-5 Inflow	9:05	9.3	65.28	7.12	10.49	3.55	
01/19/2018	JA	2.89	Overcast	0.09	15	Discharge	13:05			6.76			
01/22/2018	JM/JA	2.50	Overcast	0.53	15	Discharge	8:20	7.1	60.04	6.92	10.05	7.50	
01/22/2018	JM/JA	2.50	Overcast	0.53	15	Landfill Inflow	8:21	8.1	45.57	6.75	11.33	3.50	
01/22/2018	JM/JA	2.50	Overcast	0.53	15	Hwy-99 Inflow	8:28	9.4	56.44	7.56	11.17	24.00	
01/22/2018	JM/JA	2.50	Overcast	0.53	15	I-5 Inflow	8:31	8.7	47.34	7.36	11.87	13.50	
01/23/2018	JA	2.45	Rain	0.03	15	Discharge	8:20	8.0	49.80	6.74	10.31	3.56	
01/23/2018	JA	2.45	Rain	0.03	15	Landfill Inflow	8:18	8.3	45.58	6.71	10.47	2.88	
01/23/2018	JA	2.45	Rain	0.03	15	Hwy-99 Inflow	8:23	9.6	99.43	7.65	8.59	1.65	
01/23/2018	JA	2.45	Rain	0.03	15	I-5 Inflow	8:26	10.4	54.20	7.11	11.08	4.73	
01/24/2018	JM	3.25	Rain	0.05	15	Discharge	10:04	10.1	43.85	6.69	9.16	5.20	
01/24/2018	JM	3.25	Rain	0.05	15	Landfill Inflow	10:07	10.7	35.29	6.71	10.60	9.90	
01/24/2018	JM	3.25	Rain	0.05	15	Hwy-99 Inflow	10:08	10.3	67.02	7.33	11.13	10.00	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (μS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
01/24/2018	JM	3.25	Rain	0.05	15	I-5 Inflow	10:11	10.3	64.38	7.01	10.95	4.70	
01/24/2018	JM	3.25	Rain	0.05	15	Discharge	14:00			6.80			
01/25/2018	JM/JA	3.15	Overcast	0.45	15	Discharge	8:44	7.9	36.45	6.60	10.21	2.50	
01/25/2018	JM/JA	3.15	Overcast	0.45	15	Landfill Inflow	8:46	8.5	36.87	6.68	10.35	2.38	
01/25/2018	JM/JA	3.15	Overcast	0.45	15	Hwy-99 Inflow	8:47	8.3	99.68	7.42	11.48	3.35	
01/25/2018	JM/JA	3.15	Overcast	0.45	15	I-5 Inflow	8:50	9.2	64.09	7.09	10.64	4.83	
01/26/2018	JA/RL	3.00	Rain	0.15	15	Discharge	9:10	7.5	43.78	6.75	10.37	3.37	
01/26/2018	JA/RL	3.00	Rain	0.15	15	Landfill Inflow	9:15	7.5	38.41	6.79	10.73	2.75	
01/26/2018	JA/RL	3.00	Rain	0.15	15	Hwy-99 Inflow	9:20	8.9	91.90	7.24	11.44	12.04	
01/26/2018	JA/RL	3.00	Rain	0.15	15	I-5 Inflow	9:25	8.2	71.72	7.25	11.00	5.08	
01/29/2018	JM/JA	3.00	Rain	0.87	15	Discharge	8:12	10.0	42.27	6.70	10.27	2.55	
01/29/2018	JM/JA	3.00	Rain	0.87	15	Landfill Inflow	8:09	9.0	42.37	6.58	10.20	2.40	
01/29/2018	JM/JA	3.00	Rain	0.87	15	Hwy-99 Inflow	8:17	10.9	117.20	7.58	10.03	2.45	
01/29/2018	JM/JA	3.00	Rain	0.87	15	I-5 Inflow	8:15	9.4	51.47	6.93	9.48	3.19	
01/30/2018	JM/JA	3.25	Sunny	0.85	15	Discharge	8:12	8.5	40.80	6.67	10.28	3.98	
01/30/2018	JM/JA	3.25	Sunny	0.85	15	Landfill Inflow	8:15	8.7	35.45	6.67	10.56	2.24	
01/30/2018	JM/JA	3.25	Sunny	0.85	15	Hwy-99 Inflow	8:16	8.6	88.23	7.42	11.03	3.10	
01/30/2018	JM/JA	3.25	Sunny	0.85	15	I-5 Inflow	8:17	9.5	55.75	7.01	11.21	3.36	
01/31/2018	JM/JA	3.00	Overcast	1.03	15	Discharge	8:00	7.7	43.68	6.70	10.02	3.30	
01/31/2018	JM/JA	3.00	Overcast	1.03	15	Landfill Inflow	7:55	7.8	39.63	6.66	10.47	2.33	
01/31/2018	JM/JA	3.00	Overcast	1.03	15	Hwy-99 Inflow	8:02	10.7	122.60	7.81	9.62	2.15	
01/31/2018	JM/JA	3.00	Overcast	1.03	15	I-5 Inflow	8:05	9.7	59.47	7.16	9.73	3.45	
02/01/2018	JM/JA	2.90	Overcast	0.00	15	Discharge	8:59	8.3	47.51	6.79	10.14	30.80	
02/01/2018	JM/JA	2.90	Overcast	0.00	15	Landfill Inflow	8:58	9.0	41.48	6.72	10.35	2.50	
02/01/2018	JM/JA	2.90	Overcast	0.00	15	Hwy-99 Inflow							No flow
02/01/2018	JM/JA	2.90	Overcast	0.00	15	I-5 Inflow	9:00	9.9	55.28	7.07	10.96	3.10	
02/01/2018	JM/JA	2.90	Overcast	0.00	15	Discharge	13:20			6.67			
02/02/2018	JM/JA	2.95	Rain	0.68	15	Discharge	9:13	9.8	53.79	6.99	7.55	6.20	
02/02/2018	JM/JA	2.95	Rain	0.68	15	Landfill Inflow	9:09	9.1	39.31	6.65	10.34	2.90	
02/02/2018	JM/JA	2.95	Rain	0.68	15	Hwy-99 Inflow	9:11	9.4	67.39	7.51	9.05	3.25	
02/02/2018	JM/JA	2.95	Rain	0.68	15	I-5 Inflow	9:15	10.4	54.06	7.01	10.70	3.18	
02/05/2018	JM/JA	2.85	Rain	0.25	15	Discharge	8:11	9.6	58.28	6.84	9.14	3.81	
02/05/2018	JM/JA	2.85	Rain	0.25	15	Landfill Inflow	8:09	9.6	45.38	6.66	10.03	2.70	
02/05/2018	JM/JA	2.85	Rain	0.25	15	Hwy-99 Inflow							No flow
02/05/2018	JM/JA	2.85	Rain	0.25	15	I-5 Inflow	8:13	10.8	56.69	7.14	10.63	3.16	
02/06/2018	JA	2.66	Overcast	0.10	15	Discharge	8:09	9.8	64.88	6.75	9.05	3.27	
02/06/2018	JA	2.66	Overcast	0.10	15	Landfill Inflow	8:11	9.7	51.72	6.65	10.46	2.68	
02/06/2018	JA	2.66	Overcast	0.10	15	Hwy-99 Inflow							No flow
02/06/2018	JA	2.66	Overcast	0.10	15	I-5 Inflow	8:14	10.5	69.63	7.09	11.03	5.53	
02/07/2018	JA	2.45	Overcast	0.03	15	Discharge	7:54	10.2	68.35	6.71	8.96	3.50	
02/07/2018	JA	2.45	Overcast	0.03	15	Landfill Inflow	7:56	10.5	48.23	6.81	10.40	2.57	
02/07/2018	JA	2.45	Overcast	0.03	15	Hwy-99 Inflow							No flow

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
02/07/2018	JA	2.45	Overcast	0.03	15	I-5 Inflow	7:59	11.2	51.45	7.14	10.88	3.62	
02/08/2018	JM	2.20	Overcast	0.00	15	Discharge	8:10	10.7	77.79	6.81	8.64	3.80	
02/08/2018	JM	2.20	Overcast	0.00	15	Landfill Inflow	8:11	11.2	49.54	6.76	10.34	2.70	
02/08/2018	JM	2.20	Overcast	0.00	15	Hwy-99 Inflow							No flow
02/08/2018	JM	2.20	Overcast	0.00	15	I-5 Inflow	8:15	11.5	54.67	7.07	10.49	10.49	
02/09/2018	JM/JA	2.00	Sunny	0.21	15	Discharge	8:41	8.8	75.94	6.81	8.10	8.70	
02/09/2018	JM/JA	2.00	Sunny	0.21	15	Landfill Inflow	8:39	9.8	52.04	6.70	10.21	5.30	
02/09/2018	JM/JA	2.00	Sunny	0.21	15	Hwy-99 Inflow							No flow
02/09/2018	JM/JA	2.00	Sunny	0.21	15	I-5 Inflow	8:43	10.6	56.09	7.14	10.95	4.60	
04/09/2018	JM/JA	2.95	Sunny	1.43	15	Discharge	9:20	12.7	43.75	6.67	10.14	4.30	
04/09/2018	JM/JA	2.95	Sunny	1.43	15	Landfill Inflow	9:19	12.0	47.84	6.67	9.14	4.20	
04/09/2018	JM/JA	2.95	Sunny	1.43	15	Hwy-99 Inflow	9:26	13.1	97.11	7.35	10.72	8.40	
04/09/2018	JM/JA	2.95	Sunny	1.43	15	I-5 Inflow	9:25	12.3	54.59	6.98	9.69	10.00	
04/10/2018	JM/JA	2.70	Rain	0.00	15	Discharge	8:23	12.3	75.61	6.94	9.16	5.30	
04/10/2018	JM/JA	2.70	Rain	0.00	15	Landfill Inflow	8:20	12.2	47.13	6.76	9.87	4.00	
04/10/2018	JM/JA	2.70	Rain	0.00	15	Hwy-99 Inflow	8:25	12.2	77.66	7.24	9.97	46.80	
04/10/2018	JM/JA	2.70	Rain	0.00	15	I-5 Inflow	8:27	12.1	83.56	7.28	10.42	22.70	
04/11/2018	JM/JA	2.55	Sunny	0.25	15	Discharge	9:19	12.2	66.17	6.77	8.69	5.03	
04/11/2018	JM/JA	2.55	Sunny	0.25	15	Landfill Inflow	9:21	11.5	48.39	6.70	9.84	3.99	
04/11/2018	JM/JA	2.55	Sunny	0.25	15	Hwy-99 Inflow	9:23	12.2	113.70	7.77	9.19	2.58	
04/11/2018	JM/JA	2.55	Sunny	0.25	15	I-5 Inflow	9:25	12.4	51.54	7.12	10.25	8.68	
04/12/2018	JM/JA	2.38	Overcast	0.23	15	Discharge	9:02	10.9	56.11	6.68	8.80	4.45	
04/12/2018	JM/JA	2.38	Overcast	0.23	15	Landfill Inflow	8:58	10.1	52.62	6.69	9.49	3.30	
04/12/2018	JM/JA	2.38	Overcast	0.23	15	Hwy-99 Inflow							No flow
04/12/2018	JM/JA	2.38	Overcast	0.23	15	I-5 Inflow	9:00	12.0	53.00	7.09	10.36	8.32	oil sheen
04/13/2018	JM/JA	2.38	Rain	0.22	15	Discharge	8:17	10.7	59.89	6.71	9.48	4.36	
04/13/2018	JM/JA	2.38	Rain	0.22	15	Landfill Inflow	8:21	11.1	50.14	6.71	9.70	3.30	
04/13/2018	JM/JA	2.38	Rain	0.22	15	Hwy-99 Inflow							No flow
04/13/2018	JM/JA	2.38	Rain	0.22	15	I-5 Inflow	8:22	13.5	65.19	7.18	9.40	7.60	
04/16/2018	JM/JA	3.14	Rain	2.04	15	Discharge	9:48	9.4	49.77	6.63	8.91	3.00	
04/16/2018	JM/JA	3.14	Rain	2.04	15	Landfill Inflow	9:50	10.8	40.06	6.65	9.46	2.20	
04/16/2018	JM/JA	3.14	Rain	2.04	15	Hwy-99 Inflow	9:55	10.4	65.43	7.16	10.76	25.10	
04/16/2018	JM/JA	3.14	Rain	2.04	15	I-5 Inflow	9:52	9.9	71.36	7.33	10.96	11.60	
04/17/2018	JA	0.17	Sunny	0.60	15	Discharge	8:27	9.8	42.76	6.61	9.97	2.80	
04/17/2018	JA	0.17	Sunny	0.60	15	Landfill Inflow	8:25	10.4	40.09	6.61	9.93	2.13	
04/17/2018	JA	0.17	Sunny	0.60	15	Hwy-99 Inflow	8:29	10.4	90.75	7.44	10.80	4.07	
04/17/2018	JA	0.17	Sunny	0.60	15	I-5 Inflow	8:31	11.3	52.47	7.08	10.40	3.61	
04/18/2018	JA	3.00	Sunny	0.02	15	Discharge	8:52	11.3	54.51	6.83	9.86	3.12	
04/18/2018	JA	3.00	Sunny	0.02	15	Landfill Inflow	8:55	12.6	43.59	6.68	9.80	2.20	
04/18/2018	JA	3.00	Sunny	0.02	15	Hwy-99 Inflow	9:00	11.7	134.40	7.59	10.92	1.57	
04/18/2018	JA	3.00	Sunny	0.02	15	I-5 Inflow	9:05	12.4	56.46	7.07	10.43	3.61	
04/19/2018	JM/JA	2.80	Sunny	0.00	15	Discharge	10:31	14.5	58.59	6.94	9.37	2.40	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
04/19/2018	JM/JA	2.80	Sunny	0.00	15	Landfill Inflow	10:31	13.6	47.96	6.70	7.84	2.30	
04/19/2018	JM/JA	2.80	Sunny	0.00	15	Hwy-99 Inflow							No flow
04/19/2018	JM/JA	2.80	Sunny	0.00	15	I-5 Inflow	10:35	13.7	50.08	7.08	10.15	3.60	
04/20/2018	JM/JA	2.60	Sunny	0.00	15	Discharge	8:19	1.1	66.03	6.84	8.74	2.15	
04/20/2018	JM/JA	2.60	Sunny	0.00	15	Landfill Inflow	8:19	10.8	52.21	6.67	10.06	2.33	
04/20/2018	JM/JA	2.60	Sunny	0.00	15	Hwy-99 Inflow	8:23	12.0	53.00	7.08	10.09	4.90	
04/20/2018	JM/JA	2.60	Sunny	0.00	15	I-5 Inflow							No flow
04/23/2018	JM/JA	1.60	Sunny	0.00	15	Discharge	8:25	11.7	76.41	6.76	8.88	3.10	
04/23/2018	JM/JA	1.60	Sunny	0.00	15	Landfill Inflow	8:32	11.5	59.27	6.75	10.27	2.30	
04/23/2018	JM/JA	1.60	Sunny	0.00	15	Hwy-99 Inflow							No flow
04/23/2018	JM/JA	1.60	Sunny	0.00	15	I-5 Inflow	8:29	12.2	56.48	7.14	10.35	4.10	
10/26/2018	JM	1.50	Rain	1.04	15	Discharge	9:35	15.0	34.56	6.82	8.87	4.40	
10/26/2018	JM	1.50	Rain	1.04	15	Landfill Inflow	9:35	17.3	75.09	7.20	9.71	11.00	
10/26/2018	JM	1.50	Rain	1.04	15	Hwy-99 Inflow	9:41	16.2	31.29	7.20	9.64	5.30	
10/26/2018	JM	1.50	Rain	1.04	15	I-5 Inflow	9:40	16.7	75.57	7.59	9.88	9.10	
10/29/2018	JM	3.05	Partly Cloudy	1.95	15	Discharge	8:35	13.8	71.76	6.42	9.04	13.70	
10/29/2018	JM	3.05	Partly Cloudy	1.95	15	Landfill Inflow	8:40	16.9	64.00	6.53	9.42	14.40	
10/29/2018	JM	3.05	Partly Cloudy	1.95	15	Hwy-99 Inflow	8:45	14.9	60.81	7.29	9.63	6.10	
10/29/2018	JM	3.05	Partly Cloudy	1.95	15	I-5 Inflow	8:50	16.1	97.75	7.21	10.11	22.20	
10/30/2018	JM/RL	2.75	Cloudy	0.00	15	Discharge	8:30	12.3	80.69	6.55	9.31	13.10	
10/30/2018	JM/RL	2.75	Cloudy	0.00	15	Landfill Inflow	8:35	14.8	72.20	6.59	9.71	13.70	
10/30/2018	JM/RL	2.75	Cloudy	0.00	15	Hwy-99 Inflow	8:40	13.0	96.15	7.38	10.30	3.80	
10/30/2018	JM/RL	2.75	Cloudy	0.00	15	I-5 Inflow	8:45	14.5	96.45	7.22	10.14	18.80	
10/31/2018	JM	2.35	Overcast	0.05	15	Discharge	8:45	13.5	70.32	6.50	7.12	9.10	
10/31/2018	JM	2.35	Overcast	0.05	15	Landfill Inflow	8:50	15.2	76.22	6.70	10.12	19.70	
10/31/2018	JM	2.35	Overcast	0.05	15	Hwy-99 Inflow							No flow
10/31/2018	JM	2.35	Overcast	0.05	15	I-5 Inflow	8:55	15.7	87.85	7.21	9.61	19.60	
11/01/2018	JM	1.50	Mist	0.05	15	Discharge	8:20	14.3	79.87	6.70	7.88	8.10	
11/01/2018	JM	1.50	Mist	0.05	15	Landfill Inflow	8:25	15.5	77.35	6.83	9.38	10.00	
11/01/2018	JM	1.50	Mist	0.05	15	Hwy-99 Inflow							No flow
11/01/2018	JM	1.50	Mist	0.05	15	I-5 Inflow	8:30	15.9	85.30	7.12	9.67	15.50	
11/02/2018	JM	1.60	Overcast	0.30	15	Discharge	8:35	14.6	76.83	6.70	7.35	9.60	
11/02/2018	JM	1.60	Overcast	0.30	15	Landfill Inflow	8:40	15.6	75.17	6.72	9.32	9.50	
11/02/2018	JM	1.60	Overcast	0.30	15	Hwy-99 Inflow	8:45	16.7	57.42	7.00	9.53	2.30	
11/02/2018	JM	1.60	Overcast	0.30	15	I-5 Inflow							No flow
11/26/2018	JM/SS	0.70	Rain	1.15	15	Discharge	8:30	11.0	58.58	6.92	10.32	19.60	
11/26/2018	JM/SS	0.70	Rain	1.15	15	Landfill Inflow	8:32	12.9	66.90	6.73	9.93	3.90	
11/26/2018	JM/SS	0.70	Rain	1.15	15	Hwy-99 Inflow	8:44	13.1	46.33	7.22	10.91	75.10	
11/26/2018	JM/SS	0.70	Rain	1.15	15	I-5 Inflow	8:39	12.3	65.06	7.49	10.24	22.80	
11/27/2018	JM/SS	2.70	Cloudy	1.37	15	Discharge	8:25	12.4	47.46	6.74	9.81	6.30	
11/27/2018	JM/SS	2.70	Cloudy	1.37	15	Landfill Inflow	8:25	14.0	43.00	6.62	9.09	3.50	
11/27/2018	JM/SS	2.70	Cloudy	1.37	15	Hwy-99 Inflow	8:30	12.9	45.50	7.18	9.61	8.50	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (μS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
11/27/2018	JM/SS	2.70	Cloudy	1.37	15	I-5 Inflow	8:30	14.0	61.10	7.16	10.26	6.90	
11/28/2018	SS	3.25	Partly Cloudy	0.78	15	Discharge	8:56	11.5	49.86	6.72	9.25	8.60	
11/28/2018	SS	3.25	Partly Cloudy	0.78	15	Landfill Inflow	8:57	13.0	37.87	6.68	9.51	3.40	
11/28/2018	SS	3.25	Partly Cloudy	0.78	15	Hwy-99 Inflow	9:07	13.7	73.01	7.35	9.17	11.00	
11/28/2018	SS	3.25	Partly Cloudy	0.78	15	I-5 Inflow	9:05	12.8	56.01	7.00	10.13	5.60	
11/29/2018	SS	3.10	Fog Patches	0.20	15	Discharge	8:50	12.2	48.26	6.72	8.49	3.90	
11/29/2018	SS	3.10	Fog Patches	0.20	15	Landfill Inflow	8:55	13.0	42.32	6.63	9.31	3.20	
11/29/2018	SS	3.10	Fog Patches	0.20	15	Hwy-99 Inflow	9:00	13.0	85.15	7.38	10.40	6.90	
11/29/2018	SS	3.10	Fog Patches	0.20	15	I-5 Inflow	9:05	13.0	55.47	7.07	9.79	5.40	
11/30/2018	JM/SS	2.90	Cloudy	0.04	15	Discharge	8:49	10.7	48.45	6.56	8.47	3.60	
11/30/2018	JM/SS	2.90	Cloudy	0.04	15	Landfill Inflow	8:50	11.8	45.83	6.66	9.35	3.10	
11/30/2018	JM/SS	2.90	Cloudy	0.04	15	Hwy-99 Inflow	8:52	12.2	106.40	7.52	9.57	3.80	
11/30/2018	JM/SS	2.90	Cloudy	0.04	15	I-5 Inflow	8:51	13.0	50.43	7.02	10.21	5.40	
12/03/2018	JM/SS	2.25	Sunny	0.30	15	Discharge	8:15	9.7	59.31	6.68	9.49	2.80	
12/03/2018	JM/SS	2.25	Sunny	0.30	15	Landfill Inflow	8:16	11.0	50.95	6.76	10.18	2.70	
12/03/2018	JM/SS	2.25	Sunny	0.30	15	Hwy-99 Inflow							No flow
12/03/2018	JM/SS	2.25	Sunny	0.30	15	I-5 Inflow	8:19	12.4	51.60	7.20	9.84	4.40	
12/04/2018	JM/SS	1.90	Sunny	0.00	15	Discharge	9:12	9.6	53.87	6.68	9.82	2.80	
12/04/2018	JM/SS	1.90	Sunny	0.00	15	Landfill Inflow	9:11	11.0	52.77	6.69	10.43	2.70	
12/04/2018	JM/SS	1.90	Sunny	0.00	15	Hwy-99 Inflow							No flow
12/04/2018	JM/SS	1.90	Sunny	0.00	15	I-5 Inflow	9:13	12.2	52.57	7.05	10.50	4.20	
12/05/2018	JM/SS	1.50	Sunny	0.00	15	Discharge	8:29	5.5	51.03	6.38	6.24	2.00	
12/05/2018	JM/SS	1.50	Sunny	0.00	15	Landfill Inflow	8:29	8.9	55.86	6.60	10.73	2.60	
12/05/2018	JM/SS	1.50	Sunny	0.00	15	Hwy-99 Inflow							No flow
12/05/2018	JM/SS	1.50	Sunny	0.00	15	I-5 Inflow	8:31	10.8	57.44	7.04	10.60	4.00	
12/10/2018	JM/SS	1.80	Overcast	0.78	15	Discharge	8:06	10.2	51.52	6.67	9.02	3.30	
12/10/2018	JM/SS	1.80	Overcast	0.78	15	Landfill Inflow	8:05	9.5	54.42	6.56	10.21	3.70	
12/10/2018	JM/SS	1.80	Overcast	0.78	15	Hwy-99 Inflow	8:14	10.2	119.20	7.36	11.25	3.70	
12/10/2018	JM/SS	1.80	Overcast	0.78	15	I-5 Inflow	8:10	10.7	64.52	7.02	10.26	9.00	
12/11/2018	JM/SS	1.40	Rain	0.18	15	Discharge	8:24	9.7	53.31	6.66	9.40	3.60	
12/11/2018	JM/SS	1.40	Rain	0.18	15	Landfill Inflow	8:24	10.9	48.33	6.60	9.87	3.20	
12/11/2018	JM/SS	1.40	Rain	0.18	15	Hwy-99 Inflow	8:29	10.8	79.57	7.37	10.54	33.20	
12/11/2018	JM/SS	1.40	Rain	0.18	15	I-5 Inflow	8:28	10.7	73.63	7.07	10.51	14.00	
12/11/2018	JM/SS	1.40	Rain	0.18	15	Discharge	13:40			7.04			
12/12/2018	JM/SS	2.35	Sunny	0.70	15	Discharge	8:36	9.3	57.81	6.63	9.45	5.00	
12/12/2018	JM/SS	2.35	Sunny	0.70	15	Landfill Inflow	8:37	10.0	41.67	6.61	9.99	3.00	
12/12/2018	JM/SS	2.35	Sunny	0.70	15	Hwy-99 Inflow	8:44	11.1	142.80	7.31	11.10	4.80	
12/12/2018	JM/SS	2.35	Sunny	0.70	15	I-5 Inflow	8:44	10.9	56.65	7.10	9.15	5.30	
12/13/2018	JM/SS	2.30	Rain	0.20	15	Discharge	8:10	10.9	50.99	6.69	9.24	4.70	
12/13/2018	JM/SS	2.30	Rain	0.20	15	Landfill Inflow	8:10	10.6	47.19	6.57	10.33	2.80	
12/13/2018	JM/SS	2.30	Rain	0.20	15	Hwy-99 Inflow	8:15	10.9	97.46	7.22	10.01	30.00	
12/13/2018	JM/SS	2.30	Rain	0.20	15	I-5 Inflow	8:16	11.5	61.20	7.23	10.84	9.80	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (μS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
12/14/2018	SS	2.20	Overcast	0.09	15	Discharge	9:18	14.6	47.24	6.65	8.38	3.20	
12/14/2018	SS	2.20	Overcast	0.09	15	Landfill Inflow	9:19	13.4	48.65	6.62	9.98	2.90	
12/14/2018	SS	2.20	Overcast	0.09	15	Hwy-99 Inflow	9:21	13.9	146.40	7.36	10.78	2.50	
12/14/2018	SS	2.20	Overcast	0.09	15	I-5 Inflow	9:23	13.9	61.07	6.83	10.30	4.90	
12/17/2018	JM/SS	2.80	Cloudy	0.55	15	Discharge	8:25	10.1	49.03	6.64	9.24	3.20	
12/17/2018	JM/SS	2.80	Cloudy	0.55	15	Landfill Inflow	8:27	10.6	48.49	6.67	9.20	2.60	
12/17/2018	JM/SS	2.80	Cloudy	0.55	15	Hwy-99 Inflow	8:33	11.4	115.00	7.41	8.40	3.30	
12/17/2018	JM/SS	2.80	Cloudy	0.55	15	I-5 Inflow	8:30	11.3	54.96	7.18	9.04	5.00	
12/18/2018	SS	2.80	Rain	0.88	15	Discharge	8:52	10.0	49.98	6.74	10.55	7.90	
12/18/2018	SS	2.80	Rain	0.88	15	Landfill Inflow	8:50	10.6	35.27	6.60	9.64	3.00	
12/18/2018	SS	2.80	Rain	0.88	15	Hwy-99 Inflow	8:56	10.3	53.76	7.23	10.00	25.20	
12/18/2018	SS	2.80	Rain	0.88	15	I-5 Inflow	9:00	11.0	48.73	7.29	10.57	13.00	
12/19/2018	SS	3.05	Overcast	0.25	15	Discharge	8:17	9.7	52.79	6.61	9.57	4.70	
12/19/2018	SS	3.05	Overcast	0.25	15	Landfill Inflow	8:18	10.2	39.16	6.63	10.10	2.50	
12/19/2018	SS	3.05	Overcast	0.25	15	Hwy-99 Inflow	8:24	10.7	114.80	7.17	10.75	19.40	
12/19/2018	SS	3.05	Overcast	0.25	15	I-5 Inflow	8:22	10.4	64.14	6.99	10.36	11.50	
12/20/2018	JM	3.00	Rain	0.14	15	Discharge	10:02	10.7	54.02	6.79	9.37	3.80	
12/20/2018	JM	3.00	Rain	0.14	15	Landfill Inflow	10:04	11.8	42.36	6.74	9.82	3.30	
12/20/2018	JM	3.00	Rain	0.14	15	Hwy-99 Inflow	10:08	11.9	118.60	7.25	10.33	13.30	
12/20/2018	JM	3.00	Rain	0.14	15	I-5 Inflow	10:06	11.4	58.02	6.94	9.99	5.60	
12/21/2018	JM	3.00	Sunny	0.30	15	Discharge	9:00	10.5	56.40	6.59	9.94	3.20	
12/21/2018	JM	3.00	Sunny	0.30	15	Landfill Inflow	9:01	10.2	42.55	6.70	10.34	2.90	
12/21/2018	JM	3.00	Sunny	0.30	15	Hwy-99 Inflow	9:06	11.2	131.30	7.50	11.14	4.40	
12/21/2018	JM	3.00	Sunny	0.30	15	I-5 Inflow	9:07	12.3	58.03	7.00	10.82	2.80	
12/24/2018	JM	3.00	Overcast	1.02	15	Discharge	9:00	9.5	51.10	6.54	9.79	3.40	
12/24/2018	JM	3.00	Overcast	1.02	15	Landfill Inflow	9:05	10.9	40.47	6.72	9.42	2.60	
12/24/2018	JM	3.00	Overcast	1.02	15	Hwy-99 Inflow	9:10	11.6	108.20	7.45	10.82	3.70	
12/24/2018	JM	3.00	Overcast	1.02	15	I-5 Inflow							No flow
12/26/2018	JM	2.50	Rain	0.05	15	Discharge	9:41	9.1	58.40	6.85	9.46	2.60	
12/26/2018	JM	2.50	Rain	0.05	15	Landfill Inflow	9:41	10.3	47.25	6.79	10.49	3.00	
12/26/2018	JM	2.50	Rain	0.05	15	Hwy-99 Inflow	9:50	11.3	119.10	7.14	10.51	18.20	
12/26/2018	JM	2.50	Rain	0.05	15	I-5 Inflow	9:50	10.4	49.36	7.45	11.05	4.30	
12/27/2018	JM	2.40	Cloudy	0.27	15	Discharge	9:45	10.9	45.53	6.63	9.68	2.40	
12/27/2018	JM	2.40	Cloudy	0.27	15	Landfill Inflow	9:43	12.1	61.19	6.59	10.46	2.50	
12/27/2018	JM	2.40	Cloudy	0.27	15	Hwy-99 Inflow	9:46	11.1	109.00	7.49	11.27	2.10	
12/27/2018	JM	2.40	Cloudy	0.27	15	I-5 Inflow	9:45	11.0	54.46	7.04	10.96	3.80	
12/28/2018	JM	2.15	Rain	0.05	15	Discharge	9:39	11.0	60.65	6.63	9.64	2.80	
12/28/2018	JM	2.15	Rain	0.05	15	Landfill Inflow	9:40	11.3	47.34	6.69	10.40	2.40	
12/28/2018	JM	2.15	Rain	0.05	15	Hwy-99 Inflow	9:44	11.4	74.41	7.28	11.62	41.90	
12/28/2018	JM	2.15	Rain	0.05	15	I-5 Inflow	9:41	11.8	67.26	7.06	11.25	8.50	
12/28/2018	JM	2.15	Rain	0.05	15	Discharge	13:30			6.68			
12/31/2018	JM	2.60	Sunny	0.98	15	Discharge	9:23	8.7	57.55	6.74	11.07	3.00	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
12/31/2018	JM	2.60	Sunny	0.98	15	Landfill Inflow	9:23	9.4	45.64	6.76	10.83	2.90	
12/31/2018	JM	2.60	Sunny	0.98	15	Hwy-99 Inflow	9:24	10.3	126.90	7.58	9.90	1.00	
12/31/2018	JM	2.60	Sunny	0.98	15	I-5 Inflow	9:25	10.9	49.92	7.18	11.33	3.80	
01/02/2019	JM/SS	2.00	Cloudy	0.03	15	Discharge	8:10	7.9	51.22	6.66	10.49	2.70	
01/02/2019	JM/SS	2.00	Cloudy	0.03	15	Landfill Inflow	8:11	8.5	47.13	6.73	10.82	2.40	
01/02/2019	JM/SS	2.00	Cloudy	0.03	15	Hwy-99 Inflow	8:16	9.9	124.10	7.64	9.90	1.30	
01/02/2019	JM/SS	2.00	Cloudy	0.03	15	I-5 Inflow	8:16	10.2	48.50	7.10	11.06	3.90	
01/03/2019	JM/SS	2.20	Rain	0.62	15	Discharge	8:38	9.6	48.67	6.63	10.47	6.20	
01/03/2019	JM/SS	2.20	Rain	0.62	15	Landfill Inflow	8:38	10.3	42.89	6.55	10.41	3.20	
01/03/2019	JM/SS	2.20	Rain	0.62	15	Hwy-99 Inflow	8:44	10.5	69.59	7.18	10.12	11.90	
01/03/2019	JM/SS	2.20	Rain	0.62	15	I-5 Inflow	8:43	9.9	48.51	6.99	9.28	12.70	
01/04/2019	JM/SS	2.70	Overcast	0.45	15	Discharge	8:08	9.2	47.46	6.65	9.83	3.10	
01/04/2019	JM/SS	2.70	Overcast	0.45	15	Landfill Inflow	8:08	9.8	40.42	6.68	10.32	2.00	
01/04/2019	JM/SS	2.70	Overcast	0.45	15	Hwy-99 Inflow	8:12	9.7	92.00	7.25	9.08	11.20	
01/04/2019	JM/SS	2.70	Overcast	0.45	15	I-5 Inflow	8:12	10.9	69.82	7.30	9.48	15.60	
01/07/2019	JM/SS	2.20	Cloudy	0.35	15	Discharge	7:49	7.9	85.16	6.78	9.84	3.50	
01/07/2019	JM/SS	2.20	Cloudy	0.35	15	Landfill Inflow	7:50	8.7	44.83	6.65	10.54	2.30	
01/07/2019	JM/SS	2.20	Cloudy	0.35	15	Hwy-99 Inflow	8:09	9.5	113.20	7.58	10.85	2.00	
01/07/2019	JM/SS	2.20	Cloudy	0.35	15	I-5 Inflow	8:09	9.6	71.68	6.99	10.74	3.70	
01/09/2019	JM/SS	2.80	Rain	0.27	15	Discharge	7:36	8.9	64.33	6.78	8.14	3.80	
01/09/2019	JM/SS	2.80	Rain	0.27	15	Landfill Inflow	7:41	10.2	46.20	6.69	9.97	2.30	
01/09/2019	JM/SS	2.80	Rain	0.27	15	Hwy-99 Inflow	7:45	10.3	48.75	7.23	10.77	45.00	
01/09/2019	JM/SS	2.80	Rain	0.27	15	I-5 Inflow	7:46	11.0	61.72	7.12	9.94	9.30	
01/10/2019	JM/SS	2.80	Partly Cloudy	0.27	15	Discharge	7:50	10.3	54.12	6.73	9.25	5.80	
01/10/2019	JM/SS	2.80	Partly Cloudy	0.27	15	Landfill Inflow	7:49	10.2	69.10	6.59	8.92	5.30	
01/10/2019	JM/SS	2.80	Partly Cloudy	0.27	15	Hwy-99 Inflow	7:52	10.3	111.60	7.40	9.10	5.30	
01/10/2019	JM/SS	2.80	Partly Cloudy	0.27	15	I-5 Inflow	7:55	11.8	56.80	7.19	9.08	7.30	
01/11/2019	JM/SS	2.50	Partly Cloudy	0.00	15	Discharge	8:14	9.1	60.67	6.68	10.07	2.90	
01/11/2019	JM/SS	2.50	Partly Cloudy	0.00	15	Landfill Inflow	8:14	9.6	49.14	6.61	10.11	2.60	
01/11/2019	JM/SS	2.50	Partly Cloudy	0.00	15	Hwy-99 Inflow	8:19	10.5	125.70	7.54	10.58	4.60	
01/11/2019	JM/SS	2.50	Partly Cloudy	0.00	15	I-5 Inflow	8:20	12.0	49.22	7.16	10.35	6.00	
01/23/2019	SS	2.46	Rain	0.88	15	Discharge	10:39	10.4	41.78	6.48	10.29	4.00	
01/23/2019	SS	2.46	Rain	0.88	15	Landfill Inflow	10:41	10.1	41.43	6.62	10.66	2.90	
01/23/2019	SS	2.46	Rain	0.88	15	Hwy-99 Inflow	10:46	10.5	140.50	7.08	11.08	12.50	
01/23/2019	SS	2.46	Rain	0.88	15	I-5 Inflow	10:49	10.9	60.50	7.00	10.65	12.80	
01/25/2019	JM	2.25	Overcast	0.00	15	Discharge	8:30	9.1	60.95	6.69	9.32	4.90	
01/25/2019	JM	2.25	Overcast	0.00	15	Landfill Inflow	8:35	10.1	43.24	6.74	10.58	6.30	
01/25/2019	JM	2.25	Overcast	0.00	15	Hwy-99 Inflow	8:40	11.4	122.60	7.42	9.46	2.50	
01/25/2019	JM	2.25	Overcast	0.00	15	I-5 Inflow	8:45	10.9	54.78	7.08	10.88	6.50	
02/12/2019	JM/SS	2.45	Rain	1.00	15	Discharge	8:17	5.7	68.42	6.90	11.15	7.80	
02/12/2019	JM/SS	2.45	Rain	1.00	15	Landfill Inflow	8:17	7.1	32.23	6.67	10.92	3.60	
02/12/2019	JM/SS	2.45	Rain	1.00	15	Hwy-99 Inflow	8:22	7.0	162.50	7.16	9.31	13.00	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
02/12/2019	JM/SS	2.45	Rain	1.00	15	I-5 Inflow	8:23	5.7	401.60	7.33	11.84	22.00	
02/13/2019	JM/SS	3.20	Overcast	0.50	15	Discharge	8:05	5.5	71.93	6.60	10.71	6.00	
02/13/2019	JM/SS	3.20	Overcast	0.50	15	Landfill Inflow	8:06	6.9	28.12	6.62	11.55	2.50	
02/13/2019	JM/SS	3.20	Overcast	0.50	15	Hwy-99 Inflow	8:11	6.6	196.10	7.22	11.48	10.20	
02/13/2019	JM/SS	3.20	Overcast	0.50	15	I-5 Inflow	8:09	8.1	423.30	7.10	11.30	2.90	
02/14/2019	JM/SS	3.10	Overcast	0.00	15	Discharge	11:32	8.4	40.22	6.70	10.29	2.90	
02/14/2019	JM/SS	3.10	Overcast	0.00	15	Landfill Inflow	11:31	9.0	45.47	6.69	11.62	2.50	
02/14/2019	JM/SS	3.10	Overcast	0.00	15	Hwy-99 Inflow	11:37	6.8	184.20	7.16	10.79	3.40	
02/14/2019	JM/SS	3.10	Overcast	0.00	15	I-5 Inflow	11:36	8.3	251.50	6.83	11.36	8.70	
02/15/2019	SS	3.10	Partly Cloudy	0.18	15	Discharge	9:57	7.7	36.90	6.54	10.09	2.40	
02/15/2019	SS	3.10	Partly Cloudy	0.18	15	Landfill Inflow	9:59	8.5	32.04	6.69	11.75	2.10	
02/15/2019	SS	3.10	Partly Cloudy	0.18	15	Hwy-99 Inflow	10:01	8.2	195.60	7.26	11.80	7.40	
02/15/2019	SS	3.10	Partly Cloudy	0.18	15	I-5 Inflow	10:05	8.8	141.40	6.91	11.74	2.70	
02/19/2019	JM	2.60	Cloudy	0.36	15	Discharge	9:17	7.7	7.40	6.62	11.69	2.50	
02/19/2019	JM	2.60	Cloudy	0.36	15	Landfill Inflow	9:17	8.1	39.65	6.79	11.86	2.30	
02/19/2019	JM	2.60	Cloudy	0.36	15	Hwy-99 Inflow	9:20	9.2	225.10	7.42	11.49	3.00	
02/19/2019	JM	2.60	Cloudy	0.36	15	I-5 Inflow	9:20	9.7	76.47	8.92	7.56	3.70	
02/20/2019	JM	2.40	Cloudy	0.20	15	Discharge	9:38	8.8	71.12	6.67	11.50	2.20	
02/20/2019	JM	2.40	Cloudy	0.20	15	Landfill Inflow	9:38	8.9	40.52	6.78	10.20	2.20	
02/20/2019	JM	2.40	Cloudy	0.20	15	Hwy-99 Inflow	9:44	9.0	230.40	7.61	11.83	3.30	
02/20/2019	JM	2.40	Cloudy	0.20	15	I-5 Inflow	9:46	9.9	103.90	7.08	11.30	4.30	
02/21/2019	JM/SS	2.20	Sunny	0.00	15	Discharge	8:56	6.6	48.97	6.74	11.51	2.50	
02/21/2019	JM/SS	2.20	Sunny	0.00	15	Landfill Inflow	8:57	7.4	42.11	6.77	11.50	3.00	
02/21/2019	JM/SS	2.20	Sunny	0.00	15	Hwy-99 Inflow							No flow
02/21/2019	JM/SS	2.20	Sunny	0.00	15	I-5 Inflow	9:00	8.9	75.89	7.07	11.91	4.30	
02/22/2019	JM	2.10	Overcast	0.00	15	Discharge	8:07	7.1	131.10	6.33	10.23	2.70	
02/22/2019	JM	2.10	Overcast	0.00	15	Landfill Inflow	8:12	7.9	42.78	6.43	11.04	2.40	
02/22/2019	JM	2.10	Overcast	0.00	15	Hwy-99 Inflow							No flow
02/22/2019	JM	2.10	Overcast	0.00	15	I-5 Inflow	8:15	9.7	68.22	7.00	10.75	4.50	
03/12/2019	JM/SS	1.90	Overcast	0.92	15	Discharge	9:12	8.0	64.58	6.97	10.90	5.50	
03/12/2019	JM/SS	1.90	Overcast	0.92	15	Landfill Inflow	9:13	8.8	43.19	6.69	11.32	4.10	
03/12/2019	JM/SS	1.90	Overcast	0.92	15	Hwy-99 Inflow	9:19	8.8	115.11	7.39	10.85	5.60	
03/12/2019	JM/SS	1.90	Overcast	0.92	15	I-5 Inflow	9:20	9.4	98.97	7.14	11.84	8.70	
03/13/2019	JM/SS	1.88	Overcast	0.05	15	Discharge	8:14	7.7	74.74	6.78	10.78	6.10	
03/13/2019	JM/SS	1.88	Overcast	0.05	15	Landfill Inflow	8:17	8.6	43.48	6.79	11.64	3.80	
03/13/2019	JM/SS	1.88	Overcast	0.05	15	Hwy-99 Inflow	8:25	10.5	111.20	7.40	11.64	4.40	
03/13/2019	JM/SS	1.88	Overcast	0.05	15	I-5 Inflow	8:22	9.9	114.20	7.18	11.14	7.00	
03/14/2019	JM	1.40	Sunny	0.00	15	Discharge	8:27	8.2	90.44	6.76	10.20	4.00	
03/14/2019	JM	1.40	Sunny	0.00	15	Landfill Inflow	8:29	8.0	45.04	6.82	9.97	3.60	
03/14/2019	JM	1.40	Sunny	0.00	15	Hwy-99 Inflow							No flow
03/14/2019	JM	1.40	Sunny	0.00	15	I-5 Inflow	8:31	9.3	96.73	7.10	11.07	8.40	
04/09/2019	SS	1.15	Rain	0.26	15	Discharge	9:05	11.6	51.52	6.92	10.24	28.10	

Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (µS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
04/09/2019	SS	1.15	Rain	0.26	15	Landfill Inflow	9:05	12.7	57.71	6.72	10.31	5.10	
04/09/2019	SS	1.15	Rain	0.26	15	Hwy-99 Inflow	9:12	12.6	73.66	7.35	10.23	11.10	
04/09/2019	SS	1.15	Rain	0.26	15	I-5 Inflow	9:16	12.7	68.14	7.21	10.75	13.50	
04/12/2019	SS	2.00	Rain	0.68	15	Discharge	8:31	12.1	65.93	6.90	9.92	6.30	
04/12/2019	SS	2.00	Rain	0.68	15	Landfill Inflow	8:33	12.6	47.85	6.57	9.19	5.50	
04/12/2019	SS	2.00	Rain	0.68	15	Hwy-99 Inflow	8:40	13.2	62.88	7.21	10.20	6.90	
04/12/2019	SS	2.00	Rain	0.68	15	I-5 Inflow	8:44	13.0	91.00	7.27	10.40	12.40	
10/21/2019	JM	2.80	Overcast	1.52	15	Discharge	8:00	15.1	86.04	6.52	7.80	6.00	
10/21/2019	JM	2.80	Overcast	1.52	15	Landfill Inflow	7:57	17.9	92.12	6.52	8.95	6.20	
10/21/2019	JM	2.80	Overcast	1.52	15	Hwy-99 Inflow							No flow
10/21/2019	JM	2.80	Overcast	1.52	15	I-5 Inflow	8:05	16.5	113.90	7.20	9.32	6.50	
10/22/2019	JM/SS	2.50	Cloudy	0.51	15	Discharge	8:19	15.2	73.13	6.70	8.80	6.20	
10/22/2019	JM/SS	2.50	Cloudy	0.51	15	Landfill Inflow	8:13	15.7	79.15	6.63	9.10	6.60	
10/22/2019	JM/SS	2.50	Cloudy	0.51	15	Hwy-99 Inflow	8:19	15.2	73.13	7.14	8.80	2.70	
10/22/2019	JM/SS	2.50	Cloudy	0.51	15	I-5 Inflow	8:13	16.0	99.97	7.10	9.72	5.90	
10/23/2019	JM	2.33	Sunny	0.03	15	Discharge	9:07	13.0	76.07	6.75	7.01	5.50	
10/23/2019	JM	2.33	Sunny	0.03	15	Landfill Inflow	9:06	14.1	82.63	6.93	9.50	6.70	
10/23/2019	JM	2.33	Sunny	0.03	15	Hwy-99 Inflow	9:12	14.4	94.18	7.11	10.00	5.30	
10/23/2019	JM	2.33	Sunny	0.03	15	I-5 Inflow							No flow
10/24/2019	JM	2.00	Fog	0.00	15	Discharge	8:30	13.0	80.77	6.50	8.62	4.80	
10/24/2019	JM	2.00	Fog	0.00	15	Landfill Inflow	8:29	13.9	83.58	6.55	8.97	6.10	
10/24/2019	JM	2.00	Fog	0.00	15	Hwy-99 Inflow							No flow
10/24/2019	JM	2.00	Fog	0.00	15	I-5 Inflow	8:31	14.6	96.37	6.90	10.05	4.70	
10/25/2019	JM	1.52	Partly Cloudy	0.00	15	Discharge	8:33	14.4	98.42	6.92	9.74	5.50	
10/25/2019	JM	1.52	Partly Cloudy	0.00	15	Landfill Inflow	8:32	12.8	86.86	6.76	7.72	5.10	
10/25/2019	JM	1.52	Partly Cloudy	0.00	15	Hwy-99 Inflow							No flow
10/25/2019	JM	1.52	Partly Cloudy	0.00	15	I-5 Inflow	8:35	13.9	88.42	6.86	9.74	4.00	
11/19/2019	JM/SS	1.20	Rain	0.54	15	Discharge	8:56	13.6	80.63	6.97	9.67	4.10	
11/19/2019	JM/SS	1.20	Rain	0.54	15	Landfill Inflow	8:56	13.3	81.50	6.84	9.71	4.40	
11/19/2019	JM/SS	1.20	Rain	0.54	15	Hwy-99 Inflow	8:58	12.7	35.62	7.19	10.59	15.90	
11/19/2019	JM/SS	1.20	Rain	0.54	15	I-5 Inflow	9:00	13.3	75.30	7.43	10.50	12.85	
12/12/2019	JM/SS	1.75	Overcast	0.59	15	Discharge	8:27	11.5	6.52	7.13	9.39	5.75	
12/12/2019	JM/SS	1.75	Overcast	0.59	15	Landfill Inflow	8:28	12.9	69.86	7.08	9.96	4.50	
12/12/2019	JM/SS	1.75	Overcast	0.59	15	Hwy-99 Inflow	8:29	11.9	39.18	7.34	11.00	2.95	
12/12/2019	JM/SS	1.75	Overcast	0.59	15	I-5 Inflow	8:30	12.6	82.18	7.25	10.58	6.20	
12/13/2019	JM	1.80	Overcast	0.33	15	Discharge	8:20	10.5	82.51	6.71	8.91	6.64	
12/13/2019	JM	1.80	Overcast	0.33	15	Landfill Inflow	8:21	10.6	153.90	6.22	9.87	4.89	
12/13/2019	JM	1.80	Overcast	0.33	15	Hwy-99 Inflow							No Flow
12/13/2019	JM	1.80	Overcast	0.33	15	I-5 Inflow	8:22	11.4	77.58	6.71	10.74	7.20	
12/19/2019	JM/SS	1.40	Overcast	0.40	15	Discharge	8:39	10.3	66.25	7.05	10.30	5.20	
12/19/2019	JM/SS	1.40	Overcast	0.40	15	Landfill Inflow	8:40	10.5	67.97	6.91	10.25	4.50	
12/19/2019	JM/SS	1.40	Overcast	0.40	15	Hwy-99 Inflow	8:43	10.3	54.28	7.19	11.56	1.65	

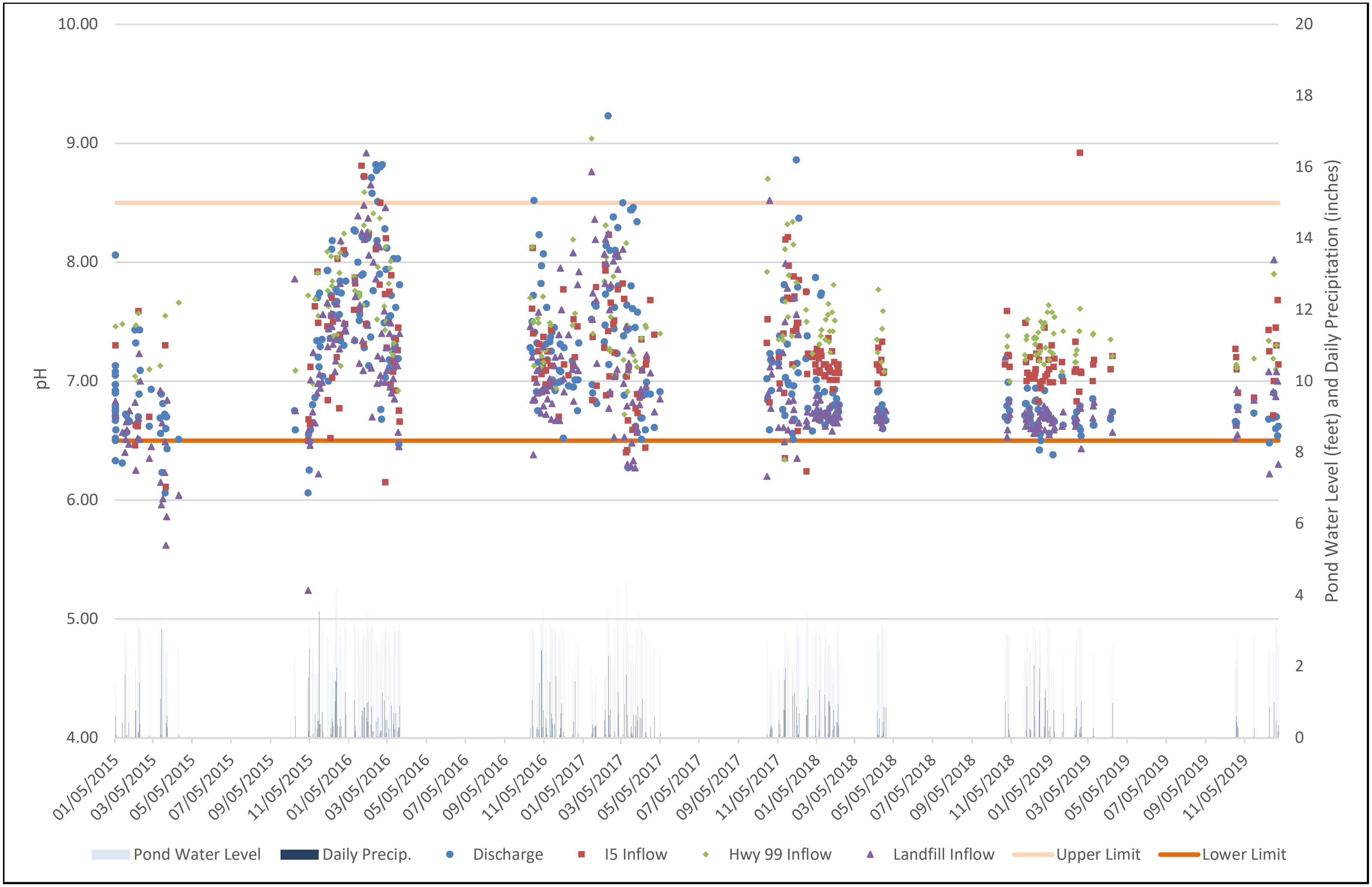
Midway Detention Pond Test Data

Form Open

Date	Tested By	Pond Level (Feet)	Weather	Rainfall (Inches)	Valve (Turn)	Location	Time	Temp (°C)	Conductivity (μS/cm)	pH	Dissoved (O^2)	Turbiduty (NTU)	Comments
12/19/2019	JM/SS	1.40	Overcast	0.40	15	I-5 Inflow	8:43	10.7	95.45	7.00	11.09	6.75	
12/19/2019	JM/SS	1.40	Overcast	0.40	15	Discharge	14:00					5.60	
12/20/2019	SS	5.50	Rain	2.67	15	Discharge	10:13	11.8	31.94	8.06	10.73	24.50	
12/20/2019	SS	5.50	Rain	2.67	15	Landfill Inflow	10:12	12.0	21.31	8.02	10.54	8.10	
12/20/2019	SS	5.50	Rain	2.67	15	Hwy-99 Inflow	10:15	11.7	33.94	7.90	10.94	20.40	
12/20/2019	SS	5.50	Rain	2.67	15	I-5 Inflow	10:17	12.1	116.80	7.45	10.45	17.50	
12/20/2019	SS	5.50	Rain	2.67	15	Discharge	12:45					27.00	pond level at 5.85
12/23/2019	JM	3.20	Overcast	2.53	15	Discharge	11:23	10.3	42.01	6.79	10.33	4.20	
12/23/2019	JM	3.20	Overcast	2.53	15	Landfill Inflow	11:23	11.4	42.96	6.87	10.22	4.00	
12/23/2019	JM	3.20	Overcast	2.53	15	Hwy-99 Inflow	11:29	10.7	90.43	7.10	11.08	4.80	
12/23/2019	JM	3.20	Overcast	2.53	15	I-5 Inflow	11:29	10.8	53.21	7.30	10.90	4.60	
12/24/2019	JM	3.00	Sunny	0.05	15	Discharge	9:51	11.1	45.42	7.08	10.42	4.00	
12/24/2019	JM	3.00	Sunny	0.05	15	Landfill Inflow	9:50	12.6	45.52	7.08	8.79	4.00	
12/24/2019	JM	3.00	Sunny	0.05	15	Hwy-99 Inflow	9:50	12.8	202.20	7.30	10.93	4.40	
12/24/2019	JM	3.00	Sunny	0.05	15	I-5 Inflow	9:54	11.6	49.36	7.68	10.91	4.40	
12/26/2019	JM	2.70	Fog	0.00	15	Discharge	9:50	8.9	60.58	6.90	8.99	4.30	
12/26/2019	JM	2.70	Fog	0.00	15	Landfill Inflow	9:50	10.6	48.59	7.00	10.53	3.90	
12/26/2019	JM	2.70	Fog	0.00	15	Hwy-99 Inflow							No Flow
12/26/2019	JM	2.70	Fog	0.00	15	I-5 Inflow	9:55	11.1	51.81	7.14	10.85	7.14	
12/27/2019	JA	2.30	Cloudy	0.10	15	Discharge	9:30	9.3	54.83	6.33	9.83	3.80	
12/27/2019	JA	2.30	Cloudy	0.10	15	Landfill Inflow	9:30	11.1	49.49	6.30	10.61	3.50	
12/27/2019	JA	2.30	Cloudy	0.10	15	Hwy-99 Inflow							No Flow
12/27/2019	JA	2.30	Cloudy	0.10	15	I-5 Inflow	9:35	11.3	52.41		11.10	4.50	

Note: Database provided by SPU

B5 Surface Water Time-series Plots



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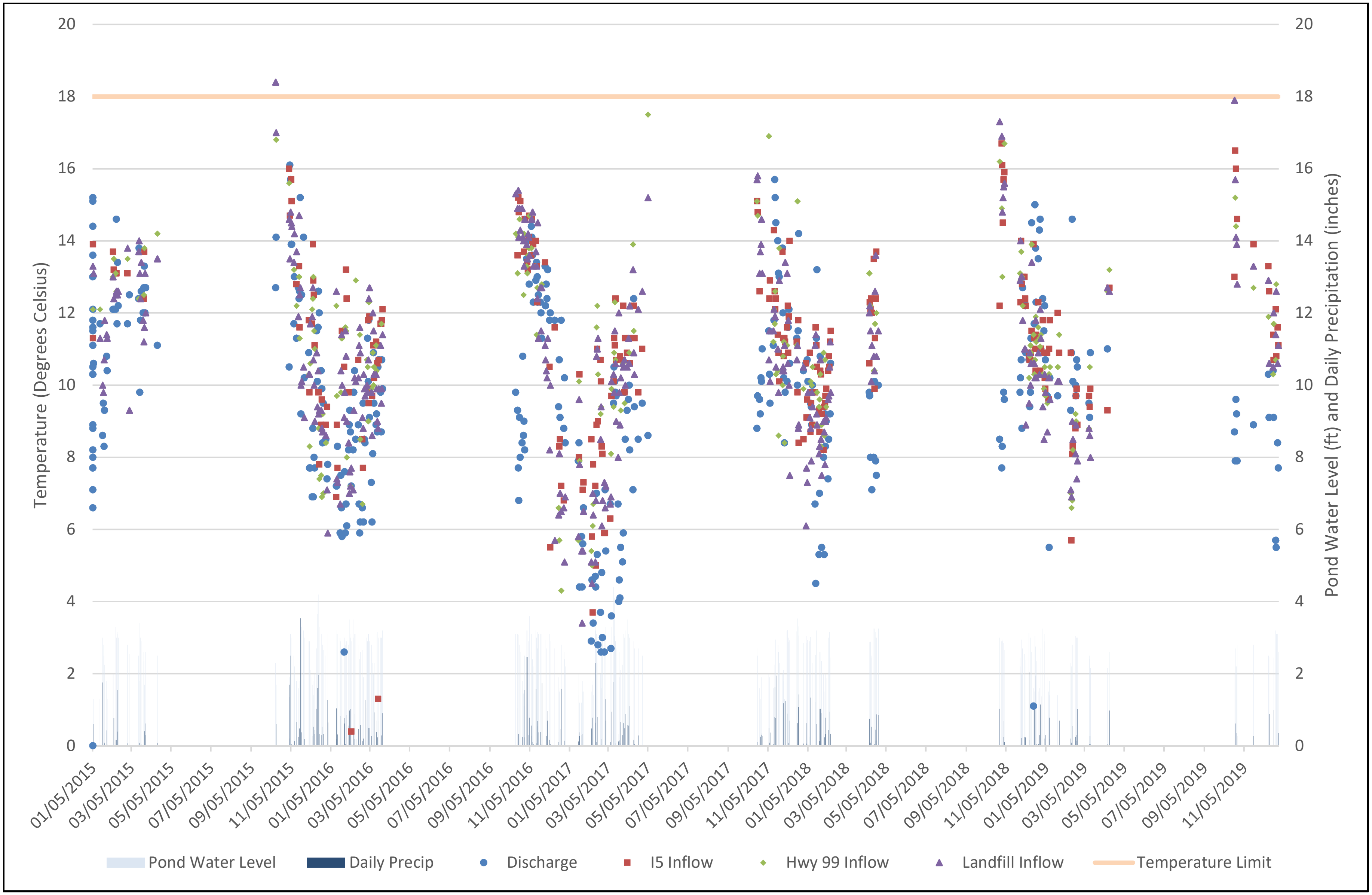
Detention Pond pH (2015-2019)
Midway Landfill

Note: All measurements provided by SPU



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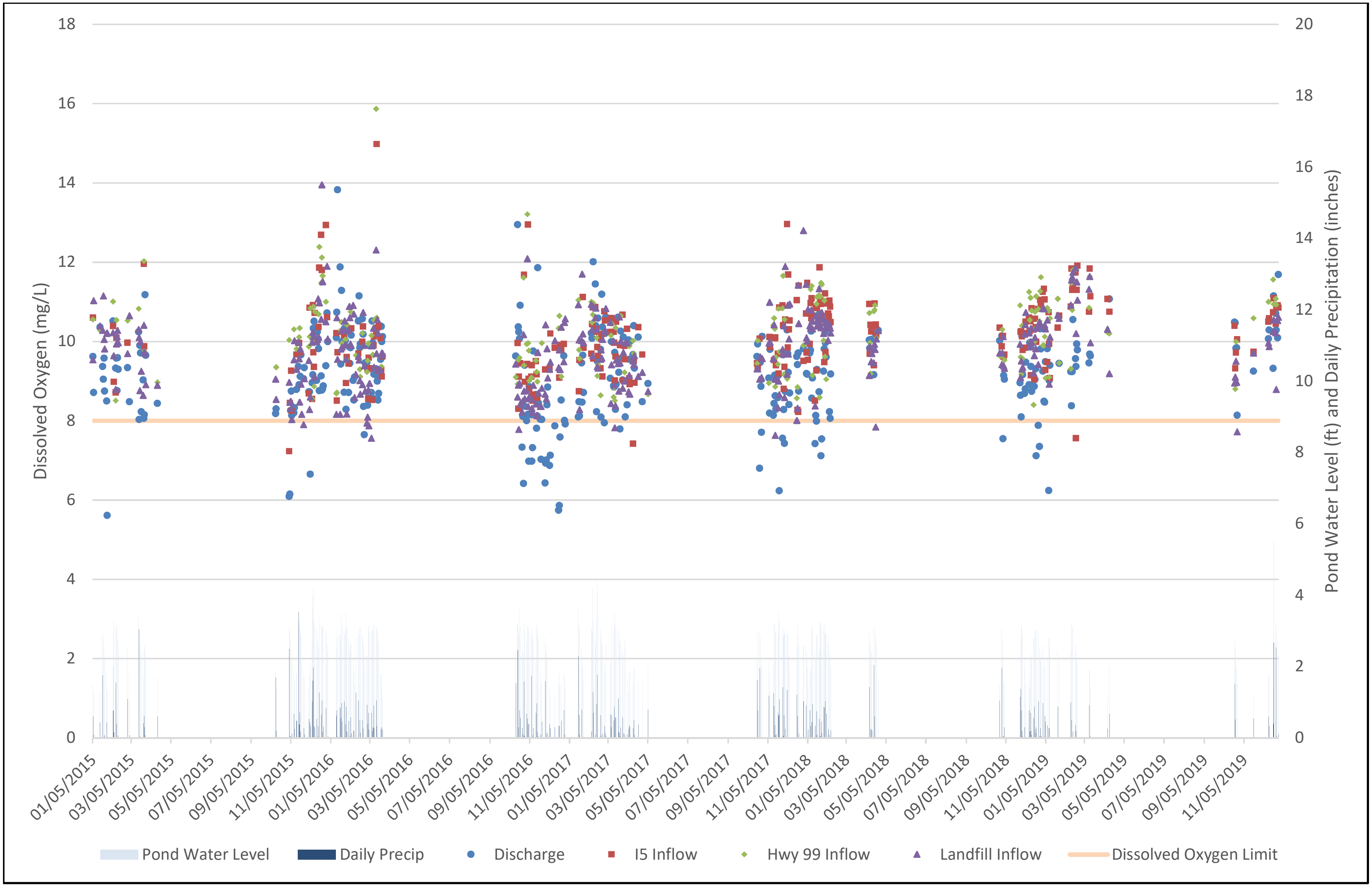
Detention Pond Temperature (2015-2019)

Midway Landfill

Note: All measurements provided by SPU



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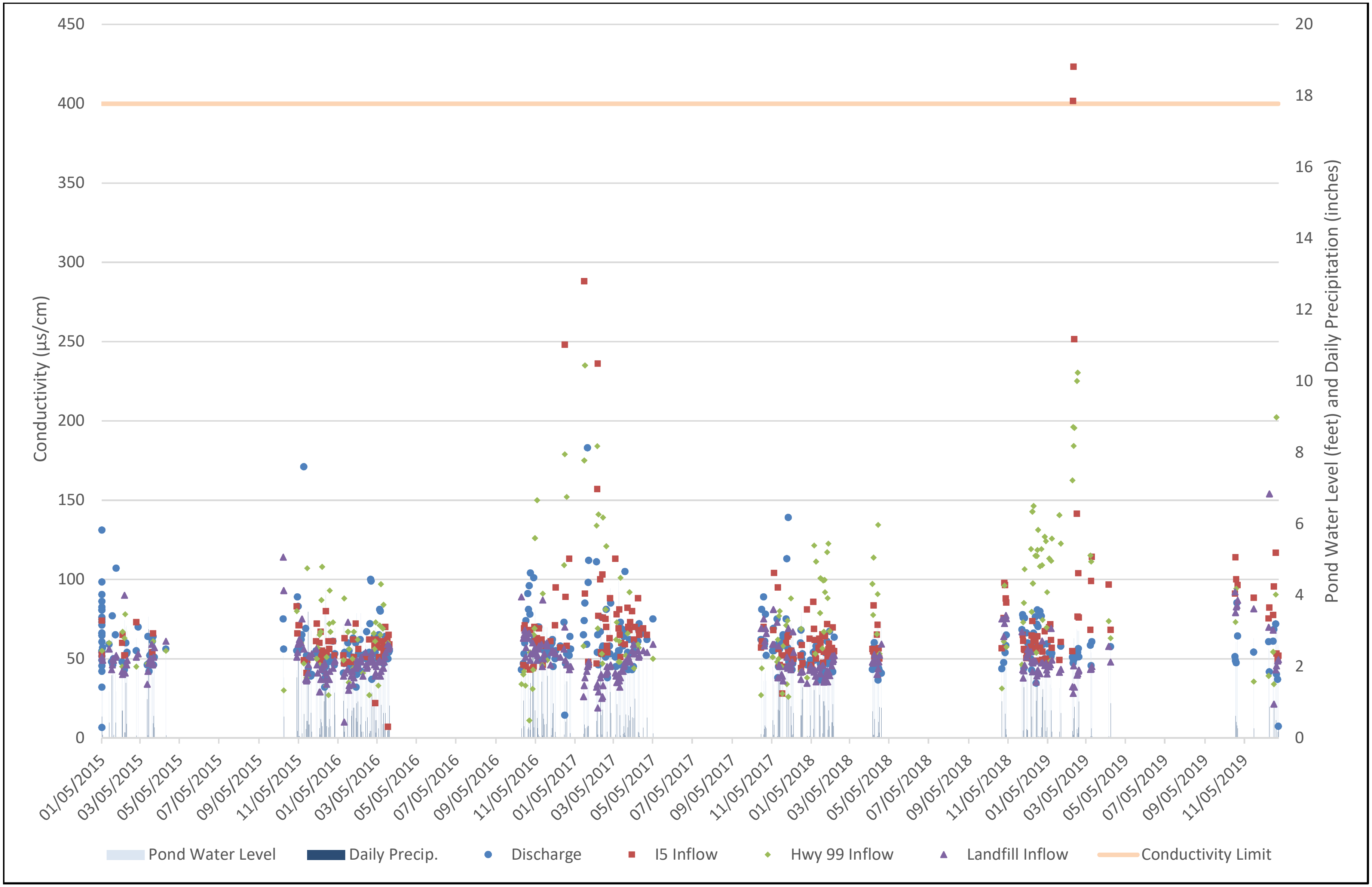
Detention Pond Dissolved Oxygen (2015-2019)
Midway Landfill

Note: All measurements provided by SPU



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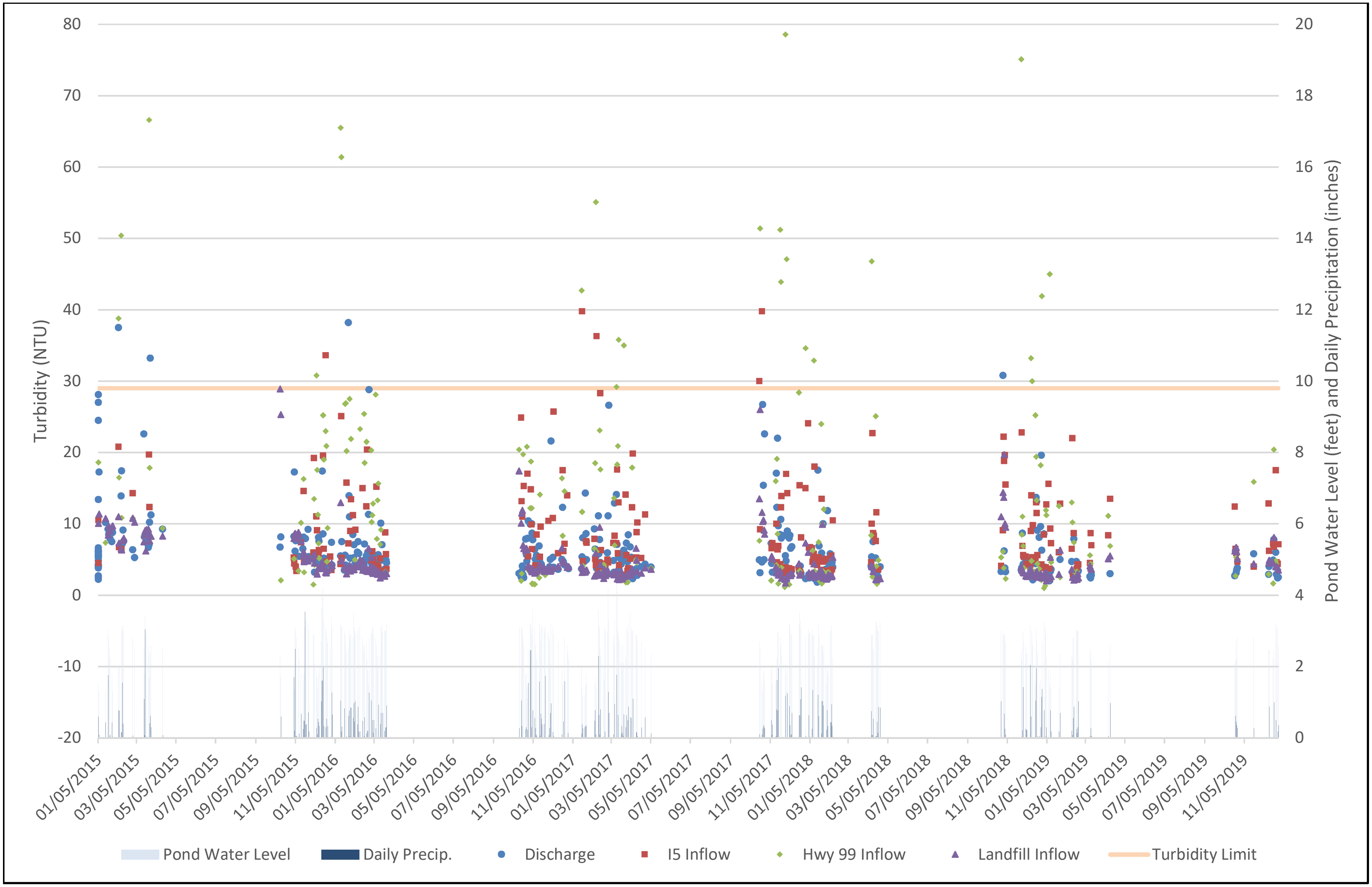
Detention Pond Conductivity (2015-2019)
Midway Landfill

Note: All measurements provided by SPU



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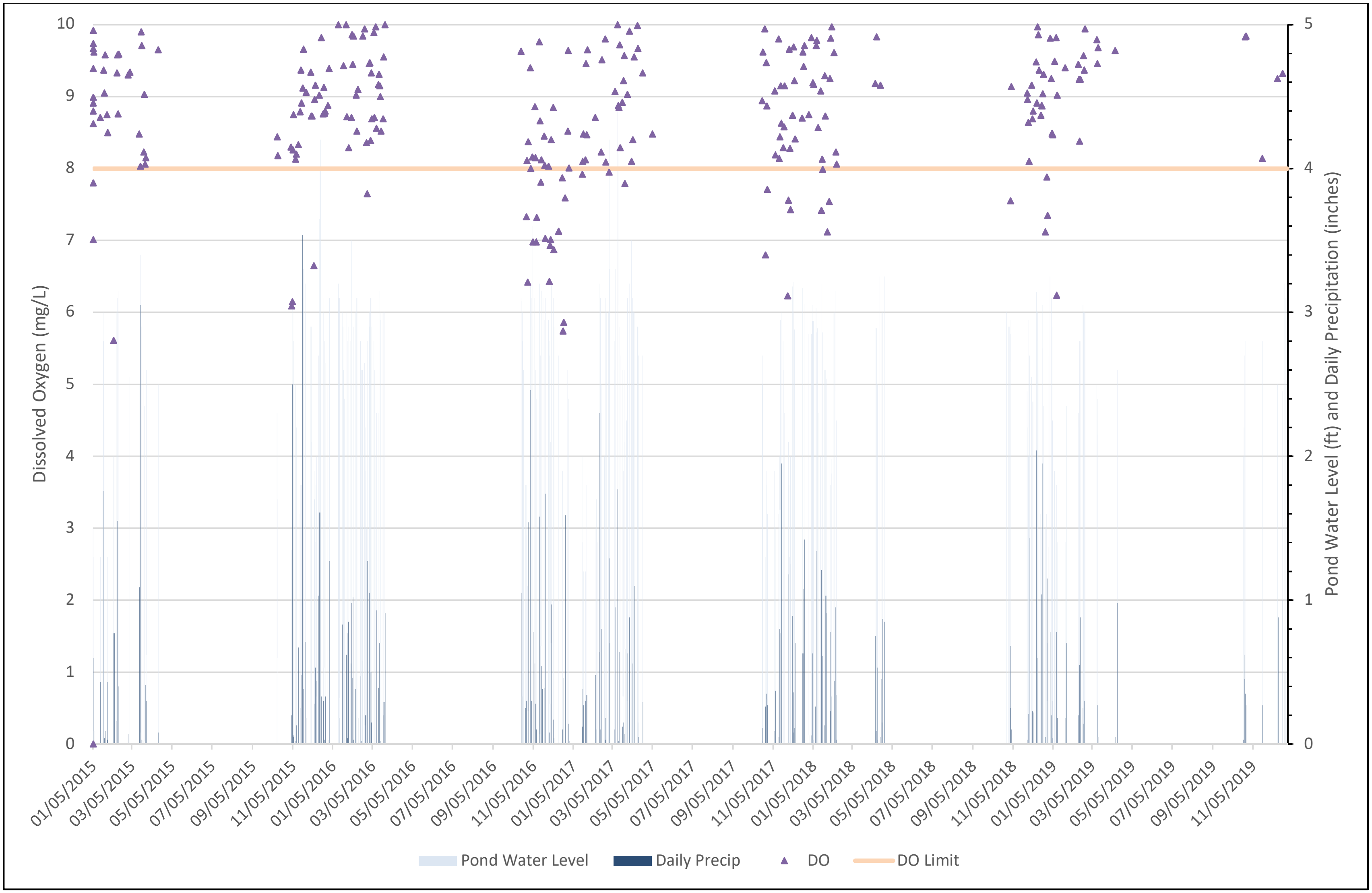
Detention Pond Turbidity (2015-2019)
Midway Landfill

Note: All measurements provided by SPU



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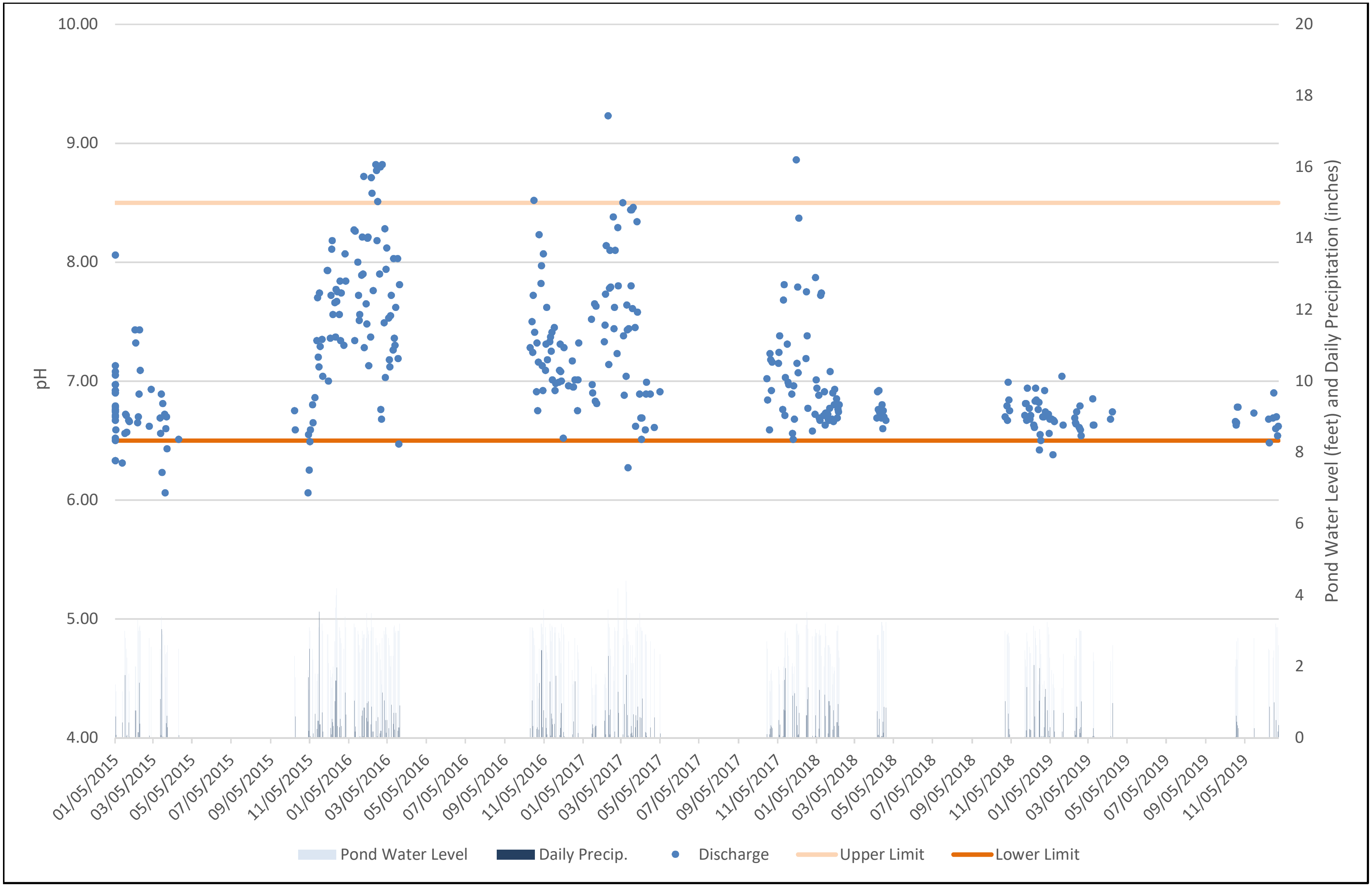
Detention Pond Discharge Dissolved Oxygen (2015-2019)

Midway Landfill

Note: All measurements provided by SPU



Parametrix
ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

Detention Pond Discharge pH (2015-2019)
Midway Landfill

Note: All measurements provided by SPU

Appendix C

Landfill Gas

C1 New PSCAA Permit

pscleanair.org
Puget Sound Clean Air Agency

Puget Sound Clean Air Agency

Notice of Construction No. **11400**

HEREBY ISSUES AN ORDER OF APPROVAL
TO CONSTRUCT, INSTALL, OR ESTABLISH

Registration No. **28342**

Date OCT 1 1 2017

One Callidus Landfill Gas Flare rated at 450 scfm, supplemented with natural gas. This NOC cancels and supersedes NOC 8517, dated 06/20/2001.

APPLICANT

Jeff Neuner
Seattle Public Utilities
P.O. Box 34018
Seattle, WA 98124-4018

OWNER

Seattle Public Utilities
P.O. Box 34018
Seattle, WA 98124-4018

INSTALLATION ADDRESS

Seattle Solid Waste Utility Midway, 24808 Pacific Hwy S, Kent, WA 98032

THIS ORDER IS ISSUED SUBJECT TO THE FOLLOWING RESTRICTIONS AND CONDITIONS

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the INSTALLATION ADDRESS in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.
2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.
3. The owner and/or operator shall ensure the flare operated under this NOC achieves a minimum of 98% destruction of all non-methane organic compounds or reduce the outlet NMOC concentration to less than 20 ppm by volume, dry basis as hexane at 3 percent oxygen.
4. The owner and/or operator shall install and operate a continuous temperature indicator and recorder on the flare. Temperature records shall be maintained on file and made available upon the request of Agency personnel.
5. The owner and/or operator shall either remove or seal in the closed position any valve that has the potential to bypass the flare. Any bypasses of the flare shall be measured and logged. The records shall be maintained on file and made available upon request of Agency personnel.
6. The owner and/or operator may test emissions from the flare at any time in order to demonstrate compliance with Condition 3, using the test methods specified in 40 CFR 60.754(d) and must submit the test report to the Puget Sound Clean Air Agency within 60 days after the testing.
7. The owner and/or operator shall submit a test notification to the Puget Sound Clean Air Agency in accordance with Section 3.07 of Regulation I before a source test is conducted.
8. The owner and/or operator shall operate the flare at an average set point temperature at or above the

temperature range recorded during the most recent source test showing compliance with Condition No. 3. The owner or operator must collect at least one measured data point for each 15-minute monitoring period in every hour the flare is receiving landfill gas. For the purposes of this condition, flare operating temperature shall be based on a rolling 3-hour average and shall only include hourly data which has at least one measured data point during three 15-minute monitoring periods during each hour. The flare operating temperature requirement does not apply to periods of start-ups, shutdowns and/or malfunctions provided that these events are not actively processing landfill gas and do not last for more than 1 hour.

9. The owner and/or operator shall report to the agency no later than 30 days after the violation is discovered all instances when either:

   a. The 3-hour rolling average flare temperature readings were below the set point.
   b. Startup, shutdown or malfunction events lasted longer than an hour and the flare was actively receiving landfill gas.

10. The owner/or operator shall develop a written start-up, shutdown, and malfunction plan according to the provisions of 40 CFR 63.6(e)(3). A copy of the plan must be maintained on site at all times.

11. The owner and/or operator may supplement the LFG piping connection to the flare inlet with no more than 20 scfm of natural gas during any 12-consecutive month period.

12. The owner and/or operator shall take corrective action whenever the flare temperature drops below the set point temperature determined during the most recent performance test.

13. Records demonstrating compliance with this order must be kept and maintained onsite for at least 2 years. Such records and the O&M plan shall be made available for review by the Puget Sound Clean Air Agency upon request.

14. This Order of Approval No. 11400 hereby cancels and supersedes NOC 8517, issued originally on 06/20/2001.

APPEAL RIGHTS

Pursuant to Puget Sound Clean Air Agency's Regulation I, Section 3.17 and RCW 43.21B.310, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon Puget Sound Clean Air Agency within 30 days of the date the applicant receives this Order.

Ralph Munoz
Reviewing Engineer

Carole Cenci, PE
Carole Cenci
Compliance Manager

C2 Gas Data Summary

Table C2-1. Static Pressure in Landfill Gas Extraction Wells, 2015-2019, Midway Landfill

Well (GW)	Static Pressure (in/Wc)			
	No. of Sampling Events	Maximum	Minimum	Average
9	60	2.10	-1.50	-0.42
10	60	2.00	-1.40	-0.42
11	60	2.10	-1.40	-0.40
12	60	0.40	-1.80	-0.33
13	60	0.60	-1.70	-0.28
14	60	0.30	-1.80	-0.33
15	60	0.30	-1.70	-0.33
44S	60	0.50	-1.60	-0.38
44D	60	-1.10	-5.10	-3.45
43S	60	0.50	-2.30	-0.44
43D	60	-1.50	-4.20	-2.67
42S	60	0.50	-2.10	-0.57
42D	60	0.50	-2.30	-0.59
48S	60	0.50	-2.10	-0.53
48D	60	0.40	-2.80	-0.92
49S	60	0.60	-2.40	-0.59
49D	60	0.00	-5.00	-2.84
47S	60	0.60	-1.90	-0.46
47D	60	0.50	-1.90	-0.50
46S	60	0.40	-1.70	-0.41
46D	60	-5.20	-15.20	-8.40
45S	60	0.40	-1.40	-0.36
45D	60	-1.30	-4.70	-2.75
16	60	0.40	-1.60	-0.29
22	60	0.20	-0.60	-0.08
27	60	0.10	-0.70	-0.16
26	60	0.10	-0.80	-0.16
C-11	60	1.30	-0.90	-0.12
6	60	1.60	-1.10	-0.32
7	60	1.90	-1.30	-0.40
8	60	2.20	-1.60	-0.48
34	60	2.30	-1.70	-0.48
33	60	2.20	-1.80	-0.57
32	60	3.00	-2.00	-0.42
1	60	2.30	-1.50	-0.32
5	60	2.00	-1.70	-0.46
2	60	1.90	-1.50	-0.38
3	60	1.80	-1.30	-0.34
4	59	0.10	-1.00	-0.27
PA2S	60	1.80	-1.20	-0.24
PA2D	60	2.60	-1.50	-0.29
PA1S	60	0.10	-1.70	-0.22
PA1D	60	2.60	-1.60	-0.30
25	60	0.20	-0.60	-0.11
28	60	0.40	-1.20	-0.21
29	60	0.60	-1.50	-0.25
21	60	0.70	-2.10	-0.37
37S	60	0.70	-2.20	-0.45
37D	60	0.70	-2.30	-0.44
20	60	0.80	-2.30	-0.43
36S	60	1.10	-2.30	-0.30
36D	60	1.10	-2.30	-0.30
19	60	0.80	-2.20	-0.41
35S	60	0.70	-2.20	-0.40
35D	60	0.70	-2.10	-0.38
18	60	0.70	-1.90	-0.31
PD1S	60	2.40	-2.90	-0.35
PD1D	60	1.50	-2.50	-0.34
PA10S	60	0.90	-2.00	-0.26
PA10D	60	1.30	-2.30	-0.35
17	60	0.90	-2.00	-0.38
23	60	0.40	-1.20	-0.25
PA9S	61	0.20	-0.50	-0.06
PA9D	60	0.30	-1.40	-0.12
PA8S	60	0.20	-0.30	-0.02
PA8D	60	0.00	-2.00	-0.69
24	60	1.40	-0.90	-0.19
31	60	2.10	-1.40	-0.47
PA7S	60	0.60	-4.50	-0.11
PA7D	60	0.00	-9.40	-5.08
PA6S	60	0.70	-0.70	-0.14
PA6D	60	0.00	-1.90	-0.60
PA5S	60	1.60	-1.00	-0.12
PA5D	60	3.30	-2.10	-0.40
PA4S	60	2.90	-1.80	-0.33
PA4D	60	3.00	-1.90	-0.39
PA3S	60	2.80	-1.60	-0.33
PA3D	60	2.80	-1.60	-0.32
30	60	2.00	-2.10	-0.98
41S	60	1.10	-2.80	-0.62
41D	60	1.20	-2.80	-0.58
40S	60	0.70	-2.60	-0.66
40D	60	0.40	-3.50	-1.28
39S	60	0.90	-2.80	-0.73
39D	60	0.50	-3.50	-1.22
38S	60	0.30	-3.30	-1.30
38D	60	0.30	-3.30	-1.30
50S	60	0.00	-3.30	-1.41

Table C2-1. Static Pressure in Landfill Gas Extraction Wells, 2015-2019, Midway Landfill

Well (GW)	Static Pressure (in/Wc)			
	No. of Sampling Events	Maximum	Minimum	Average
50D	60	1.10	-2.60	-0.46
51S	60	2.30	-1.80	-0.66
51D	60	3.00	-2.00	-0.57
52S	60	2.10	-1.80	-0.68
52D	60	-0.30	-4.40	-3.14
53S	60	2.10	-1.60	-0.52
53D	60	2.30	-1.70	-0.50
54S	60	0.60	-2.40	-0.60
54D	60	0.90	-2.60	-0.57
55	60	2.70	-1.90	-0.45
56S	60	0.70	-0.60	-0.10
56D	60	1.20	-3.90	-2.30
MAN	120	2.60	-0.20	1.69
MAN-S	120	-0.10	-51.10	-45.89
MAN-N	120	-0.10	-51.00	-45.96

Note: Database provided by SPU

Table C2-2. Methane in Landfill Gas Probes, 2015 - 2019, Midway Landfill

Probe (GP)	Maximum CH4 Measurement (%)	No. of Sampling Events	No. of Detections	No. of LEL Exceedances
29-S	2.8	20	3	0
31-S	0	20	0	0
32-S	0	20	0	0
33-S	0	8	0	0
34-S	0	20	0	0
35-S	0	20	0	0
37-D	0	60	0	0
37-M	0	60	0	0
37-S	0.1	60	2	0
39-S	0	20	0	0
43-S	0	20	0	0
44-D	0.1	60	2	0
44-M	0.1	60	2	0
44-S	0.1	60	3	0
45-D	0.4	60	2	0
45-M	0.1	60	1	0
45-S	0.1	60	2	0
49-S	0	20	0	0
50-D	0.1	60	4	0
50-M	0.1	60	6	0
50-S	0.1	60	1	0
58-S	0	20	0	0
59-D	0.1	60	1	0
59-M	0.1	60	1	0
59-S	0.1	60	1	0
60-S	0.1	60	1	0
61-S	0.1	60	2	0
64-S	0.1	60	1	0
69A-S	0.2	60	11	0
76-D	0	60	0	0
76-M	0	60	0	0
76-S	0	60	0	0
79-D	0.1	60	2	0
79-M	0.1	60	4	0
79-S	0.1	60	2	0
80-D	0	20	0	0
80-M	0	20	0	0
81-D	0.1	60	1	0
81-M	0	60	0	0
85-D	0.1	60	1	0
85-M	0.1	60	1	0
87-D	0.1	60	1	0
87-M	0.1	60	1	0
87-S	0.1	60	1	0
88-D	0	60	0	0
88-M	0	60	0	0
88-S	0	60	0	0
AF-D	0	20	0	0
AF-M	0	20	0	0
AF-S	0.1	20	1	0
AG-M	0.1	20	1	0
AG-S	0.1	20	1	0
AM-D	0.1	60	2	0
AM-M	0.6	60	14	0
AM-S	4.9	60	25	0
AN-M	0.1	60	3	0
AN-S	0.1	60	4	0
AO-M	0.1	60	4	0
AO-S	0.1	60	4	0
AP-D	0.3	60	4	0
AP-M	0.2	60	4	0
AP-S	0.1	60	3	0
AQ-D	0.1	60	2	0
AQ-I	0.1	60	6	0
AQ-S	0.1	60	5	0
AR-D	0.3	60	3	0
AR-S	0.2	60	4	0
AV-D	0.1	60	1	0
AV-M	0	60	0	0
AV-S	0	60	0	0
AV-W	0.1	60	1	0
AW-S	0	60	0	0

Table C2-2. Methane in Landfill Gas Probes, 2015 - 2019, Midway Landfill

Probe (GP)	Maximum CH4 Measurement (%)	No. of Sampling Events	No. of Detections	No. of LEL Exceedances
B-D	0	20	0	0
B-M	0	20	0	0
B-S	0	20	0	0
C-D	0.1	60	1	0
C-M	0.1	60	1	0
C-S	0.1	60	1	0
D-D	0.1	60	1	0
D-M	0.1	60	1	0
D-S	0.1	60	2	0
H-D	0.1	60	1	0
H-M	0	60	0	0
H-S	0	60	0	0
I-D	0	60	0	0
I-M	0	60	0	0
I-S	0.2	60	3	0
J-D	0.1	60	1	0
J-M	0.1	60	1	0
J-S	0.1	60	1	0
K-D	0.1	60	2	0
K-M	0.1	60	1	0
K-S	0.1	60	1	0
L-D	0	20	0	0
L-M	0	20	0	0
L-S	0	20	0	0
M-D	0.1	60	1	0
M-M	0	60	0	0
M-S	0	60	0	0
MW10-D	0.1	20	1	0
MW14-D	0.9	20	19	0
MW15-D	0.1	60	1	0
MW20-D	0.1	60	2	0
MW23-D	0.1	20	1	0
MW24-D	0.1	60	1	0
MW27-D	0.1	60	1	0
MW29-D	0	60	0	0
MW8-D	1.1	60	12	0
N-D	0.1	20	1	0
N-M	0	20	0	0
N-S	0.1	20	1	0
O-D	0	20	0	0
O-M	0	20	0	0
O-S	0	20	0	0
Q-D	0.1	20	1	0
Q-M	0.1	20	1	0
Q-S	0	20	0	0
R-M	0.1	20	1	0
R-S	0	20	0	0

Note: Database provided by SPU

Table C2-3. Methane in AM Gas Probe, 2015-2019, Midway Landfill

Date	AM-S CH4%	AM-M CH4%	AM-D CH4%
1/12/2015	0	0	0
2/9/2015	4.1	0	0
3/11/2015	0	0	0
4/2/2015	0	0	0
5/11/2015	1.3	0	0
6/3/2015	0	0	0
7/13/2015	0	0	0
8/3/2015	0	0	0
9/3/2015	4.5	0	0
10/6/2015	4.9	0	0
11/9/2015	2.3	0.1	0.1
12/14/2015	0	0	0
1/7/2016	0.1	0	0
2/3/2016	0	0.5	0
3/7/2016	0	0	0
4/5/2016	0	0	0
5/16/2016	0	0.3	0
6/15/2016	3.9	0.2	0
7/11/2016	2.8	0	0
8/3/2016	0.3	0	0
9/8/2016	0	0	0
10/10/2016	3.5	0	0
11/9/2016	0.1	0	0
12/6/2016	0	0	0
1/4/2017	3.7	0	0
2/10/2017	0	0	0
3/1/2017	0	0	0
4/12/2017	0	0.1	0
5/8/2017	0	0.3	0
6/1/2017	0	0.4	0
7/6/2017	0	0.2	0
8/1/2017	0	0.3	0
9/5/2017	0	0.2	0
10/2/2017	0	0	0
11/1/2017	0	0	0
12/4/2017	0	0	0
1/2/2018	0	0	0
2/5/2018	0	0.6	0
3/1/2018	0	0.5	0
4/2/2018	0	0	0
5/1/2018	0	0	0
6/1/2018	0	0	0
7/2/2018	0	0	0
8/2/2018	0	0	0
9/6/2018	0	0	0
10/2/2018	0	0	0
11/1/2018	0.2	0	0
12/3/2018	0.8	0	0
1/7/2019	1.1	0	0
2/6/2019	0	0	0
3/7/2019	2.1	0	0.1
4/9/2019	0.6	0	0
5/13/2019	0.7	0.2	0
6/3/2019	3.4	0	0
7/1/2019	3.4	0.3	0
8/1/2019	1	0	0
9/6/2019	0.4	0	0
10/1/2019	0.2	0	0
11/25/2019	4.1	0	0
12/26/2019	4.1	0	0

Appendix D

Cap/Cover

D1 Example of Monthly Log

Midway General inspection and maintenance sheet - Monthly.

Month/Year :			By:		
Item		**Description**	**OK**	**Not OK**	**Any maintenance record or remark**
1	Office				
	1	Permits	☐	☐	
2	Landfill Cover System				
	1	Any erosion or crack	☐	☐	
	2	Any trees or brush at the cover system	☐	☐	
	3	Vegetation control	☐	☐	
3	ST-102 Detention pond pumping system				
	1	ST-102 pump	☐	☐	
	2	Alarm system	☐	☐	
	3	ST-102 integrity	☐	☐	
4	Detention pond				
	1	Any trash and debris	☐	☐	
	2	Any erosion or crack?	☐	☐	
	3	Any trees or brush at the pond	☐	☐	
	4	Detention pond integrity	☐	☐	
5	Road system				
	1	Any erosion or crack?	☐	☐	
	2	Pot hole	☐	☐	
6	I-5 Pump station				
	1	4 pumps	☐	☐	
	2	Vent fan	☐	☐	
	3	Powers	☐	☐	
	4	Righting system	☐	☐	
	5	retrieving system	☐	☐	
7	LFG collection system				
	1	All extraction wells	☐	☐	
	2	Flex line repair (leaking)	☐	☐	
	3	Manifold line leakage	☐	☐	

8	Flare station.				
	1	Blower maintenance	☐	☐	
	2	Any sensor replacement	☐	☐	
	3	Gas flow meter	☐	☐	
	4	Flare integrity	☐	☐	

9	Site access				
	1	All fence security	☐	☐	
	2	Gate lock system	☐	☐	

List detail

Date	Item #	Description